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Junaidi Mistar ·  
Ronny Malavia Mardani ·  
Ifit Novita Sari ·  
Heri Nurdiyanto *Editors*

Proceedings of the  
2nd International  
Conference  
on Multidisciplinary  
Sciences for Humanity  
in Society 5.0 Era  
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Junaidi Mistar · Ronny Malavia Mardani ·  
Ifit Novita Sari · Heri Nurdiyanto  
Editors

Proceedings of the 2nd  
International Conference  
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Era (ICOMSH 2022)



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## Preface

Industrial Revolution 4.0 was started with the concept of the digital industrial era/information and communication technology era in Germany with 6 main pillars namely digital society, sustainable energy, smart mobility, healthy living, civil safety, and technology in the workplace. Indonesia has implemented Industry 4.0.

The era of super smart society (Society 5.0) was introduced by the Government of Japan in 2019, which was made in anticipation of the turmoil of disruption due to the Industrial Revolution 4.0, which led to a complex and ambiguous liberation. Where at that time Japan was experiencing a population reduction challenge that reduced the productive age population/workers, Japan tried to improve this condition by implementing Society 5.0. It is feared that the invasion will erode the values of human character that have been maintained so far.

Society 5.0 is a society that can solve various challenges and social problems by utilizing various innovations that were born in the era of the Industrial Revolution 4.0 such as the Internet of Things, artificial intelligence, big data, and robots to improve the quality of human life. Society 5.0 can also be interpreted as a concept of society that is based on humans and technology.

In facing the era of Society 5.0, the world of education plays an important role in improving the quality of human resources. In addition to education, several elements and stakeholders such as the government, Community Organizations, and the whole community also take part in welcoming the era of Society 5.0.

There are five elements in Society 5.0, namely: emotional elements, intellectual elements, physical elements, social elements, and spiritual elements. These five elements are related to each other in a balance. With the Society 5.0 concept, it is hoped that it can minimize the negative impact of robotic technology and artificial intelligence so that it does not dominate human life without adequate control, but humans are actors who control and control robotic technology and artificial intelligence. Thus, Society 5.0 is a foresight in organizing an ideal social life, as a response to the Industrial Revolution 4.0 which is feared will degrade the role of humans due to dependence on advances in robotic technology and artificial intelligence. With Society 5.0, it is hoped that there will be a balance of life between the use of technology and a more humane quality of human life.

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## Peer-Review Statements

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All of the articles in this proceedings volume have been presented at the 2<sup>nd</sup> ICOMSH during December 16, 2022 – December 17, 2022 in Malang, Indonesia. These articles have been peer reviewed by the members of the *Scientific Committee* and approved by the Editor-in-Chief, who affirms that this document is a truthful description of the conference's review process.

### 1. REVIEW PROCEDURE

The reviews were *double-blind, open, etc.* Each submission was examined by 2 reviewer(s) independently.

*The conference submission management system was OCS*

All new manuscripts to The 2nd ICOMSH 2022 should be submitted directly via Open Conferences System (OCS). System. By using the online system, you can access and process submitted papers from anywhere with internet access, and all the records including files and exchange will be maintained.

Step 1. To keep scientific integrity, one of our editors will run Turnitin on each new submission to see if has problem of possible plagiarism. Papers not passing plagiarism check will be desk rejected immediately.

Step 2. Then the publication chairs will have an initial check on new submission to ensure if it's within scope of the conference, and decide if it merits further review. If the new manuscript passed the initial check, it will be assigned to reviewers for double-blind peer review.

Step 3. Each of selected paper will be reviewed by at least two/three independent experts with related research background mainly on originality, validity, quality and readability.

Step 4. Review Reports received from the experts will be judged by one of the editors with international scientific standards.

Step 5. If logical, then Review Reports will be sent to authors to modify the manuscript accordingly. If not logical, then editor can assign new reviewer or can also judge at his/her own.

Step 6. Authors will be required to revise their papers according to the points raised.

Step 7. Revised version will then be evaluated by the editor whether the points raised by the reviewers have been addressed or not.

Step 8. Then the editor will send the revised manuscript to the reviewers again for re-evaluation.

Step 9. If the reviewers approve the revised version of the manuscript, then the Editor-in-Chief will make final decision for the publication.

## 2. QUALITY CRITERIA

Reviewers were instructed to assess the quality of submissions solely based on the academic merit of their content along the following dimensions.

1. Pertinence of the article's content to the scope and themes of the conference;
2. Clear demonstration of originality, novelty, and timeliness of the research;
3. Soundness of the methods, analyses, and results;
4. Adherence to the ethical standards and codes of conduct relevant to the research field;
5. Clarity, cohesion, and accuracy in language and other modes of expression, including figures and tables.

In addition, all of the articles have been checked for similarity in an effort to detect possible signs of plagiarism by the publisher.

Firstly, papers submitted to our OCS platform are required to pass the similarity check before acceptance.

Secondly, in order to eliminate plagiarism more effectively, all accepted papers are checked again for similarity before being submitted to the publisher.

## 3. KEY METRICS

<i>Total submissions</i>	101
<i>Number of articles sent for peer review</i>	73
<i>Number of accepted articles</i>	42
<i>Acceptance rate</i>	47%
<i>Number of reviewers</i>	16

## 4. COMPETING INTERESTS

Neither the Editor-in-Chief nor any member of the Scientific Committee declares any competing interest.

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# Increasing MSMEs Competitiveness In Facing Society 5.0 Era

Erni Puspanantasari Putri<sup>1\*</sup>, Ontot Murwato<sup>2</sup>, IGN. Anom Maruta<sup>3</sup>,  
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**Abstract.** Business and technology are interdependent. Indonesia has recently stepped into the "Society 5.0" age. Technology now permeates every facet of existence. Because of this, societies need to be prepared to use breakthroughs from the Revolution 4.0 period to address a variety of issues. The Society 5.0 period aims to address people's needs by producing jobs in addition to bridging the technological and human divides. Indonesian MSMEs are currently working to recover from the COVID-19 pandemic-related slowdown. The globe is waiting impatiently for Indonesian goods, so this could be a business opportunity. There is a sizable market for both food security and digitization technology. The top market position in the ASEAN area is held by Indonesia. In the age of Society 5.0, the MSMEs sector is one that is crucial. However, only a small percentage of MSMEs (about 16% of all MSMEs in Indonesia) have embraced digitization. To make MSMEs more competitive in the Society 5.0 era, numerous initiatives are required. The qualitative method (document/text study) was employed in this investigation. According to the study's findings, MSMEs can become more competitive by (i) developing their digital skills, (ii) learning by doing, (iii), increasing their human resources, (iv) incorporating teamwork, (v) adopting an educational curriculum that emphasizes human-digital skills, and (vi) utilizing the government's regulatory role.

**Keywords:** Competitiveness, Digital MSMEs, Society 5.0 Era.

## 1 Introduction

The enterprise world faces challenges from the Industrial Revolution 4.0, including (i) a lack of qualified HR skills, (ii) security concerns with communication technology, (iii) the dependability and stability of production equipment, (iv) stakeholder resistance to change, and (v) significant job losses as a result of automation. The Industrial Revolution 4.0 is being met by Society 5.0. Humans are a component of all technology. Since high-tech machines will be used in Industry 4.0, many people believe that fewer

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positions will need to be filled by people. To create the most cutting-edge technologies, Society 5.0 depends on creating new ideals. As a result, it may make future economic problems more accessible to society. The Indonesian society needs data and technology literacy abilities in order to take advantage of opportunities and respond to society 5.0's defiance of the Industrial Revolution 4.0 [1].

Micro, small, and medium enterprises (MSMEs) in particular and the business world in general are intertwined. In particular, Indonesia has entered the "Society 5.0" era. Technology is a part of every aspect of existence. Therefore, society must learn how to handle all forms of disobedience and problems that appear in the Revolution 4.0 period. In addition to bridging the gap between cultures and technology, the "society 5.0" period also had to get over people's barriers to creating work. MSMEs in Indonesia are currently working to recover from the COVID-19 pandemic's detrimental consequences. The state of the planet is progressively getting better. As a result, it may be a good economic opportunity given how enthusiastically buyers around the world seek out Indonesian goods. There is a huge market for digital technology and food security in Indonesia. The development of the Indonesian market is ranked top in ASEAN [2].

The rapid advancement of technology is a result of the COVID-19 pandemic. Relationships and a wide range of online activities have been made simpler. The socialization of digital technologies has sped up the digital transformation. The vast majority of internet users are exposed to a variety of threats, including cyberbullying, scams, digital intimidation, and other harmful content. On the other hand, there are also chances for micro, small, and medium enterprises to gain from the digital revolution at the business level (MSMEs). MSMEs are operating businesses owned by both natural persons and legal entities. The Republic of Indonesia's Law No. 20 of 2008 establishes the existence and definition of MSMEs. Small, micro, and medium enterprises are the main drivers of national economic growth. By promoting MSMEs' digitalization and providing various incentives to digital MSMEs, the government maximizes the potential and productivity of MSMEs. MSMEs are making an attempt to digitize MSME marketing. MSMEs can now be more easily digitalized thanks to the age of ever-improving technology [3].

## **2 Materials And Methods**

### **2.1 Competitive Advantage**

One of Indonesia's initiatives for economic and industrial development is the growth of the MSME creative sector. The ability to compete with other MSMEs is a competitive advantage for SMEs. When compared to other competing products, MSME items that are highly competitive will have reduced product sales expenses. As a result, in order to succeed in the commercial rivalry, MSMEs must take competitive advantage into account. Several elements of competitive advantage, including (i) cutting-edge technology, (ii) labor ethic, innovation, human resources, and motivation, (iii) production process productivity and efficiency, (iv) prime product quantity, (v)

thorough promotion, (vi) advanced supervision structure and organizational connection, (vii) proper after-sales care, can influence MSMEs to be business winners; and (viii) economic level in the production process.

The capacities of MSMEs define the viability of a competitive advantage plan. It was related to competition, environmental change, and MSME business maturation. MSMEs that meet the requirements for a highly competitive market will be able to choose a more effective approach. The correct system in MSMEs will be able to provide a highly competitive company environment. The following are a few essentials for establishing the zone: (i) concentration of business strength; (ii) avoiding businesses that are less appealing to competitors; (iii) use of appropriate technology; (iv) market expansion to augment customers; (v) protection of MSME products by patents or agreements between users; (vi) concentration in businesses that have specific and stable relationships with raw material resources, distributors, and customers; and (vii) MSME capabilities are superior to those of rivals [4,5].

## **2.2 Micro, Small, and Medium Enterprises**

Micro, small, and medium enterprises (MSMEs) play a crucial and vital role in the structure of the national economy. Small businesses (those with 5–19 employees) and medium-sized businesses (those with 20–99 employees) are among the categories that the Central Statistics Institution used to categorize SMEs (20–99 employees). According to the perspective of business development, there are four different types of MSMEs: (i) MSMEs in the informal sector, such as street vendors; (ii) Micro MSMEs, such as MSMEs with the capacity to be artisans but lacking the entrepreneurial spirit to build their companies; (iii) Dynamic Small MSMEs, such as MSMEs with the capacity to be entrepreneurs by approving collaboration for exports and sub-contracts; and (iv) Fast-Moving Enterprises, or SMEs that have the skills to be entrepreneurial specialists and have the potential to grow into huge businesses [6].

## **2.3 Society 5.0 Definition**

Japan first put forth the definitions and components of society 5.0 in 2019. The Industrial Revolution 4.0 has been extended into this time period. Industrial Revolution 4.0 makes use of artificial intelligence, while Society 5.0 is concerned with both technology and social systems. A group of individuals who are capable of resolving numerous societal difficulties through the application of various innovation concepts is described as "society 5.0." This concept covers more than just fundamental reading; it also covers abilities in communication, teamwork, creativity, critical thinking, and problem-solving. Curiosity, initiative, persistence, flexibility, a leadership spirit, social concern, and culture make up the ideal characteristics of a civilization [7].

## **2.4 Research Methodology**

A qualitative research method (document/text study) was employed in this study. Increasing MSME competitiveness, the competitive advantage of MSMEs, digital

economy challenges in Indonesia, the acceleration of MSMEs turning to digital, and how do MSMEs face the era of the Industrial Revolution 4.0 and Society 5.0 are some of the research materials.

### **3 Results And Discussion**

#### **3.1 Digital Economy Challenges in Indonesia**

Diverse nations have been inspired by Industrial Revolution 4.0 to innovate in the digital economy. Investing in Indonesia's digital economy presents the government with five challenges: (i) cyber security; (ii) greater market competitiveness; (iii) human resource development; (iv) widespread availability of internet connection; and (v) outdated rules.

1. Cyber Security. Every year, there are more and more online transactions in Indonesia. It provides reckless individuals the chance to assault the online community. To ensure that investments and transactions in the digital economy are made safely, the government must set up an internet security system.
2. Increasingly fierce market competition. The existence of e-commerce has opened the door for easily imported goods into Indonesia. MSMEs needed to improve their business performance as a result. By-products from other nations, which are frequently offered at low prices, will diminish MSME products if they can't compete.
3. Development of human resources. Google found that Southeast Asia has little professional resources for accelerating digital economic growth. In order to prepare for the contemporary digital economy, efforts must be taken to educate society and prepare the educational system.
4. Throughout the region, internet connectivity is readily available. Internet accessibility affects Indonesian investments in the digital economy. Today, only the larger islands have widespread access to the internet (Java, Sumatra, Bali, and Nusa Tenggara), while Kalimantan, Sulawesi, and Papua are still regarded as having low levels. To promote economic growth, the Internet development program is required.
5. The laws do not reflect modern society. Laws and rules governing the operation of the national digital economy must be created by the government and other relevant entities. The goal of this is to protect the rights of users and other participants in the digital economy so that they can operate more effectively in the future [8].

#### **3.2 Acceleration of MSMEs Turning to Digital**

The goal of digitizing MSMEs is to alter how business is conducted. technology-based product marketing and sales It is recommended that each MSME have at least one WhatsApp contact, one regular social media account, one Google business account or map, and one regular online store. Future online retail and digital technology juggernaut potential for Indonesia is still quite strong. The following are the key justifications:

1. The millennial generation makes up the majority of the population in Indonesia, and Gen Z is a technologically advanced and social media-active generation. In 2018, Indonesia has 100 million smartphone users. This is the future potential for the market for digital SME products.
2. More people are shopping online now than before the COVID-19 outbreak. Indonesians now live increasingly digital lifestyles as a result of this time. Future generations are anticipated to continue living a digital lifestyle.
3. Global technological advancements and changes, particularly in wealthy nations. Due to these elements, MSMEs must become digital MSMEs.

In the age of Society 5.0, the MSME sector is one that is essential. However, only a small percentage of SMEs—roughly 16% of all SMEs in Indonesia—have shifted to digitization. The community's level of technological readiness is still quite low, and not every location has access to the internet. Due to this, initiatives are required to (i) introduce modern SMEs, (ii) foster interaction between the government, MSME entrepreneurs, and the general public as consumers, and (iii) offer outreach and training to MSME actors who are still unfamiliar with MSME digitalization. Digital MSMEs (e-commerce) generated 32 billion dollars' worth of digital transactions in 2020. By 2025, its contribution is projected to reach 83 billion USD. For MSMEs, digital payments are essential in the Society 5.0 era. Because it is quicker and simpler to use, a digital payment system is a type of financial system that can help with payments in the modern era. For MSME actors, online services including social media, websites, Grab, *Gojek*, *Tokopedia*, Zoom, and Google Meet are highly helpful. Drone use between cities makes SME business activities easier, particularly in the regions [3].

### 3.3 Increasing MSME Competitiveness

Globally, the effects of the digital age are apparent. The digitization revolution will cause the loss of 1-1.5 billion employment between 2015 and 2025. It is a result of the replacement of human jobs with automated machines. The opportunities in the digital age are expanding as well as the problems, which are getting harder. The MSME sector's rising demand for creative goods, the emergence of digital lifestyles, and the demographic dividend in 2035 all have the potential to expand the business sector. For MSMEs, using digitization can have a number of benefits as follows: (i) creating efficiencies for organizing MSMEs businesses, such as warehousing, production costs, transportation, and social media (Facebook, Instagram, and Twitter) promotions; and (ii) expanding marketing networks to different regions or other countries.

Many parties must get involved if MSMEs are to become more competitive. The ABCGM (Pentahelix) model refers to these stakeholders, including academics, businesspeople, communities, governments, and the media. The following are a few tactics to help MSMEs be more competitive as they deal with the Industrial Revolution 4.0 and Society 5.0:

1. The duty to enhance spending on digital skills. Human resources, digital infrastructure, a mindset, a vision, and policies are all included.

2. Use the newest technological prototypes and gain knowledge through practice. Because of how quickly technology is developing,
3. Increasing human resources by looking into new partnerships for certification and educational methods.
4. Working together to determine future skill availability and demand in the digital age.
5. Create a curriculum for schooling that incorporates information on human-digital competencies.
6. The government's role as a regulator includes the following duties: (i) establishing and enforcing policies pertaining to MSMEs; (ii) acting as a facilitator and accelerator in the support of MSMEs; (iii) offering rewards to MSMEs that perform well; and (iv) facilitating licensing to encourage collaboration [9].

## 4 Conclusion

In Era Society 5.0, the SME sector plays a significant role. However, only a small percentage of MSMEs—roughly 16% of all MSMEs in Indonesia—have shifted to digitization. As a result, numerous initiatives are required to improve MSMEs' competitiveness in the Era of Society 5.0. Diverse nations have been inspired by Industrial Revolution 4.0 to innovate in the digital economy. The government of Indonesia is up against five obstacles as it makes investments in the digital economy: (i) cyber security; (ii) harsher market competition; (iii) human resource development; (iv) widespread internet access; and (v) outdated rules.

The goal of digitizing MSMEs is to alter how business is conducted. The use of technology in product marketing and sales is very prevalent. Future online retail and digital technology juggernaut potential for Indonesia is still quite strong. The key factors are that (i) the majority of Indonesia's population is from the millennial and Gen Z generations, (ii) a digital lifestyle is starting to emerge in society, and (iii) global technical advancements. Due to these elements, MSMEs must become digital MSMEs.

Globally, the effects of the digital age are apparent. The digitization revolution will cause the loss of 1-1.5 billion employment between 2015 and 2025. It is a result of the replacement of human jobs with automated machines. The opportunities in the digital age are expanding as well as the problems, which are getting harder. The MSME sector's rising demand for creative goods, the emergence of digital lifestyles, and the demographic dividend in 2035 all have the potential to expand the business sector.

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# Gender Role In The Conservation And Management Of Forests Over Limestone In Samar Island Natural Park, Philippines

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**Abstract.** Recognizing and understanding the importance of the different roles and responsibilities of men and women, ensure greater success and provide critical insights as we promote sustainable development and effective conservation policies while properly safeguarding natural resources. Hence, the study was carried out to determine the role of men and women, of various age brackets, in the conservation of forests over limestone (*kaigangan*) in SINP, which will lead to more effective and inclusive implementation of conservation management. A 10% sample of the total population in Paranas and Taft was categorized based on gender and age bracket (>18 years old). The survey material was divided into two sections: (1) socio-demographic profile and (2) participation in conservation activities in SINP. Spearman correlation and ANOVA was employed in the analyses of the study. A total of 273 respondents, with 140 males and 133 females were interviewed. The findings revealed that many of the respondents' responses were found to be significantly correlated ( $p < 0.05$  and  $p < 0.01$ ) with their age group. Gender is significantly correlated ( $p < 0.05$ ) with the respondents' involvement in conservation activities. Men (29%) outnumbered women (14%) in engaging in any conservation activities at various ages. However, some respondents were unable to participate because they were unaware and did not have time to attend any conservation-related activities. Women and men are both important stakeholders in the conservation of *kaigangan* forest in SINP. The lesser is the degree of participation, in forest conservation activities, the lesser is the likelihood of success in the conservation efforts.

**Keywords:** gender roles, conservation and management, forests over limestone, *kaigangan*, Samar Island Natural Park

## 1 Introduction

Forests over limestone in Samar Island Natural Park (SINP) provides a variety of products, including wood and non-wood products, as well as intangible forest services

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such as reducing the severity of natural disasters and providing aesthetic value in nearby villages [1]. Despite the benefits demonstrated above, this forest is declining because it is vulnerable to anthropogenic activities such as quarrying, land-use change, deforestation, hunting, illegal logging [2, 3, 4], and habitat degradation due to processes such as domesticated animal grazing and wood collection for fuel [5, 6]. Thus, sound policies and programs should be implemented to prevent the destruction of this forest over limestone by incorporating and understanding the roles of men, women, as well as their participation and interactions with the environment and the community [7].

Gender roles, according to Manfre & Rubin [8], are socially defined tasks, responsibilities, and behaviors that are appropriate for men and women as they have different levels of knowledge and access to forest and resource use for various purposes [9, 10]. Their knowledge, preferences, and priorities are the result of socialization processes that assign certain responsibilities to men and women based on their gender [8]. Moreover, women's perceptions, priorities, and concerns must be understood by development programs because they differ from men's and can influence outcomes [11]. Understanding this ensures greater success and provides critical insights on how they value resources as we promote sustainable development and effective conservation policies while properly safeguarding natural resources [12, 13]. Furthermore, involving both men and women in conservation management entails empowering marginalized groups by allowing them to express and act on their preferences and needs in forest conservation management [14, 15]. This is because both men and women are studied and consulted, allowing for more accurate and clearer research results [16].

To date, there is little information and a lack of focus on gender roles and their conservation implications [17, 18], particularly for forests over limestone of Samar Island Natural Park (SINP). Al-Azzawi [19] stated that a significant number of studies had indicated that including gender studies in monitoring and evaluating conservation projects was extremely valuable. Most empirical studies on gender focus on agriculture [20, 21, 7], water and sanitation [22], post-harvest activities and trade [23, 24, 25], and coastal or mangrove conservation [26, 27]. Recognizing the different roles and responsibilities of men and women, as well as the importance of their equal roles, is critical in identifying relevant problems, solutions, management, and decision making in the sustainable management of natural resources [28, 13]. Hence, the study was carried out to determine the role of men and women, of various age brackets, in the conservation of forests over limestone (kaigangan) in SINP, which will lead to more effective and inclusive implementation of conservation management. The study specifically aims to (1) assess the respondents' knowledge and awareness of the importance, activities, and impact related to kaigangan forests, (2) determine the respondents' involvement and roles in any conservation activities, and (3) determine the respondents' perception of who should be responsible and take the lead for the protection and conservation of the kaigangan forests.

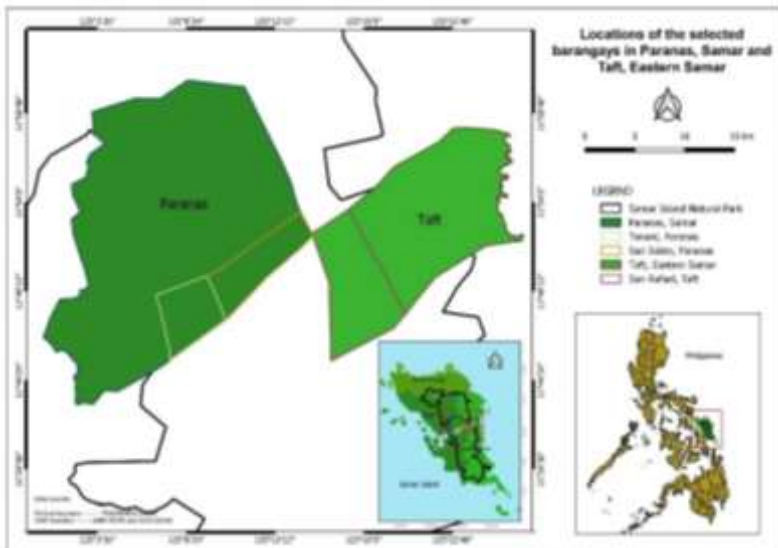
## 2 Methodology

### 2.1 Study sites

The research was carried out in selected barangays in Paranas, Samar (Brgy. San Isidro and Tenani) and Taft, Easter Samar (Brgy. San Rafael), Samar Island, Philippines (Figure 1). These barangays were part of the Samar Island Natural Park (SINP), a protected area by Presidential Proclamation No. 442 of 2003 in accordance with Republic Act No. 7586 (NIPAS Act of 1992). These areas were selected because Paranas has the eco-trail and Taft has the birding sites in SINP.

The municipality of Paranas, Samar is made up of 44 barangays, including San Isidro and Tenani. It is located on the island of Samar at approximately  $11^{\circ} 46'$  North and  $125^{\circ} 1'$  East. The elevation at these coordinates is estimated to be 6.9 meters or 22.7 feet above mean sea level (<https://www.openstreetmap.org>). The land area of Paranas is 556.12 square kilometers, making up for 9.20% of Samar's total area. Its population as determined by the 2020 Census was 32,374 [29], representing 4.08% of the total population of Samar province according to PhilAtlas.

On the other hand, Taft, Eastern Samar is made up of 24 barangays, one of which is San Rafael. Taft's municipal center is located on the island of Samar at approximately  $11^{\circ} 54'$  north,  $125^{\circ} 25'$  east. Elevation is estimated to be 8.7 meters or 28.5 feet above mean sea level at these coordinates (<https://www.openstreetmap.org>). Taft covers 231.27 square kilometers of land, making up for 5.01% of Eastern Samar's total area. Its population as determined by the 2020 Census was 18,786 [29], representing 3.94% of the total population of Eastern Samar province according to PhilAtlas.



**Fig. 1.** Location of the study area in Paranas, Samar and Taft, Eastern Samar, Philippines.

## 2.2 Determining the sampling size

**Table 1.** Population size (10%) of the total population in SINP.

AGE BRACKET/ GROUPS	MEN	WOMEN
18-30 years old	63	61
31 – 50 years old	48	44
> 51 years old	29	28
<b>TOTAL</b>	<b>140</b>	<b>133</b>

The population data of each selected barangays of Paranas, Samar and Taft, Eastern Samar were the target respondents of this study. The collected data were categorized based on gender and age. The study differentiated between men and women and was further subdivided into three (3) age groups. These were the young adults (18-30 years old), adults (31-50 years old), and senior citizens (51 years old and up). The sampling size was computed by taking the 10% [30] of the total population in each category (Table 1).

## 2.3 Data gathering and interview

The survey was conducted in selected barangays in the municipalities of Paranas and Taft in July 2022. A survey questionnaire was developed to determine the gender roles and participation of the residents in the kaigangan forest within SINP. Additionally, the instrument has components assessing the residents' perspective towards the different factors needed to consider in the planning and implementation of conservation management of Samar's forests over limestone. The material was divided into two sections: (1) socio-demographic profile and (2) participation in conservation activities. The socio-demographic profile is composed of questions designed to elicit basic information from the interviewee. On the other hand, the second section will assess the respondents' knowledge, awareness, involvement and roles, and perception related to kaigangan forests.

In this study, the scale developed by Sözen [31] was used and modified based on the scale towards different questions in the participation of the respondents in conservation activities. The scale was designed as a 5-point Likert type, as shown in Table 2 below.

**Table 2.** Scoring range of Likert scale of the survey Sözen [31].

	Value	Range
Strongly Agree	5	4.21 – 5.00
Agree	4	3.41 – 4.20
Undecided	3	2.61 – 3.40
Disagree	2	1.81 – 2.60
Strongly Disagree	1	1.00 – 1.80

## 2.4 Data analysis

Respondents' responses were transferred into Excel sheets. Questions were reverse coded in Excel before they were transferred into SPSS for data analyzing procedures. The socio-demographic profile of the respondents was tabulated and summarized using frequency distributions and percentages [32]. Spearman correlation coefficient analysis was done between gender and age groups and their participation in conservation activities. Also, to see the differences between the groups, one-way ANOVA test was also performed.

## 3 Results and Discussion

**Table 3.** Socio-demographic profile of the respondents.

Socio-demographic profile	PERCENTAGE (%)					
	MEN			WOMEN		
	18-30 years old	31-50 years old	>51 years old	18-30 years old	31-50 years old	>51 years old
<b>Age</b>	45	34	21	46	33	21
<b>Regional Ethno-linguistic Group</b>						
Waray	98	98	100	98	97	100
Tagalog	2	2	0	2	0	0
Others	0	0	0	0	3	0
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Religion</b>						
Roman Catholic	92	92	93	90	91	93
Born again	3	8	0	2	2	7
Cristian	0	0	0	2	0	0
Iglesia ni Cristo	2	0	0	2	0	0
7th day Adventist	2	0	7	5	0	0
Sabadista	2	0	0	0	0	0
Pentecostal	0	0	0	0	5	0
Muslim	0	0	0	0	2	0
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Civil status</b>						
Single	79	17	3	48	11	0
Married	5	50	76	16	48	64
Separated	2	2	0	0	5	0
Widower	0	2	14	3	2	29
Live-in	14	29	7	33	32	7
Others	0	0	0	0	2	0
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Role in the family</b>						
Father	22	83	93	0	0	0
Mother	0	0	0	41	91	93
Son/Daughter	76	17	3	52	9	0



### 3.1 Participation in conservation activities

A total of 273 respondents, with 140 males and 133 females were interviewed in selected barangays in the municipality of Paranas (San Isidro and Tenani) and Taft (San Rafael) (Table 1). The demographics of the respondents (Table 3) show that both men (79%) and women (48%), aged 18-30 years old were single and in high school educational attainment. Whereas 76% men and 64% women of the respondents were married (>51 years old). Many of the respondents, both men and women of various ages, have a household income of Php1, 000.00 to 5,000.00, and earned their living through farming.

Table 4 shows the mean scoring range of Sözen's [31] scale for assessing respondents' knowledge, awareness, involvement and roles, and perception related to kaigangan forests. The findings revealed that men and women of various ages had nearly identical knowledge about kaigangan forests, with only a few exceptions based on the range [31] of the computed mean value of the variables.

Results shows that between 18-50 years old (Table 4), men know "very well", and women know "well" that kaigangan forest exists in their area (Q2). This could be because men are well aware that they rely on the forest for survival. In terms of the benefits provided by kaigangan forests, it was observed that timber (Q9.9), ornamentals (Q9.11) and firewood (Q9.12) were "very important" to women, but only "important" to men. Perhaps because ornamentals add aesthetic value and firewood can be used as fuel when women cook for their families. Moreover, both men and women aged 18-50 years old "rarely" saw slash and burn (Q10.1) and cutting of trees (Q10.3), whereas men and women over 51 years old (both men and women) "never" saw these activities in kaigangan forests. Farming (Q10.4), on the other hand, was seen "occasionally to frequently" by respondents aged 18-50 years old, while those over 51 years old had "never" seen this activity. Most likely because some senior citizens would rather stay at home than go outside. Furthermore, women (31-50 years old) were "rarely" involved in conservation activities as an awareness campaign/ communicator (Q14.6) and monitoring staff (Q14.7). Both men and women (31-50 years old) were "rarely" involved as field guides (Q14.9), field workers and laborers (Q14.10). Women (>31 years old) are "rarely" involved as seed and seedling distributors (Q14.13) and maintenance personnel (Q14.14). This is because the majority of respondents in SINT educational attainment was in high school and elementary level, making it difficult for them to participate in conservation activities where some of the roles required a graduate degree. However, both men and women "agree" that they do not have time (Q15.2) to participate in any conservation activities. Men "agree" that they were unaware of the activities (Q15.1), while women "agree" that they were afraid of harmful animals (Q15.6) and supernatural beings (Q15.7), which is why they did not participate in conservation activities.

Though the majority of men and women were "never" involved in any conservation activities, they were knowledgeable and aware of the kaigangan forest in their area, as shown in Table 4. According to Owens [33], increased knowledge and awareness do

not result in pro-environmental behavior. Similarly, many of those who were not involved in conservation activities are between the ages of 18 and 30 (Table 4). Gandiwa et al. [34] discovered on their study that no youth were members of the Communal Area Management Programme for Indigenous Resources (CAMPFIRE) committees in their four study communities in Zimbabwe because youths were reported to be preoccupied with educational activities, cross-border trading, and sporting activities. Aside from that, a higher proportion of the youths in their study were employed and/or preferred employment that paid a monthly salary, primarily outside of their rural communities [34]. This is also one of the reasons why SINP respondents prefer to work rather than participate in conservation activities. As a result, conservation activities and programs should include livelihood opportunities that are appealing to SINP respondents.

Table 4. The mean scoring range of the 18–30, 31–50 and &gt;51-year-old respondents' participation in conservation activities.

Questions	18-30 years old		31-50 years old		>51 years old	
	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN
1. Are you familiar with forests over limestone of kaigangan forest?	Well	Well	Well	Well	Very well	Very well
2. Are you aware that there is kaigangan forest in your area?	Very well	Well	Very well	Well	Very well	Very well
3. Do you know that kaigangan is protected by law?	Well	Well	Very well	Well	Well	Well
4. Do you know that there is an agency that oversees the management and conservation of kaigangan forests?	Well	Well	Very well	Well	Well	Very well
5. Current condition of kaigangan forests?	Good	Good	Good	Fair	Fair	Fair
6. Past condition of kaigangan forests?	Good	Good	Good	Good	Good	Good
7. Future condition of kaigangan forests in the next 10 years?	Fair	Fair	Good	Fair	Good	Fair
8. Do you know the benefits from kaigangan forests?	Well	Well	Well	Well	Well	Well
9. How do you rate the importance of the ff. benefits provided by kaigangan forests?						
9.1 Clean water	Very important	Very important	Very important	Very important	Very important	Very important
9.2 Fresh air	Very important	Very important	Very important	Very important	Very important	Very important
9.3 Soil stability	Very important	Very important	Very important	Very important	Very important	Very important
9.4 Wildlife habitat	Very important	Very important	Very important	Very important	Very important	Very important
9.5 Climate change amelioration	Very important	Very important	Very important	Very important	Very important	Very important
9.6 Place for meditation	Very important	Very important	Very important	Very important	Very important	Very important
9.7 Ecotourism	Very important	Very important	Very important	Very important	Very important	Very important
9.8 Food & Medicine	Very important	Very important	Very important	Very important	Very important	Very important
9.9 Timber	Important	Very important	Very important	Very important	Very important	Very important
9.10 Raw Materials	Very important	Very important	Very important	Very important	Very important	Very important
9.11 Ornamentals	Important	Very important	Very important	Very important	Very important	Very important



	Important	Very important	Important	Very important	Very important
<b>9.12 Firewood</b>	Very important	Very important	Important	Very important	Very important
<b>9.13 Income</b>	Very important	Very important	Very important	Very important	Very important
<b>10. How often have you seen the ff. activities in kaigangan forests?</b>					
<b>10.1 Slash &amp; Burn</b>	Rarely	Rarely	Rarely	Rarely	Never
<b>10.2 Mining</b>	Never	Never	Never	Never	Never
<b>10.3 Cutting of trees</b>	Rarely	Rarely	Rarely	Rarely	Never
<b>10.4 Farming</b>	Frequently	Frequently	Occasionally	Occasionally	Rarely
<b>10.5 Harvesting of plant parts</b>	Occasionally	Frequently	Rarely	Rarely	Rarely
<b>10.6 Hunting of wildlife</b>	Rarely	Never	Rarely	Never	Never
<b>11. Do you agree that the ff. can happen in kaigangan forests if not sustainably managed?</b>					
<b>11.1 Climate change</b>	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
<b>11.2 Landslides</b>	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
<b>11.3 Flooding</b>	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
<b>11.4 River pollution</b>	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
<b>12. The ff. activities will help in the protection and conservation of kaigangan forests?</b>					
<b>12.1 Participating in conservation programs</b>	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
<b>12.2 Strengthening &amp; organizing POs</b>	Agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
<b>12.3 Strict implementation of laws</b>	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
<b>12.4 Enactment of localized biodiversity conservation strategy</b>					
<b>12.5 Active involvement of concerned agencies</b>	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
<b>12.6 Forest information dissemination</b>					
<b>12.7 Native plant collection and distribution</b>	Agree	Strongly agree	Agree	Strongly agree	Strongly agree
<b>12.8 Sowing of seeds in the backyard</b>					
<b>12.9 Planting of seedlings</b>	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree

<i>12.10 Care &amp; maintenance of plants</i>	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Agree	Agree
<i>12.11 Sustainable harvesting of resources</i>	Strongly agree	Strongly agree	Strongly agree	Agree	Strongly agree	Agree
<i>14. Your role in activities related to the conservation of kaigangan forests?</i>						
<i>14.1 Lead Planner</i>	Never	Never	Never	Never	Never	Never
<i>14.2 Policy Maker</i>	Never	Never	Never	Never	Never	Never
<i>14.3 Collatorator Staff</i>	Never	Never	Never	Never	Never	Never
<i>14.4 Support staff</i>	Never	Never	Never	Never	Never	Never
<i>14.5 Resource person</i>	Never	Never	Never	Rarely	Never	Never
<i>14.6 Awareness campaign/ communicator</i>	Never	Never	Never	Rarely	Never	Rarely
<i>14.7 Monitoring staff</i>	Never	Never	Never	Never	Never	Never
<i>14.8 Plant identification experts</i>	Never	Never	Never	Never	Never	Never
<i>14.9 Field guide</i>	Never	Never	Rarely	Rarely	Never	Never
<i>14.10 Field workers &amp; laborers</i>	Never	Rarely	Rarely	Rarely	Rarely	Occasionally
<i>14.11 Sample collector</i>	Never	Never	Rarely	Never	Never	Never
<i>14.12 Propagule &amp; seed collector</i>	Never	Never	Never	Never	Never	Never
<i>14.13 Seed &amp; seedling distributor</i>	Never	Never	Never	Rarely	Never	Rarely
<i>14.14 Maintenance personnel</i>	Never	Rarely	Rarely	Rarely	Rarely	Rarely
<i>15. Why are YOU not involved in activities related to the protection and conservation of kaigangan forests?</i>						
<i>15.1 Unaware</i>	Agree	Undecided	Agree	Undecided	Undecided	Agree
<i>15. No time</i>	Agree	Agree	Agree	Agree	Undecided	Agree
<i>15.3 Not interested</i>	Agree	Undecided	Undecided	Undecided	Undecided	Undecided
<i>15.4 Not priority</i>	Undecided	Undecided	Undecided	Undecided	Undecided	Undecided
<i>15.5 Living far from the forest</i>	Undecided	Undecided	Undecided	Undecided	Undecided	Undecided
<i>15.6 Afraid of harmful animals</i>	Undecided	Agree	Undecided	Undecided	Undecided	Undecided
<i>15.7 Afraid of supernatural beings</i>	Undecided	Agree	Undecided	Undecided	Undecided	Undecided
<i>15.8 Bad experience in the forest</i>	Undecided	Undecided	Undecided	Undecided	Undecided	Undecided
<i>16. Who should be responsible in the care and management of kaigangan forests?</i>						
<i>16.1 DENR</i>	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
<i>16.2 Provincial government</i>	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
<i>16.3 Municipal government</i>	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
<i>16.4 Barangay</i>	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
<i>16.5 People's organization</i>	Strongly agree	Agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree



<i>19.2 It has the authority</i>	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
<i>19.3 It has the financial capacity</i>	Strongly agree	Agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
<i>19.4 It has the technical capability</i>	Strongly agree	Agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree
<i>19.5 It is independent</i>	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Agree	Strongly agree
<i>19.6 It is less bureaucratic</i>	Strongly agree	Agree	Strongly agree	Agree	Strongly agree	Strongly agree
<i>19.7 It has minimal irregularities</i>	Strongly agree	Agree	Agree	Agree	Agree	Agree

### **Respondents' knowledge and awareness of the importance, activities, and impact related to kaigangan forests.**

Based on the analysis (Table 5), there is a significant correlation ( $p < 0.01$  and  $p < 0.05$ ) between age groups in terms of respondents' responses to Q2 (Are you aware that there is kaigangan forest in your area?), Q3 (Do you know that kaigangan forests are protected by law?), Q4 (Do you know that there is an agency that oversees the management and conservation of kaigangan forests?) and Q9.8 (Food and medicine). This means that the responses of the respondents at various age groups are related to their age level. Moreover, gender is negatively correlated ( $p < 0.01$ ) with Q7 (condition of the kaigangan forests in the next 10 years) (Table 5). This is due to the different perspectives of men, which is "Good" to "Fair" condition of women in the kaigangan forests in the next 10 years (Table 4). Based on ANOVA analysis (Table 6), gender was significant ( $p < 0.05$ ) in respondents' responses in Q1, Q2, Q7 (condition of the kaigangan forests in the next 10 years), and some of the benefits provided by kaigangan such as Q9.8 (Food and medicine), Q9.9 (Timber) and Q9.12 (Firewood). In addition, aged 18-30 years old (Table 6) was significant only in  $>51$  years old in terms of Q1 and Q2. Based on Table 4, the majority of 18-30 year old respondents know "well," while those over 51 years old know "very well" about kaigangan forests. This is most likely due to the fact that respondents over the age of 51 were already in the area before the young adults.

Table 7 shows a significant correlation ( $p < 0.05$  and  $p < 0.01$ ) between age groups in terms of the activities seen in kaigangan forests such as Q10.1 (Slash and Burn), Q10.2 (Mining), Q10.3 (Cutting of trees), Q10.4 (Farming), Q10.5 (Harvesting of plant parts), Q10.6 (Hunting of wildlife), and activities that will help in the protection and conservation such as Q12.9 (Planting of seedlings), Q12.10 (Care and maintenance of the plants) and Q12.11 (Sustainable harvesting of resources). ANOVA analysis (Table 8) reveals a significant relationship ( $p > 0.05$ ) between  $>51$  years old and 18-50 years old in terms of slash and burn and mining. It was also observed that  $>51$  years old "never" seen slash and burn in kaigangan, while 18-50 years old "rarely" seen this activity (Table 4). Likewise, age groups were significant in farming activities (Q10.4). This is because farming was "frequently" seen by both men and women (18-30 years old), "occasionally" seen by 31-50 years old and "rarely" seen by  $>51$  years old respondents (Table 4). This might be because senior citizens ( $>51$  years old) respondents might probably rarely go outside to see what the activities is conducted in their area. Additionally,  $>51$  years old were significant in 18-50 years old in terms of planting of seedlings (Q12.9). Planting of seedlings/propagules was viewed as a task for both genders in the study of Ladia et al. [26] in the Case of Calatagan Mangrove Forest Conservation Park in Batangas. However, in this study, it was discovered that gender has no effect, but age group does. This is because respondents between the ages of 18 to 50 "strongly agree", whereas people over 51 only "agree" on the importance of planting of seedlings to help in the protection and conservation of kaigangan forests. Based on the ANOVA analysis (Table 8), gender and age group were significant ( $p < 0.05$ ) in the activities seen in kaigangan such as hunting of wildlife (Q10.6). Men

“rarely” saw wildlife hunting, while women “never” saw it in the kaigangan forest. Men and women over the age of 51, on the other hand, have “never” witnessed wildlife hunting in the kaigangan forest (Table 4).

Moreover, non-significant findings in the majority of the questions in Tables 5, 6, 7, and 8 indicated that men and women of different ages have similar knowledge and awareness about the importance, activities observed, and their impact on kaigangan forests. The respondents' knowledge of the benefits provided by kaigangan forests is unrelated to their gender or age. As a result, the small differences in the perception of men and women at various ages on their responses to various questions in the survey had no effect on the overall findings of the **Table 5**. study.

Correlations between gender and age group in the respondents' knowledge and importance about kaigangan forests.

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q9	Q9	Q9	Q9	Q9	Q9	Q9	Q9	Q9	Q9	
	1	2	3	4	5	6	7	8	9	10	11	12	13	13	13	13	13	13	13	
<b>Gender</b>	0.0	-	0.0	0.01	-	0.0	-	-	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	33	0.0	0.07	9	0.0	69	.179	0.0	0.1	18	38	67	51	0.05	44	3	91	9	5	7
	85				37		**	49												
<b>Age group</b>	0.1	.12	.14	.230	-	-	0.10	0.1	-	-	-	-	-	-	-	-	-	-	-	-
	06	6*	8*	**	0.0	0.0	4	0.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	p				25	88		94	97	70	96	73	76	87	87	**	49	8	2	7

\*, \*\* correlation is significant at  $p$ -value of  $<0.05$  and  $<0.01$  level.

Table 6. Influence of gender and age group in the respondents' knowledge and importance about kaigangan forests.

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q9	Q9	Q9	Q9	Q9	Q9	Q9	Q9	Q9	Q9	Q9
	1	2	3	4	5	6	7	8	9	10	11	12	13	13	13	13	13	13	13	13
<b>Gender</b>	4.14	4.36	4.01	3.9	3.4	3.7	3.3	3.8	4.6	4.5	4.4	4.4	4.2	4.4	4.3	4.4	4.26	4.23	4.11	4.34
	a	a	a	5 <sup>a</sup>	5 <sup>a</sup>	4 <sup>a</sup>	6 <sup>a</sup>	8 <sup>a</sup>	0 <sup>a</sup>	6 <sup>a</sup>	4 <sup>a</sup>	7 <sup>a</sup>	8 <sup>a</sup>	4 <sup>a</sup>	1 <sup>a</sup>	9 <sup>b</sup>	6 <sup>b</sup>	a	b	a
<b>Women</b>	3.81	4.09	4.08	4.0	3.4	3.8	2.8	3.8	4.7	4.6	4.5	4.5	4.2	4.4	4.5	4.2	4.29	4.36	4.35	4.43
	b	b	a	0 <sup>a</sup>	1 <sup>a</sup>	3 <sup>a</sup>	9 <sup>b</sup>	0 <sup>a</sup>	1 <sup>a</sup>	8 <sup>a</sup>	8 <sup>a</sup>	6 <sup>a</sup>	0 <sup>a</sup>	3 <sup>a</sup>	7 <sup>a</sup>	6 <sup>a</sup>	a	a	a	a
<b>Age group</b>	3.80	4.08	3.85	3.6	3.4	3.9	3.0	3.7	4.6	4.6	4.5	4.5	4.2	4.4	4.6	4.3	4.27	4.32	4.22	4.44
	a	a	a	8 <sup>a</sup>	6 <sup>a</sup>	2 <sup>a</sup>	2 <sup>a</sup>	3 <sup>a</sup>	9 <sup>a</sup>	5 <sup>a</sup>	6 <sup>a</sup>	0 <sup>a</sup>	7 <sup>a</sup>	7 <sup>a</sup>	1 <sup>b</sup>	2 <sup>a</sup>	a	a	a	a
<b>31-50 years old</b>	4.01	4.26	4.29	4.2	3.4	3.6	3.1	3.8	4.6	4.6	4.5	4.4	4.2	4.4	4.3	4.4	4.32	4.25	4.16	4.32
	ab	ab	b	3 <sup>b</sup>	1 <sup>a</sup>	7 <sup>a</sup>	8 <sup>a</sup>	6 <sup>a</sup>	4 <sup>a</sup>	5 <sup>a</sup>	8 <sup>a</sup>	7 <sup>a</sup>	3 <sup>a</sup>	1 <sup>a</sup>	3 <sup>a</sup>	7 <sup>a</sup>	1 <sup>a</sup>	a	a	a

>51 years old	4.32 <sub>b</sub>	4.49 <sub>b</sub>	4.07 <sub>ab</sub>	4.2	3.3	3.6	3.3	4.0	4.5	4.5	4.4	4.3	4.1	4.3	4.3	4.3	4.23 <sub>a</sub>	4.30 <sub>a</sub>	4.35 <sub>a</sub>	4.37 <sub>a</sub>
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\* Means with the same superscripts in the same column are not significantly different at  $p < 0.05$  using DMRT.

**Table 7.** Correlation between gender and age group in the respondent's awareness of the activities seen and conducted related to the conservation of kaingangan forests.

	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q12.	Q12.	
Gender	0.1	0.2	0.3	0.4	0.5	0.6	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	10	11	
Age group	-	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	0.04	0.08	
p	2.5	0.9	7.0	3.5	0.0	0.13	3.3	9.5	9.1	6.3	0.0	1.4	0.0	1.6	0.3	0.4	2.6	0.0	0.0	1	8	
	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.167	0.139
	9**	1**	9**	1**	4**	6	57	33	49	90	97	11	68	99	72	15	9**	9**	2.1	2.1	**	*

\*, \*\* correlation is significant at  $p$ -value of  $< 0.05$  and  $< 0.01$  level.

**Table 8.** Influence of gender and age group in the respondent's awareness of the activities seen and conducted related to the conservation of kaingangan forests.

	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q1	Q12.	Q12.
Gender	0.1	0.2	0.3	0.4	0.5	0.6	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	10	11
Men	2.1	4.3	2.0	3.0	2.5	1.9	4.3	4.4	4.3	4.3	4.3	4.2	4.4	4.3	4.3	4.3	4.1	4.4	4.4	4.40 <sup>a</sup>	4.24 <sup>a</sup>
Women	0 <sup>a</sup>	6 <sup>a</sup>	8 <sup>a</sup>	1 <sup>a</sup>	9 <sup>a</sup>	7 <sup>a</sup>	3 <sup>a</sup>	0 <sup>a</sup>	9 <sup>a</sup>	6 <sup>a</sup>	8 <sup>a</sup>	3 <sup>a</sup>	3 <sup>a</sup>	9 <sup>a</sup>	3 <sup>a</sup>	8 <sup>a</sup>	1 <sup>a</sup>	1 <sup>a</sup>	8 <sup>a</sup>	8 <sup>a</sup>	4.24 <sup>a</sup>
Age group	1.9	4.0	1.9	3.1	2.5	1.6	4.4	4.5	4.4	4.2	4.2	4.2	4.3	4.4	4.3	4.4	4.1	4.3	4.4	4.47 <sup>a</sup>	4.36 <sup>a</sup>
p	9 <sup>a</sup>	9 <sup>b</sup>	1 <sup>a</sup>	1 <sup>a</sup>	6 <sup>a</sup>	8 <sup>b</sup>	2 <sup>a</sup>	3 <sup>a</sup>	2 <sup>a</sup>	5 <sup>a</sup>	9 <sup>a</sup>	7 <sup>a</sup>	8 <sup>a</sup>	0 <sup>a</sup>	5 <sup>a</sup>	0 <sup>a</sup>	8 <sup>a</sup>	8 <sup>a</sup>	7 <sup>a</sup>	4.4	4.36 <sup>a</sup>
18-30 years old	2.3	1.6	2.2	3.5	2.8	1.9	4.3	4.4	4.4	4.3	4.3	4.1	4.4	4.4	4.3	4.4	4.1	4.4	4.5	4.50	4.40 <sup>b</sup>
	0 <sup>b</sup>	2 <sup>b</sup>	3 <sup>b</sup>	2 <sup>c</sup>	9 <sup>c</sup>	5 <sup>b</sup>	8 <sup>a</sup>	4 <sup>a</sup>	5 <sup>a</sup>	9 <sup>a</sup>	4 <sup>ab</sup>	9 <sup>a</sup>	5 <sup>a</sup>	7 <sup>a</sup>	3 <sup>a</sup>	0 <sup>a</sup>	5 <sup>a</sup>	2 <sup>ab</sup>	7 <sup>b</sup>	4.5	4.50



31-50 years old	2.1	1.5	1.9	2.9	2.4	1.8	4.4	4.4	4.4	4.4	4.4	4.3	4.3	4.4	4.4	4.4	4.1	4.4	4.4	4.52	4.24 <sup>a</sup>
	0 <sup>b</sup>	3 <sup>b</sup>	2 <sup>ab</sup>	6 <sup>b</sup>	7 <sup>b</sup>	3 <sup>ab</sup>	2 <sup>a</sup>	4.4	4.4	3 <sup>a</sup>	2 <sup>b</sup>	4.3	5 <sup>a</sup>	0 <sup>a</sup>	6 <sup>a</sup>	8 <sup>b</sup>	4 <sup>a</sup>	7 <sup>b</sup>	8 <sup>b</sup>	8 <sup>b</sup>	
>51 years old	1.4	1.1	1.6	2.2	2.0	1.5	4.4	4.4	4.4	4.1	4.1	4.3	4.3	4.2	4.2	4.2	4.1	4.2	4.2	4.16 <sup>a</sup>	4.16 <sup>a</sup>
	2 <sup>a</sup>	2 <sup>a</sup>	1 <sup>a</sup>	3 <sup>a</sup>	7 <sup>a</sup>	8 <sup>a</sup>	7 <sup>a</sup>	4 <sup>a</sup>	0 <sup>a</sup>	9 <sup>a</sup>	9 <sup>a</sup>	5 <sup>a</sup>	2 <sup>a</sup>	5 <sup>a</sup>	6 <sup>a</sup>	5 <sup>a</sup>	4 <sup>a</sup>	1 <sup>a</sup>	5 <sup>a</sup>	5 <sup>a</sup>	

\* Means with the same superscripts in the same column are not significantly different at  $p < 0.05$  using DMRT.

3.1.2 Respondents' involvement and roles in any conservation activities.

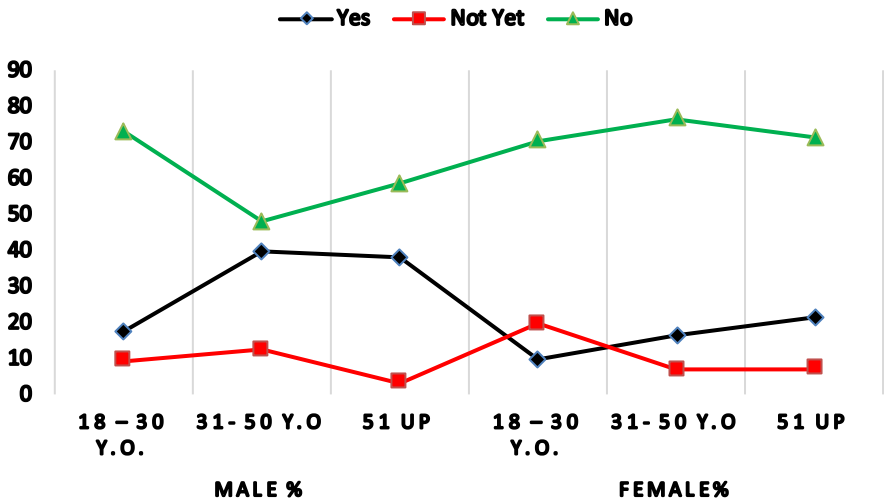


Fig. 2. Respondents' involvement in any conservation activities

As shown in Table 9, it was observed that gender was significant at the  $p < 0.05$  level in respondents' involvement in any conservation activity (Q13) and that they are unaware of the conservation activities (Q15.1) (Table 9 and 10). This is significant because the vast majority of respondents, both men (71%) and women (85%) were not engaged in and never participated in any conservation-related activities (Figure 2). People's involvement in the conservation of kaigangan forests in SINP is critical. In general, the success or failure of conservation is heavily dependent on the participation of local people in any conservation activities [35, 26]. As a result, residents of SINP must engage them in these activities. As shown in Fig. 2, men (29%) outnumbered women (14%) in participating in any conservation activities at various ages. Forestry has traditionally been a male-dominated field [36, 37, 38], which is one of the reasons why gender is rarely incorporated into conservation research, making it more difficult for women to participate in forest management and decision making. There are also documented cases where women are uninterested in forest resource management [39]. This could imply that women's roles in the sector are invisible and informal, resulting in poor working conditions and lower remuneration [40]. Studies show that the lesser their involvement in conservation activities and the more restrictive the society is to women, the lesser they perform their role as preservers of the environment, the faster forest denudation may occur [27] and conservation activities are less likely to succeed [41, 42]. According to Sodhi [43], the inclusion of women may encourage other women to participate in conservation efforts. Women, on the other hand, can strengthen their capacity to effectively advocate for their rights and negotiate with other institutions by working through women's groups [8]. It has been demonstrated that increasing women's

participation in decision-making committees in community forest institutions improves forest governance and resource sustainability [14, 15]. Thus, the outcomes are better [44].

Meanwhile, gender and age groups are not significant in terms of the roles of the respondents in any activities related to conservation (Table 9 and 10). Probably because it is related to their profile, which is not included in the analysis. Based on the mean scoring range (Table 4), majority of the respondents have no roles in any conservation activities and only a few were “rarely” involved such as awareness campaign/communicator, monitoring staff, field guides, field workers and laborers, sample collector, seed and seedling distributor and maintenance personnel.

In terms of why respondents were not involved in any conservation activities, a negative correlation was found between gender in terms of Q15.1 (Unaware) and age group in terms of Q15.2 (No time). The same results were also obtained using ANOVA in this analysis. Men (18-50 years old) “agreed” that they were “unaware”, while women (18-50 years old) were “undecided” of the SINP conservation efforts. Both men and women between (18-50 years old) “agreed” that a lack of time or no time is the reason they do not participate in such activities, as illustrated in Table 4. Time constraints limit respondents' ability to participate in a variety of conservation-related activities. According to Ruiz-Pérez et al. [45], one of the factors limiting the ability of Cameroonian women traders is a lack of time. Based on the respondents' demographics, many in this study are mothers (Table 3). Women manage a tight schedule if they have small children, businesses, unpaid community work, or their house is not close to the forest area and attending meetings and conservation related activities may be difficult to fit in [8, 11]. In Bolivia, women's participation in meetings was found to be constrained more by a general lack of time than by the time of day meetings were held [46]. This study discovered that participation in conservation by both genders is linked to livelihood, as the results show that SINP respondents would rather work to feed their families than participate in conservation activities. In addition, most respondents were “undecided” as to why they do not participate in activities related to the protection and conservation of kaigangan forests, as shown in Table 4. Similarly, a few respondents stated that they were unable to participate due to their age, or that they had not been informed or invited to participate in conservation activities and had other priorities to work on, such as feeding their families.

### **Respondents' perception of who should be responsible and take the lead for the protection and conservation of the kaigangan forests.**

As illustrated in Tables 11 and 13, a negative correlation was observed between age groups in terms of who should be the following individuals or citizens such as Adults (Q17.3), Men (Q17.4), and who should take the lead such as LGU Barangay (Q18.1), LGU Municipal (Q18.2), LGU Province (Q18.3), People's organization (Q18.5) and Youth organization (Q18.7) for the protection and conservation of kaigangan forest. This suggests that the perceptions of different age groups differ from one another. Based on the survey, every one of all ages agreed that children, teenagers, adults, men and women, and senior citizens should be responsible for the protection and

conservation of the kaigangan forests. It was also discovered in Table 4 that some respondents', mostly women over the age of 51, were "undecided", that children should participate in such activities. Some respondents also stated that everyone, including the President, Vice President, senators of the Republic of the Philippines, the PNP, and the AFP, should take the lead in protecting and conserving the kaigangan forests. Nonetheless, gender has no relationship or influence on who should be responsible and take the lead for protecting and conserving the kaigangan forests (Tables 11, 12, 13, and 14). This could be due to the fact that these perceptions are based on age group rather than gender.



s	old	2.	1.6	1.4	1.2	1.4	1.5	1.8	1.7	1.5	1.8	2.1	1.7	1.6	1.8	2.1	3.2	3.8	3.1	3.3	3.2	3.2	3.1
50	year	3.3	9 <sup>a</sup>	4 <sup>a</sup>	8 <sup>a</sup>	4 <sup>a</sup>	6 <sup>a</sup>	1 <sup>a</sup>	5 <sup>a</sup>	6 <sup>a</sup>	6 <sup>a</sup>	1 <sup>a</sup>	9 <sup>a</sup>	8 <sup>a</sup>	9 <sup>a</sup>	1 <sup>a</sup>	9 <sup>a</sup>	0 <sup>b</sup>	1 <sup>a</sup>	4 <sup>a</sup>	0 <sup>a</sup>	5 <sup>a</sup>	6 <sup>a</sup>
s	old	2.	1.6	1.4	1.1	1.6	1.3	1.7	1.8	1.2	1.6	2.2	1.3	1.2	1.6	1.9	3.3	3.3	3.1	3.1	3.1	3.3	3.1
>51	year	3.5	9 <sup>a</sup>	0 <sup>a</sup>	5 <sup>a</sup>	0 <sup>a</sup>	5 <sup>a</sup>	0 <sup>a</sup>	0 <sup>a</sup>	5 <sup>a</sup>	0 <sup>a</sup>	0 <sup>a</sup>	0 <sup>a</sup>	5 <sup>a</sup>	5 <sup>a</sup>	5 <sup>a</sup>	3 <sup>a</sup>	9 <sup>a</sup>	4 <sup>a</sup>	7 <sup>a</sup>	7 <sup>a</sup>	1 <sup>a</sup>	7 <sup>a</sup>
s	old																						

\* Means with the same superscripts in the same column are not significantly different at  $p < 0.05$  using DMRT

**Table 11.** Correlation between gender and age group in the respondent's perception of who should be the individuals or citizens be responsible and take the lead in the protection and conservation of kaigangan forests.

	Q16.1	Q16.2	Q16.3	Q16.4	Q16.5	Q16.6	Q16.7	Q16.8	Q16.9	Q17.1	Q17.2	Q17.3	Q17.4	Q17.5	Q17.6
Gender	0.089	-0.034	-0.037	-0.058	-0.076	-0.073	-0.047	-0.036	0.003	-0.058	0.028	-0.006	0.056	-0.046	-0.062
Age group	-0.103	-0.014	-0.027	-0.068	-0.025	-0.008	0.017	0.016	-0.062	-0.040	-0.045	-0.132*	-0.154*	-0.046	0.008

\*, \*\* correlation is significant at  $p$ -value of  $< 0.05$  and  $< 0.01$  level.

**Table 12.** Influence of gender and age group in the respondent's perception of who should be the individuals or citizens be responsible and take the lead in the protection and conservation of kaigangan forests.

Gender	Q16.1	Q16.2	Q16.3	Q16.4	Q16.5	Q16.6	Q16.7	Q16.8	Q16.9	Q17.1	Q17.2	Q17.3	Q17.4	Q17.5	Q17.6
Men	4.63 <sup>a</sup>	4.41 <sup>a</sup>	4.46 <sup>a</sup>	4.43 <sup>a</sup>	4.39 <sup>a</sup>	4.26 <sup>a</sup>	4.15 <sup>a</sup>	3.96 <sup>a</sup>	4.39 <sup>a</sup>	4.01 <sup>a</sup>	4.16 <sup>a</sup>	4.49 <sup>a</sup>	4.49 <sup>a</sup>	4.44 <sup>a</sup>	3.89 <sup>a</sup>
Women	4.72 <sup>a</sup>	4.35 <sup>a</sup>	4.40 <sup>a</sup>	4.29 <sup>a</sup>	4.22 <sup>a</sup>	4.11 <sup>a</sup>	4.10 <sup>a</sup>	3.93 <sup>a</sup>	4.41 <sup>a</sup>	3.86 <sup>a</sup>	4.17 <sup>a</sup>	4.50 <sup>a</sup>	4.58 <sup>a</sup>	4.37 <sup>a</sup>	3.71 <sup>a</sup>
Age group															
18-30 years old	4.68 <sup>a</sup>	4.43 <sup>a</sup>	4.49 <sup>a</sup>	4.43 <sup>a</sup>	4.36 <sup>a</sup>	4.28 <sup>a</sup>	4.17 <sup>a</sup>	4.11 <sup>a</sup>	4.37 <sup>a</sup>	4.16 <sup>b</sup>	4.34 <sup>b</sup>	4.49 <sup>a</sup>	4.53 <sup>ab</sup>	4.45 <sup>a</sup>	3.89 <sup>a</sup>
31-50 years old	4.58 <sup>a</sup>	4.39 <sup>a</sup>	4.40 <sup>a</sup>	4.32 <sup>a</sup>	4.30 <sup>a</sup>	4.21 <sup>a</sup>	4.16 <sup>a</sup>	3.88 <sup>a</sup>	4.42 <sup>a</sup>	3.67 <sup>a</sup>	4.00 <sup>a</sup>	4.40 <sup>a</sup>	4.40 <sup>a</sup>	4.35 <sup>a</sup>	3.82 <sup>a</sup>
>51 years old	4.71 <sup>a</sup>	4.35 <sup>a</sup>	4.40 <sup>a</sup>	4.33 <sup>a</sup>	4.27 <sup>a</sup>	4.10 <sup>a</sup>	4.07 <sup>a</sup>	3.86 <sup>a</sup>	4.41 <sup>a</sup>	3.90 <sup>ab</sup>	4.10 <sup>ab</sup>	4.54 <sup>a</sup>	4.60 <sup>b</sup>	4.40 <sup>a</sup>	3.73 <sup>a</sup>

\* Means with the same superscripts in the same column are not significantly different at  $p < 0.05$  using DMRT.

**Table 13.** Correlation between gender and age group in the respondent's perception of who should be the individuals or citizens be responsible and take the lead in the protection and conservation of kaigangan forests (cont.).

	Q181	Q182	Q183	Q184	Q185	Q186	Q187	Q188	Q189	Q191	Q192	Q193	Q194	Q195	Q196	Q197
Gender	0.080	-0.016	-0.037	0.090	0.097	0.106	0.066	0.036	0.026	0.004	0.010	0.007	0.032	0.025	0.051	0.071
Age group	<b>-0.119<sup>a</sup></b>	-	-	-	<b>-0.146<sup>a</sup></b>	-	<b>-0.140<sup>a</sup></b>	-	-	-	-	0.024	0.019	-	-	-
	<b>.178<sup>**</sup></b>	<b>.159<sup>**</sup></b>	0.106	0.059	0.078	0.113	0.070	0.053	0.064	0.013	0.053	0.064	0.013	0.053	0.053	0.053

\*, \*\* correlation is significant at  $p$ -value of  $< 0.05$  and  $< 0.01$  level.

**Table 14.** Influence of gender and age group in the respondent's perception of who should be the individuals or citizens be responsible and take the lead in the protection and conservation of kaigangan forests (cont.).

Gender	Q181	Q182	Q183	Q184	Q185	Q186	Q187	Q188	Q189	Q191	Q192	Q193	Q194	Q195	Q196	Q197
Men	4.39 <sup>a</sup>	4.39 <sup>a</sup>	4.37 <sup>a</sup>	4.20 <sup>a</sup>	4.30 <sup>a</sup>	4.23 <sup>a</sup>	4.24 <sup>a</sup>	4.54 <sup>a</sup>	4.36 <sup>a</sup>	4.44 <sup>a</sup>	4.43 <sup>a</sup>	4.29 <sup>a</sup>	4.33 <sup>a</sup>	4.26 <sup>a</sup>	4.26 <sup>a</sup>	4.14 <sup>a</sup>
Women	4.18 <sup>b</sup>	4.38 <sup>b</sup>	4.34 <sup>b</sup>	4.11 <sup>b</sup>	4.16 <sup>b</sup>	4.08 <sup>b</sup>	4.17 <sup>b</sup>	4.56 <sup>b</sup>	4.30 <sup>b</sup>	4.44 <sup>b</sup>	4.46 <sup>b</sup>	4.25 <sup>b</sup>	4.29 <sup>b</sup>	4.24 <sup>b</sup>	4.15 <sup>b</sup>	4.03 <sup>b</sup>
Age group	4.30 <sup>a</sup>	4.47 <sup>b</sup>	4.41 <sup>b</sup>	4.22 <sup>a</sup>	4.30 <sup>b</sup>	4.14 <sup>a</sup>	4.29 <sup>b</sup>	4.55 <sup>a</sup>	4.37 <sup>a</sup>	4.45 <sup>a</sup>	4.44 <sup>a</sup>	4.20 <sup>a</sup>	4.25 <sup>a</sup>	4.28 <sup>a</sup>	4.20 <sup>a</sup>	4.15 <sup>a</sup>
18-30 years old	4.36 <sup>a</sup>	4.41 <sup>ab</sup>	4.40 <sup>b</sup>	4.13 <sup>a</sup>	4.31 <sup>b</sup>	4.24 <sup>a</sup>	4.23 <sup>ab</sup>	4.61 <sup>a</sup>	4.35 <sup>a</sup>	4.47 <sup>a</sup>	4.49 <sup>a</sup>	4.34 <sup>a</sup>	4.38 <sup>a</sup>	4.26 <sup>a</sup>	4.18 <sup>a</sup>	3.99 <sup>a</sup>
>51 years old	4.14 <sup>b</sup>	4.16 <sup>a</sup>	4.16 <sup>a</sup>	4.05 <sup>a</sup>	3.94 <sup>a</sup>	4.07 <sup>a</sup>	4.00 <sup>a</sup>	4.46 <sup>b</sup>	4.23 <sup>b</sup>	4.39 <sup>b</sup>	4.37 <sup>b</sup>	4.32 <sup>b</sup>	4.32 <sup>b</sup>	4.18 <sup>b</sup>	4.25 <sup>b</sup>	4.12 <sup>b</sup>

\* Means with the same superscripts in the same column are not significantly different at  $p < 0.05$  using DMRT

## 4 Conclusion

A total of 273 respondents, with 140 males and 133 females were interviewed in selected barangays in the municipality of Paranas (San Isidro and Tenani) and Taft (San Rafael). Many of the respondents, both men and women of various ages, have a household income of Php1, 000.00 to 5,000.00, and earned their living through farming. Moreover, a scoring range based on the computed mean value found few differences between the gender and age groups. Some of the differences were also discovered in the analysis, as there is a significant correlation ( $p < 0.05$  and  $0.01$ ) between age group in terms of the knowledge about kaigangan, awareness about the activities in kaigangan, involvement and roles in any conservation activities, and respondents' perception of who should be responsible and take the lead in the protection and conservation of kaigangan forest.

Furthermore, it was also revealed that respondents living in SINP were familiar with and aware of the importance and benefits of kaigangan forests. Gender was found to be significant at the  $p < 0.05$  level in respondents' involvement in any conservation activity. This is because the vast majority of respondents, both men (71%) and women (85%) were not engaged in and never participated in any conservation-related activities. There were only 29% men and 11% women involved in any conservation activities. Some respondents were unable to participate because they were unaware of the activities and did not have time to attend because they prefer to work to feed their families. In addition, a few respondents also stated that they were unable to participate due to old age, or that they had not been informed or invited to participate in conservation activities. There is a need to identify diverse activities in which all local residents, regardless of gender or age, can freely participate. Women and men are both important stakeholders in the conservation of the kaigangan forest in SINP. The less they participate and engage in conservation activities, the less likely conservation efforts are to succeed. As a result, this study recommends that the government should find a way to increase public participation, particularly women's engagement and opportunities for conservation activities, or provide a source of income related to the protection and conservation of the kaigangan forests, so that SINP residents will actively participate and cooperate.

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# The Role of Online Customer Reviews in E-commerce

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**Abstract.** There are four (4) aspects in online customer review, namely (1) awareness, (2) frequency, (3) comparison, (4) effect. Online customer review is writing that explains the condition of a product that has been purchased by the buyer. The purpose of this research is to analyze the role of online customer reviews in e-commerce. This study uses a descriptive qualitative method with data collection using triangulation analytical techniques through the Manager of PT. Hyarta Danadipa Raya and online traditional market consumers as informants. The data sources used are secondary data and data collection methods with documentation used to investigate, find, describe, and analyze the research focus, namely: The role of online customer reviews in purchasing e-commerce through four aspects (1) awareness (awareness), (2) frequency (frequency), (3) comparison (comparison), (4) effect. The results show that the role of online customer reviews in e-commerce is: (1) Improving the quality of products and services. (2) Measuring customer satisfaction, (3) Other sources of customer information (4) Providing data in business decisions.

**Keywords:** Online Customer Reviews, E-Commerce.

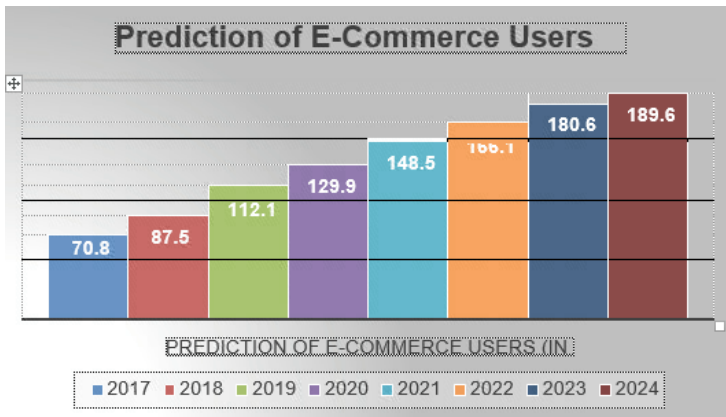
## 1 Introduction

E-commerce business in Indonesia is increasingly promising. During a pandemic, this digital-based trading business is even projected to grow 33.2 percent from 2020 which reached IDR 253 trillion to IDR 337 trillion this year. Online trade, e-commerce, marketplace, is extraordinary, it can even grow 33.2 percent, when viewed from the perspective of consumer behavior, in all online -based lines of trade, the trend of digital-based transactions has increased as people are at home during the pandemic. In addition, the existence of increasingly established technology accompanied by easier and faster transaction speeds greatly helps accelerate this type of digital business. the time provided for people to log into online trading platforms during the pandemic has gone from 3.7 hours/day to 4.7 hours/day during the lockdown and to 4.2 hours/day after the lockdown ended. Based on this, the projected e-commerce transactions will be IDR 337 trillion this year. An increase of 33.2 percent compared to 2020 transactions of IDR 253 trillion.

The factor that has accelerated digital economic transactions this year is because the Covid-19 pandemic has not yet hit. " Last year's e-commerce business was estimated at IDR 253 trillion, an increase from 2019 to IDR 205.5 trillion. Then this year it

increased significantly to IDR 337 trillion, “the increase in the number of transactions through e-commerce is also inseparable from government policies in encouraging digital acceptance for the community, and continuing to accelerate the development of fintech and digital banking. It is not just e-commerce-based businesses that are increasing. The use of electronic money has increased by 32.3 percent or the equivalent of IDR 266 trillion in 2021. In 2020, the central bank estimates that the use of electronic money will reach IDR 201 trillion. E-commerce business continues to grow and there is annual growth. The trend of digitization will continue to grow rapidly. This is also reflected in the projected digital banking transactions in 2021 which will increase to around IDR 32.206 trillion, growing 19.1% from the projected realization of digital banking transactions last year which reached IDR 27.036 trillion. Sales through e-commerce reached.

15.4 percent. In fact, the sales value of e-commerce transactions (gross merchandise value /GMV) rose 54 percent from USD 21 billion in 2019 to USD 32 billion (or equivalent to IDR 266.3 trillion) and is predicted to continue to increase to USD 83 billion in 2025. (Ministry of Communications and Informatics RI, 2022).



**Fig. 1.** Prediction of the Number of E-Commerce Users in Indonesia in 2024 Source: Indonesian Cultural, Culinary and Tourism Statistical Data in 2020.

E-Commerce is a business model that is applied to online shopping in marketplaces. Online shopping is the main alternative that many people choose. E-commerce is all buying and selling activities carried out through electronic media. Although the means include television and telephone, nowadays e-commerce is more common via the internet. There is an understanding of the notion of e-commerce and marketplace. The term e-commerce is used to describe all transactions that use electronic media.

Market place is one of the e-commerce models, where it functions as an intermediary between sellers and buyers. Sellers who trade on the marketplace only need to serve purchases. All other activities such as website management have been taken care of by the platform. E-commerce is part of e-business, where the scope of e-business is broader, not only commercial but also includes business partners, customer service, job vacancies, products, information and so on. With the existence of electronic commerce

(e-commerce), customers can access and place orders from various places or countries. Big cities in Indonesia, supported by the era of advanced technology, have lots of places that provide internet access facilities via mobile phones, laptop/notebook using wifi technology.

E-commerce continues to increase, there are various driving factors that make activities in the marketplace for online shopping. First, because of the many promo programs offered by e-commerce companies. This certainly makes a lot of people very interested. During this pandemic, various online shopping promotions were offered, both on social media and on billboards outside of digital electronics. Second, with the pandemic situation, people are more required to avoid crowded places. Automatically to meet their needs, people tend to choose to shop online [3]. The desire to shop through e-commerce will continue to increase in the future.

The more people communicate through the internet, especially in e-commerce stores, consumers can easily share their experiences or opinions about using e-commerce goods and services. In the same way, they can look up what other people think online about how other people comment about the goods and services. In addition, it is also necessary to look at how to shop online because there are still many cases where people do not know how to shop through e-commerce and cases where the goods ordered do not match the order which makes consumers feel at a loss.

Based The description above shows that there is a phenomenon, namely that e-commerce is the people's choice for shopping because with various considerations of time efficiency, in a post-pandemic situation there are still many people who shop through e-commerce. PT Hiyarta as an e-commerce user who manages the online market, wants to improve products as well as services. The way to improve the product is to do an evaluation online customer reviews or product reviews on sites that include:

(1) awareness/awareness in buying products, (2) frequency/frequency in frequently giving reviews, (3) comparisons/comparisons in comparing product reviews, (4) effects in selecting or purchase of products (Saripa Ilmiyah & Krishernawan (2020)

Online customer reviews or product reviews are a good source of information for other customers about the company's products and services so that they can be used as a basis for making business decisions. Online customer reviews are positive or negative reviews of a company's products that have been sold in online shops as well as informational evaluations of goods and services posted on third-party websites and retailers, created by consumers.

The results of [4] concerning Analysis of the Influence of Online Customer Reviews, Online Customer Ratings, and Star Sellers on Customer Trust to Purchase Decisions at Online Stores at Shopee the results show that customer reviews, customer ratings, and star sellers have a positive and significant effect on customer trust. The customer review feature has a more dominant influence than customer ratings and star sellers. Then, customer trust has a positive and significant effect on purchase intention. Meanwhile, the desire to buy and the attitudes of other people have a positive and significant effect on buying decisions. Unforeseen situational factor variables do not influence purchasing decisions.

In addition, [10] regarding the influence of online customer reviews, word of mouth, and price awareness on buying interest at Shopee shows that based on the results

of data analysis and the results of submitting hypotheses in this study, it can be written that online customer reviews have a positive and significant effect on buying interest, this is evidenced by the t value. -count of 4.943 and a significant value is indicated by  $0.000 < 0.05$ . word of mouth has a positive and significant effect on purchase intention, this is evidenced by the t-count value of 3.436 and a significant value indicated by  $0.001 < 0.05$ . Awareness price has a positive and significant effect on purchase intention, this is evidenced by the t-count value of 3.451 and the significant value is shown at  $0.001 < 0.05$ .

Based on these two studies, there is novelty in this research, namely that both studies are influenced by online customer reviews of purchasing decisions without spending a role. Meanwhile, this study examines the role of online customer reviews in e-commerce. In this study analyze one indicator together from online customer reviews. Due to indicators from online customer reviews which is types consumer experience which includes (1) awareness /awareness in buying products, (2) frequency/frequency in frequently using reviews as a source, (3) comparisons /comparisons in comparing product reviews, (4) effects in product selection or purchase. This will have an impact on e-commerce companies.

Strategic marketing online customer reviews which have these four indicators will shift the traditional approach marketing that emphasizes features and profit of the product. Online customer reviews are a marketing concept who do not just sell products or services only to consumers but also deliver experience to consumers so that consumers can differentiate the company's products and services from competitors' products and services.

On this basis, it is hoped that this research will add to the repertoire of the economy and business in Indonesia, especially e-commerce companies, which will continue to grow, given the 4.0 era, which all lead to digitalization, and after this pandemic, people are still wary of crowds, all activities need online including online shopping or e-commerce. Through e-commerce this will benefit both parties. It is necessary to have initiative from the seller to make good and attractive offers to attract buyers and create collaboration between sellers and buyers in e-commerce. The presence of an online customer review is expected to form initial expectations from potential customers before making an online purchase transaction. Consumers will find it easier to find comparisons with similar products sold at other online sellers. This is due to the rapid use of digital marketing, thus providing benefits to consumers and e-commerce companies. Thus, the use of e-commerce in the future will be higher and drive the wheels of the economy in the future. Therefore, the role of online customer review is needed e-commerce because in choosing a product is not only influenced by rational factors, but also emotional factors. This emotional factor is what we want to explore further through the online customer review concept. Based on the description that has been submitted, the formulation of the problem in this study is: What is the role online customer reviews on e-commerce.



## 2 Literature Review

### 2.1 Online Customer Reviews

Before discussing about online customer review, first discusses marketing and consumer behavior because online customer review is part of marketing related to consumer behavior. According to [14], that marketing is the whole of business activities aimed at planning, determining prices, selling, and distributing goods and services that satisfy the needs of both existing and potential buyers.

Based on this description, it can be interpreted that marketing (marketing) is a social activity carried out both for individuals and by a group to meet the desired needs. The activity in question is creating, offering, and exchanging the product value with other parties. Satisfying needs is carried out through the process of planning and executing concepts, pricing, promotion, and distribution of goods and services and ideas that can be created through exchanges of value with one another. According to Schiffman and Kanuk (2008) suggests that the study of consumer behavior is a study of how an individual makes decisions to allocate available resources (time, money, effort, and energy). According to [8] consumer behavior is an individual or group (consumer) behavior or action in buying or using products or services that involve a decision-making process so that they will get the product or service desired by a consumer.

According to Saripa in [5] reviews/ reviews are writings that explain the condition of a product that has been purchased by the buyer. According to Toni in Suwarno et al (2016) Online customer reviews or online consumer reviews are writing specifically made to provide an overview of a product so that the product can be seen its uses, advantages, and disadvantages so that readers will know and be interested in owning the product or even don't want to have the product because not good.

So online customer reviews are reviews given by consumers related to information from evaluating a product about various aspects, with this information consumers can get the quality of the product they are looking for from reviews and experiences written by consumers who have purchased products from online sellers. Consumers usually look for relevant information when deciding to buy a product.

Online customer reviews which are types experience. According to Saripa in [5], which includes:

1. Awareness
2. Frequency
3. Comparison
4. Effect

As for the explanation as following:

1. Awareness, that is, buyers are aware of the existence of product reviews on the site and use this information for the product selection process
2. Frequency that is, Online shoppers often use reviews as a source of information.
3. Comparison, that is, before buying, the buyer reads the reviews of the product to be purchased, which are on the site one by one and compares these reviews.

4. Effects namely, the form of strategy undertaken to create experience customer which connected on behavior individual, social behavior, and style life.

## 2.2 E- Commerce

According to [7] E-Commerce, namely companies or sites that offer to transact or facilitate quality products and services online on marketplaces. And then e-commerce will give rise to e-purchasing and e-marketing. E-purchasing means that companies decide to purchase goods, services, and information from various suppliers online. E-marketing describes a company's efforts to inform buyers, communicate, sell, and sell products and details via the internet.

According to Hartman (2000) in [6] E-Commerce is a type of electronic business mechanism that focuses on individual-based business transactions using the internet as a medium for exchanging goods or services in marketplaces between two institutions. Business to Business (B-to-B) as well as between institutions and direct consumers/Business to Consumer (B-to-C).

It can be concluded that e-commerce is a dynamic collection of technologies, applications and business processes that connect companies and consumers and certain communities where the exchange of goods between those being sold and consumers of various commodities on a broad scale and one electronic transaction, and in the process of sending goods from purchased using transportation from one region to another until it reaches the consumer's hands which is mutually beneficial to both parties.

Following are the characteristics of e-commerce according to [10]:

1. A transaction occurs between two parties
2. There is an increase in goods, services, or information
3. The Internet is the main medium in the process or mechanism of such trading.

The characteristics above clearly show that basically e-commerce is the impact of the development of information technology and telecommunications. This significantly changes the way humans interact with their environment, which in this case is related to trading mechanisms. According to Toni in [13] Online customer reviews or online consumer reviews are writing specifically made to provide an overview of a product so that the product can be seen its uses, advantages, and disadvantages so that readers will know and be interested in owning the product or even do not want to have the product because not good.

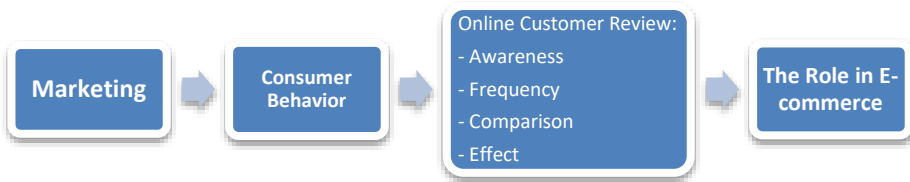
According to Saripa in [5] reviews/ reviews are writings that explain the condition of a product that has been purchased by buyers and have indicators (1) awareness /awareness in buying the product, (2) frequency/frequency in frequently giving reviews, (3) comparisons / comparisons in comparing product reviews, (4) influence in selecting or purchasing products.

This theory is supported by the research journal [2] concerning the Influence of Online Customer Reviews and Ratings on Trust and Purchase Interest in Online Marketplaces in Indonesia. This study aims to determine the impact of Online Customer Reviews and Ratings on online marketplaces in Indonesia. This study uses the Structural Equation Modeling (SEM) method with 313 respondents collected from internet users

who have shopped at online marketplaces. The research results obtained from this study are that both online customer reviews and online customer ratings are proven to have a relationship with customer purchase intentions and are one of the important features, but not a factor that causes increased customer trust. Therefore, online marketplace companies must make reviews and ratings one of the main marketing tools that can increase company revenue.

This theory is also supported by the journal Sari's research results (2021) concerning the Effects of Promotions, Online Customer Reviews, and Online Customer Ratings on Purchase Decisions (studies on marketplace Shopee users in Indonesia). This study aims to determine the effect of promotions, online customer reviews, and online customer ratings on purchasing decisions for Shopee marketplace users in Indonesia. This type of research is explanatory research with a quantitative approach. The population used is Shopee marketplace users in Indonesia. The data was obtained from a questionnaire filled out online, sampling using probability sampling with a purposive sampling technique with a sample size of 100 respondents. Data analysis used descriptive statistical analysis and classical assumption test with SPSS 28.0 application tools. Based on the results of the t (partial) test, it shows that the promotion, online customer review, and online customer rating variables each have a significant effect on purchasing decisions. The results of the F test (simultaneous) explain that promotions, online customer reviews, and online customer ratings together have a significant effect on purchasing decisions. Then the R2 test shows that as much as 57.9% of purchasing decisions are influenced by promotions, online customer reviews, and online customer ratings and the remaining 42.1% of purchasing decisions are influenced by other variables.

### 2.3 Framework



## 3 Methods

The focus of this research is on how the online role inside customer reviews e-commerce with indicators: (1) awareness /awareness in buying products, (2) frequency in frequently using reviews as a source, (3) comparisons /comparisons in comparing product reviews, (4) effects in selecting or purchasing products. Based on this focus, this data was taken from PT Hiyarta Danadipa Raya as the manager of the Malang online traditional market, namely marketing staff as informants. The data is in the form of review documents or online customer reviews from customers who have commented on the site marketing PT Hiyarta Danadipa Raya about reviews or online customer

reviews that are on the site. The data analysis method used is descriptive analysis with a qualitative approach with the following stages:

1. Data reduction is a process of selecting, simplifying, and transformation of raw data that emerges from written records in the field. At this stage the data obtained from PT Hiyarta's marketing staff is about reviews or online the customer reviews on the site are still global
2. Triangulation, at this stage is analyzing the information obtained from reduced records to see the truth while looking for supporting data so that the results can be trusted. This stage uses observation and understanding of data or documents from marketing staff of PT. Hyarta obtained from sites about reviews or online customer reviews.
3. Data presentation is a collection of information that is composed of the triangulation stage and provides the possibility of drawing conclusions and acting both in tabular and narrative form in order to combine the arranged information into an integrated form. In this stage, you have got an idea about the role of online inside customer reviews e-commerce.
4. Drawing conclusions is the process of noting regularity, an explanation of the causal flow of the process of presenting data. Then the conclusions of memory during the research in other words before the final conclusions are made, can be preceded by conclusions in the previous process. The provisional conclusions with the interactive model led to competent final conclusions with research propositions. This final stage raises conclusions that can answer the research objectives, namely the role of online inside customer reviews e-commerce.

## 4 Result and Discussion

Based on the results of interviews with the marketing staff of PT. Hiyarta Danadipa Raya about reviews or online customer reviews on the site, it can be explained that:

### 4.1 Awareness

Namely awareness in buying the product. From the data buyers are aware of the existence of product reviews on the site and use this information for the product selection process. Can be exemplified in reviews or online customer reviews as follows:

*“Products arrived home safely. Good packaging and quality. Fast delivery. All the products are very fresh.”*

Based on reviews or online the customer review that is exemplified, PT. Hiyarta can learn and understand so that this awareness indicator can be used as a basis for improving the quality of products and services.

## 4.2 Frequency.

frequently using reviews as a source of information. Online shoppers often use reviews as a source of information. This is used by PT. Hiyarta as a basis for improving products and services. Can be exemplified in reviews or online customer reviews as follows:

*"Thank you, my order has arrived. Sorry I did not have time to take a photo. Will repeat order here I think"*

*"The bananas are a bit black but it's okay, I shop here for all the fruit"*

Rely on reviews or online the customer review that is exemplified, PT. Hiyarta can learn and understand, for example, if you look at the word repeat, it shows repeat purchases so that the frequency indicator can be used as a basis for measuring customer satisfaction.

## 4.3 Comparison

Comparison before buying, the buyer reads the product reviews to be purchased, which are on the site one by one and compares these reviews. Can be exemplified in reviews or online customer reviews as follows:

*"Although many have shopped at traditional markets offline, for certain needs it is better online, not heavy especially fruit, prices are also cheaper. If you go to the market, you only buy a few because it is heavy"*

*"The bananas came still green. Still can wait a few days. I hope it is delicious"*

By paying attention to reviews or online The customer review that is exemplified is that in this comparison there are elements that compare so that this comparison indicator can help PT. Hiyarta to provide information to other customers

## 4.4 Affect

That is, review can be considered important if it influences product selection. Can be exemplified in reviews or online customer reviews as follows:

*"It's good, the goods arrived immediately, the goods were fresh, I also recommend ordering here"*

*"The banana has been given an item. Sad. Please pay attention to the quality so that buyers do not regret it"*

Look at reviews or online the customer review that is exemplified, this effect indicator can be used as a basis for business decisions. That there are positive and negative reviews that need to be taken by PT. Hiyarta. In this case, it is necessary to have quality control before the goods are sent because quality control can ensure that the products/services provided meet specific requirements and are reliable and satisfactory. The results of this study are in line with Toni's theory in [13] online customer reviews or online consumer reviews are writing specifically made to provide an overview of a product so that the product can be seen its uses, advantages, and disadvantages so that readers will know and be interested in owning the product or even don't want to have the product because not good. As well as being in line with Saripa's theory in [5] review,

namely that writing explaining the condition of a product that has been purchased by the buyer with indicators (1) awareness /awareness in buying the product, (2) frequency /frequency in frequent use as source reviews, (3) comparisons / comparisons in comparing product reviews, (4) effects in product selection or purchase.

The results of this study are in line with research by [2] concerning the Effects of Online Customer Reviews and Ratings on Trust and Purchase Intention in Online Marketplaces in Indonesia. This study aims to determine the impact of Online Customer Reviews and Ratings on online marketplaces in Indonesia. The research results obtained from this study are that online customer reviews and online customer ratings are proven to have a relationship with customer purchase intentions and are one of the important features, but not factors that cause increased customer trust. Therefore, online marketplace companies must make reviews and ratings one of the main marketing tools that can increase company revenue.

The results of this study are also in line with Sari's research (2021) concerning the Effects of Promotions, Online Customer Reviews, and Online Customer Ratings on Purchasing Decisions (a study of Shopee marketplace users in Indonesia). Based on the results of the t (partial) test, it shows that the promotion, online customer review, and online customer rating variables each have a significant effect on purchasing decisions. The results of the F test (simultaneous) explain that promotions, online customer reviews, and online customer ratings together have a significant effect on purchasing decisions. Then the R<sup>2</sup> test shows that as much as 57.9% of purchasing decisions are influenced by promotions, online customer reviews, and online customer ratings and the remaining 42.1% of purchasing decisions are influenced by other variables.

Online customer reviews/reviews influence purchasing decisions in the case of online/ e-commerce purchases in marketplaces. Thus, it can be interpreted that online customer reviews have a role in online/ e-commerce purchases. The role of online customer reviews in e-commerce is (1) Improving the quality of products and services. (2) Measuring customer satisfaction, (3) Other sources of customer information (4) Providing data in business decisions.

#### **4.5 Conclusion**

#### **4.6 Conclusion**

Based on the theory and research results that have been described that online customer reviews /reviews influence purchasing decisions in cases of online/ e-commerce purchases in marketplaces, the conclusions that can be drawn from this research are, the role of online customer reviews in e-commerce namely, (1) Improving the quality of products and services. (2) Measuring customer satisfaction, (3) Other sources of customer information (4) Providing data in business decisions.

#### **4.7 Sugestion**

1. Maintaining company policies regarding positive online customer reviews

2. Revise company policies regarding negative online customer reviews
3. Paying attention to the importance of quality control so that products/services are of high quality.

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# Female Reog Of Plunturan: Empowering Women Preserving Culture

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**Abstract.** Reog dance is a cultural product from Ponorogo, a district located in the southern part of East Java. Female Reog is the art dance of reog where all the dancers are women. Female Reog in Ponorogo are rarely found. The emergence of Female reog, raises the pros and cons in society. The object of this research is the association of female reog, namely "Ki Onggoputi Putri" from Plunturan village, Ponorogo Regency seen from the perspective of women's empowerment and cultural preservation. The problem in this study is there is no awareness in the community that women have a very important role in cultural preservation and the development of cultural tourism villages. Women have rights in the public sphere and the same competencies as men. The artistic activities of PKK members are not just to fill their spare time, it is also an effort to empower women to improve their quality of life and develop independence and welfare. The method used in this study is a qualitative method, while data collection is through observation and interviews. This study applies the theory of women's empowerment and gender equality in analyzing "Ki Onggopati Putri". The results of this study show that female reog which was originally established to fill the spare time of housewives has become an empowerment movement in preserving Ponorogo's reog art culture. It has an important role in the development of cultural tourism villages as well. The long-term goal of this research is the awareness in the community that women have a very important role as cultural preservers and the development of cultural tourism villages. Women become agents of change who are able to participate in empowering themselves. The results of this study are expected to be a model for women's empowerment in the field of cultural preservation of tourism village development.

**Keywords:** Female Reog, Women Empowerment, Cultural preservation, Cultural Tourism Village

## 1 Introduction

Talking about the art of reog, what comes to people's minds is directly focused on Ponorogo Regency. Ponorogo is a city that presents a uniqueness in performing arts. Moreover, Reog is one of the cultural heritages that has been recognized internationally and has become an icon of a city called "Bumi Reog ( land of Reog)". The Reog performance is presented in the form of a ballet, a dramatic dance without dialogue.

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From the movements, it is hoped that this dance is sufficient to represent the content and theme of the dance. Only, so far the reog dance has been played by male dancers, except for the jathilan dance which is played by women.

Historically, the jathilan dance was originally performed by men dressed in women's clothing. This is a depiction of gemblak, a teenage boy who was taken care of by the Warok as his concubine, as an effort to maintain his supernatural powers. However, because the gemblak figure was not in accordance with religious norms, the Ponorogo Regency Government in 1985 made a policy and changed the jathilan dance should be performed by female dancers. The shift of the jathil dancer by the woman persists to this day.

. The art of reog is synonymous with masculinity, but this attribute has changed with the emergence of female reog in 2017. In order to empower women in the field of art where they are considered not to have fully contributed, a female reog art group named "Ki Onggowati Putri" in Plunturan Village, Pulung District, Ponorogo Regency, was established. The reason behind the establishment, according to Yayuk, the head of the group is "want to examine the lives of women in the art world, because art and women are an ambivalence that creates two different views in society. On the one hand, women are seen as victims of exploitation, on the other hand, women in traditional arts are seen as destroyer of male domination,". Bintoro, the head of the Plunturan village stated that "Reog Ponorogo is always associated with the interests of various parties outside the interests of the arts itself. And reog is in the complexity of conflict among the people of Ponorogo,"

## 2 Theory

This study applies the theory of women's empowerment and gender equality. The method used in this study is a qualitative method, while data collection is through observation and interviews. Empowerment is defined as a process of obtaining power, strength or ability from those who have power to those who are less or less empowered [7]. Onny. S, Prijono added that Empowerment is a process for the community to become empowered, encouraging or motivating individuals to have the ability or empowerment to make life choices, empowerment must also be aimed at groups or layers of society that are left behind.

Women's empowerment becomes important because the awareness of the role of women begins to develop which is embodied in the approach of women's programs in development. Based on the idea that women need independence, their role and positions in society must be considered. Empowerment is an important strategy to increase the role of women increasing their potential to be more independent and work. Empowerment can be done by involving women in cultural preservation. Bintang Puspayoga, the Minister of women's empowerment and child protection, in her interview with [9] stated that "Women are cultural agents, not cultural objects. Our cultural traditions tell us how Indonesian women play a role in building culture. Not only contributing to its preservation, women also play a major role in creating culture in Indonesia". As an agent of culture, women have a very important role in preserving

local cultural values and local knowledge that have long been ingrained in society. These values can always be maintained and developed into very valuable assets in development. Local cultural values and local knowledge are great assets for a nation to be able to move forward.

Empowering women as cultural preservers provides a very large role for local communities to determine their own destiny. This pattern of empowerment emphasizes the aspect of local community participation rather than introducing from outside. Women with all their advantages will be directly involved in the process of implementing sustainable development. Because it is directly involved in sustainable development, empowering women as cultural preservers is also a form of gender equality. Although culture cannot be positioned as the cause of major changes in gender relations, cultural factors inevitably influence the character and persistence of progress in the position of women. Cultural norms and values provide a framework within which changes in gender relations are interpreted and determine how different societies perceive the achievement of gender equality.

### **3 Methods**

The methods applied in this study is observation and interview. The method of data collection is categorized as a participatory study, because the researcher has to immerse herself in the setting where her respondents are, while taking notes and/or recording. The researcher not only made observations but she also conducted interviews. Interviews were conducted to obtain facts, beliefs, feelings, desires and so on that are needed to achieve the research objectives expected by the researcher. Questions used to stimulate information are made the same as making a list of questions with various adjustments. The questions are designed by a researcher to elicit information from interview participants on a specific topic or set of topics .

## **4 Result and Discussion**

### **4.1 PKK Activities**

According to Yayuk the establishment of this association began with activities of family welfare empowerment which were carried out every month. PKK stands for Pemberdayaan Kesejahteraan Keluarga or Family Welfare Empowerment, is a social organization that empowers women to participate in Indonesia's development. In a Village, PKK has the task of assisting the village government and is a partner in empowering and improving family welfare. The term PKK is very broad and is usually associated with women's associations (house wives and young women) which have a variety of positive activities. Starting from how to do a Small and Medium Enterprises, conducting seminars on reproductive health, family planning, domestic violence and child health. These activities have a big contribution to help society, especially in terms of families, women and children. In addition to carrying out the activities mentioned

above, the PKK activities in Plunturan Village, Ponorogo, also empowering women in cultural preservation activities by establishing the female Reog Association.

The female reog association "Ki Onggopati Putri", based on Yayuk's story, was taken from the name of the male reog association, namely "Ki Onggopati". The word "putri" means woman or angel. It also shows that all the dancers of this association are women. Yayuk added by saying "so far the standard of reog are played by men, in this new innovation we want to show a different side from the standard of dominance, the Reog grip having been played by men, in this new innovation we want to show a different side from the dominant (male) grip"

#### **4.2 Performing Art as a Form of Self-Actualization**

Self-actualization is a person's desire to use all of their abilities to achieve whatever they want and can do. This understanding of self-actualization is a person's need to develop, use and utilize their potential, talents and capacities to produce and realize what they are. Self-actualization needs are included in the group of needs because they want to develop and change, where individuals want to experience transformation to become more meaningful.

One form of self-actualization of women in Plunturan Village, Ponorogo, is realizing and cultivating their abilities or talents. As a village full of cultural heritage, especially the Reog culture, women perform art through attractive stages or art performances. In this show, some of the characters in reog such as Barongan that depicts power and beauty and symbolized by a tiger's head and a peacock ornament, Warok depicts a violent character with his supernatural power, usually played by men having a big body wearing black clothes, Klono sewandono depicting a brave and wise king figure, the fourth, Ganongan an energetic character, funny and has martial arts skills, and jathilan, a dance depicting horsemen, are all played by women. These dances have storylines that describe people's lives or human life in general. Rules and conditions in a performance must also be met so as not to violate the standard (rules) that already exist. Women living in the rural areas, have been particularly marginalized from cultural life. They face many barriers to access, contribute and participate equally in theatre, cinema, arts, music and heritage, which prevents them from developing their full potential and impedes social and inclusive sustainable development. through reog art performances, women have opportunity to be able to actualize themselves in the form of art which is a symbol of pride for a region.

#### **4.3 Promoting Gender Equality**

Apart from being a means for self-actualization, this artistic activity is also promoting gender equality. Gender equality can also mean that there are equal conditions for men and women in obtaining opportunities and rights as human beings, so that they are able to play a role and participate in legal, political, economic, social, cultural, educational, defense and national security activities as well as equality in enjoy the fruits of development in a country.

The UNESCO report on Gender Equality, Heritage and Creativity the need to enhance debate, research and awareness-raising regarding equal rights, responsibilities and opportunities for women and men, girls and boys in the areas of heritage and creativity. It means that women and men have the same right to preserve cultures. The construction in society which states that women are only second class citizen in preserving the culture can be eroded through the role of women's reog.

Studying traditional arts cannot be separated from the gender aspect, but this gender aspect also leaves several problems, including internal problems, namely the emergence of psychological anxiety and uncertainty in women themselves when they actualize their public roles. This psychological problem arises when they have to seek ethical justification for their public role. They are faced with a choice whether to optimize the role of the public by freeing themselves from the views of society that have been imprisoning them or by continuing to base themselves on the ethical foundation of the beliefs they adhere to. The role of women in maintaining a culture so that their work does not violate the rules or norms of decency in customs recognized by a society as stated by Yayuk her party wants to make a new breakthrough in the Reog Ponorogo art repertoire. She wants woman's existence as a cultural heritage preserver to be noticed, even though her group does not want to go any further than men.

Culture cannot be positioned as the cause of major changes in gender relations, although cultural factors inevitably influence the character and persistence of progress in the position of women. Cultural norms and values provide a framework within which changes in gender relations are interpreted and determine how different societies perceive the achievement of gender equality.

#### **4.4 Preserving Cultural Heritage**

The role of women in maintaining local culture and wisdom cannot be separated from the aspects of society that support it. There is awareness in women of the need to study science, actualize themselves and show their role in order to create a peaceful society. Women also need opportunity to demonstrate their social and intellectual role in social life. the existence of the reog women's association "Ki Onggopati Putri" needs to be strengthened because in addition to showing its uniqueness, what women do in this association is a form of cultural preservation.

This uniqueness, if developed further, will be able to provide new cultural tourism for Ponorogo Regency, especially Plunturan Village. As a cultural tourism village, Plunturan village needs to develop Reog danced by women so that it becomes a new icon in Ponorogo. Not only, the image of reog which is usually synonymous with masculinity and power, will also get a new image, namely femininity and tenderness. As a cultural tourism village that carries cultural heritage, the female reog performance has become a new cultural tourism destination that is able to attract the attention of the public. This innovation in the arts .opens up new potential for cultural and economic tourism destinations for the community

## 5 Conclusion

Local culture and wisdom in a society are closely related to women as the main actors. Women have a big role in maintaining local culture and wisdom which through a series of processes will bring benefits to the community itself. This role is manifested in the social activities of a woman in society or in actualizing herself in the public environment. Women are needed so that local wisdom in society does not fade with time. The role of women in maintaining local culture and wisdom is also related to the various characteristics of women who are full of patience and thoroughness so that they become an inspiration in their own family and in the surrounding community.

The various roles of women in maintaining culture and maintaining local wisdom values do not mean that a woman is free from various kinds of problems related to gender bias. These problems can be from internal factors as well as women's problems and difficulties in intervening in public policies which sometimes do not support women's rights.

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# Government Performance Complex Regarding Principal-Agent Relationship

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**Abstract.** Public issues are the main problems that must be handled by the government. Organizationally, the government or the state are public institutions established for the public interest. Therefore, problems such as poverty, education, health, and so on, which are considered public problems, must be handled properly by the government. If these problems can be handled by the government, then the government's performance can be considered good. However, the complexity of public problems makes it difficult to determine government performance measurements. The ministries in the government cannot operate independently, but must be in contact with other ministries. Thus, the principal-agent relationship in public institutions, internally experiences quite high complexity. The one ministry success cannot be measured by one ministry success itself, but it depends on other ministries, vice versa. There are quite a lot of interfaces between principals and agents which results in increasingly complex performance measurements in the public sector. With qualitative methods supported by secondary data through literacy studies, this paper is expected to be able to provide an in-depth understanding regarding the complexity of performance measurement in the public sector seen from the principal-agent relationship. It is hoped that this paper will also make a major contribution regarding performance measurement in the public or government sector.

**Keywords:** Government Performance, Principal-Agent, Complexity, and Performance Measurement.

## 1 Introduction

Performance is one of the main indicators of the success of an organization, including public organizations. Since the implementation of business values in public organizations in the New Public Management (NPM), performance has become an important element in government. Thus, the main concentration on each leader in public organizations tends to improve performance (Denhardt and Denhardt, 2007). Not only that, performance also shifts traditional forms of accountability to performance-based accountability (Peters, 2007). The importance of the position of performance in this public organization, makes all elements in public organizations performance-oriented. Meanwhile, to achieve this performance, it is necessary to have freedom from the routines and regulations that arise from the administrative system (Kaboolian, 1998).

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This freedom indicates that the application of business value through NPM in the public sector is still visible. Although basically, freedom is a term used by the business sector to be able to compete in quite massive changes, the public sector in implementing NPM also applies freedom. As Osborne and Gaebler (1992) stated that one of the characteristics of NPM implementation is the use of changes based on the market environment. Instead of controlling the situation in its territory, the state is required to be able to adjust to the market. However, with this freedom, performance measurement in the public sector is more complex than ever before. With this freedom, the success of the public sector, whether state, province or city or district cannot be generalized or standardized.

This freedom of values is indeed a problem in measuring the performance of public organizations. However, basically, problems that occur in society are complex problems and require high flexibility in handling efforts. Many previous studies have described the incompatibility of principal-agent theory in public organizations. Lane (2012) explains that the problem in principle-agent theory in public organizations is that there is asymmetric information, namely moral hazard and adverse selection between agents and principals. Therefore, in the problem of poverty, for example, the many dimensions of poverty make it possible to say that the handling of poverty by the government has been successful on the one hand, but has not been successful on the other. So,

In this way, the question of how complex the application of principal-agent theory is in public organizations, namely government, is a question that needs to be answered. To answer this question, the next section explains the procedure or method for answering the question. This method is then followed by collecting data both empirically and conceptually so as to produce an analysis related to the research question. This analysis is also what then produces the conclusions of this article.

## 2 Methods

This study used a qualitative method with second-by-second data as the input data. Any amount of second-by-second data can be taken from a book, the internet, an electronic journal, or other sources of reference. In addition to that, data was searched using the Google Scholar, International Journal, and key words related to "government performance," "principal agent," "performance measurement," and "government complexity." After receiving the article that is related to the key phrase, the next step is to create the article that will be used as a reference and documentation for the study. Following the analysis of the necessary references, the next step is to suspend the writing. The findings of this study demonstrate that government performance is a complex activity with a connection to the relationship between the principal and agent.

### **3 Result and Discussion**

#### **3.1 The Diversity of Public Problems Causes**

So far, performance measurement has been one of the indicators of a government's success, it was even explained earlier that performance is an indicator of government accountability. The performance measure itself is the impact of the development of the NPM paradigm which was initiated in developed countries. The NPM paradigm itself is the infiltration of business values into the public sphere, not only limited to the technical aspect, but also to the realm of values or norms (Denhardt and Denhardt, 2007). However, in its development, performance measurement in the public sector is far more complex than in the business sector. The measure of profit orientation in the business sector is the main measure of performance measurement. Good performance necessarily indicates increased profits, and vice versa. Meanwhile, in the public sphere,

On the other hand, in terms of complex problems, the state is also faced with freedom of values from the measure of its success. One example, the problem of poverty is a problem that occurs in almost all countries in this world. However, the measurement of poverty standards in each country may vary. The World Bank measures poverty using a standard measure of each person's spending. The World Bank says that if someone lives below US\$ 2.15 or the equivalent of Rp. 33,518 a day, then that person is said to be poor (World Bank, 2022). Meanwhile, the Central Bureau of Statistics (BPS) does not fully implement this. The poverty line, according to BPS, is a reflection of the minimum spending rupiah that a person needs to meet their needs for one month (BPS, 2022).

On the other hand, Amartya Sen (1979) argues that there is no absolute measure of poverty, even though there is, an absolute measure is not sufficient to measure poverty levels. Thus, measurement using only income levels cannot be used as the sole measure of poverty levels. Thus, Xaba (2016) formulates Sen's opinion that poverty is not only a lack of physical access such as food, clean water, education, health, but also a lack of social needs, namely a lack of choices in life. This shows that basically poverty is not only based on economic problems, but also has elements of education, health, food, and even political issues. So, basically, reducing the poverty rate is not the result of just one public organization,

#### **3.2 Using Principal-agent Theory Amidst Solving Public Problems**

One public problem, as previously explained, demands that the government not only involve one organization, but rather involve various kinds of organizations, even non-governmental organizations, such as businesses and non-governmental organizations (NGOs). From an organizational management point of view, having its own structural flow makes measuring organizational performance increasingly complex. Basically, principal-agent relationships can be found in public organizations but with higher complexity compared to private organizations because they can involve outside organizations such as NGOs (György, 2012).

In Indonesia itself, the problem of poverty which also involves the sectors of income, employment, health, education, natural resources, and politics, of course, also involves several organizations, both internal and external. From an internal standpoint, in Government Regulation Number 46 of 2015, the Ministry of Social Affairs is the ministry whose task is to deal with the problems of the poor (BPK, 2017). However, when viewed from the poverty measure described in the previous section, the reduction in the poverty rate from 9.71% in 2021 and 9.54% in 2022 (Javier, 2022) cannot be used as a benchmark for the success of the Ministry of Social Affairs' performance alone. Ministry of Education, Culture, Research and Technology, Ministry of Manpower, and other ministry that related with the causes of poverty are participate to this poverty alleviation.

On the other hand, organizations outside the government also contribute to reducing poverty. Internationally, there are at least 25 NGOs that have dedicated their organizations to fighting poverty. This number is not yet from NGOs that have emerged nationally and have the same goal of alleviating poverty. On the other hand, if poverty is associated with job opportunities, then the business sector also has a stake in poverty alleviation. It is this complexity that makes government performance measurement related to one problem, namely poverty increasing and even impossible to measure. If it is linked to the principal-agent theory,

then in this case, the higher allusions that occur between principals and agents when linked to public problems.

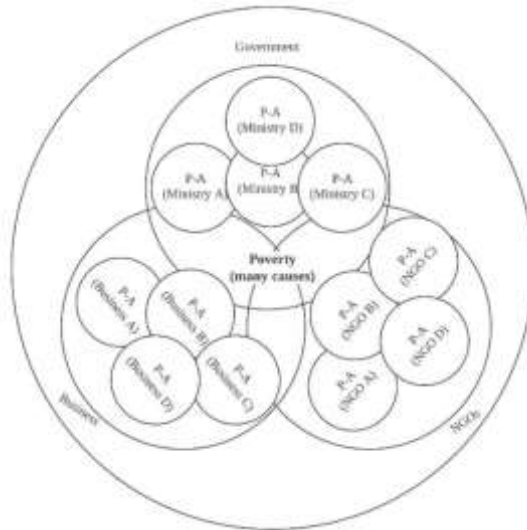


Fig. 1. The Complexity of Principal-Agent in Handling of Public Problems.

Figure 1 shows that in dealing with one problem, namely poverty, there is complexity when viewed from the point of view of principal-agent theory. First, the many causes of poverty make poverty not the responsibility of just one ministry, but the responsibility of several ministries. The problems of education, health, natural resources, and several problems related to the poverty measure that have been described previously also contribute to the problem of poverty. Second, external elements of the government also have a role in poverty alleviation. This of course intersects with public problems in which the government is the main actor in dealing with public problems. This is what then makes performance measurement in the public sector far more complex than the private sector, especially the business sector.

### 3.3 Complexity of Performance Measurement

Performance measurement has the potential to clarify the characteristics of public organizations by providing information to the public regarding the goals and achievement of goals that have been carried out by the government (Moynihan et.al., 2011). Performance is the most crucial aspect of an organization to research and gauge in order for management to understand how much effort each employee puts into achieving organizational objectives. Performance has several distinct definitions, according to many experts. Gibson explains performance as the outcome of work related to organizational goals, efficiency, and other performance's efficacy (in Tsauri, 2014). Ilyas, on the other hand, emphasizes that performance is an outward manifestation of what the organization's members have accomplished through their labour (in Tsauri, 2014).

All members of the organization not just those in functional or structural positions are subject to this look (Tsauri, 2014). According to Rue and Byars, performance is defined as accomplishing results or what is referred to as the degree of achievement. According to Bernardin and Russell, the term "performance" also refers to a record of work-related activities or tasks that were completed throughout a specific time period (in Tsauri, 2014). Performance is measured by the extent to which an organization can accomplish objectives based on prior objectives (Tsauri, 2014). In contrast to Rue and Byars, Robbins defines performance as the outcomes attained by workers based on standards that are relevant to a job (in Kamaroellah, 2014). Mangkunegara, on the other hand, is concerned with how well and how much (quality and quantity) someone accomplishes when performing their tasks in accordance with their responsibilities (in Kamaroellah, 2014). Considering the aforementioned experts' perspectives, it can be deduced that by performance, what is intended is the encouragement of someone's work that is unrestricted by a position and that seeks to achieve organizational goals as effectively as feasible.

According to these scholars, determined that performance is the quantitative measure to the organization. As explained before, the measurement of the main purpose of the organization, public organization especially, can not be measure with only quantitative data, but also qualitative. Quantitative data in one organization must be measured with quantitative data of other organization. Additionally, public problems must be viewed as qualitative problems that needs to consider complex measurement. With the

complexity of principal-agent also, the government performance can not be measured with the quantitative of achievement solely. This because the achievement of government is the outcome of complex principal-agent both internally and externally.

## 4 Conclusion

The importance of performance in public organization, makes all elements in public organizations performance-oriented. This measurement indicates that the application of business value through NPM in the public sector is still visible. Instead of controlling the situation in its territory, the state is required to be able to adjust to the market. This freedom of values is indeed a problem in measuring the performance of public organizations. One public problem, demands that the government not only involve one organization, but rather involve various kinds of organizations, even private organizations, such as businesses and non-governmental organizations (NGOs). This involvement, internally and externally, create principal-agent complex while dealing with public problems. Thus, the achievement of government in dealing with the public problem cannot be said of good government performance. Rather, it is achievement of the principal-agent complexity relation both internally and externally that makes performance measurement more complex.

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# Daily Bank Social Interactions And The Role Of Micro Business

(Study on Noodle and Meatball Traders in Malang City)

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**Abstract.** In the neoclassical paradigm which argues that an action will be influenced by economic factors. However, the opinion of this school of thought does not apply to the action of daily bank loans for noodle and meatball traders in the city of Malang. Where the social structure in understanding existing actions in institutional theory can break this paradigm view. In this study using qualitative methods with a phenomenological approach. And the researchers used an institutional approach model through social interaction to answer the interaction of daily bank loans and the role of micro-businesses for noodle and meatball traders to make micro-business actors, especially noodle and meatball traders, feel comfortable borrowing from daily banks. This further clarifies that existing social interactions have a role in making micro-entrepreneurs not interested in formal banks or cooperatives and tend to choose daily banks. What's more, in addition to the daily bank services to micro business actors, they provide additional value by not only focusing on services in the form of cash only, daily banks also provide goods. This is done in order to foster and improve the network. This service, which is carried out in the form of goods, is an innovation from a daily bank. From here, a trust will be built that will strengthen and increase mutual trust between them. So that if on the way there are problems with payments, it is quick and easy to negotiate with each other. Starting from here, more and more agreements are created with positive norms and values that are built from daily banking, so that traders will be increasingly reluctant to move to cooperatives or formal banks. As for the role of influence on the development of micro-businesses, traders can have positive or negative implications. These implications depend on the internal and external factors of the micro business actors.

**Keywords:** Social Interaction, Noodle and Meatball Traders, Daily Bank, Role, Micro Enterprise.

## 1 Introduction

Humans as social beings who depend on and need interaction with individuals and other creatures. Humans as social beings are required to interact well with others in society with the aim of creating a peaceful and peaceful society. In the view of sociology, trade

is trading in the view of sociology is a social institution for the solution of the problem of desire. economic principal in the distribution of goods and services. The mixing of the meaning of trading in economic or sociological analysis can be explained if the market governs social life, automatically encompassing the economy in it. Social interaction can be referred to as energetic social relations. Social ties can be interpreted in the form of bonds between one person and another, between one group and another, or between groups and individuals. In interaction there are also icons, where the icon is meant as something whose number or meaning is given to it by those who use it. According to H. Bonner, social interaction is a bond between 2 or more people, where the behavior of one person influences, replaces or justifies the behavior of the other person or vice versa. Social interaction is the key to all social life, without social interaction there is no life together. The meeting of individuals in a mere physical way will not result in social life in a social group. Such association of life will only occur if many individuals or groups of people work together, exchange dialogues, and then to achieve a common mission, carry out competitions, clashes and the like. Some sociologists think that cooperation is the main form of social interaction. Cooperation sticks out because of the direction of individuals to their groups and other groups. Collaboration may increase strongly if there are external threats that criticize or there are other actions that offend loyalty that is conventionally or institutionally embedded in a group, in a person or group of people W. A. Gerungan, Social Psychology, (Bandung: Eresco, 1996) Print. 13, 57. Cooperation will increase strongly if there are external threats that criticize or there are institutional actions that have been embedded within the group, in a person or a group of people. Such activities can have a violent character if a group for a long time experiences resentment as a result of feelings of dissatisfaction, because their main desires cannot be fulfilled because there are obstacles that come from outside the group, the condition becomes even more acute when the group feels ridiculed or burdened by a belief system or on one of the sensitive aspects of culture. Similar forms and patterns of activity are to be found in all classes of people. Such habits and attitudes begin since childhood in family life or kinship groups. Such a form of activity grows when people can be mobilized to achieve a common mission and there must be an understanding that the mission will later be useful for all.

So that there must be an exciting atmosphere in calculating activities and responding to the services to be obtained. In subsequent advancements, special skills are needed for those with similar duties, so that the concept of the same activities can be carried out properly. Similar activities stick out because of the direction of individuals towards their groups and other groups. Similar activities will probably increase strongly if there are external threats that criticize or there are external actions that offend obedience which is traditionally or institutionally embedded in a group, in a person. or a group of people. Such activities can have a violent character if a group for a long time experiences resentment as a result of feelings of dissatisfaction, because the basic desires cannot be realized due to obstacles that come from outside the group. In interaction there are factors that make the interaction system hampered. Aspects that limit the way of interaction are as follows:



a. Feelings of worry about communicating, the presence of prejudice towards people or groups of people often creates fear of speaking. Meanwhile, communication is one of the driving aspects for the formation of integrity

b. There is individual antagonism, the existence of antagonism between people wants to exacerbate the differences that exist within special groups. Soejono Soekanto. *The science of society Something Introduction*. (Jakarta: Raja Grafindo Persada 2006), 78-80

According to Parsons, social action is a way in which actors participate in the process of collecting subjective decisions about tools or methods to achieve specific goals to be achieved. Talcott Parsons explained that social action has elements such as movie stars, tools or equipment and missions. Gilin and Gilin argue that social interaction is energetic social relations involving bonds between people and individuals, between groups and groups of people, or individuals and groups of people. The social interaction defined in this research is the daily bank ties with the noodle and meatball sellers in Malang City.

## 2 Literature Review

The choice of a trader to make a choice on a debt agreement at a daily bank can be caused by many reasons. The trader's decision is not only due to economic factors, but also due to cultural, social, normative, sociological factors, etc.

### 2.1 Urgent needs and trade needs

For traders, debt is not caused by will, but because of necessity which is caused by pressing desire. For example, when illness strikes in one part, the supply budget is not enough for treatment, or a disaster occurs that forces you to run out of assets or something like that. When such a thing occurs, there is no choice so that the debt must also be tried; In situations like this, debt can even be tried for life. Often, we are faced with a difficult financial situation with a limited duration, debt can help us get through that situation and plan and schedule to make payments at a later date.

In traders' micro business expeditions, there are times when noodle and meatball traders want a budget injection to improve their business performance or take business opportunities that arise. The more business opportunities you have, the higher the budget injection that must be planned and spent. Of course getting a large budget is not easy, so a capital loan is one of the important alternatives that can be implemented. Without borrowing funds that can support the trading progress more quickly, business opportunities that existed beforehand could be completely closed because traders failed to take advantage of this opportunity.

### 2.2 Difficult to Get Access to Funding

Micro business operators, especially those selling noodles and meatballs, face challenges in accessing finance. Meanwhile, micro-enterprises are becoming the

foundation, especially the pioneers of the national economy. Noodle and meatball traders are having trouble getting access to funding due to 4 reasons, namely low data, low technology, not passing audits, and unsafe assets. This situation opens opportunities for informal financial institutions to take advantage of the limitations of unbankable traders.

A significant characteristic of a formal financial institution is in the type of agreement made in the form of a contract system. It is difficult to access credit at official institutions, both bank and non-bank financial institutions (pawn shops, cooperatives, etc.), so it is a medium for informal areas to explore opportunities for unreliable market traders. As a result, it is precisely at such a point that informal financial institutions enter to meet limitations that cannot be reached by official financial institutions. This opportunity is used by banks every day to carry out loan contracts to merchants in a simple and mortgage-free manner.

### **2.3 Social Interaction as Debt Guarantee**

As social beings, humans are always positively related as individuals or groups. Social interaction can be established through processes of encouragement, recognition, compassion, and synthesis (Supardan, 2007: 151). The method that then penetrates will give birth to something attached. On the other hand, attachment is an economic action that is situated in a social way and is attached (embedded) in individual social networks that are currently running between actors (Damsar, 2009: 139). On the other hand, networks that are bound by beliefs and maintained by rules are called "social interactions". Broadly speaking, social interaction is referred to as the ability of citizens to work together to achieve common goals among various groups and groups. This social interaction will be a substitute for pawning debt on bank loans every day. If explored further, social capital has three instruments mentioned by Coleman (1988:102-105) consisting of:

#### **1. Trust**

The ability to associate becomes a very important capital for economic life and other aspects of social existence when the community wants to share with each other to find common ground for shared norms and values. These shared values will arise what is called trust ( Fukuyama, 2002:13). Trust in economic activity is very important because its existence can reduce expenses for monitoring and enforcing contracts (Yustika, 2008: 182). Thus, the trust that is established between the trader and the Daily Bank will smooth out the actions of accounts payable. Besides that, this trust will provide benefits for traders and daily banks. On the trader side, trust can be used as a guarantee eraser. Meanwhile, on the daily bank side, trust can reduce costs for conducting supervision and minimize the risk of bad credit.

#### **2. Network:**

The definition of network according to Lawang (2004:50-51) is that there are ties between nodes (people or groups) connected to the media (social relations). As the

network in the concept of social ties provides access to resources where there is information that is very important as a basis for action. The information network that exists between traders and the daily bank will make it easier for both of them to carry out debt and credit transactions. For traders, the network will make it easier for traders to get their business capital. Meanwhile, for daily banks, the network will make it easier to extend credit.

### 3. Norms

Norms are a set of recognized rights of several individuals to limit or otherwise determine the actions of individuals who are the target of norms (Coleman, 2008:397). In general, norms are understood as shared rules that guide one's behavior. Norms provide a way in which a person orients himself towards other people (Damsar, 2009: 216). Meanwhile, the basic understanding of norms is to provide guidelines for someone to behave in society. The binding strength of these norms is often known by four meanings including usage, habits (folkways), behavior (mores), and customs (custom) (Soekanto, 2010: 174). Norms are unwritten and organized social rules. Where these factors are collective which can prevent individuals from social deviations. If customers from informal financial institutions do not pay their debts, then there are norms that apply to society, which ultimately affect the stability and social interaction of the customers themselves in the eyes of certain communities (Hamka, 2009:19).

#### 2.4 Patron-client between daily banks and meatball noodle traders

Because borrowing from an official institution such as a bank, of course, must be accompanied by a line of provisions as a mortgage loan when applying for bank installments, such as duplicate ID cards, family cards, marriage certificates, even land titles, houses, especially transportation. Meanwhile, daily real banks offer loans with much shorter terms and can be filled at a relatively short duration. This is what makes *mei* and meatball traders prefer the daily bank as a place to let go for just a second without assuming the long-term consequences that accompany it. The term patron-client is not a recent thing, but has existed from the Roman empire. Patron-clients are found in all layers of society, both modern and conventional citizens. Clientism managed to survive from ancient to modern times through informal codes, numbers and norms that were socially protected (Muhtadi, 2013, p. 43). In social science literature, patrons are plans for ties to social levels and economic base capabilities, patron designs are always accompanied by consumer plans, without consumer designs so there is no patron design (Hefni, 2009, p. 16). Patron-clients themselves are one thing bond between parties who have authority and modules with other parties who do not have both of these things. Rivers (in Scott, 1994, p. 79) assumes that patron-client is a personal bond that is often known by a sense of kinship, as a result when one party feels burdened, this collaboration will break down and both parties can end the bond that was created. woven.

The daily bank association as a patron and noodle and meatball trader as a customer is based on the trust and agreement of both parties. Daily banks or patrons get profits

from consumers who borrow money in the form of interest, and consumers get profits in the form of money loans. The survival or failure of a patron-client relationship is related to harmony between the patron and his client in carrying out the rights and roles inherent in each party by establishing mutually beneficial, mutually giving and welcoming bonds (Priyatna, 2011, p. 43). However, it is certain that in a relationship it will not always run easily or have some obstacles. One of the obstacles or problems that is meant is when the consumer cannot pay off the debt with the interest, of course the consumer will experience loss in a modular way because he has to sell the assets he owns and no longer gets complete trust from his patron.

### **3 Research Method**

The research concept used in this research is descriptive qualitative. Bogdan and Taylor (1975) in Moleong (2012: 4) describe qualitative methodology as a method of research that produces descriptive information in the form of recorded words or words from several people and attitudes that can be observed. Based on this interpretation, in this research the researcher intends to explain and describe in depth the relationship between the interactions between the noodle and meatball traders and the bank every day in depth. The mission of phenomenological research is to explain what experiences a person feels in this life, including his interactions with other people (Salim, 2006: 171). In addition, research using a phenomenological approach seeks to understand the meaning of events and interactions among people in specific situations.

#### **3.1 Subject or Research Object**

The subject or object of research is the database of instrument terms to be processed in research (Zulganeff, 2008: 121). The research subjects consisted of key informants and supporting informants. The key informants in this study are people noodle and meatball traders. Instead to determine the next informant using the snowball method (snowball). The snowball method is used to find informants by passing from one informant to another so that the information obtained is more numerous, complete and in-depth. On the other hand, the supporting informant is the daily bank. On the other hand, the object of the research was carried out at noodle and meatball traders in Malang City because the number of traders in it is widely spread in Malang city and Malang city is known as culinary mei and meatballs. With so many traders in this city, it creates a complication of interactions involving traders, consumers, or investment service facilitators.

#### **3.2 Data Collection Methods and Data Validity**

Primary data is generated from observation and question and answer. Observation was attempted in a direct way with traders in Malang city who carry out debt negotiations in the daily bank. The method of observation to be carried out consisted of collecting illustrations, interaction of noodle and meatball traders with the daily bank

and other activities that occurred during the experimental observation procedure. Questions and answers were carried out to ask for data from noodle and meatball traders, not only for the accuracy of the data so that questions and answers were also tested on the daily bank. On the other hand, secondary data is obtained from illustrations of elections when carrying out research and data that supports research. In order to ensure that research data has a high level of validity (validity), so that the data screening process must meet important standards or benchmarks, namely:

1. credibility standards, meaning that they are in accordance with the reality on the ground,
2. transferability standards, providing detailed, real, analytical, and justifiable explanations,
3. the standard of dependability is that data can be accounted for objectively and confirmability is that the data obtained is authentic (Usman and Akbar, 2001: 88-89).

## **4 Result and Discussion**

To obtain information in order to answer the formulation of the problem, the researcher conducted interviews with several parties that had been determined in the research method. The following is a list of informants in the research used in collecting primary data. List of informants

1. Sulasmi, 59 years old, meatball seller on Jl. Jakarta is the city of Malang
2. Mesyadia is 34 years old, a noodle seller on Jl. M. Panjaitan Malang city
3. Ibrahim Erhan Nuha, 30 years old, seller of meatballs in Dinoyo, Malang City
4. Saifut Zaenuri, 64 years old, a noodle seller on Jl. Veterans of Malang City
5. Lilik, 50 years old, noodle seller, Jl. Pekalongan
6. Yayuk, 49 years old, a noodle seller on Jl. Bogor City of Malang
7. Rawi, 61 years old, meatball seller on Jl. Joyo Mulyo Malang City

### **4.1 The influence of urgent needs and the need for collateral trade, and economic sociology in debt decisions**

Various economic and non-economic factors can influence a trader's decision to pay off daily bank loans. The reason for this being that traders are based on an economic pattern can be explained by the experience of Mrs. Sulasmi and Mother Mesadia due to a small economic situation (lack of capital) or being hit by difficulties. In this way, it was the economic conditions that resulted in Mrs. Sulasmi being forced to borrow from the daily bank. On the other hand, the alibi of other traders borrowing from the daily bank was motivated by the medical expenses of the child. Mesadia's mother said frankly that when her baby had recovered from her illness, Mother Mesadia no longer borrowed money from the daily bank. As a result, Mrs. Mesadia only borrowed from the daily bank only based on her pressing desire to pay for the treatment of her child. Apart from the reasons explained above, the reason for the trader's decision to choose

loans from daily banks compared to other agencies is to think about the profits and losses that are obtained when borrowing from daily banks. A copy of KTP paper is also a special consideration for Mr. Ibrahim to be more selective at daily banking than pawnshops, official banks or cooperatives. This also proves that traders prefer a method that is very easy and not complicated. contrary to the case with Mr. Saifud, by equating daily banks with pawnshops, official banks and cooperatives but what becomes a problem is administration fees. On the other hand, because of the economic background of the concept of social science, this is what Mrs. Lilik feels. On the other hand, Mrs. Lilik explained that the initial interest in borrowing at the Daily Bank was more based on the observations of economic society. Mother action. Lilik borrowing from the daily bank was born because of the seriousness of the communication that was strung between Mother Lilik and other traders (Mother. Sulasmi). The seriousness of the interaction will create attachment between traders. When This attachment continues to be strong so that someone will tend to follow the actions carried out by many people in their environment. In this way, you can say that the data network supporting the trader can influence the trader's decision to carry out a loan contract at the Daily Bank. This attachment continues to be strong so that someone will tend to follow the actions carried out by many people in their environment. In this way, you can say that the data network supporting the trader can influence the trader's decision to carry out a loan contract at the Daily Bank.

## **4.2 Network**

As social beings, people live together with other people. Therefore, people in carrying out their lives need social interaction with other people or in a special class. Prolonged interaction will give birth to social bonds between the participating actors. Network Level: Based on the network level, the social network is broken down into 2:

### **a. Micro Network**

Intense social interaction will give birth to a social bond. Social bonds that then permeate can give birth to a social network between them. Conversely, social networks between people are known as micro networks. The micro network was established when the Daily Bank offered loans to meatball noodle traders. Banks daily try to communicate with traders, in the form of offering loans. Likewise, in economic principles, if there is an agreement, there must be a request. the negotiations attempted by Thithil Bank were in fact responded by the traders. When there is a reaction by the traders, a loan debt is formed. Not only that, Ms. Lilik also said that the alibi for following other traders was motivated by the time and space that gave birth to data. Familiarity with the place where the trader accompanies makes the attachment stronger. When the attachment is created so that it wants to give birth to an action. On the other hand, what Lilik feels is the act of following other people based on area effects.

### **b. Meso Network**

The bonds formed by actors with or within groups eventually create a network that can be called a meso network. Meso network applications in the environment can be found in association activities, some of which are traders. The Paguyuban often acts as a bridge when there are problems with outside traders. One of them is when there is a "satpol PP gropyok" the average trader sells in public facilities, on the sides of the road, which often has to be chased by public order officers from the regional government because they are considered to violate public order.

### 4.3 Trust

The discrepancy in the duration of the trader's payment can cause a daily bank effect before receiving the profit. In effect, debts of money that run between traders and banks are daily intertwined "under the ground". In this way, legal agreements cannot be used easily, and therefore social agreements are needed. Legal agreements usually incorporate risk into the decision to participate or not to participate in the action. The inclusion of effects in decisions can be described in one word, namely "trust". Looks like Trust: The trust that has been tied between the trader and the Daily Bank doesn't just happen. The emergence of trust can be motivated by various aspects, actions, or ways. Further circumstances that can create trust:

#### a. Processual Trust

The occurrence of trust between daily banks and traders is called processual trust. Processual trust arises through the ways of social interaction formed by actors, namely traders and daily bankers. Mrs. Sumiati, while doing her job as a daily bank, said that she only gave out loans to people she already knew. That way trust is created because of intense interaction. The interaction that took place and absorbed eventually gave birth to economic action, namely the debt agreement.

#### b. Symbol-Based Trust

Abstract systems are important areas for the development of trust. Abstract system is an institutional method that explains the change of social relations through "symbolic equipment". The icon that represents the merchant's business and the Daily Bank is in the form of a place where the business resides. This means that a trader has a place to trade that is certain and resides every day. That way, an icon in the form of a place for goods that is certain and stays can be a guarantee that the trader does not want to leave. The rationale possessed by the Daily Bank is that a trader does not want to leave just because of his debt to Thithil Bank and leave his trading place. Therefore the Daily Bank thinks if you continue to be worthy and stay in place of the trader's goods then trust will continue to be created, and vice versa.

#### c. Trust Born from Intermediary Networks

Intermediary forms can arise in all areas of social life. None other than in economic action in the form of accounts payable. The intermediary that is meant is that the trader

wants to provide advice to the daily bank regarding the integrity of the traders around him. As a result, these intermediaries are the key to daily banking in distributing loans to prospective customers. Therefore, the data provided by these intermediaries is very important in determining whether the trader is eligible for a loan or not. For the Bank, the daily data provided by intermediaries is useful for reducing the effect of failing to give money.

#### **d. Contagious Belief**

Widespread trust is shown through belief in a group that determines a belief, will influence the opinions of others. The assumptions that traders have near Ibu Sulasmi's place of trading share data and have an impact on the collection of decisions. Unknowingly this belief has the impact of dependency.

#### **e. Trust Backed up by Third Parties**

The occurrence of a relationship of trust will create another closeness of trust similar to the closeness of trust that will link the guarantor as an intermediary to the business, but simultaneously the third party plays a more peaceful but more important position. Trust that is backed up by a 3rd party is a trader who already has a strong attachment to the daily Bank, as a result the trader has been trusted by the daily Bank. When the person next to the trader wants to borrow from a daily bank, so that through integrity collateral by a third party, the person next to the trader is given a loan. However, if the trader cannot protect the trust that the bank has placed on a daily basis, then the integrity of the third party will be compromised.

### **4.4 The Rise and Fall of Trust and Its Consequences**

The structure of communication experienced by donors of trust has the potential to affect the increase and decrease in trust. But not only down and up just trust. There are times when that trust cannot be created. Next is a statement thrown by Ms. Yayuk when describing her experience with a full face which means that she is angry because she is not trusted by the daily bank: Social interaction in the form of a debt agreement between traders and daily banks can lead to instability. Sometimes trust increases. But the increase in confidence does not occur in a short and instant duration. But it takes a long time to maintain and increase that trust. As in social interactions that have been tried for years because of an increase in trust on both sides. Meanwhile, what is different is when there is a decrease in trust. The reflection of diminishing trust can be observed in traders who do not regularly pay their daily dues. This will also result in a decrease in trust and will result in a new policy if the trader will not be included in a debt loan in the next period. Next is the increase and decrease in this belief giving effect to ongoing actions. Next is an explanation of the consequences:

#### **a. Tarnished Trust**



The trust that has been submitted to the acceptor of trust cannot last forever. There are times when there is a loss of trust. Depreciation of trust can be caused by inaccuracies in installment payments. That way, it will have a negative impact on that person's view. Besides that, the trust that has been tainted will end the next loan contract.

#### **b. Beliefs that Create Repeated Actions.**

The consequences of increased trust can be positive. Confidence that has stuck and originates in trust donors (daily banks) and trust acceptors (traders) will create sustainable economic activity. But in an indirect way this will affect the dependency of meatball noodle traders on daily banking.

### **4.5 Values and Norms**

Value is understood as something that is expected or not expected. On the other hand, norms are understood as norms. If it is implemented in a daily bank agreement, it can be explained in more detail later.

#### **a. Norms of Encouragement and Prohibition**

Norms can be understood as the rules of playing together that guide the behavior of a person who in this case is a trader and a Daily Bank. One of the norms applied by the daily Bank is in the form of implementing a face payment system for electronic goods worth millions. The provisions that have been formalized by the daily bank are made to protect goods that have been ordered by merchants. That way, a trader will not be legal at will if he cancels an order for an object. If there is a cancellation of the order, then the risk is that the advance payment that has been paid is scorched. On the other hand, the norms of abstinence are meant as provisions that are known in the ordinary way by a citizen or a commercial person. This taboo norm is in the form of not being allowed to borrow back when the previous loan has not been completed, so it does not only give a minus value to the daily bank. However, this will automatically interfere with the view of the trader in other groups of traders.

#### **b. Maintain Loan Contract Loyalty with Norms**

Protecting a good bond with someone can be tried by protecting the values and norms that are believed by a citizen. This is not much different from protecting the bonds of accounts payable that are strung between traders and daily banks. Especially for daily banks to continue to protect customer comfort and not switch to other daily banks. Ms. Sulasmi and Ms. Lilik frankly said that when making loans to daily banks, they never moved to other daily banks because of cool values and ethical norms. Based on the statement of the trader who carries the norms of decency and positive values that support the continuation of the agreement. Bypassing the type of unrecorded norm which means that this norm is not legalized by means of law but can be obtained by citizens. That norm is the norm of courtesy, through actions and values that support,

among others, politeness in speaking and fortitude. The values listed in the norms will create a sense of security so that traders are not easy to switch to other minds, namely to other daily banks. The result is also customer loyalty which will end in the continuity of the loan contract.

### **c. Daily bank loan rules versus formal banks (BPR)**

In carrying out its actions, the Daily Bank is not the only agency that provides loans to traders. But there are still other institutions which are also involved in providing investment services for traders, one of which is an official bank. The system applied at official banks is also not much different from the daily bank system when viewed from the installment system which is also tried every day. On the other hand, the provisions differentiate between daily banks and BPR banks. We can see the comparison between daily banks and official banks (BPR). comparison of loan agreement systems at daily banks with official banks (BPR). Each agency has its strengths and weaknesses. From the daily bank section, there are no collateral requirements but the interest rate is large. On the other hand, on the part of BPR banks, there is collateral but a small interest rate. If a trader violates the terms that have been agreed upon, then the trader will get a reward. Sanctions that arise when a commercial person cannot pay off a loan at a daily bank are not legal rewards, but social rewards. Social sanctions can be characterized as giving rewards that are not visible but can be experienced for those who receive rewards. One of the social rewards is shame. That shame means that the mercantile person looks at the values of self-esteem in himself. The social reward that exists in these traders is to make traders carry out their daily lives less confident. As a result it will affect socialization with other traders.

## **4.6 The Role of Social Interaction on Daily Bank Loans**

The bonding factors of social interaction are beliefs, networks, and norms characterized by succession and influence. Next is the explanation of the relationship accompanied by social interaction factors:

### **a. Networks that Generate Confidence and Ability**

Networks that have been established accompany traders or traders and daily banks produce data for the two actors. On the merchant's part, the data submitted by other traders affects the ability to pay. This is because the trader gets data about the daily bank which gives interest rates and the difference is very economical and the method is very simple. In addition, the network can act as a smoothing agent to carry out debt agreements where the loan is affected by the data submitted by the merchant next door. On the other hand, in the daily data bank section, this data is useful for updating services for traders according to the requests and wishes of traders. This can be shown by the purchase of objects other than cash. In addition, this network is the birthplace of a daily banking trust in traders.

### **b. Beliefs that Bind Networks and Norm Elasticity**

The trust that is built between the trader and the daily bank starts from a network. Beliefs born from networks include processual beliefs born from micro networks. After that, the trust that was born from the intermediary network is the traders in their environment as the key to daily bank data. Not only that, widespread belief makes other traders and welcomes data submitted by people next to their trade. On the other hand, the last one is trust that is backed up by a third party, which is trust that was born from the meso network. The network that creates that belief is then tied together with the belief. If a bond of belief continues to become familiar so that it will make the umpteenth action and vice versa. When mutual trust is created between the trader and the daily bank, negotiations can be attempted. The negotiations that took place were promises of installment payments. That way, beliefs that can influence norms.

### **c. Norma Mobilizes Confidence and Maintains Networks**

The operation of the loan contract is not only based on mutual trust, but requires provisions that have been trusted by traders and daily banks as the pioneers of debt action. Coupled with the program that is applied by the Bank every day is to pay attention to the views of positive values so that these provisions continue to run easily. These values include courtesy in speaking and calm when merchants postpone installment payments. In addition, the Bank's daily actions are not to confiscate merchant goods if there is a failure to give money. In fact, the daily Bank is acting resigned to the budget it has lent it. That way, this is what will protect the obedience and comfort of traders. As a result, you could say that a network can be maintained by norms. In a shorter way, if the dependency of ties in the elements of social interaction. There is a bond of succession associated with social interaction factors. In theory, a network will be bound by beliefs and maintained by norms. That subject is interpreted by the box it's in on. On the other hand, the implication is that a network will generate attachments and those attachments will share data. On the other hand, the information will give birth to an innovation. Things generated in this network will be bound by beliefs through icons, intermediaries, and third parties. After that, the networks that have been bound by these beliefs will be driven by norms through rules, negotiations, values and elasticity. Furthermore, this rule will maintain the network created by traders and daily banks. That way, the factors of social capital cannot stand alone, but there is a bond of interdependence between one factor and another. When these three factors are carried out, the loan contract between the trader and the daily bank will continue.

## **4.7 Linkage of debt to merchant business continuity**

In order to recognize the impact of daily bank loans on the sustainability of the merchant's business, the first thing to know is what the loan money is used for. Whether the entire budget is used for venture capital or not. After knowing the use of loan funds from daily banks, which are quite diverse. As a result, the effect on traders cannot be known with certainty how it will affect their business because it is influenced by other factors. However, based on the various responses, one can observe the factors that

influence the sustainability of traders, which are not only influenced by the daily interest rate on bank loans. if there are factors that influence the sustainability of the trader's business. These factors can be grouped into 2, namely internal aspects and external factors. Rather than covering the pattern of using funds that are not only used as business capital, but also used as payment for medical treatment for children's education and others. Not only that, the belief (whisper) about the worthlessness and lastly is the trader's listing system that doesn't comply, so that traders often don't know the advantages and disadvantages of an effort. On the other hand, from the outside, it includes Bank Thithil loan installments with large interest rates, a lack of clients due to market shocks due to the separation of Covid-19 and online lectures which have caused students to be unlucky, and an increase in basic materials due to an increase in fuel oil, including oil shortages. fry. The linkage of these factors to the trader's efforts can be characterized by profit, injury, or the effort continues without recognizing profit and loss.

## 5 Conclusions And Suggestions

### 5.1 Conclusion

Based on the conclusions of the problems that have been made and the reviews that have been presented, it can be concluded that:

#### **1. Social interaction plays a big role in making traders sort the Daily Bank from within the official:.**

1. Observed from the network, the familiarity of individual bonds makes noodle and meatball traders feel safe borrowing from Daily Banking. In addition, loan innovations in the form of purchasing goods other than cash loans are intended to protect the network from daily banks.
2. Trust is built from mutual confidence. So that if there are difficulties in repaying, they can easily and quickly carry out the negotiation stage.
3. The positive values and norms agreed to support the loan contract are running. Apart from that, there is an interesting discovery about the figure of the Daily Bank that cares about the value side of producing results which is something special and different because it is in contrast to the public's opinion so far about daily banking which is dominated by negative public opinion. The daily banks that were found did not carry out confiscations or auctions of assets or houses, and even pretended to be cool when the merchant made a payment promise and gave up when the seller failed to repay the loan.

#### **2. The linkage of debt to the sustainability of the trader's business can be profitable and harmful.** This is related to the internal and external aspects.

## 5.2 Suggestion

First, official financial institutions should carry out corrections to related traders with administrative fees in installments. The penitentiary explains that the administration fees charged when making loans at official financial institutions are not regular payments.

Second, there is a need to form a noodle and meatball trader cooperative which is expected to provide access to investment in cooperation with regional authorities and provide guidance to the traders Noodle and meatball traders regarding the advantages of noodle and meatball trader cooperatives, explaining the analogy between cooperatives and daily banks, cooperative caretakers attend directly to traders who are seen being visited by daily banks, and share various explanations about the facilities for traders to obtain budget loans or capital.

Third, access to KUR (People's Business Credit) needs to be continued to distribute capital injections to small traders so that they are not entangled in Daily Banks. In addition, corrections should be made to traders if KUR is not subject to administration fees and compensation if a payment agreement is made

## 5.3 A Subsection Sample

Please note that the first paragraph of a section or subsection is not indented. The first paragraphs that follows a table, figure, equation etc. does not have an indent, either.

Subsequent paragraphs, however, are indented.

**Sample Heading (Third Level).** Only two levels of headings should be numbered. Lower level headings remain unnumbered; they are formatted as run-in headings.

*Sample Heading (Forth Level).* The contribution should contain no more than four levels of headings. The following Table 1 gives a summary of all heading levels.

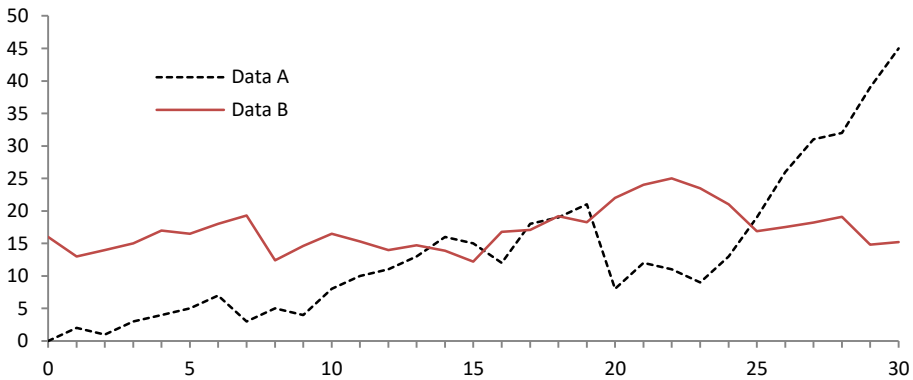
**Table 1.** Table captions should be placed above the tables.

Heading level	Example	Font size and style
Title (centered)	<b>Lecture Notes</b>	14 point, bold
1 <sup>st</sup> -level heading	<b>1 Introduction</b>	12 point, bold
2 <sup>nd</sup> -level heading	<b>2.1 Printing Area</b>	10 point, bold
3 <sup>rd</sup> -level heading	<b>Run-in Heading in Bold.</b> Text follows	10 point, bold
4 <sup>th</sup> -level heading	<i>Lowest Level Heading.</i> Text follows	10 point, italic

Displayed equations are centered and set on a separate line.

$$x + y = z \tag{1}$$

Please try to avoid rasterized images for line-art diagrams and schemas. Whenever possible, use vector graphics instead (see Fig. 1).



**Fig. 1.** A figure caption is always placed below the illustration. Short captions are centered, while long ones are justified. The macro button chooses the correct format automatically.

For citations of references, we prefer the use of square brackets and consecutive numbers. Citations using labels or the author/year convention are also acceptable. The following bibliography provides a sample reference list with entries for journal articles [1], an LNCS chapter [2], a book [3], proceedings without editors [4], as well as a URL [5].

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# Law And Science 5.0

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**Abstract.** In the improvement of the economy of Indonesia, it is often only based on the economic value of course. On the stages is thus, not everything that is related to the economy associated with the value of the currency. In that context, the economy according to the Legislation of the Republic of Indonesia Year 1945 connected with the ability of the state to keep society and form of government. The concept of the welfare state tend to be on the protection of the state oriented economic improvement. Often the problem is not resolved because of a mistake in giving the solution. This means that there is a change in the ability of the economy to make it stronger for its own life. The legal drafter major have the ability to form laws and regulations but do not have an analysis in a democratic economy. This results in a weakness in access to information related to academic text data, so collaboration with the community is needed so that the economic basis is to reduce the graph of ignorance in forming laws.

**Keywords:** Law, Science, Democracy.

## 1 Introduction

In the improvement of the economy of Indonesia, it is often only based on the economic value of course. On the stages is thus, not everything that is related to the economy associated with the value of the currency. In that context, the economy according to the Legislation of the Republic of Indonesia Year 1945 connected with the ability of the state to keep society and form of government. The concept of the welfare state tend to be on the protection of the state oriented economic improvement.[30] Often the problem is not resolved because of a mistake in giving the solution. This means that there is a change in the ability of the economy to make it stronger for its own life.

Such changes can actually show that the entity of economic democracy is something that is absolute in nature. Philosophically, democracy is a form of government, but it can influence all aspects of the state [19]

Note Section 33 of the constitution of the Republic of Indonesia Year 1945 stated that the Economy is structured as a joint effort based on the principle of kinship; brother-branches of production which are important for state and controlling the lives of many people controlled by the state; the Earth and water and natural resources contained therein are controlled by the state and used for the greatest prosperity of the people; national economy based on economic (View of Unraveling the Importance of Democracy in Formation Legislation, n.d.) Democracy with the principles of

togetherness, efficiency, equitable, sustainable, environmentally sound, self-reliance, as well as to maintain the balance of economic progress and national unity; and further provisions regarding the implementation of this article shall be regulated in the legislation [1]. This research is very important because it will result in government openness that will include elements of the economy in forming legislation. When the economy improves, the laws and regulations are effective.

From the article there is a merging of smart financial economic value with a form of government which applies vice versa. The presence of this conflict raises the question of the research is how the completion of the economic problem if solved from the standpoint of the forms of government.

Based on the background of the problem above, the objectives of this study are: (1) to find out elements of the economy in forming legislation in the legal drafter major, (2) to develop a accessible data for community.

## **2 Literature Review**

### **2.1 Improvements In Economic Democracy**

In this section, economic democracy is not actually a part of the form of government but is like a kind of name but its validity is small [14]. The literature suggests that institutions and institutional constraints are essential for sustaining democratic regimes.

The recent economic and health crises have stimulated much interest in alternative systems of socio-economic organisation [29] Work organisations' roles within the public and private spheres, the interplay between the individual and the social, democracy aspects and the market economy are being questioned, while the necessity, type, and priorities of economic growth are strongly re-examined [20]. Particularly in poor countries, the viability of democracy is strongly dependent on institutional inheritance. The rule of law is mentioned as one of the most critical factors for democracy and democratization. Firstly, the law provides powers for governments, but at the same time regulations constitute legal enforcement of the adequate limits of those powers [13] The concepts of economic democracy are often interpreted as a welfare state but that meaning is not part of the democracy adopted in Indonesia. In the principle of separation of powers, it is known that the separation is not pure but there is a supervisory role of each power. Economic development does expect the creation of prosperity. In fact, even the broader concept of 'sharing society' has been defined by few as 'an open economic and social system in which information technology is leveraged to empower [agents] with data that are shared, reused and transformed [23]. However, prosperity can be understood differently by each individual. This happens because in the process towards prosperity, humans do not live alone but live together in society. Thus, the availability of goods for humans needs to be regulated and guaranteed through property rights regulations. (Nurul Hikmah, 2021)

Economic democratic property forms a hybrid of individual and collective property. On the one hand, individual owners participate in the privately organized market with free choice of occupation and income incentives. On the otherhand, individual property mixes with common property [17]

## 2.2 Perspectives Of Norms And Economic Sustainability

Perspective or norm is continuous development of social relations entails the need for constant legal regulation improvement, so that it corresponds to the realities prevailing in society [5]. Such a perspective is wrong because the settlement of the problems in Indonesia tend to be on the economical aspects. Note again the phrase “national economy based on economic democracy with the principles of togetherness, efficiency, equitable, sustainable, environmentally sound, self-reliance, as well as to maintain the balance of economic progress and national unity”[1]. The discussion of the details related to the principles of togetherness that is the problem solved together to enjoy together. But the way it becomes chaotic when the problem that caused a person has the effect of joint and resolved together. If togetherness is the social contract that pure? [24]. The purity of the social contract actually lies in a person's consciousness that he was not able to. The principles of togetherness also became the foundation of thought in creating the welfare state. In the next sentence, the principles of togetherness directed on the efficiency of justice. Meaning the efficiency of justice also could not be attributed to the implementation of a fast but how about a short time produces legal implications are huge [18].

In the state of the concept of the protection of the law based on the social contract this shows that the role of government through the establishment of the law to protect the interests of the debtor which is also reflected in the value contained in the precepts of social justice for all Indonesian people based on and inspired by the Precepts of God [5], just And Civilized Humanity, the Unity of Indonesia and Democracy guided By the inner Wisdom In Deliberation/Representation. In the fifth sila of contained values which is the purpose of the state as a goal in life together. Therefore, in the fifth principle contained in the values of justice embodied in the common life (social life)[4]. Justice is animated and based on the nature of justice, humanity is justice in human relationships and himself, a human with another human, a human with the community, the nation and the country as well as the human relationship with God Almighty[11]. While in the association between nations, aims to create the world order based on freedom, lasting peace, and social justice. The realization and protection of fairness in living together in a country, requires the state to create a law. In that sense, then the state of social justice should be based on law, which shall recognize and protect the human rights listed in the constitution of the Republic of Indonesia Year 1945 [21]. Starting from the values of social justice contained in the fifth principle, namely Social Justice For All Indonesian People then it can be understood that the value of justice are contained in the constitution of the state of Indonesia that is the basic Law of the Republic of Indonesia Year 1945 [2]

Environmentally sound has meaning to produce a generation that respects the environment. If the damage then the damage should be associated with appropriate sanctions. The power of sanctions should be measurable so that they can provide a deterrent effect that good [9]

Pay attention to the Stockholm Declaration of 1972 that regarding the issue of environment and development which:

1. Principle 1: Human beings have rights to freedom, equality and the conditions of life offered, in a quality environment that allows for a dignified and prosperous, and he holds a sacred responsibility to protect and improve the environment for present and future generations. In this respect, policies promoting or perpetuating apartheid, segregation racial, colonial, and other forms of oppression and foreign occupation condemned and must be eliminated.
2. Principle 2: the earth's natural resources, including air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through the planning and management of carefully and according.
3. Principle 3: the Capacity of the earth to produce vital resources that can be renewed must be maintained and, wherever it is implemented, restored and enhanced.
4. Principle 4: the Man has a special responsibility to safeguard and wisely manage the heritage of wildlife and its habitat, which are now completely extinct by a combination of factors that harm. Nature conservation, including wildlife, must be received for its importance in planning for economic development.
5. Principle 5: the earth's resources that cannot be renewed should be used in such a way as to keep out of danger exhausted their future and to ensure that the benefits of that kind of work is also owned by the mankind.
6. Principle 6: the Disposal of toxic substances or other substances and the release of heat, in a large amount or concentration that exceeds the capacity of the environment which is safe and harmless, must be halted in order to ensure that the damage can not be repaired again no impact on the ecosystem. The struggle of mankind from the State that are prone to pollution should be supported.
7. Principle 7: the State should take all steps possible to prevent the pollution of the seas by substances that are liable to harm the health of human life and marine life, facilities undermine or conflict with the utilization of sea other lawful.
8. Principle 8: the economic and social Development is very important to guarantee a good life and working environment for man and for creating conditions on earth that are necessary for improved quality of life.
9. Principle 9: Defisiansi environment caused by conditions due to the development and natural disasters pose a problem deadly and the most good can be overcome by accelerated development through the transfer of financial and technological assistance in large quantities as a complement to the efforts of the State in developing countries and kind of timely assistance to the extent necessary.
10. Principle 10: For developing Countries, stability of prices and adequate income for primary commodities and raw materials is very important for the management of the environment, because it factors the economic as well as ecological processes must be considered.
11. Principle 11: the environmental Policies of all States should enhance and not be detrimental to the potential construction of the now or the future of the Country-a developing country, also should not hamper the achievement of better living conditions for all, and appropriate measures must be taken by nations and international organizations with a view to reaching an agreement on the possibility

of meeting national and generate economic consequences as a result of the application of environmental measures.

12. Principle 12: resources should be made available to preserve and improve the environment, taking into account the circumstances and particular requirements of developing Countries and the cost of the brethren may come from those who incorporate environmental protection into development planning and the need for supplies for them, after their request, additional international assistance in financial and technical for this purpose.
13. Principle 13: In order to achieve the management of the more rational and thus the resources to improve the environment, States should mengadopsipendekatan integrated and coordinated planning for their development to ensure that development is compatible with the need to protect and improve the environment for the benefit of their population.
14. Principle 14: the rational Planning constitutes an essential tool for reconciling any conflict between the needs of development and the need to protect and improve the environment.
15. Principle 15: the Planning must be applied to human settlements and urbanization with the aim to avoid adverse effects on the environment and benefit the social, economic, and environmental maximum for all. In this case the projects are designed curved to colonialist and dominasirasis should be abandoned.
16. Principle 16: Demographic policies which are without prejudice to the rights of man and are deemed appropriate by governments concerned should be applied in those regions where the rate of population growth excessive tend to have an adverse impact on the environment of human life and mengambat development.
17. Principle 17: national Institutions the right to be entrusted with the task of planning, managing or controlling the 9 environmental resources Countries with the intention of improving the quality of the environment.
18. Principle 18: Science and technology, as part of their contributions to economic and social development, must be applied to the identification, avoidance and risk monitoring of the environment and solving environmental problems and for the common good of mankind.
19. Principle 19: Education in environmental issues, for the young generation and also of the adults, giving consideration to the poor, it is important to broaden the base in the enlightenment opinion and responsible for individuals, enterprises and communities in protecting and improving the environment in the full dimensions of this man.. It is also important that the communication of the mass media contribute to avoid damage to the environment, but on the contrary, disseminates information of the nature of education on the need to project and improve the quality of the environment in order to allow the growing in all things.
20. Principle 20: Research ilmiah and development in the context of environmental problems, both national and multinational, must be promoted in all Countries, especially developing Countries. In this connection, the free flow of scientific information that follows the development and transfer of experience must be supported and assisted, to facilitate the settlement of environmental problems; environmental technologies should be made available for developing Countries in

the things that push spreader of the area without becoming a burden to the economy in developing countries.

21. Principle 21: the Countries have been in accordance with the Charter of the United Nations and principles of international law, the sovereign right to exploit the resources of their own in accordance with the policy of their own environment, and the responsibility to ensure that activities within the jurisdiction or control they do not cause damage to the environment of other Countries or areas beyond the limits of the jurisdiction of the national.
22. Principle 22: the Countries will work together to develop further international law regarding liability and compensation for victims of pollution and other environmental damage caused by activities dalamyuridiksi or supervision of these Countries to the outside of the jurisdiction they are.
23. Principle 23: Without prejudice to such criteria can be agreed upon by the international community, or to standards which should be determined nationally, it will be important in all cases to consider the systems of values prevailing in each Country, and the extent to which the implementation of standards that apply to the Countries that are most advanced, but that may be a social burden improper and uncalled for developing Countries.
24. Principle 24: international Issues concerning the protection and improvement of the environment should be handled in a spirit of cooperation by all Countries, big and small, on an equal footing. Cooperation multilateral or bilateral through the settings or other means appropriate is very important in controlling, preventing, reducing, and eliminating effectively the adverse impact of the environment due to the activities carried out in all the fields, in such a way that the impact on the value of a is taken of the sovereignty and interests of all states.
25. Principle 25: Countries should ensure that international organizations perform the role of a coordinated, efficient and dynamic for the protection and improvement of the environment.
26. Principle 26: Humans and the environment must be spared the effects of nuclear of all kinds of mass destruction. The state should strive for the urgent achievement of the agreement, in organs relevant international, about the removal and completion of crusher such weapons [22]

The latter is self-reliance, as well as to maintain the balance of economic progress and national unity. Independence and balance economic progress and national unity is an absolute thing that menajdik economic influence tightly over the form of government [6]. Third it will be an important point of understanding the meaning of the economy where the authority to change it into the realm of the state.

### 3 Methods

This research is qualitative research and normative research. Where data related to the internal and external analysis of the legal drafter Major were obtained through survey to students, interviews with lecturers and the administration department and related documents from the legal drafter Major [25]

According to Joao Leite Ferreira-Neto, it should lead the researcher to the choice of strategies, instruments, and arrangements. Because of that, the method understood as the path towards a result is not an a priori of the research. On the contrary, it is something that can be reviewed, rectified, or changed during the research process [7]

So this research includes a conceptual study because the researcher conducted a normative study based on legal interpretation and data obtained through the Central Statistics Agency of the Republic of Indonesia [8]. This means that the acceptance of the method is not centered on normative legal studies or empirical legal studies. The importance of understanding legal research with data will result in conceptual studies with different novelties. This conceptual study must adapt to the written work [26]. It is wrong when the work adapts to the literature so that a conceptual study occurs that does not meet the newness of the latest information.

## 4 Results And Discussion

**Table 1.** SWOT Matrix

	<b>Strenght</b>	<b>Weakness</b>
	<ol style="list-style-type: none"> <li>1. <b>knowledge of government</b></li> <li>2. <b>knowledge of economics from a legal perspective</b></li> <li>3. <b>knowledge of economic knowledge in economics perspective</b></li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Government organizations</b></li> <li>2. <b>Community organizations engaged in government</b></li> <li>3. <b>Education</b></li> </ol>
<b>Opportunity</b>	SO	WO
<ol style="list-style-type: none"> <li>1. <b>Accessible data</b></li> <li>2. <b>Accessible academic texts</b></li> <li>3. <b>Collaboration across government organizations</b></li> </ol>	<ol style="list-style-type: none"> <li>1. Encourage knowledge to take good knowledge</li> <li>2. Create legal drafter application for public with easy guideline</li> </ol>	<ol style="list-style-type: none"> <li>1. Improve collaboration</li> <li>2. Improve reliable information</li> </ol>
<b>Threat</b>	ST	WT
<ol style="list-style-type: none"> <li>1. <b>Fund</b></li> <li>2. <b>Technology</b></li> <li>3. <b>Community</b></li> </ol>	<ol style="list-style-type: none"> <li>1. There are no guideline for legal drafter to implement knowledge of economic</li> <li>2. State can not keep up</li> <li>3. Community can not keep up</li> </ol>	<ol style="list-style-type: none"> <li>1. The quality of online access</li> <li>2. Education for all community</li> </ol>

Sometimes the state to be closed because of the form of government is not in accordance with the development of the era. Sometimes also the form of government affects the development of the economy of a nation. In this case what the state must be transformed into a unity between society and the state [3]

Citing the opinion of Jean Jacques Rousseau, when people want to earn a good life then they do the deeds of the social contract. That is their inability to be incorporated in the form of the same. Most people can only refuse but they definitely need because of the problems of life always appear. When the happening of the social contract then it is not what is legal for example do the written agreement or any sanctions if violated. The absence of a written agreement or sanction actually shows that the social contract

is mengarahh to submission to the state. Many things are done in the social contract, among others:

1. Education is not fulfilled will become an obstacle to the progress of society. They believe that society should be equivalent to the leader because it can't always be in the line low.
2. Health remains must be maintained to prevent the destruction of mankind. When health becomes the main element then the human can be so homo homini lupus. Destruction of human health and is not the health in the actual sense but in the inability to control himself. Man will be free and no one has power over him except himself.
3. Relationships who want to be more narrow because of the absence of trust of other people. They form a group-the group that gave rise to the leaders in it.

The third thing above can actually be resolved when the state is able to choose the form of government proper. In Indonesia, a democratic election often happens according to the will. Anyone can give a definition of democracy for example when the state religion was in a state of complicated then it appears the flow of democracy religion. If religion can be compared with democracy? When that happens, then democracy will be the religion of the more chaotic because democracy has the meaning of bad in the thought of Socrates or Aristotle [10]

With the hope of creating a growing economy. Deliberative democracy [12] to be very fair when its inability to solve the problems of the group. The presence of small things is an excess of deliberative democracy. Democracy has similarities with deliberation typical of Indonesia. Democracy can only be applicable when the sound of one person to be interesting to be discussed. One man's desire to remain taken into account without harming the interests of the other. A legal perspective explains that democracy in Indonesia is not democracy that is rooted in relationships of power. Democracy in Indonesia is an absolute thing that shows that Indonesia has always solve the problem together [16]

The economic element in the formation of laws and regulations is very important because the development of the country leads to economic efficiency. This is also in line with the SWOT analysis where having knowledge related to governance and community participation will result in legislation that fulfills legal objectives.

## 5 Conclusion

The legal drafter major have the ability to form laws and regulations but do not have an analysis in a democratic economy. This results in a weakness in access to information related to academic text data, so collaboration with the community is needed so that the economic basis is to reduce the graph of ignorance in forming laws



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# An Added Value of Chili Processing Results in Providing Contribution for SMEs

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**Abstract.** Chilli processing SMEs in Indonesia are currently diverse and developing various derivative products. One of the chilli processing products produced by SMEs is bottled chilli sauce. Processing of chilli commodities can support an increase in the volume of imports of processed chilli products and can increase the added value of an SME. This study aims to determine the added value of chilli processing into bottled chilli sauce at various raw material price levels. The research location was chosen purposively at Silvana Food SMEs. The method used to determine the level of added value in SMEs in this study uses the Hayami method. The results show that high added value occurs when the price of cayenne pepper and red chilli is normal, namely cayenne pepper (Rp. 25,000) and red chilli (Rp. 20,000). At this price level, 50% added value is added to processing packaged chilli sauce. The simulation results of raw material prices for cayenne pepper and red chilli at different price levels provide different values. To maintain income stability and added value, SMEs must partner with farmers to obtain constant raw material prices.

**Keywords:** Added Value, Chili Processing, SMEs.

## 1 Introduction

The food crops and horticulture sub-sector is one of the sub-sectors in agriculture. There are several sub-sectors in the agricultural sub-sector, including the plantation, livestock, forestry, and fisheries sub-sectors. Types of horticultural crops include fruits, vegetables, and ornamental plants. The existence of these plants is fundamental because the human body needs various types of substances. The content of these substances includes vitamins, minerals, and dietary fiber. Some examples of horticultural plant commodities are vegetables, such as tomatoes, eggplants, cucumbers, and chilies [1].

One type of vegetable that is exceptionally strategic and has a relatively high economic value is chili. Chili (*Capsicum annum* L.) has reasonably high adaptability. This plant can be cultivated in various locations, such as highlands and lowlands. In Indonesia, the chili commodity land area reaches 187,955 ha with a total production of 1.51 tons and a total consumption of 7.8 tons per ha [2]. According to the results of the National Socio-Economic Survey (SUSENAS), the types of chili consumption in Indonesia consist of red chilies, green chilies, and cayenne peppers. Chili consumption

per capita per year is relatively stable, with a growth rate of 0.44% per year [3]. The majority of people use chili as a food flavoring ingredient. In addition, chili companies are used as raw materials for the food industry, such as instant noodle companies and chili sauce companies [4].

Chili commodities contribute to inflation, and price increases can increase inflation [5]. Chili production is not evenly distributed throughout the year because chili productivity depends on the season. In the rainy season, chili production decreases, but the price offered increases. In the dry season, chili production increases but causes chili prices to fall [6]. Production in the dry season results in losses because sometimes chilies still have yet to be sold out and will experience decay over time [7]. Prices can be stable if supply and demand balance [8]. Processing to extend the shelf life of a chili product, such as dried chili, chili powder, and chili sauce, can be done to minimize losses [9].

An SME is considered capable of increasing the income of agribusiness actors, encouraging the creation of new industries, and supporting national development [10]. Agro-industrial development is needed to be able to support development in the economic sector and realize people's welfare [11]. Indonesian people are considered relatively low in knowledge and ability to process a product. Most of the exported agricultural commodities are raw materials, with percentages reaching 71% - 75%. That shows that only 25% - 29% of agricultural products are exported in the processed form [12].

Chili processing SMEs in Indonesia are currently diverse and developing various derivative products. One of the chili processing products produced by SMEs is bottled chili sauce. Sambal bottle is a processed product derived from good quality and fresh chili. Usually, in the processing of chili sauce, the majority of the types of chili used are red chili and cayenne pepper. That is because this processing can maximize the utilization of chilies to obtain added value to chili commodities [13]. This chili sauce is included in finished processed products ready to be consumed as a food companion.

The processing of chili commodities can support an increase in the volume of imported chili products. From 2000-2015, the volume of imported processed chili products increased to 8.94% per year [3]. In addition, the processing of chili commodities can increase the added value of an SME. Value added is adding value to a product after processing, which will produce a higher value than before processing. The purpose of added value analysis is to determine the level of added value contained in processed agricultural products. Profits in an agro-industry can be determined by reducing the total profit from one kilogram of processed raw materials and the costs incurred by the agro-industry in one production process [14]. The added value of chili processing SMEs can be identified using the added value analysis of the Hayami method.

Based on the potential possessed, the processing of chili commodities will provide added value to a product. Therefore, this study aims to determine the added value of chili processing into the packaged bottled sauce at various raw material price levels. It is hoped that this research can provide an innovation in the development of processing of agricultural products to increase added value and profits in SMEs.

## 2 Methods

This study analyzes added value to determine the level of added value in processed agricultural products in SMEs. The location for this research was chosen purposively, namely in Silvana Food chili processing SMEs. The data collection method was carried out by interviewing the key speaker, the Owner of Silvana Food, using a questionnaire. The questionnaire contains the identity of the SMEs and the situation or situation in chili processing SMEs. The primary data that becomes the variables analyzed include production capacity, the number of raw materials used, labor, labor wages, product output prices, raw material prices, and other input prices. Secondary data was obtained from several references or literature, including journals, supporting books, and BPS publications.

This study used the quantitative approach to determine the level of added value in chili-processing SMEs using the Hayami method. Analysis of added value can be determined using the Hayami method through equation [15]:

$$\text{Value added} = f(K, B, T, U, H, h, L)$$

Where:

K = Production capacity

B = Amount of raw materials used

T = Labor Involved

U = Labor wages

H = Product output price

h = Price of raw materials

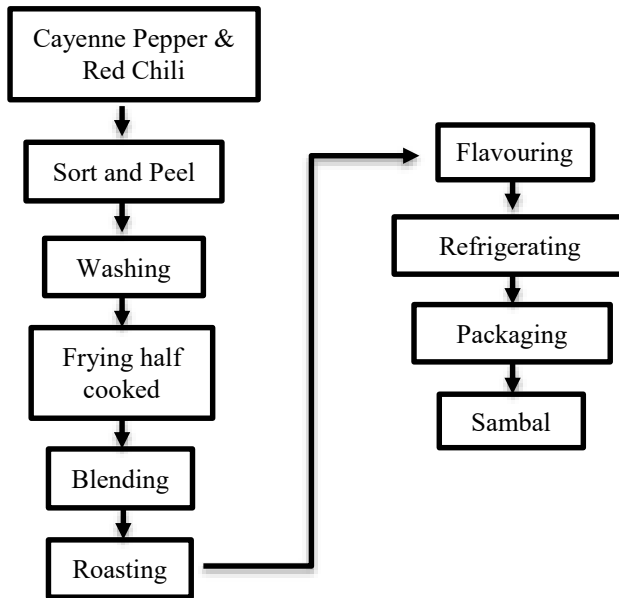
L = Prices of other inputs

## 3 Result and Discussion

### 3.1 Profile of Silvana Food SMEs

Silvana Food is one of the SMEs that processes horticultural agricultural commodities into various packaged sauces branded "Numani." This Sambel Boran is inspired by the typical Lamongan food, "Boran Rice". The idea of creating packaged Sambel Boran arose because Nasi Boranan food was rare or non-existent in other areas. With the creation of sambel boran in the form of packaging, it is hoped that it can relieve the homesickness of Lamongan residents who migrate to other areas and be used as typical Lamongan souvenirs apart from Wingko and Milkfish Brains. Silvana Food produces various types of packaged sambal. There are six sambal variants: Boran Sambal, Onion Sambal, Plow Sambal, Anchovy Sambal, Klotok Fish Sambal, and Tuna Sambal. In addition to various kinds of chili sauce, they produce various snacks such as rolled gapit, jeber gapit, and amplang.

### 3.2 Processing Procedure



**Fig. 1.** Chili Processing Procedure

The recipe for the ingredients used in making packaged boran sauce requires ingredients, including the primary raw materials: cayenne pepper and red chili. Other ingredients include shallots, garlic, various spices (pecans, galangal, ginger, turmeric, kencur, coriander, and cumin), cooking oil, sugar, and salt.

In Fig. 1, the processing of boran sauce is as follows: the ingredients to be used are sorted and peeled, peeled, and drained. The ingredients are half-cooked to remove the water content because the packaged sambal should not contain any water. After frying, the ingredients are blended to make them smooth with cooking oil. The delicate ingredients are roasted/sautéed for 3-4 hours, after which they are finished adding sugar, salt, and flavorings. Try the chili sauce; if it is enough, the stove can be turned off. The finished chili is cooled for 10-12 hours, after which it is put into bottles. Finally, the sticker on the packaging and seal is installed.

### 3.3 Added Value Generated at Various Chili Price Levels

Value added is the additional value obtained from processing raw materials into finished or semi-finished materials. Economically, increasing the added value of a product can be done in four ways: form utility, place utility, time, and position [16]. Silvana Food SMEs are now involved in the business of various packaging sauces, as previously presented. The primary raw material in the manufacture of chili sauce is cayenne pepper, which produces a spicy taste. As the primary raw material for various chili sambal products, sometimes the price of cayenne pepper is volatile.

Processing of boran sambal requires Rp. 25,000 for raw materials in the form of cayenne pepper with contributions of Rp. 360,600 for other inputs, which include large

chilies, shallots, garlic, candlenuts, galangal, turmeric, kencur, coriander, cumin, oil, and salt. The selling price offered is IDR 25,000/unit of boran sambal. In one production run, Silvana Food SMEs can produce 62 units of boran sauce with a raw material input requirement of 2 kg of cayenne pepper. The number of workers required to process this boran sauce is three people. The required conversion factor is 31 units of chili sauce, which shows that every 1 kg of cayenne pepper produces 31 units of chili sauce. The labor coefficient obtained is 1.5, meaning that labor use in the Silvana Food SMEs is classified as efficient. That is because the raw material needed in large quantities is 2 kg of cayenne pepper, resulting in a relatively small labor coefficient value. The more raw materials are used in processing a product, the value of the resulting labor coefficient has a smaller value [17]. The average wage for each worker earns IDR 25,000 for one production.

Analysis of the added value of processing cayenne pepper into boran sauce in this study, various price simulations will be presented. The results of the analysis of the various price simulations in question are presented as follows:

#### **Simulation 1; Rawit Chili prices and Red Chili prices are Regular.**

The price of Cayenne Pepper in Lamongan usually is around IDR 25,000. In simulation 1, it is assumed that the price of cayenne pepper is average, and the price for red chili is also standard (Rp. 20,000). Based on Table 1, the added value obtained at Silvana food SMEs, assuming the regular price of cayenne pepper and red chili is IDR 20,000, the added value obtained is IDR 389,400 with a ratio of 50%. That shows that Silvana Food SMEs is included in the high category. SMEs with a value-added ratio of >40% are included in the high category [18].

The value-added of sambal boran also generated from labor income or compensation of IDR 37,500 or 10%. The added value contribution of chili processing to Silvana Food SMEs, namely the profit obtained for every 1 kg of cayenne pepper processed into 31 units of sambal boran, is IDR 351,900 or with a profit rate of 45%. The total margin from production factor fees is IDR 750,000 for every 1 kg of cayenne pepper processed into boran sauce. In the total margin, there is 5% of labor income and 48% contribution of other inputs.

#### **Simulation 2; the price of Cayenne Pepper is medium, and Red Chili is regular.**

The increase in the price of cayenne pepper will certainly affect the level of profit and added value generated by the SMEs. In this second simulation, it is assumed that the price of Cayenne Pepper will increase to Rp. 60,000, but the price of Red Chili will not increase too. Based on Table 1, the added value obtained by Silvana Food SMEs, with this assumption, is IDR 354,400, with a ratio of 46%. Silvana Food SMEs are included in the high category, > 40% [18]. The selling price is fixed at IDR 25,000/unit of boran sambal.

In the added value generated from sambal boran, IDR 37,500 of labor income or a labor reward of 11%. The value-added contribution of chili processing to Silvana Food SMEs obtained a profit of IDR 316,900 or a profit rate of 41%. The total margin from production factor fees is IDR 715,000, with 50% contribution from other inputs.

**Simulation 3; the price of Cayenne Pepper is high, and Red Chili is regular.**

In this third simulation, the price of cayenne pepper increases to Rp. 120,000, but the regular red chili price is Rp. 20,000. The selling price offered is IDR 25,000/unit of boran sauce. Table 1 shows the added value obtained at Silvana Food SMEs, where it is assumed that the price of cayenne pepper increases to Rp. That shows that the Silvana Food SMEs is included in the medium category. SMEs with a 15-40% value-added ratio is included in the medium category [19].

Labor income of IDR 37,500 labor income, or a labor benefit of 13%. The profit obtained as a contribution to the added value of Silvana Food is IDR 256,900 or with a profit rate of 33%. The total margin from production factor fees is IDR 655,000 for every 1 kg of cayenne pepper processed into boran sambal. In the total margin, there is 55% contribution of other inputs.

**Table 1.** Price Simulation Results on Boran Sambal Processing

No	Variable	Price Simulation Results				
		1	2	3	4	5
<b>Output, Input, Price</b>						
1	Output/total production (unit)	62	62	62	62	62
2	Raw material input(kg)	2	2	2	2	2
3	Labor input (HOK)	3	3	3	3	3
4	Conversion factor (unit/kg body weight)	31	31	31	31	31
5	Labor coefficient (HOK/kg RM)	1,5	1,5	1,5	1,5	1,5
6	Product price (IDR/unit)	25.000	25.000	25.000	25.000	25.000
7	Average labor wage per person (IDR/HOK)	25.000	25.000	25.000	25.000	25.000
<b>Revenue and Profits</b>						
8	Raw material (RM) input prices (IDR/kg BB)	25.000	60.000	120.000	60.000	120.000
9	Contribution of other inputs (IDR/kg BW)	360.600	360.600	360.600	450.600	636.600
10	Product value (IDR/kg RM)	775.000	775.000	775.000	775.000	775.000
11	a. Value added (IDR/kg RM)	389.400	354.400	294.400	264.400	18.400
	b. Value added ratio (%)	50%	46%	38%	34%	2%
12	a. Labor income (IDR/unit)	37.500	37.500	37.500	37.500	37.500
	b. Labor benefits (%)	10%	11%	13%	14%	204%
13	a. Profit (IDR/unit)	351.900	316.900	256.900	226.900	-19.100
	b. Profit rate (%)	45%	41%	33%	29%	-2%
<b>Remuneration for Production Factors</b>						
14	Marjin	750.000	715.000	655.000	715.000	655.000
	a. Labor income (%)	5%	5%	6%	5%	6%
	b. Contribution of other inputs (%)	48%	50%	55%	63%	97%
	c. Company profit (%)	47%	44%	39%	32%	-3%

Source: Primary data processed (2022)

**Simulation 4; the price of Cayenne Pepper is medium, and the price of Red Chili is medium.**

The fourth simulation assumes that an increase also follows the price of Cayenne Pepper in Red Chili. In this simulation, the price of cayenne pepper becomes Rp.



60,000, and the price of Red Chili is IDR 50,000. Based on the price simulation, Sambal boran processing requires IDR 60,000 for raw materials in the form of cayenne pepper, with another input contribution of IDR 450,600. The selling price offered is IDR 25,000/unit of boran sambal. Based on Table 1, the added value obtained is IDR 264,400, with a ratio of 34%. An SME has a 15-40% value-added ratio, so it is included in the medium category [19].

Labor income of IDR 37,500, labor income, and 14% employee benefits. The added value contribution for SMEs is the profit earned in IDR 226,900, or with a profit rate of 29%. The total margin obtained from production factor fees is IDR 715,000. In the total margin, there is 5% of labor income and a contribution of other inputs of 63%.

### **Simulation 5; The price of cayenne pepper and red chili is high.**

For the fifth simulation, it is assumed that an increase also follows the price of Cayenne Pepper in Red Chili. In this simulation, the price of cayenne pepper becomes Rp. 120,000, and the price of Red Chili is IDR 112,000. The analysis results from the fifth simulation show that the processing of boran sambal requires IDR 120,000 raw materials in the form of cayenne pepper, with another input contribution of Rp. 636,600. Based on Table 1, the added value obtained by Silvana Food SMEs on the assumption that the price of cayenne pepper is IDR 120,000 and the price of red chili is IDR 112,000, so the added value obtained is IDR 18,400 with a ratio of 2%. That shows that the added value of Silvana Food SMEs is in a low category. According to an SMEs that has a value-added ratio of <15%, it is included in the low category [20]. In the added value generated from sambel boran, there is IDR 37,500 in labor income or a labor reward of 204%. The profit earned by Silvana Food SMEs is -Rp 19,100 or with a profit rate of -2%. The total margin from production factor fees is IDR 655,000 for every 1 kg of cayenne pepper processed into boran sambal. From total margin, the contribution of other inputs of 97%, and the profit earned reaches -3% or -Rp 19,100. Based on the analysis of various price simulations, it can be concluded that the simulation of the price of raw materials in the processing of boran sambal, which has a high added value, is the simulation of the price of cayenne pepper and red chili under normal circumstances. The price level of regular cayenne pepper of IDR 25,000, and red chili of IDR 20,000, which can generate added value in the processing of chili sauce by 50%. The higher the price of raw materials in the processing of boran sambal, the lower the added value generated, assuming a constant selling price of boran sambal is IDR 25,000/unit.

The income contribution and share of labor benefits at each chili price are also shown in Table 1 above. The share of labor benefits at the price of raw materials and products sold is typically 10% or an average of IDR 37,500/unit. An increase in the price of raw materials in the processing of boran sambal will increase the share of labor rewards. The simulation of raw material prices in processing value-added products also shows that the profit level generated at regular cayenne pepper and red chili prices is 45%. The higher the price of chili raw materials at a constant selling price, the lower the profit generated.

The existence of high-added value can impact the development of an agro-industry in the future. To support the increase in added value and development in an agro-industry,

it pays more attention to product quality, ease of obtaining it, technology during the processing process, and product marketing [21].

## 4 Conclusion

High added value occurs when the price of cayenne pepper and red chili is regular. Namely, the regular price of cayenne pepper is IDR 25,000, and red chili is IDR 20,000. These conditions can produce added value in the processing of boran sambal by 50%. Based on the simulation results of raw material prices for cayenne pepper and red chili, different price levels with constant selling prices will provide different added value.

Changes in raw material prices significantly impact the income and added value of a product produced by MSMEs. Many small industries refrain from selling when raw material prices rise because of the dilemma of raising prices, but with the risk that no one will buy their products. SME partnerships with farmers can increase partner farmers' income compared to those who form partnerships with collectors and wholesale traders [22]. The solution or recommendation is that SMEs need to partner with farmers to get constant prices for raw materials, especially cayenne pepper and red chili, to maintain income stability and the added value obtained. In addition, the government can facilitate inter-industry meetings so that they can partner by initiating partnership programs between industry players

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# Land Authority Control by the State as a Basic Principal of an Authority and Land Ownership in Indonesia

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## Abstract

The controlling power by the State on land as a source of state authority to provide the disposition control, ownership, allotment, and the land utilization in Indonesia is limited by Indonesian constitution, UUD 1945. Besides UUD 1945, there is another substantive restriction in which regulations created by the state should be relevant to the purpose achieved for the greater citizenry prosperity. Therefore, refraction rule that involves self-interest conflict and could cause other detriment is a form of law's violation. The state authority to make arrangements related to its authority cannot be delegated to the private sector since it involves public welfare which is loaded with a service mission and will possibly create self-interest conflict. This research is a juridical normative approach using conceptual and legislative framework. The research question in this research is what state's formulations are in obtaining authority power to control land in Indonesia. The result shows that the state control the land as a result of the authority granted by the Constitution as the transference of the public's right that gives some of their freedom right voluntarily to be regulated by the State

**Keywords:** Controlling power, the state, Tenure and Land Ownership

## 1 Land Ownership in Indonesia at a Glance

Indonesia as the recipient of the gift from God Almighty over the earth of Indonesia implies that the earth of Indonesia belongs to all components of Indonesian society members, so that every citizen has been as a subject of equal rights and responsibilities in the maintenance, utilization and the allotment of Indonesian land in term of improving the welfare of Indonesian societies.

For the Indonesian, the relation among human and land had a natural characteristic. In this case it couldn't be eliminated by anyone, unless the land was affected by a disaster, the owned land couldn't be occupied, managed, utilized, even traded. Due to the importance of the land as a basic of human need, therefore the state presented to provide a protection to the Indonesian which has been regulated in the constitution of the Republic of Indonesia.

Constitutionally, the state had an obligation to realize the state objectives as being outlined in the 1945 Constitution, to promote the general welfare. One of the main resources in realizing common welfare was through land tenure and ownership, land

management and utilization. Reasoning that the land within the territory of this Republic was one of the main natural resources, besides having deep inner value for the Indonesian, the land also had a very strategic function in fulfilling the needs of the state and the societies who have been continuously increasing and more divers, either at the national level or international level [1]. Therefore the land should be managed and utilized optimally for the present and future generations in term of creating equitable and prosperous society. The mandate of the Constitution was intended to realize the purpose of the state, to promote the common prosperity and achieve social justice [2].

Article 33 Paragraph (3) of the 1945 Constitution stated distinctly that the earth, water, and natural resources contained were controlled by the state and being utilized for the greatest prosperity of the societies. Then, the mandate was verified in UU no. 5 of 1960 about the Basic Regulations of Agrarian Affairs or being familiar with the Basic Agrarian Law (BAL or UUPA). This means that the management and utilization of land as part of Indonesia's natural resources should be wise for the prosperity and safety of the Indonesian societies. The arrangement of land tenure, ownership, utilization and management had to be done through the regulation of legal relationships rooted in the noble values of the Indonesian Nation.

In its fluctuation, the nationalist and populist Basic Agrarian Law (BAL/UUPA) which was based on Indonesian customary law does not work as the purpose of its formation. Various BAL deviations encouraged the emergence of MPR Decree No. IX Year 2001 on Agrarian Reformation and Natural Resource Management, which has been the basis of legislation in the field of agrarian reform and natural resource management.

Nowadays, some agrarian conflicts, especially land affairs have been increasing in various regions, either conflict between people or government, conflict between people or companies, and among individuals in society itself. The land cases that have surfaced so far have been dominated by unequal land tenure factors. For examples, the case of land that occurred in Mesuji Lampung, the land dispute of East Kalimantan fertilizer widely known as Pupuk Kaltim, in Bontang East Kalimantan, land cases in Riau Province, Papua, etc. The land cases have caused prolonged conflict. From a legal standpoint, some questions have been raised, such as: what the legal matters are, whether the legal regulations were inadequate, or the inconsistent enforcement of the law. After 57 years of Basic Agrarian Law (BAL or UUPA) have been exist, various elements viewed that the noble values of BAL have not been able to be implemented in land policy. On the other hand, some of the laws and regulations which have been mandated the formulation by BAL or UUPA also have not materialized yet, while the formulation of various sectorial laws related to the agrarian sector, especially land, was widely considered to have weakened the BAL because its substance was overlapping or even contradictory to the values arranged in the Basic Agrarian Law (BAL or UUPA).

After examining the background of this research, the research problem is what the conceptions of the state are in obtaining an authority over the land in Indonesia. This study aims to analyze and find the state conception in obtaining power authority over the land in Indonesia. The research design used is normative juridical research (legal

research), namely research on the application of positive legal norms. This research is conducted by reviewing the authoritative law regulation with literature as the theoretical concept and the opinion of legal expert on the problems being analysed. Meanwhile, the approach used is statute approach and conceptual approach. The statute approach was conducted to examine all laws and regulations relating to the legal issues which is being studied (State authority over the land), while a conceptual approach is used to provide a solution to the legal analysis of state authority over the land as the juridical ground of land affairs in Indonesia.

## 2 Indonesian State Land Authority

In the Indonesian General dictionary, the word "control" means a position of dominion over something or holds power over something. The definition of "controlled" by the state as it has been stated in Article 33 paragraph (3) of the 1945 Constitution of the Republic of Indonesia. After the amendment of the 1945 Constitution of the Republic of Indonesia there was no explanation, either general explanation or the elucidation of article by article. This allowed the right of land control by the state to be interpreted for various understandings, depending on the point of view and interpreting interests.

Here were some of definitions formulas, meaning, and substantial "controlled by the state" as the basis for reviewing the rights of state control, among others, namely:

1. Mohammad Hatta formulated the notion of being controlled by the State. Controlled by the state did not mean the state itself become an entrepreneur or businessman. It has been more appropriate to say that the power of the state lied in the making of rules for the smoothness of economic roads, a rule which prohibited the exploitation of the weak by the capitalists [3].
2. Muhammad Yamin formulated the notion of being controlled by the state including regulating and/or organizing primarily to improve and enhance production by prioritizing cooperation [4].
3. Bagir Manan formulated the scope of understanding controlled by the state or the right of state control, as follows [5]:
  - a. The control of such ownership by the state, meaning that the state through the Government was the sole authority to determine the right of authority over it, including here the earth, water and wealth contained therein,
  - b. Manage and monitor the use and utilization,
  - c. Equity participation and in the form of a state enterprise for certain businesses.

In accordance to the above constitutional provisions, the right to control the land by the state covered all the land, without any exception. So, the formula was that the state hold the power over the agrarian resources as it has been stated in article 33 paragraphs (3) of the 1945 Constitution [6].

When It was viewed in Article 2 of the BAL as the elaboration of article 33 (3) of the 1945 Constitution, the explanation memory of points II /2 confirmed that the notion of being controlled was not meant to be possessed, but the meaning was giving an authority to the state as the power organization of the Indonesian nation at the highest

level to arrange the allotment, regulated the legal relationship between the person and the parts of the land and the arrangement of the legal relationship between the person and the legal act [7].

The definition of the right to state control as the Constitutional Court (CC) decision, related to the decision on the Privatization of Oil and Gas, stated that the Conception of control by the state was a public legal conception related to the principle of popular sovereignty embraced in the 1945 Constitution, both in the political field (political democracy) as well as economics (economic democracy). In the sense of popular sovereignty, it was the people who were recognized as the source, owner, and ultimate authority in the life of the state, in accordance with the doctrine "from the people, by the people, and for the people". In the sense of supreme authority was also covered the sense of public ownership by the people collectively. That the earth, water and wealth contained within the territory of the state law were essentially the public property of all people collectively mandated to the state to control it to be used for the greatest possible prosperity. Therefore, article 33 (3) determined "the earth, water and natural resources contained therein were controlled by the state and used for the greatest prosperity of the people" [8].

Based on the argument, the definition of "controlled by the state" had to be interpreted to include the meaning of control by the state in a broad sense derived from the sovereignty of Indonesian concept over all sources of wealth "earth, water and natural wealth contained in it", It also included the definition of public ownership by the collectivity of the people over the sources of wealth. The people collectively were constructed by the 1945 Constitution mandating to the state to establish it: 1) policy (beleid), 2) handling action (bestuursdaad), 3) arrangement (regelendaad), 4) management (beheersdaad), and 5) supervision (toezichthoudensdaad) for the greatest possible prosperity of the people.

The arrangement function (bestuursdaad) by the state, conducted by government with its authority to issue and revoke licensing facilities (licenses), licenses (licenties), and concessions (consessie). Whereas the regulatory function of the state (regelendaad) was conducted through the legislative authority by the People's Legislative Assembly with the Government, and the regulation by the government. Meanwhile, the management function (beheersdaad) was done through a share-holding mechanism and/or through direct involvement in the management of State-Owned Enterprises or State-Owned Legal Entities as institutional instruments, through which the state, c.q. Government, utilize its control over the resources to be used for the greatest prosperity of the people. Similarly, state control (toezichthoudensdaad) is done by the state, c.q. Government, in order to supervise and control for the implementation of the control by the state on the sources of wealth intended to be done for the greatest prosperity of all people [8].

Notonagoro [9] established three types of direct relationships between the state and the earth, water and space, as follows:

1. Country as a subject, being given the position not as an individual, but as a country. In this form the state did not have the similar status as the individual.

2. The State as a subject, which was likened to an individual so that the relationship between the state and the earth and so on was "equal" with the individual right to the land.
3. The relationship between the "direct" state with the earth and so on was not an individual subject and not in its position as a possessing state, but as a state which was the personification of all people so that in this concept the state couldn't be separated from the people. The state was only the founder and supporter of people unity.

Referring to Notonagoro's view above, the relationship formula between the state and the earth, water, and space, in accordance with the meaning of the right to control the state was a relationship form to the three relationships, because the state as the personification of the people. Controlling the land would be more appropriate because of the social and human nature of the place.

In line with Notonagoro's point of view above, Imam Soetikinjo also agreed that the right to control the state included into the state relationship as the personification of all people (the 3rd relationship formula), because if it was viewed in terms of humanity, it was in accordance with the nature of social beings. Thus, the state has the following two rights: 1) Right Communes, if the state as a personification which holds power over land and so on; 2) Empire Rights, if the state only holds the power of land use [10].

The term "control" is entirely different from the term "owned" as understood in the concept of "domain" of the state before the BAL or UUPA was being implemented. The equalization of the term "control" with the term "possess", according to Maria S.W. Sumardjono [11] would bring the effect on the people who couldn't have a private property on the land. In this case, there might be only the right to use for individuals whereas in reality, in Indonesia there were various rights to land which could be owned by either a person or a legal entity as being stipulated in Article 16 of the BAL.

The distinction between "controlled" and "owned" was judged precisely by Boedi Harsono in an attempt to draw the legal basis for state authority in performing his duties state. On the right of state ownership over the land, it was not a concept of modern state law, but rather a concept of feudal state law. Further Boedi Harsono argued that it was appropriate that BAL or UUPA didn't use the concept of nation or state domain, but rather the concept of customary law which concerned on private property rights in the domain of federation right. This didn't mean that lands that were not owned by a person/legal entity became *res nullius*, where everyone could freely control and use the land.

In the right of nation framework, the right to control the state and federation right, according to Boedi Harsono [12], the meaning of *res nullius* land was unknown, as the land that nobody authorized it, for controlling the land without the basis of rights granted by the state or without any permission from whom who owned it, it was unjustifiable, even it could be threatened with the criminal sanctions as It has been regulated in Article 2 and 6 of Law No. 51 year 1960 concerning the Prohibition of Land Usage Without the rightful authorization or its legal authority. Article 2 states that: "It was prohibited to use the land without any proper authorization or legal authority".



In the right of the nation concept, the right of state control and federation right, although the relationship was not a property right, but it was still a concrete legal relationship with the muddy lands within the territory of the country and the customary law of concerning community. In the context of federation right, the concrete legal relationship could be stated in the basic map of land registration, as being regulated in Article 5 paragraph (2) on Regulation of the Minister of Agrarian Affairs No. 5 year 1999 under the Guideline for the Settlement of Customary Communities of Land Rights issues, namely, "The existence of customary land of customary communities as it was written in paragraph (1) should be stated on the basis of land registration by applying a cartography mark and, whether it was possible drew its limits and recorded it in list of the land".

By these provisions, it was actually very possible if the citizen of customary law could have their right certificate over federation land. However, the provisions on the implementation of such matters should be regulated in the form of regional regulation where the federation right was located, as it was mandated by Article 6 on Regulation of the Minister of Agrarian Affairs No. 5 year 1999, there was no region that has implemented or formed it [6].

### **3 The Philosophy of State Land Controlling Authority**

The law of land affairs history in Indonesia has an important meaning in the construction of national law; therefore, the law of land affairs construction required not only the development of contemporary law material, but also the development of the past law material. Through the history of a nation would be able to explore various aspects of Indonesian law of land affairs in the past.

In term of historical and philosophical perspective, one of the important meanings from the conceptualization of Land Controlling Authority over State in the Basic Agrarian Law (BAL or UUPA) was the explicit elimination of the principle domain adopted by the colonial land law. The concept of land ownership by the state which actually aimed to provide legalization and legitimacy for private plantation companies in large land acquisitions in the Dutch East Indies, was contrary to the independent state of Indonesia and the nation's view of life, therefore it had to be abolished from the national land law [13].

The Domain's principle of state ownership of the land was born as a result of the revitalization of feudalistic relations of the past which had been exploited by the VOC (Vereenigde Oost-Indische Compagnie), as well as during the reign of Raffles (1811-1816), which was further reinforced by the principle of domainverklaring in Agrarisch Besluit (Staatsblad 1870 No. 118) as the implementer rule of Agrarische Wet 1870. Article 1 Agrarisch Besluit (Staatsblad 1870 No. 118) stated "by not diminishing the enactment provisions of paragraphs two and three of the Agrarische Wet, so it was maintained that all others could not prove that the land was the land of its eigendom, was the domain of the State". The provisions of Article 1 of the Agrarische Besluit could be specified that:

1. The application of *domainverklaring* principle should not violate the provisions of Article two and three Agrarische Wet, that were the articles contained protection of indigenous people's rights to land. In other words, the application of *domainverklaring* principle should not harm the indigenous Indonesian society.
2. In article 1 of Agrarisch Besluit there was the word "retained principle". This means that before the implementation of the Agrarisch Besluit there was already a regulation containing the principle of *domainverklaring* which was contained in Article 520 BW whose translation was "other unshakable grounds and immovable property and no owner, such as those who died without inheritance, or whose inheritance had been abandoned, was the property of the State ". The principle contained in article 520 BW was maintained (persisted by Agrarisch Besluit).
3. Another party who could not prove that the land was its eigendom land is the state of land. In other words, if the community could not prove that a plot of the land is the right of its *eigendom*, so the land was declared as the land of state.

Although on its conception, aiming to guarantee the right of Indonesian to their land and the state power over the land as the absolute owner is meant only on the no man's land which could not be proven of its eigendom right and the right of agrarische eigendom [13], yet the application was quite different [14]. The Dutch Government interpreted narrowly the rights of eigendom as customary of property rights (customary people's property of rights) which had been requested by the owner through certain procedures and recognized only by the court. This was truly very detrimental to the indigenous people because without any Western law-based verification, the indigenous (the holders of customary rights) only considered as the users of the country's land domain. Even though the legal relations with the relevant land remained to be recognized, yet in legislation, customary property was only referred as the right of the hereditary individual use (*erfelijk individualueel gebruiksrecht*) and then as the right to dominate the land into state land domain (*Inlands bezitrecht*). Then the lands of customary property rights since they were not equated with the right of eigendom in Western law even It was not regarded as a free country land (*onvrij lands domain*), in which the state could not freely give it to other parties, with the limited rights of the people.

Event The land of federation right still exists and being obeyed by the customary law community, was not acknowledged by domain verklaring, till it was categorized as the domain of the country, namely as the free land of country (*vrij lands domain*) [13]. Thus; all the land being owned or has been owned by indigenous of Indonesia, with the ownership rights and land being owned or has been owned by customary law communities with the federation right was the land of the State domain. The Land whose been owned by the indigenous of Indonesia with property rights was only valued as a hereditary right of use, yet the customary rights should be protected and respected so that the Governor-General might not take it even to be granted to the entrepreneurs with *erfpact* rights [15].

It could not be denied that AW 1870 was a political product driven by certain interests, in this case mainly the interests of the capitalists, foreign businessmen. The explicit enforcement in wet required the capitalists to ensure legal certainty that

facilitated them in acquiring vast land for the establishment and the development of their businesses in the Indies. The domain's state concept gave a wide authority to the state as the owner to utilize it based on his interests and needs. It was also similar when the insistence of capitalist urged the State to utilize its authority on behalf of their interests. By the shift of state authority over vast land to the capitalists, it would create a "state within the state." This was what a major problem became since the beginning of Indonesian independence.

Furthermore, after post-independence, the formulation of article 33 in the 1945 Constitution "The earth and the water and the natural resources contained therein were controlled by the State and used for the greatest prosperity of the people" was the constitutional basis for the formation and formulation of the Basic Agrarian Law (BAL or UUPA) [2].

BAL itself was born in the context of the struggle for the reform of the national agrarian law went hand in hand with the history of the Indonesian struggle to escape from the clutches, influences and remnants of colonialism; especially the peasants' struggle to free themselves from the constraints of the feudal system on the land and the exploitation of foreign capitalists [16].

The spirit of opposing the strategy of capitalism and colonialism which had led to the "exploitation de l'homme par l'homme" on the one hand and at the same time opposed the strategy of socialism which was considered "negate the individual rights of the land" on the other, the ideological and philosophical foundation of the BAL formation.

In the general explanation of BAL, it was clearly stated that the purpose of BAL was:

1. Laying the groundwork for the drafting of national agrarian law which would serve as a tool for bringing prosperity, happiness and justice to the state and people, especially the peasants in the framework of a just and prosperous society;
2. Pint pointing the groundwork for holding unity and simplicity in law of land;
3. Laying the groundwork for providing legal certainty of land rights for all people together.

In term of laying the groundwork for the drafting of national agrarian law, the domainvelkraring principle as set forth in Article 1 Agrarsch Besluit, Stb. No. 1870 No. 118, in which before the implementation of BAL became the basis of colonial agrarian law, it had to be abandoned and the domain statement which assumed all land was the property of the state unless it could be proven its eigendom right, had to be revoked. Instead, it was stipulated the principle of Land Ownership Rights by a State based on Pancasila and Article 33 Paragraph (3) of the 1945 Constitution, which stated: "The earth and the water and the natural resources contained therein were controlled by the state and used for the greatest prosperity of the people".

It was also similar to the concept of the State Right of Control (SROC or HMN). The authority of the state right of control was understood within the framework of the relationship between the State and the earth, water and natural resources within it as a relationship of control, not of ownership such as in the West and in communist countries. The control by the State in the SROC concept did not mean to have

eigensdaad. If the State control of right was defined as eigensdaad, then there would be no guarantee for the objective achievement of the State's right to control the land, which was as big as the welfare of the people [17]. The state in this case as the authority at the highest level was authorized to regulate the use of land in a broad sense and to determine and regulate legal relations and legal acts with respect to the land. As the recipient of power [18], then the State had to be responsible for the community as the authorizer. With this AP. Parlindungan called it as the right of the people at the State level [19].

This constitutional directive was further elaborated in Article 2 of the BAL. Furthermore, as the embodiment of Pancasila the philosophy of the state, the provisions of Article 1 paragraph (1), paragraph (2) and paragraph (3) BAL established the following [6]:

1. The whole territory of Indonesia is the unity of the homeland and all of Indonesians were united as the nation of Indonesia.
2. All of the earth, water, and space, including the natural wealth which contained therein within the Republic of Indonesia territory, as a gift of God Almighty was the earth, water, and space of the Indonesian nation and those were a national treasure.
3. The relationship between the Indonesian nation and the earth, water, and space which was included in paragraph (2) of this article was a lasting relationship.

According to Mahfud MD, there were several important points of this the state right of control (SROC or HMN) is that:

1. The State Right of Control was born in the context of anti-imperialism, anti-capitalism and anti-feudalism;
2. For the abolition of the domain principle of the state utilized by the colonial government to take over the ownership of the people and then lease or sell it to foreign or private entrepreneurs;
3. As a synthesis between individualism and collectivism/socialism;
4. This control is more regulating and organizing (public), for the greatest prosperity of the people (as accountability);
5. Restricted by the Constitution;
6. Implementation of HMN is for general welfare, can be delegated to local or customary law community, but not to private

Furthermore, Moh. Mahfud.MD hoped that SROC or HMN should instead give way to other responsive actions because of the government right could take actions that were aligned to the interests of the community [20]. Two important points of the opinion, the Government should be able to proactively and responsively issued regulations on the regulation and management of agrarian resources, taking into account at least six elements contained in the above SROC or HMN. However, all regulations on behalf of SROC or HMN must be within the framework of its alignment to the public interest.

## 4 The Nature of State Authority to Control

The state's authority in land tenure comes from the Constitution or the Constitution of the State. Normatively recognized interpretation in jurisprudence was that societies voluntarily surrender some of their liberty rights to be governed by the State and restored to society to preserve the order, protection and prosperity of the people. The State or Government must have a sense of public service, while the public must have the duty of public obedience [21]. In such of this balance, the objective of surrendering some society's rights to the state gained political legitimacy and social legitimacy. The legal relationship between the State and the land think out the right to control the land by the State. The relationship between indigenous and tribal peoples with their federation lands think out federation right, and the relationship between individuals and land think out the individual rights to the land. This was in line with Van Vollenhoven's thinking that the state as the highest organization of the nation was given the authority to regulate everything including the right to control the land and the state based on its position also has the authority to make the rule of law [22].

State authority in land tenure comes from the constitution. In the preamble or preamble of the Constitution it was stated that one of the tasks of the State which constituted the Republic of Indonesian's government was to promote the common welfare and to protect the entire nation of Indonesia.

The Further explanation of the right to control land by the state, was contained in Article 2 of Law No. 5 of 1960 on the Basic Regulation of Agrarian Principles (then it was mentioned as BAL or UUPA) which stated that the earth, water and space, including the natural resources contained therein it was at the highest level controlled by the State, as the organization of the power of all people. The right control of the State authorized the State to:

1. Arrange and organize use of land, inventory and maintenance. The rights concerning the designation of such designation were outlined in various products of other laws and regulations, in such areas as:
  - a. Land use
  - b. Spatial arrangement
  - c. Land acquisition for public interest
2. Regulate the legal relationship between people with parts of the land. The rights relating to such legal arrangements were outlined in various product laws and other legislation, in such areas as:
  - a. Restrictions on the number of fields and land area that may be controlled (land reform)
  - b. Arrangement of right land management
3. Regulates legal relationships between people and legal actions. Rights concerning the regulation of legal relations and legal acts are outlined in various products of other laws and regulations, in such areas as:
  - a. Registration of land, which was a series of activities undertaken by the Government continuously, continuously and regularly, including collection, processing, book keeping, and presentation and maintenance of physical data and

juridical data, in the form of maps and lists, on the plots of land and units apartment buildings, including the provision of a certificate of title to the existing land rights and property rights of the apartment units and certain rights that burden it ( Article 1, paragraph 1 of PP 24 of 1997 on Land Registration)

b. Dependent right.

Based on Law no. 4 Year 1996, mortgage rights were security rights imposed on land rights covering property rights, use rights and building rights. Mortgages can be classified into legal relationships between people and legal acts on the land, because basically the mortgage is a follow-up (accessory) of a major commitment, such as the debt relation of the receivable secured by the mortgage. These three things were the essence of the BAL regulation Article 2, Paragraph 2, which concerned on the authority derived by the state to the government.

The land tenure by the state in the above context was a dominion whose authority raises responsibility, namely for the welfare of the people. On the other hand, the people could also have the right to the land. Article 2 of the BAL provided an understanding that understanding was controlled by the State did not mean owned. However, there was a right which authorized the State to regulate the above 3 points.

The contents of the State's authority based on the right to control the earth, water and natural resources owned by the Indonesian nation were merely "public", that was, the authority to regulate and not the authority to control the land physically and in the use of the land as the right holder on "private" land. Therefore, if the State needed land to build government offices, it was pursued by granting a right to land (use rights/management rights) to government agencies [15].

As for the scope of the regulation, The Right State of Control (RSOC or HMN) applied to all existing land in Indonesia, whether the land has not been abused, or land that has been hailed by an individual. Against land has not yet individually been abused, RSOC or HMN gave birth to the term "land directly controlled by the state," or subsequently referred to briefly as "state land", while the land which had been individually abused was called "land controlled indirectly by the state," or "land right". The authority over land which has been acquired by the individuals was basically passive, unless the lands was left untreated/abandoned so that the State may arrange for it to be productive or fall in the hands of the state [10].

The State's power of the land which a person has already been possessed with a right and it has been limited by the content of the right itself. This means that the State gives power to those who have to exercise their rights. The rights and limitations were stated in Article 4 paragraphs 1 and 2 of the BAL which stated that:

1. On the basis of the right state of control as referred in article 2, it was determined that there were various kinds of rights on the surface of the earth, called land, which may be given to and possessed by persons of their own or together with others and legal entities.
2. The land rights referred in paragraph 1 of this article authorize the use of the land concerned as well as the earth body and water and the space above it, is merely necessary for the immediate interest in relation to the land, within the limits of this law and higher regulations.

## 5 The Restriction of Controlling Land by the State

In the state constitution of Indonesia, the existence of the right to control the land by the state was mentioned explicitly in Article 33 Paragraph (3) of the 1945 Constitution which stipulated that the earth, water, and natural resources contained therein were controlled by the state and used for the people greatest prosperity. Theoretically, the arrangement was actually declarative. That was, with or without the provision of Article 33 paragraph (3) of the 1945 Constitution above, the state of Indonesia remains as the holder of the right to control the state over the earth, water, and natural resources contained therein.

With such a way of thinking it was understandable to van Vollenhoven's view that: "... in fact the state's right to land to govern and so on was nothing other than the state's power over all things and the land was a specimen, a special thing. If in this case we needed to give another form, then surely it should not reduce and change the state position against all things. "However, the explicit mention of state authority over land with the right to control the state remained more positive, because with the mention it means that there was an 'affirmation' that the right to control the state was attached to all the land in the legal environment of the Unitary State of the Republic of Indonesia (NKRI) [23].

In Article 2 Paragraph (2) BAL also explicitly spelled out the contents of the authority of the right to control the country. One of the contents was to organize and organize the inventory of land. The substance of Article 2 paragraph (2) might be interpreted including the provision of land for the sustainability development for the public interest. The Procurement of land for the supply of land might be voluntary, such as sale, purchase or disposal of rights, might also be compulsory, such as the revocation of rights. Since the compulsory of land acquisition was essentially a forced (unilateral) means, the arrangement of mandatory land procurement had to be done on a statutory basis. In a theoretical perspective, the occurrence of the state control over the state constitution was due to the delegation of the public element of the right of the nation as the right to control the highest land in the national land law (Article 1 BAL).

The right to control the land by the state still needs to be limited so that the right holder controls the state to be spared and not fall within the authority that harmed him. Restrictions on the right of the state control were necessary because each authority had the potential to be diverted. However, such restrictions should not be intended to dwarf the power of the state itself. The state should have a great power to organize its territory including organizing the tasks of government in the field of land. The important thing was the right to control the land by the State was ensured to be directed seriously for the realization of the greatest prosperity of the people.

The Right of Land Ownership over the State was limited by the rights to the land of a person and legal entity. The General explanation of the Numbers II of BAL provided an understanding that the state's power over land that was not owned by a right by a person or other party was broader and fuller than those lands which have been acquired by a person or legal entity. In other words, the state was more empowered to exercise its control over land which was still state land status, whereas for the land that has been attained the right, state power over the land was limited, for example: under normal

circumstances should not take the land without the consent of the owner and in circumstances forcibly removing the right to land should be subject to appropriate compensation. Therefore, the rights to a person's land or legal entity became the limiting authority of the state's right of control.

The explanation of BAL also explicitly stated that the Right to Control Land by the State was limited by the existence of customary rights of customary law community which in fact still exist. If the public interest was to have federation right, then the acquisition of the land could only be done after the customary law community of the right holder "hears his opinion" in the sense of being invited to deliberation and given recognition. Strictly speaking, under ordinary circumstances, it could not obtain the customary land without the consent of the customary law community that holds the Federation Right.

Regarding the right to control the land by the State, Mary SW Sumardjono said that the authority of this country was limited to two things: first, it was limited by the 1945 Constitution. That the things regulated by the state should not result in human rights violations guaranteed by the 1945 Constitution. The bias regulation against an interest and causing harm on the other hand was one such form of violation. A person who discharged his/her rights had to receive legal protection and a fair reward for the sacrifice. Second, the restrictions that were substantive in the sense of regulations made by the state should be relevant to the goal to be achieved that is for the greatest prosperity of the people. The authority of the State to make arrangements relating to this authority cannot be delegated to the private sector because it concerns the general welfare that is full of service missions. Delegation to the private sector that is part of the community will create a conflict of interest, and therefore is not possible.

## **6 Conclusion**

The right of control from the State includes all the land within the territory of the Republic of Indonesia, whether or not the land which has been abandoned with an individual right. The land which has not been abused by the individual rights as the newly formed land acquired by nature through the process of sedimentation and land reclamation by BAL are lands directly controlled by the State.

The right of control from the State cannot be transferred to another party. But the State land may be granted with a right to the land to another party. The granting of a land-country right to a person or a legal entity does not mean relinquishing the Mastering Right from the land concerned. The land remains in state control. The State does not relinquish its authority as regulated in Article 2 of the BAL, on the land concerned. It is just that the authority of the State over the lands that have been granted with a right to another party, to be limited, to the extent of authority which is the content of the rights granted.



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# The Post-Pandemic Phase of Citronella Grass Farming in Indonesia: An Economic Perspective

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**Abstract.** The number of citronella farmers producing essential oils has dropped dramatically during the pandemic. Currently, this business is starting to revive as the situation after the pandemic is getting more stable. This study aims to describe the post-pandemic challenges in citronella farming and essential oil production of the official essential oil business cluster in Indonesia and determine business strategies to support the sustainability of citronella farming and its essential oil production. In-depth interviews and observations were conducted to 9 of 120 farmers who survive during the pandemic and still cultivate citronella. Furthermore, their financial records were analyzed to measure the feasibility of the citronella essential oil business in the post-pandemic period. The circular economy concept is proposed to strengthen the resilience of the post-pandemic citronella farming and its essential oil business. Furthermore, the digital marketing approach becomes one of the core strategies in this post-pandemic era.

**Keywords:** Citronella, Essential Oils, Post-Pandemic, Business, Strategies.

## 1 Introduction

As an agrarian country, Indonesia's agriculture sector has a major contribution in driving the economic sector. *Cymbopogon nardus* or commonly known as citronella grass is one main plantation commodities in Indonesia which has a consistent growth before Covid-19 era. Indonesia is the second supplier of citronella oil after China [1]. The world market demand for citronella oil increases every year, therefore the opportunity to produce citronella oil for global market is quite potential [1]. One of the essential oil-producing areas in Indonesia is Kendal Regency. In 2019, a cluster of essential oil centers had been established, including Sukorejo District and Patean District. Along with increasing market needs and encouragement from the government, many farmers had tried to cultivate and refine citronella. According to Statistic Indonesia [2], from 2018 to 2020, there was an increase in the value of essential oil exports by 25.3% from 4,060.3 tons to 5,088.9 tons. More than 10 ha of citronella

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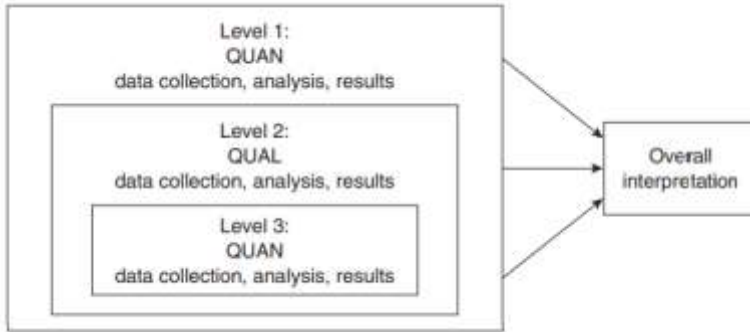
planting areas had been developed in several locations to support the export activities. However, this condition was changed right after the pandemic getting worse in the middle 2020. A policy of restriction on the social scale large in almost all cities in Indonesia, and even around the world cause the supply chain disruption [3]. Prices increase because people bought and hoarded goods, especially the staple ones. Public demand for anti-fungal, antioxidant, anti-bacterial drugs, anti-mosquito lotions, perfumes, cosmetics and aromatherapy has decreased drastically. Therefore, the demand for citronella, as one of their raw materials [1], also decreased and its price dropped dramatically.

This condition is similar to that stated by Aviasti [4] that the challenges faced by the citronella oil industry in its production are large production costs and low market prices. In addition, there is unclear product supply chain in this industry [5]. Furthermore, investment in the product industry also requires huge costs, causing farmers' reluctance to continue production of citronella oil [6], even though the pandemic has been able to be controlled. However, there is evidence of a higher flexibility of smaller business [7]. Hence, the surviving citronella farmers are struggling to get back up to restore their business.

The panic phase is over, and most companies have entered the strategic planning phase [8], as well as local citronella growers in Indonesia. As in other industries, COVID19 has caused the socio-ecological fragility of this industry. A transition to a more socially just, ecologically resilient, local system is urgently needed [9]. This study connected local citronella farmers in Kendal Regency to university research program under the local government guidance in order to find innovative solutions for challenges they face, especially in the post-pandemic phase era. As the resource-based theory of strategic alliances stated that the basis of collaboration between various parties is the value creation potential of company resources pooled together [10]. This study bridges the dialogue between stakeholders in local citronella industry aiming to improve local farmers' well-being.

## **2 Research Methodology**

This study used a mixed-methods approach using triangulation design named multilevel model introduced by Creswell & Clark [11]. This model consists of three levels: the first quantitative, qualitative, and the second quantitative. After passing all levels, researchers analyzed them all to write overall interpretation. The model could be shown in the Figure 1.



**Fig. 1.** A Multilevel Model of Triangulation Design [11]

Level 1 in this study was a survey conducted to 120 citronella farmers in Kendal Regency, Central Java Province, Indonesia which was taken in the early 2020 or before the first wave of pandemic in Indonesia. This survey depicted the condition of local citronella farming before pandemic, including: the demographic data of farmers, production activities, marketing activities, and the challenges faced. The data was interpreted using descriptive percentage analysis.

Level 2 in this study was the qualitative phase to collect the data about the condition of citronella farming during and after the pandemic. The data collected by field observations, in-depth interviews with 9 surviving farmers, and focus group discussion with citronella farmers and the representatives of local government. Furthermore, level 3 was the second quantitative phase, which is the financial report and investment analysis for the new machines applied in citronella essential oil production. All these three levels then would be interpreted to formulate strategies to improve citronella farmers business quality.

### 3 Results and Discussion

#### 3.1 The Condition of Citronella Farming before Pandemic

In 2019, before the cases of Covid-19 were identified in Indonesia, the essential oil business grew rapidly. The government encouraged farmers to plant commodities that can produce essential oils, such as clove leaves, patchouli, nutmeg skin and citronella. The local government of Kendal Regency in Central Java, Indonesia even declared Sukorejo District and Patean District as the essential oil cluster in the society empowerment mapping plan. Along with increasing market needs and encouragement from the government, many farmers tried to cultivate and refine citronella during this period.

In the beginning of 2020, in Pesaren Village, one of village in Sukorejo District, more than 10 ha of citronella planting areas have been developed in several locations. Based on the field observation, distillate products of citronella were sold directly to a local company with a price range of IDR 100,000 – 130,000 per kilograms. At that

time, those prices were below the market price because the citronella essential oil produced did not meet commercial standard specifications which can reach IDR 200,000 – 250,000 per kilograms. Even though their products were bought at a lower price, farmers still get enough profit to keep their business going. Therefore, in this phase, the number of citronella farmers increased significantly as many as 120 farmers. The demographic data of citronella farmers in the early 2020 is described in Table 1.

**Table 1.** The Demographic Data of Citronella Farmers before Pandemic

<b>Respondents Characteristics</b>	<b>Frequency (N)</b>	<b>(%)</b>	
<b>Gender</b>	Male	105	87.50
	Female	15	12.50
<b>Age</b>	< 25 years old	5	4.17
	26-40 years old	28	23.33
	41-55 years old	56	46.67
	>55 years old	31	25.83
<b>Education Level</b>	Uneducated	1	0.83
	Elementary School	60	50.00
	Junior High School	28	23.33
	Senior High School	29	24.17
	University	2	1.67
<b>Family member</b>	0-2 people	29	24.79
	3-4 people	61	52.14
	> 4 people	27	23.08
<b>Cultivated Land Area</b>	< 1 ha	113	94.96
	> 1 ha	6	5.04
<b>Land Ownership</b>	Rented	7	5.83
	Owned and rented	19	15.83
	Owned	94	78.33
<b>Side Business</b>	No side business	57	47.90
	1 side business	40	33.61
	More than 1 side business	22	18.49
<b>Training Experience</b>	Never	108	90.76
	1-2 times	10	8.40
	More than 2 times	1	0.84
<b>Group Involvement</b>	Not a member	73	62.39
	Become a member	44	37.61

The total number of respondents was 120 people dominated by male (87.5%) male farmers in the age range 41-55 years (46.67%). Basically, the age of the farmer influences the development of creativity and innovation in farming activities. An active participation of young farmers is able to create a supportive environment for intensifying farming activities and increasing national sustainable productivity [12]. However, the citronella grass farmers in this area mostly were the older ones. This condition would affect the resilience of their business during the peak of pandemic later.

The majority of farmers graduated only from junior high school (23.33%) with 3-4 family members (52.14%). Education is the main indicator of development and the

quality of human resources [13]. Level of education determines the negotiation skills of farmers which is beneficial for their survival strategies towards any unexpected distraction, including the negotiation skills related to land rent rate [14] due to the fact that the majority of respondents had a citronella grass cultivation area of less than 1 ha (94.96%) and need to rent the wider land if they want to expand their business. Furthermore, other condition such as making citronella cultivation as the main business (47.90%), the lack of training (90.76%), and the poor networking (62.39% of respondents are not members of any farmer group) had made the citronella grass business in this area was very vulnerable facing future uncertainties.

In terms of production and distribution, most of citronella grass farmers (81.51%) had less than 200 citronella trees handled by themselves (60.68%). Annually, the majority of respondents (98.31%) spent less than IDR 20 million as the working capital. In a year, 82.05% of farmers stated that the production capacity of citronella was less than 10 tons. Meanwhile, the income of citronella farmers in one year is mostly 92.11% of respondents answering less than IDR 30 million. All farmers stated that their product was purchased by wholesalers or middlemen who came directly to their production location with a certain selling price determined by the middlemen. Citronella grass farmers hardly had a power to set the price. The comprehensive information about production and distribution aspects are presented in Table 2.

**Table 2.** Production and Marketing Aspects of Citronella Grass Farming

<b>Production Aspects</b>		<b>Frequency (N)</b>	<b>(%)</b>
<b>Number of workers</b>	None	71	60.68
	1-4 people	43	36.75
	> 4 people	3	2.56
<b>Working Capital</b>	< IDR 20,000,000	116	98.31
	> IDR 20,000,000	2	1.69
<b>Total Production</b>	< 10 tons	96	82.05
	10-30 tons	18	15.38
	> 30 tons	3	2.56
<b>Revenue</b>	< IDR 30,000,000	105	92.11
	> IDR 30,000,000	9	7.89
<b>Marketing Aspects</b>		<b>Frequency (N)</b>	<b>(%)</b>
<b>Selling location</b>	Farm	1	0.85
	Company	117	99.15
<b>Buyer</b>	Company	119	100
<b>Selling Price Information</b>	Among farmers	2	1.68
	Wholesaler/middlemen	116	97.48
	Local government	1	0.84

### 3.2 The Condition of Citronella Farming during Pandemic

When the pandemic occurred and reached its first wave peak in July 2020, almost all of economic sectors are collapse, including agriculture sector [3], [15], [16]. Initial

conditions of citronella grass farmers in Kendal Regency that were already vulnerable (low knowledge, limited experience, and poor networking) worsen their survival ability during pandemic. This condition is exacerbated by a drastic decrease in selling prices of citronella grass and its derivative products. Before the pandemic, the price of citronella oil could reach IDR 300,000/kg, then it decreased and is currently only IDR 160,000/kg. For wet leaves, the initial price could reach IDR 1,000/kg and now it is dropping to IDR 500/kg even at some points could drop to IDR 300/kg. This condition forced farmers to replace citronella plants with other more profitable plants, such as coffee. The number of citronella grass farmers had fallen drastically from 120 became only at least 9 farmers in 2022.

Apart from the selling price, citronella farmers in Kendal Regency also have lack of distillation equipment and the location for it. If the distillation equipment has a small capacity, farmers have to go back and forth to harvest and process it so that the costs and labor expended will also increase, especially if the location of the equipment is far from the farm. Those few farmers who are still surviving generally have their own refining equipment, hence they can sell citronella grass as the essential oil and maintain a normal profit or event break event point condition to keep their business survive. Besides, farmers with refining equipment called distillation machine could diversify their products by also distill clove leaves which do not require too much operational costs because they use fallen dry leaves as ingredients. Another challenge related to physical and social distancing was the limited interaction with farming counselor, hence farmers could not consult with any expert due to their low ability using online facilities. Table 3 shows further details about challenges faced by citronella farmers during pandemic.

**Table 3.** Citronella Grass Farming Challenges

Challenges Factors	Indicators	Frequency (N)	(%)
<b>Production factors</b>	Worker availability	1	0.85
	Farming equipment	4	3.42
	Working capital	38	32.48
	Supporting material availability	13	11.11
	Plant pests	5	4.27
	Water availability	4	3.42
	Selling price	52	44.44
	<b>Farming Counselor Role</b>	Not good	87
	Good	14	12.84
	Very good	8	7.34

### 3.3 Strategies to Revive in Post-Pandemic

After the pandemic, most of business sectors have completed their initial COVID-19 crisis management and try to implement some innovations in the post-pandemic period [8], including citronella grass farming. Based on in-depth interviews conducted to 9



citronella farmers left in Sukorejo District, the newest condition related to citronella farming after pandemic are revealed.

In 2022 (post-pandemic phase) the citronella planted by the farmers are the Citrona2 Agribun variety. Farmers get the seeds from Bogor Spice and Medicinal Plants Research Institute (Balitro), either free of charge as a subsidy from the Government or purchased from middlemen. Farmers in Pesaren Village received seed for free from the Government, while farmers in Patean bought these seeds from middlemen at a price of IDR 2,000/stick, and farmers in Sukorejo Village also bought seeds from middlemen from Cilacap for IDR 1,000/stick. In terms of productivity, 1 hectare of land on average produces 10 tons of wet citronella leaves and if it is refined every 2 tons of leaves produce 5 kilograms of essential oils. Some farmers sell directly in the form of leaves and other do their own distillation. The citronella essential oil worth IDR 160,000/kgs, while if it is sold as unprocessed leaves, it costs IDR 300/kgs all through the middlemen.

Some of major problems in citronella industry is the lack of collaboration between industries of refined citronella [17]. Therefore, this study set a FGD between farmers, scientists, and local government to identify collaboration potential to improve citronella business after pandemic, as Khamung & Hsu [18] stated, collaboration with local government is needed to help small business adapt to the change. During the Focus Group Discussion (FGD), farmers expressed their concern about the falling price of citronella leaves and oil. Besides, they also complained about the lack of distillation equipment and the location of them. The existing distiller machines only can process big capacity of production (around 1-2 tons) and located far away from the farm. Farmers have to go back and forth to harvest and process it so that the production cost increases. Farmers hoped they have at least 3 distillation machines and those are located near the farm, so they can reduce transportation costs from harvest to the distillation process.

There was also a discussion about the potential of diversification of processed citronella oil. Most of farmers agree on this. A product development process will enable farmers to not only sell the citronella as a basic essential oil, but also in the form of perfume, floor cleaners and other added value product. Farmers also expected the new distillation machines has lower capacity, adapted to their low working capital. A machine with lower capacity is considered to be more effective and more flexible when it will be used for developing essential plants such as roses, betel and cloves. The implemented strategies during the post-pandemic phase are described in the following sub-sections.

**Modifying the distillation machines.** Henry [19] stated that pandemic taught farmers to invest more in automation machines and minimize manual steps throughout the production chain. By collaborating with researchers and supporting university, farmers have managed to get machines with the specifications they want. The new machines' capacity is 100 kgs, suitable for low production level and it is very possible for ex-citronella farmers who want to restart their businesses that paused during the pandemic. Based on the financial report, this new machine could cut down the investment cost up to 8.5% and variable cost reduced up to 10.8%. Meanwhile, the revenue reported increase for 5.9% using this strategy. Even though the changes of financial report do not seem too significant, according to the feasibility report, the

Benefit Cost ratio the new machine is confirmed higher than the old ones (1.29 versus 1.27), the payback period is shorter (6.19 versus 7.21), the NPV is higher (IDR 7,788,066 versus IDR 7,350,835), and the Accounting Rate of Return is outnumbered the old machine (0.16 versus 0.14). Therefore, it could be concluded that the new machines are worth to buy and operate during the post-pandemic phase in order to reduce the production cost, shorten the payback period and the rate of return on investment as well.

**Implementing circular economy concept in citronella farming.** The low production capacity of new distillation machines not only affect the production cost reduction, but also triggered farmers to focus more on the essential oil waste. The waste of citronella essential oil products has good economic value. However, it has not been explored by local citronella farmers. Citronella essential oil derivatives can be used as raw materials for various products such as soaps, antiseptics, detergents, and perfumes. In addition, essential oil raw materials can also be used as a bio-additive for fuel oil due to the presence of geraniol compounds [20]. The results of other studies also show that waste from the production of citronella essential oil distillation can be used to produce economically valuable products, such as the manufacture of carboric acid [21] and anti-mosquito briquettes [22]. With the circular economy concept, the next agenda for increasing local citronella farmers productivity is by building a zero-waste industrial economy that generates benefits from two types of material inputs namely, biological materials, materials that can return to the biosphere in a restorative manner without harm or waste (degrades naturally) and technical materials, materials that can be continuously used returned without harm or waste [23].

**Optimizing product diversification and the digital marketing approach.** So far, farmers sold citronella leaves and its essential oil to middlemen at low prices, hence when the market price of citronella drops, farmers suffer huge losses. With the independent production of essential oils using new machines with lower capacities, farmers have options for new production methods. The decreased production of citronella allows farmers to explore the cultivation of other aromatic plants, and the low machine capacity allows farmers to make a variety of different essential oils as a form of product diversification. As Altieri & Nicholls [9] stated that crop diversification is necessary because monoculture crops grown on a large scale are highly susceptible to pest, weed and disease outbreaks.

Digital innovation has contributed to many cases of rural farmers in several countries, for example China is working with private companies to digitize their agriculture and Ghana has transformed farmer transactions with digital money [24]. The digital marketing channels are heavily based on collective organizations aiming to build short local and regional chains [25]. It clearly takes time to make such kind of transformation. Therefore, it needs an intensive collaboration between farmers, local government, and researchers to build an inclusive online marketing system to support citronella farming. Along with production activities with new machines, farmers were given trainings to introduce them to the online marketing system and put it into practice.

## 4 Conclusion

As Golovina et al [14] stated that farmers who are able to build wider networking and communication with many parties economically will be more successful and perceive their financial situation to be better than their conventional counterparts. The local citronella farmers in Kendal Regency need to collaborate with universities, local government, and other potential parties to survive in their business. The new distillation machines have proven give more flexibility in producing varies essential oils for farmers. The concept of circular economy is expected reduce the production waste and increase side revenue. Furthermore, in the long term, product diversification and digital marketing approach will be implemented to strengthen business resilience. By implementing these strategies, it is expected the local citronella farmers in Kendal Regency could be back stronger in the market during the post-pandemic phase. This study is limited in the local area citronella farming of Kendal Regency, hence the strategies built have not implemented in other similar farming in Indonesia. The next study is expected to explore other business strategies to citronella farmers in other regions in order to develop a more comprehensive citronella business model for citronella farming improvement in Indonesia.

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# Proportional And Equity Work Agreements In The Gig Economy Era

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**Abstract.** This study aims to determine the impact of the Gig Economy by connecting 204.7 million Indonesians in early 2022 with the internet on Gig workers in the perspective of Labor law. The regularity and harmonization of work relations regulated in Law Number 13 of 2003 concerning Manpower in Indonesia has regulated all minimum elements in work relations with the purpose to protect parties bound in work relations. The research question asked in this research is how to arrange work agreements that are proportional and fair in the 5.0 era. The research method used is normative juridical by using statutory, concept and case approaches. The legal material analysis technique used is analytical descriptive juridical. From the results of the research conducted, it was found that the change from the conventional economic system to an online system had an impact on the emergence of legal relations carried out online, including work relations. As a form of regulation of employment relations for Gig Workers, different legal provisions are needed, formulation of work agreements that take into account legal rights, obligations and responsibilities for companies and workers who work independently (Gig Workers) as a foundation that reflects balance (proportionality) and protection for parties as a form of justice. It is concluded that the impact of the Gig economy due to digital transformation creates Gig Workers who should be bound in a work agreement that comprehensively regulates rights, obligations, time, work results and legal responsibilities..

**Keywords:** Independent worker, work agreement, Gig Economy.

## 1 Introduction

According to the data at the beginning of 2022, there are at least 204.7 million people in Indonesia who are connected to the internet, meaning that 73.7% of Indonesia's population has used internet facilities. The internet is not only a tool for communication, but the internet is also used as a tool for building the economy through various fields, both real and service segments. The use of the internet has succeeded in transforming people's ways of carrying out productive activities that are oriented to market needs. With a smartphone, people can already carry out various activities to supplement their usual income. This condition then becomes the embodiment of the Gig Economy. There are many versions of the Gig Economy, but basically the gig

economy is a work ecosystem that gives everyone the possibility to work independently regarding work time and place of work. The gig economy offers a variety of new opportunities for the labor market, not limited to job levels from blue collar to white collar. The impact of the Gig Economy is what gives rise to Gig Workers.

The gig economy with its Gig Workers is estimated to have generated the equivalent of 246 billion dollars by 2021. Freelance-based design and technology work is becoming a popular job. According to research results published by Payoneer, here are some gig workers that have emerged in the era of the global gig economy.



Fig. 1. The most popular fields are not the ones providing the highest pay

Based on BRodmin data, the contribution of Gig Workers to the growth of the global Gig Economy is projected to reach \$17.4 in 2023, from the achievement in 2022 which reached \$350 billion. The results of the Gig Worker survey show that 79% of respondents who work independently say they are happier than their previous job.

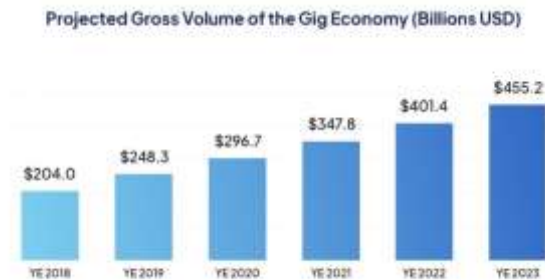


Fig. 2. Projected gross volume of the gig economy

Gig economy statistical indicators can be seen in the emergence of companies that are more interested in optimizing the presence of professional workers to increase their productivity. While these gig economy statistics show how interested companies and professionals are in leveraging them, experts believe the never-before-seen number of gig workers could trigger burnout in its workforce, which could lead to a drop in hourly pay if clients prefer gig workers. The quote is lower.

In the future, it looks like there will be more people participating in economic development by becoming gig workers. Interestingly, gig workers are administratively classified as informal workers with no full involvement with the company and a steady income. Of course this will present challenges as well as new opportunities for various industries. Gig Workers have a way of working with a contract system, but it is not permanent for a period after one contract is completed, the worker will move on to another task. Gig Workers are indirectly controlled by Third Parties.

The increase in the number of Gig Workers is supported by the increase in on demand workers or workers ready to work which can now be ordered online. Forbes magazine predicts that in 2030, the millennial generation will not feel comfortable working with models leaving at 08 in the morning to work and 17 o'clock going home. Such a pattern of working capital will be considered old-fashioned and boring for the next 10 years.

Changes in the habits of companies recruiting workers must of course be accompanied by an ecosystem or legal instruments that unite internal companies and gig workers. For freelancers, it will be easy for them to work wherever and whenever flexibly, but for those who lack skills, it will certainly be difficult to find work. Based on the background mentioned above, the research that is important to be appointed is on what are the work agreements made by Gig Workers with Entrepreneurs that can reflect proportionality and be fair to all parties.

## **2 Research Methods**

The statute approach is carried out by examining all laws or regulations that are related to the legal issues being discussed. This statutory approach is used because this research focuses on studying the norms in a rule of law, especially those related to employment. While the research method chosen and used in this study is normative juridical. Besides that, also using a conceptual approach (conceptual approach) the author also provides an overview and complements with views and doctrines in the science of law, it is hoped that this will give birth to notions, legal concepts and legal principles that are relevant to the issues raised or faced. This qualitative approach looks more at the meaning of substantive issues concerning values, principles and applicable legal norms related to employment issues.

Normative juridical research was chosen to put more emphasis on the use of primary legal materials that have binding powers that are authoritative. Primary legal material consisting of the applicable laws and regulations along with their derivatives. Research originating from primary legal materials also does not leave secondary legal materials for additional legal materials which this research hopes will be more complete. Tertiary



legal materials are also not left behind to complete and make this research more comprehensive. As for tertiary legal materials, legal materials provide instructions from primary legal materials and secondary legal materials in the form of general dictionaries, legal dictionaries, large Indonesian dictionary and English dictionary. The analysis used in this study is descriptive qualitative analysis, namely conducting an analysis by describing or explaining existing regulations related to the problem discussed, namely the impact of changes in the concept of work for work relations, so that a conclusion can be drawn.

### **3 Result And Discussion**

Based on the basic principle of thought that is used to determine an action as an ordinary action or legal action is whether or not there is a legal relationship which then gives rise to legal consequences, whether originating from an agreement and or originating from a law as referred to in the provisions of Article 1233 BW which finally there gave rise to an engagement. The discussion in subsequent articles which concretely explains agreements and engagements that arise due to law, has implications for binding legal consequences. The legal relationship arising from the engagement will bring legal consequences for the parties. Based on this, the author deems it necessary to discuss in the field of labor law the model of the legal relationship that occurs and includes the impact of changes in work patterns on special employment agreements (different from other general agreements) or better known as the *sui generis contractus*.

#### **3.1 Employment Relations**

##### **3.1.1 Work Relations in the perspective of Law Number 13 of 2003 concerning Manpower.**

The definition of an employment relationship as the relationship between the entrepreneur and the worker/laborer is based on a work agreement which has the following elements: work, wages and instructions. The subjects in the employment relationship are employers and workers. Entrepreneurs are defined as: a) natural persons, associations or legal entities that run a company owned by themselves; b) individuals, partnerships or legal entities that independently run a company that does not belong to them; and c) individuals, partnerships or legal entities located in Indonesia representing companies as referred to in letters a and b that are domiciled outside the territory of Indonesia. While workers are defined as everyone who works by receiving wages or other forms of compensation.

The employment relationship must be seen as a relationship based on the will of the parties by designating the position of the two parties based on the rights and obligations of workers towards employers and the rights and obligations of employers towards workers, the embodiment of the will of the parties is formulated in the form of a work agreement. The work agreement itself is an agreement between the worker/laborer and the employer or employer which contains the terms of work, the rights and obligations of the parties. The form of the agreement can be made in writing or not written/oral.

This exchange of rights and obligations must be carried out in a balanced way to reflect justice and legal protection. It is hoped that the existence of the Labor Law can become a positive instrument as a preventive measure for all parties who have a direct interest in work agreements, as stated by Prof. Sadjipto, who defines legal protection in two preventive and repressive categories.

### **3.1.2 Work agreements as the basis of employment relations.**

As the main pillar and as the initial foothold of the employment relationship, an understanding of the Employment Agreement is indispensable. Work agreements must be made on the basis of: a) agreement of both parties; b) ability or ability to carry out legal actions; c) the existence of the agreed upon work, and d) the agreed upon work does not conflict with public order, morality and regulations in force. If the work agreement above is made and contradicts the provisions referred to in a and b, then the work agreement is declared to violate subjective legal requirements and can be canceled. Meanwhile, if it conflicts with the provisions in letters c and d, then the work agreement is null and void because it does not fulfill the objective of legal requirements for making the agreement as stipulated in article 1320 BW.

The Manpower Law regulates the materials that must be regulated in the work agreement as stipulated in Article 54 paragraph (1), the work agreement contains at least: a) the name, address of the company and type of business; b) name, gender, age and address of the worker/laborer; d) position or type of work; d) place of work; e) the amount of wages and payments thereof; f) working conditions which contain the rights and obligations of employers and workers/laborers; g) the start and validity period of the work agreement; h) the place and date the work agreement was made and i) the signatures of the parties to the work agreement. The material in the work agreement must not conflict with company regulations, collective labor agreements and applicable laws and regulations.

### **3.1.3 Employment Agreement Framework.**

The work agreement is an agreement between the employer and the worker, so the work agreement cannot be retracted or changed, except with the agreement of the parties. Work agreements can end when : a) the worker dies, b) the term of the work agreement ends, c) there is a court decision and/or decision from an Industrial Relations Settlement Institution that has permanent legal force or d) there are certain circumstances or events included in the agreement which can lead to the termination of the employment relationship. Conversely, work agreements do not end due to the death of the entrepreneur or the transfer of company rights due to a legal event (sale, inheritance or grant).

Work agreements themselves consist of 2 types, namely work agreements made for a certain time (PKWT) or for an unspecified time (PKWTT). It is called PKWT because the work agreement made is based on a timeframe or the completion of a particular job. PKWT can only be made for certain jobs, namely : a) work that is one time or temporary in nature, b) work that is estimated to be completed in a short time and a maximum of 3 (three) years, c) work that is seasonal in nature, or d) work related to certain products,

new activities or additional products that are still in trial or exploration. Work agreements for a certain time cannot be held for permanent jobs, this work agreement can be extended and renewed.

### **3.2 The legal impact of changes in the employment relationship system**

It turns out that it's not only because of the gig economy that has caused a change in the work relations system in Indonesia, the condition of Covid-19 with the issuance of the Decree of the Minister of Manpower Number 104 of 2021 as outlined in the Presidential Decree (Keppres) of the Republic of Indonesia Number 12 of 2020 regarding the establishment of Non-Natural Disasters CORONA VIRUS DISEASE 2019 (Covid-19) as a National Disaster is a strong starting point related to changes in the work relations system.

There are at least 4 (four) points stated in the first point which reads "declare non-natural disasters caused by the spread of Corona Virus Disease 2019 (COVID-19) as a national disaster". The impact is that many companies experience financial difficulties, some employers take policies that are detrimental to workers/laborers, such as the policy of workers being furloughed, but not given wages (unpaid leave), changes in the amount of wages, laying off workers and ending in termination of employment (PHK). The impact will certainly increase the number of unemployed which can cause social unrest. Employment relations that have ended for workers causing workers to lose their livelihood is the beginning of unemployment with all its consequences, so to guarantee peace and certainty of workers' lives there should be no layoffs.

The guidelines specifically aim to: 1) provide guidelines for adjusting the work system in the employment relationship between employers and workers/laborers to prevent and minimize the spread and reduce the risk of Covid-19 in companies or workplaces, 2) provide guidelines in implementing remuneration for companies that have experienced the effects of the covid-19 pandemic and the imposition of restrictions on business activities in order to continue to fulfill the rights of workers/laborers, 3) encourage employers and workers/laborers to prioritize dialogue in resolving work relations issues so as to prevent termination of employment.

This guide covers:

1. Implementing a work from home (WFH) system and working in an office/workplace or WFO, in this system workers may do work either through the WFH or WFO system in accordance with orders issued by employers and still receive wages. The implementation of WFH and WFO can be carried out by considering a proportional system (for example 50% WFH and 50% WFO) or by using a system of level of need taking into account government regulations and or possibly by reducing working hours.
2. Implementation of wages and other worker/laborer rights, the application of WFA and WFO is determined not to mean that workers do not receive wages, but workers will still receive wages, and for employers who are directly affected due to Covid-19 can make wage adjustments based on an agreement between employers and workers/laborers and is carried out in a fair and proportional manner while taking

into account the survival of workers/laborers and business continuity. Wages must also continue to be given to workers who are laid off, if the employer is unable to afford it then the employer and worker must make an agreement which is the result of a dialogue that is carried out in deliberation based on kinship, transparency and good faith. This agreement must be made in writing at least contains; amount of wages, method of payment and time period.

3. Measuring to prevent termination of employment. The government seeks dialogue to find the best solution in maintaining the continuity of business and work. Termination of employment is the last step that can be taken after going through various efforts. Alternatives that can be taken include: a) adjusting the workplace, b) adjusting working hours, c) temporarily laying off workers/laborers temporarily, d) making adjustments to the amount and method of payment of workers/laborers' wages, e) reducing facilities and/or or gradual worker/laborer benefits, f) not extending the term of the work agreement for a certain time, g) pension for workers/laborers who meet the requirements. All alternative steps must be carried out in dialogue to get an agreement. Finally, if layoffs cannot be avoided, then the settlement will still be through statutory provisions.

The fact is that the Covid-19 pandemic has become a real trigger for the work pattern of Gig Workers in Indonesia, which is something that cannot be avoided. In addition to the conditions created by the impact of Covid-19, the need for professional work is not directly tied to time and work location, but is tied to work results. A working relationship that is based on a proportional employment agreement will help protect the parties bound by the agreement from unprofessional actions committed by one of the parties and this will create justice.

Gig Economy, New Normal has real implications for the emergence of Gig Workers whose work contracts must be formulated differently compared to regular work contracts. The principles of contractual proportionality, integrity, professional work, results-oriented work, not tied to 1 (one) employer and compensation in the form of wages (remuneration) above the minimum wage standard accompanied by legal consequence (legal consequence) will reflect the values of justice in the parties to the agreement.

Article 50 of Law Number 13 of 2003 concerning Manpower specifically regulates work relations. Work relations between employers and workers/laborers occur because of a work agreement. Imam Soepomo defines the working relationship as a relationship that exists between workers and an employer. In practice, the working relationship is no longer one employer and one worker, but one worker works for several employers/companies. In fact, it is no longer oriented towards a top-down and top-down relationship, but rather a sub-ordination relationship. These practices can be found in entrepreneurs who are members of a particular business group. Such a model can be seen in companies that have business affiliations spread across different entities. This may occur in the form of: 1) Workers are transferred from one company to a different company with a legal entity within the same business group or what is known as a mutation; 2) workers do work for several companies that are members of a business group or commonly known as job sharing; and 3) workers assigned temporarily in

companies that are members of a business group or commonly known as job assignments.

Not only that, in work practice there is also a work model in which time rules are no longer part of the work agreement, work time rules are adjusted to existing conditions, the needs of the employer and the readiness of the workers. Even with the advent of the Indonesian National Qualifications Framework (KKNI) which provides an illustration of a framework for evaluating the qualifications of Indonesian human resources that juxtaposes, equalizes and integrates the education sector with the training sector and work experience in a work capability recognition scheme that is adapted to the structure of various work sectors. The IQF that has been set is expected to represent the embodiment of the quality and identity of the Indonesian nation in relation to the education system, the national job training system and the national learning outcomes evaluation system that produces quality and productive national human resources. The impact of following the IQF is the emergence of the Indonesian National Work Competency Standards (SKKNI) which is a formulation of work capability that includes aspects of knowledge, skills and/or expertise and work attitudes that are relevant to the implementation of the duties and conditions of the stipulated positions. SKKNI is developed by ensuring the suitability of needs in the workplace so that SKKNI can be used to design and implement the results of training in the world of work. It is hoped that this will become the basis for appreciation for every worker who has contributed his energy and thoughts to the company, thus increasing the national productivity level. The SKKNI stipulated by the Minister of Manpower must still have an impact on shifting work patterns, patterns of authority distribution and patterns of accountability before the law.

The gig worker era shifted more rapidly when the Covid-19 Pandemic was declared a national disaster. A statement from the government that explicitly stipulates that the Covid 19 outbreak is a national disaster. It is stipulated in the Presidential Decree (Keppres) of the Republic of Indonesia Number 12 of 2020 concerning the determination of Non-Natural Disasters with the spread of CORONA VIRUS DISEASE 2019 (Covid-19) as a National Disaster. There are at least 4 (four) points stated in the first point which reads "declare non-natural disasters caused by the spread of Corona Virus Disease 2019 (COVID-19) as a national disaster". There are many new regulations as an effort to deal with disasters and including in the field of Manpower, including the issuance of Minister of Manpower Decree Number 104 of 2021 concerning Guidelines for Implementing Work Relations during the Corona Virus Disease 2019 (Covid-19) Pandemic Period for legal relations between employers and worker. Covid, which has been running for more than 2.5 years, has created a new work climate and in fact has not been able to recover as before.

On the other side, Indonesian labor regulations are known to be rigid, at least from the business perspective. This rigidity is making businesses do everything possible to avoid being bound by employment relationship as the costs are considered too high, and thus, classifying its workers into partnership model is a 'solution' to this issue. To make things worse, the Indonesian government tends to believe in the notion of rigidity of labor law, hence trying to loosen it up through the revision of the Manpower Law (Law Number 13 of 2003) in the Job Creation Law (Law Number 11 of 2020). The

reduced state control over labor law in Job Creation Law can be clearly seen in many provisions, from the term of the fixed-term contract to paid leave. The effort to deregulate the labor law through Job Creation Law will lead to a more flexible labor market, then make labor more precarious (Pulignano, 2019). In this labor market condition, precariousness becomes the alternative to unemployment, which make more people willing to accept any available job, even with reduced benefit (Rubery et al., 2018), such as the job with a partnership model that offers no employment protection whatsoever.

So that the work agreement that is made for gig workers should at least contain the standard terms of the work agreement plus the terms of work results and the resulting legal consequences. Described as the following table:

**Table 1.** the substance of the Gig Worker Agreement

<b>Description</b>	<b>Reff</b>	<b>Order</b>	<b>Wage</b>	<b>Work</b>	<b>Specific result</b>	<b>Legal Consequence</b>
Employment	Standard Agreement	√	√	√	x	x
Gig Worker	Standard Agreement +	√	√	√	√	√

The additional the above 2 (two) material and work agreement substance is hoped to make balance on the suitable work agreement arrangement, and as a result the work productivity can increase professionalism and responsibility.

## 4 Conclusion

It can be concluded that the emergence of the Gig Economy has had an impact on the emergence of Gig Workers and the Covid-19 Pandemic has become a trigger for accelerating changes in the concept that occurs in employment contracts as the main basis for a working relationship between employers and workers. The concept of a work agreement which is regulated in detail in Law no. 13 of 2003 concerning Manpower, it is certain that it must undergo a shift and be returned to objective and proportional work agreements which are based on the general provisions of the agreement, namely the provisions on freedom of contract, the principle of good faith and the principle of *pacta sunt servanda* contained in articles 1320 BW and 1338 BW without having to ignoring the provisions of article 1339 BW. The formulation of a standard work agreement without being bound by terms of time and place of work, but bound by work results means that work agreements must also be accompanied by legal responsibility for work results along with legal consequences that arise (legal consequence), to be agreed upon by the parties as a form implementation of work agreements that are proportional and fair. Concretely, the parties bound by the Gig Work Agreement must realize that the legal relationship is based on a professional legal relationship that is oriented towards a balance of exchange of rights and obligations between parties and all must be carried out based on professional values to obtain the intended end result.

### 4.1 A Subsection Sample

Please note that the first paragraph of a section or subsection is not indented. The first paragraphs that follows a table, figure, equation etc. does not have an indent, either.

Subsequent paragraphs, however, are indented.

**Sample Heading (Third Level).** Only two levels of headings should be numbered. Lower level headings remain unnumbered; they are formatted as run-in headings.

*Sample Heading (Forth Level).* The contribution should contain no more than four levels of headings. The following Table 2 gives a summary of all heading levels.

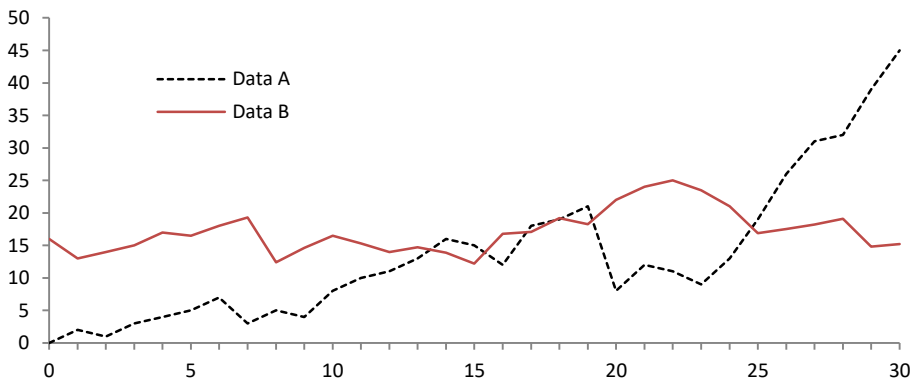
**Table 2.** Table captions should be placed above the tables.

Heading level	Example	Font size and style
Title (centered)	<b>Lecture Notes</b>	14 point, bold
1 <sup>st</sup> -level heading	<b>1 Introduction</b>	12 point, bold
2 <sup>nd</sup> -level heading	<b>2.1 Printing Area</b>	10 point, bold
3 <sup>rd</sup> -level heading	<b>Run-in Heading in Bold.</b> Text follows	10 point, bold
4 <sup>th</sup> -level heading	<i>Lowest Level Heading.</i> Text follows	10 point, italic

Displayed equations are centered and set on a separate line.

$$x + y = z \tag{1}$$

Please try to avoid rasterized images for line-art diagrams and schemas. Whenever possible, use vector graphics instead (see Fig. 3).



**Fig. 3.** A figure caption is always placed below the illustration. Short captions are centered, while long ones are justified. The macro button chooses the correct format automatically.

For citations of references, we prefer the use of square brackets and consecutive numbers. Citations using labels or the author/year convention are also acceptable. The following bibliography provides a sample reference list with entries for journal articles [1], an LNCS chapter [2], a book [3], proceedings without editors [4], as well as a URL [5].

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# The Determinants Of Capital Structure: Trade-Off Theory Vs Pecking Order Theory

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**Abstract.** This paper aims to examine the determinants of capital structure based on the views of the trade-off theory and the pecking order theory. A hundred and three companies were observed 618 times, differentiated for companies using debt below and above 50% and applying multiple regression to find out the determinants of capital structure in manufacturing companies in Indonesia from 2011 to 2017. The results of the study prove that there are differences in the determinants of capital structure when viewed from the trade-off and pecking order theories. Companies that use a debt proportion of  $<50\%$  are theoretically more following the pecking order theory, and companies that use a debt proportion of  $\geq 50\%$  are theoretically more suitable with the trade-off theory. But, in companies that use a debt proportion of  $<50\%$ , three variables produce coefficients that match predictions (Firm Age, Profitability, and Liquidity), and three variables do not match the predicted direction (Firm Size, Debt tax shield, and Business Risk). One variable is not significant (Growth). These results indicate that sample companies that are more mature, more liquid, and more profitable tend to prioritize internal sources of funds in financing company activities, so they use a lower proportion of debt in their capital structure, in line with the view of the pecking order theory. But on the other hand, the larger the size of the company, which has a certainty of profit (low business risk) tends to take advantage of the tax advantages of debt by increasing the proportion of debt in its capital structure, more in line with the trade-off theory. In companies that use a debt proportion of  $\geq 50\%$ , only one variable produces a coefficient that follows predictions (Firm Age), and four variables are not following the prediction direction (Firm Size, Profitability, Business Risk, and Liquidity). Two variables are not significant (Debt tax shield and growth). These results indicate that more mature sample firms tend to use lower debt which is more in line with the trade-off theory. On the other hand, the larger the company's size, the more profitable it has a certainty of profit and is more liquid; it tends to use a lower proportion of debt in its capital structure, more in line with the pecking order theory.

**Keywords:** Determinants Capital Structure, The Trade-Off Theory, The Pecking Order Theory.

## 1 Introduction

Modern finance theory is missing something important regarding corporate debt policy. Current theory can't explain why a company chose its capital structure composition [1]. Myers (1984) said we don't know enough about capital structure. We don't know how companies decide whether to issue debt, equity, or a mix of the two. Also, Thies & Klock (1992) said that capital structure is one of the most controversial financial topics. Since Modigliani and Miller wrote about it in 1958, academics worldwide have been interested in studying capital structure. Over the last 50 years, many studies have been done to determine how a business's capital structure affects its value, how businesses choose their capital structure, and how much to borrow based on the benefits and costs of borrowing.

In addition, Modigliani & Miller (1963) claimed that debt affects corporate value, suggesting that a greater debt load signals higher corporate value, encouraging firms to increase their debt levels. This idea has been panned for not taking into account the company's risks due to its rising debt levels. Later, this tactic was characterized by the concept of "tax savings versus financial expenses" (or "the trade-off idea"). Capital structure ratios that maximize returns while minimizing the risk of insolvency are determined by applying the principles of trade-off theory [5].

Continuing our exploration of capital structure hypotheses, we will discuss the Pecking Order Hypothesis. In 1963, Harvard Business School's Research Division published the findings of a study by Gordon Donaldson in which he analyzed data from 500 companies included in the Fortune 500. This research shows that a company's financing cycle begins with retained earnings, moves on to indebtedness to other parties via loan or bond sales, and ends with the issuance of new shares (Donaldson, 1963).

Also, firms prefer to finance securities offering events with debt and equity from within the company (Myers, 1984). Asymmetric information problems are what the theory of pecking order is based on. The business itself may pay for investments. So, using outside financing means that debt is more important than equity. Also, Myers & Majluf (1984) said that the issue of safe securities is usually better than the issue of risky securities. Firms should look for outside capital on the bond market, but if they can, they should also try to raise equity through retention. That is, debt financing from outside is better than equity financing.

Corporate size is a frequently postulated indicator of financial leverage, according to Schoubben & Van Hulle (2004). Most capital structure models account for scale and financial leverage. Size and leverage were first positively correlated by Schwartz & Van Tassel (1950). Large firms have a better ability to pay interest, are more diversified, have higher collateral values, and are less likely to go bankrupt than small ones, supporting the positive linearity argument. Pandey (2004) uses the log of assets to estimate the business size. Riportella & Papis (2001) use sales, assets, and employees as proxies for business size and argue that firm size is positively connected with firm

leverage because large firms can satisfy interest payments, are more diversified, and are more profitable.

On the other hand, Rajan & Zingales (1995) show that a company's size has a negative effect on its debt level because large companies prefer to finance themselves with equity instead of debt. So, smaller and younger companies pay fewer dividends because they focus more on debt and investments than bigger companies (Cooley & Quadrini, 2001). The link between firm size and debt is negative because big companies have easier access to equity investments than small companies [14]–[17].

Leverage for a company is also affected by how old the firm is. Kieschnick & Moussawi (2018) say that a firm's use of debt is linked to its age, even without considering how it interacts with other parts of corporate governance. Several other researchers have also found a negative link between the age of a company and its debt [19], [20]. In general, the researcher thinks the research results show that as managers get older, they can let their risk preferences have a bigger say in how their company's capital structure is set up [18], [21], [22]

Another factor that affects capital structure is profitability. Kumar et al. (2017) say that profitability is one of the most important factors in the research on capital structure. Leverage has a negative effect on overall profits. When the relationship is looked at separately in different parts of the world, it is found to be inversely proportional to leverage. This statement explains why corporations usually invest their own money, such as retained earnings and owner's equity. Researchers in the past have found that debt and profit are linked in a bad way [12], [17], [24]–[26].

On the other hand, a number of researchers found a positive link between profit and debt [27]–[29]. The main things determining the optimal capital ratio are taxes and the costs of financial trouble (Berger et al., 1995). The trade-off theory says that debt and effective tax rates will have a positive relationship. So, a high tax rate makes the tax benefits of interest on debt bigger. Trade-off theory says that firms will use more debt when the tax rate is higher to benefit from higher interest taxes [26]. Also, Rasiah & Kim (2011) said that the biggest reason companies take on more debt is the tax shield that comes from paying interest on the debt instead of taxes. According to the pecking order theory, corporate debt is related to the effective tax rate in a bad way because a higher effective tax rate will cut the company's internal funds from profits and raise its cost of capital [31].

In the academic literature, a company's capital structure is mostly based on its business's risk [32], [33]. Evidence shows no clear link between business risk and capital structure. Research shows that the two have an inverse relationship [34]–[39]. Several other scientists have also found a possible link between the two [40]–[42]. In their research, Titman & Wessels (1988) found no significant link between the two. On the other hand, different researchers have found a positive link between business risk and capital structure costs, which goes against the idea that reducing business risk increases capital structure costs [1], [43].

Organizations with high development potential also typically have low debt levels, according to Myers (2001). Numerous other researchers who found a negative association between growth and company leverage have confirmed this finding [45]–[48].

In various prior research, liquidity has also been noted as a factor influencing capital structure [23]. According to Jensen (1986), there is a positive association between liquidity and cash-rich firms' decision to take on new debt to prevent management from wasting free cash flows. Several researchers support this conclusion [35], [50]. However, the preponderance of empirical evidence suggests that the relationship between liquidity and debt ratios is inverse [12], [14], [17], [39], [51]–[53].

## **2 Literature Review**

### **2.1 Theories and Hypotheses Development-Based Capital Structure**

It has been argued that the impact of financing on the firm's value is irrelevant since Modigliani and Miller's 1958 article "The Cost of Capital, Corporation Finance, and the Theory of Investment", which made several limiting assumptions. The topic of capital structure has drawn the attention of academics around the world. Over the past 50 years, several studies have been conducted to clarify the relationship between capital structure and firm value, how organizations choose their capital structure, and how much debt is appropriate, given the advantages and disadvantages of borrowing. The beginnings and development of corporate leverage are attempted to be explained by three main hypotheses.

The first hypothesis is the traditional (or static) trade-off theory. By comparing the tax advantages of debt, the costs of bankruptcy, and the expenses of debt and equity agency, this theory explains how a corporation determines the ideal level of debt and strives to alter its existing debt level toward the optimal point [1], [4], [35].

Pecking order is the second hypothesis [2], [7], [54]. The corporation funds itself internally, through debt, and with stockholder equity due to information asymmetries between insiders and outsiders [55].

To reconcile the traditional (or static) trade-off theory and pecking order theory, the dynamic trade-off theory (DTOT) was developed (Kraus & Litzenberger, 1973; Leland, 1994). Time is valued highly in this theory but not in the static model. The determination of whether and how to use suitable leverage in the firm's capital structure depends on the derivation of two concepts, expectations (targets) and adjustment cost. The adjustment allows for observation of the company's behaviour. Some people have more influence than others and vice versa. The findings of the dynamic model show the shift between actual and desired leverage, despite the dynamic model appearing to be more advanced than the static model.

The third capital structure theory is the market timing hypothesis. This theory explains why companies issue additional shares when they think their stock is overpriced and purchase them back when they think it is underpriced. Market timing aims to take advantage of short-term changes in a company's equity and then maximize it to make a profit for the company [24].

### **2.2 Capital Structure's Empirical Determinants**

#### **Firm Size.**

The trade-off theory argues that larger companies tend to be more diversified, have lower bankruptcy chances [26], have smaller transaction costs of issuing debt, have higher investment opportunities than smaller companies, and have debt agency costs. Relatively lower monitoring costs, easier access to credit markets, and requires more debt to fully benefit from tax protection [58]. With this argument, larger companies will use higher debt.

In contrast, given the pecking-order theory, the information asymmetry between company insiders and capital markets is lower for large companies than for small companies. Therefore, large companies are better able to issue new equity. (Chen, 2004). Other researchers also stated that small companies have to pay more than large companies when issuing new equity [17]. Therefore, the pecking-order theory holds that larger companies will use less debt.

On the other hand, empirical research that analyzes the effect of firm size on the capital structure has been carried out before. Pandey (2004), Czerwonka & Jaworski (2021), Saif-Alyousfi et al. (2020), Arsov & Naumoski (2016), Forte et al. (2013), Lei (2020), Matias & Serrasqueiro (2017), Ahmad & Aris (2015), and Bassegy et al. (2014) can prove that the company's capital structure is positively influenced by company size. But on the other hand, Rajan & Zingales (1995), Cooley & Quadri (2001), Bevan & Danbolt (2002), Faulkender & Petersen (2006), Ali et al. (2022) and Ezeoha (2008) in their research obtained evidence of a negative effect of company size on capital structure.

If it is based on the theory of capital structure, the effect of firm size on the capital structure can be positive (TOT) or negative (POT). Based on research facts, especially DER ratio data as a proxy for capital structure, companies with a ratio below 50% are 57.4% which is more in line with the pecking order theory. In contrast, from the results of previous research, most researchers can prove that company size positively affects capital structure. Thus, the first hypothesis can be formulated as follows:

H1 : Increasing the size of the company will increase the capital structure

### **Firm Age.**

Odit & Gobardhun (2011:117) stated that firm age is usually seen as a standard measure of reputation in the capital structure model. From a life cycle perspective, a company is establishing itself as a sustainable business, thereby increasing its capacity to take on more debt. According to Diamond (1989), company reputation can be used to overcome creditworthiness problems because reputation is a good name built by the company for years, which the market understands as the company's ability to fulfil its obligations on time.

TOT assumes a positive effect of age on the capital structure because mature companies with a better reputation and more experience can reduce agency costs through positive signals on the quality of potential investments. Conversely, according to POT, mature companies have fewer resources for leverage (Adair & Adaskou, 2015: 4). Pandey & Singh (2015:172) states that new companies cannot use more debt because the profits generated are still low and bankruptcy costs are high, so these companies cannot benefit from interest tax shields.

Empirically, the effect of firm age on the capital structure has also been carried out. Sibindi (2016), Saif-Alyousfi et al. (2020), Forte et al. (2013), Ahmad & Aris (2015), and Hall et al. (2004) in their research can prove that firm age has a positive effect on capital structure. On the other hand, several researchers have obtained evidence that firm age has a negative effect on capital structure [67], [76].

If it is based on the theory of capital structure, the effect of firm age on capital structure can also be positive (TOT) and negative (POT). At the same time, from the results of previous research, most researchers can prove that firm age positively affects capital structure. Thus, the second hypothesis can be formulated as follows:

H2 : The more mature the age of the company will increase its capital structure

### **Profitability.**

TOT assumes a positive relationship between profitability and debt ratio. Profitable companies prefer debt because of the tax shield factor. Profitability sends signals to lenders regarding the company's financial health and reduces information asymmetry in the context of funding applications. Conversely, according to POT, profitability has a negative impact on debt ratios. Profitable companies will prioritize cash flow funding to secure their independence and avoid exposure to information asymmetry. Companies will use debt after they have exhausted their ability to generate internal funds. Profitable companies will use less debt [72].

The pecking order theory put forward by Myers & Majluf (1984) explains the influence of information asymmetry between company insiders and outsiders. This theory proposes that firms prioritize their sources of financing in such a way that all internal funds are used up before looking elsewhere for more expensive external finance. According to this theory, highly profitable firms will use less debt than less profitable ones. Another opinion states that long-term and short-term debt are negatively related to capital structure, indicating that companies prioritize retained earnings and do not depend on debt [65].

Empirically, research that analyzes the impact of profitability on the capital structure has been carried out before, most of which can prove that there is a negative effect of profitability on capital structure [27], [29], [63], [64], [66], [68], [77]–[79]. But on the other hand, other researchers [23], [80]–[82] obtained the opposite result, namely a positive effect of profitability on capital structure.

If it is based on the theory of capital structure, the effect of profitability on the capital structure can be positive (TOT) or negative (POT). Based on the results of previous research, most researchers can prove that profitability has a negative effect on capital structure. Thus, the third hypothesis can be formulated as follows:

H3 : The higher the company's profitability, the lower the capital structure

### **Debt Tax Shield.**

The trade-off theory predicts that firms will use more debt when tax rates are higher to take advantage of the tax benefits of higher interest [26]. The tax shield that arises due to the company's ability to reduce its taxable income through reducing interest payments on debt is the main factor that motivates businesses to take on more debt [31].

From the pecking order theory point of view, the effective tax rate has a negative effect on the company's capital structure because the effective tax rate will reduce the company's internal funds that earn profits and will further increase its cost of capital (Rasiah & Kim, 2011:157).

Many other studies can prove the positive effect of tax benefits on debt on capital structure [26], [31], [64], [83], [84]. Conversely, some researchers can also prove the negative effect of tax benefits on debt on capital structure [31], [68], [85].

Based on the theory of capital structure, the effect of tax benefits on debt on the capital structure can be positive (TOT) or negative (POT). From the results of previous research, most researchers can prove that tax benefits on debt have a negative effect on capital structure. Thus, the fourth hypothesis can be formulated as follows:

H4 : debt tax shields have a significant effect on capital structure

### **Business Risk.**

The trade-off theory predicts the negative effect of business risk on capital structure. In other words, companies with highly volatile cash flows should avoid debt financing because highly volatile cash flows can lead to financial difficulties. Thus, to avoid bankruptcy, companies with fluctuating cash flow levels must stop using debt financing (Sibindi, 2016:231).

According to Antoniou et al. (2008:64), companies with high-income volatility risk decreasing income levels under their debt payment commitments, which may result in the need to rearrange funding at high costs or face the risk of bankruptcy. Therefore, companies with very volatile income should have lower debt capital. Frank & Goyal (2009, p. 9) support this view, which states that companies with more volatile cash flows face higher costs of financial distress and have to use less debt.

Meanwhile, the pecking order theory predicts the positive effect of business risk on capital structure based on the idea that cash flow volatility implies income volatility which causes companies to be constrained in their funding using retained earnings. Therefore, companies must seek funding from the debt market (Sibindi, 2016:231).

Empirically, most conclude that there is a negative effect of business risk on capital structure [39], [63], [68], [77], [87]. Conversely, the positive effect of business risk on the capital structure has also been proven by several researchers [68], [88], [89].

Based on the theory of capital structure, the effect of business risk on the capital structure can be negative (TOT) or positive (POT). Based on the results of previous research, most of them obtained evidence of a negative effect of business risk on capital structure, and the fifth hypothesis can be written as follows:

H5 : an increase in business risk will reduce the capital structure

### **Growth.**

Frank & Goyal (2009:8) argue that growth increases financial distress costs, reduces free cash flow problems, and exacerbates debt-related agency problems. Growing companies place greater value on investing with stakeholders. Thus, the trade-off theory predicts that growth reduces the debt ratio. Antoniou et al. (2008:62) suggest that there is a negative relationship between growth opportunities and capital structure

for two main reasons. First, according to the trade-off theory, growth increases the cost of financial distress, thereby forcing managers to reduce debt in their capital structure. Second, in the presence of information asymmetry, firms issue equity instead of debt when overvaluation leads to higher expected growth. Meanwhile, according to the pecking order theory, when the internal resources of a growing company are not sufficient to finance the company's positive NPV investment opportunities, it must increase external capital. If companies need external finance, they issue debt before equity.

According to Myers (1977b) agency theory states that growth opportunities are negatively related to capital structure. Growth opportunities can cause a moral hazard, companies are perceived as riskier and fail to convince lenders to give them credit, so those with growth potential tend to have low debt ratios. Similarly, Jensen & Meckling (1976), Myers & Majluf (1984) and Fama & French (2002) argue that companies with high future growth opportunities should use more equity financing because companies with higher leverage tend to miss opportunities for profitable investment. The trade-off model predicts that firms with more investment opportunities have less leverage because they have stronger incentives to avoid underinvestment and asset replacement which can lead to shareholder-bondholder agency conflicts. The trade-off theory predicts a negative relationship between leverage and investment opportunities. In contrast, according to POT, the relationship is positive. The combination of growth potential and limited access to financial markets encourages firms to seek bank financing [91].

Empirically, the effect of growth on the capital structure has been carried out by many previous researchers. Gupta (1969), in his research, can prove that there is a positive effect of growth on capital structure. Several other researchers can also prove the positive effect of growth on capital structure [60], [63], [66], [79]. But on the other hand, Myers (2001), in his research, can prove that growth negatively affects capital structure supported by several other researchers who also found the same results [61], [93].

Based on the theory of capital structure, the effect of growth on the capital structure can be negative (TOT) or positive (POT). From the results of previous research, it can also be proven that growth negatively or positively affects capital structure. Thus, the sixth hypothesis can be formulated as follows:

H6 : Growth has a significant effect on capital structure

### **Liquidity.**

Based on the trade-off theory, companies with high liquidity can use high debt because of their ability to fulfil their obligations [94] implies a positive relationship between a company's liquidity position and debt ratio, companies that have a high level of liquidity (large short-term assets), have lower liquidity risk and borrow more debt, due to their ability to repay debt. On the other hand, the pecking order theory shows that companies with high liquidity can use their internal funds to finance their investments [95]. In other words, a negative relationship between liquidity and capital structure is expected because companies with more debt are associated with higher liabilities and lower remaining current assets.



Others argue that highly liquid companies tend to have substantial internal funds that reduce their need for more debt financing. In line with the pecking order theory, companies with higher liquidity ratios tend to rely on internal funds to finance their projects. Therefore, previous literature stated a negative relationship between liquidity and leverage [52], [96]. In contrast, the trade-off theory references a positive relationship, indicating that firms with higher liquid assets facilitate the debt repayment process by providing lenders with more collateral and security assets. In addition, a higher current ratio as a measure of liquidity is associated with the fact that companies are in a better position to manage short-term and long-term financial constraints, which leads them to obtain debt financing [97].

Empirically, Jensen (1986), in his research, can prove that there is a positive effect of liquidity on capital structure. This result is supported by several other researchers [23], [98], [99]. However, most empirical evidence supports the view that liquidity negatively affects capital structure [51]–[53], [60], [68], [100].

Based on the theory of capital structure, the effect of liquidity on the capital structure can be positive (TOT) or negative (POT). From the results of previous research, it can also be proven that liquidity positively or negatively affects capital structure. Thus, hypothesis seven can be formulated as follows:

H7 : Liquidity has a significant effect on capital structure

### 3 Research Framework

The population used in this study is a manufacturing company listed on the Indonesia Stock Exchange. The research period (observation) is 2012-2017, with 2011 as a comparison. All population members are used as samples (saturated samples) with several criteria adjusted to the research objectives. Based on the population criteria that have been determined, the number of sample companies is 103 companies with observation data during 2012-2017 of 618 observation data. Next, we divide the 618 observations based on the debt ratio below 50% and above or equal to 50% based on the capital structure theory. The pecking order theory holds that companies prioritize internal funds, so they have a lower debt ratio (<50%). In contrast, the trade-off theory holds that companies will optimize debt composition more to obtain tax benefits so that the company will have a higher debt ratio ( $\geq 50\%$ ).

#### 3.1 Measurements

##### **Firm Size.**

The firm's size was determined by the sum of the company's assets at the end of the fiscal year. Ln Total Assets was used to determine the firm size in this study [50], [86], [101]–[105].

##### **Firm Age.**

The firm's age was the period since it became a public business. Thus, firm Age was defined in this study as the period when the company was listed on the stock exchange [19], [20].

### **Profitability.**

Profitability refers to a company's ability to generate profits. Profitability was measured in this study by Return on Assets [80], [89], [93], [106] using a formula:

$$ROA = \frac{\text{Earning After Tax}}{\text{Total Assets}} \times 100\%$$

### **Debt Tax Shield.**

Debt Tax Shield was the company's profit on taxes from paying interest on the debt. Debt Tax Shield was measured by calculating the difference between corporate tax costs without debt and corporate tax costs with debt or multiplying interest costs by taxes. [107], [108]

$$\text{Debt Tax Shield} = \text{Interest Expense} * \text{Tax Rate}$$

### **Business Risk.**

A company's earnings variability (uncertainty) is a business risk. The standard deviation of EBIT was used to assess business risk. [89], [103].

### **Growth.**

The ability of a corporation to expand in size is referred to as growth. Sales growth was used to measure growth in this study. [17], [50], [102] using a formula:

$$\text{Sales Growth} = \frac{\text{Sales}_{(t)} - \text{Sales}_{(t-1)}}{\text{Sales}_{(t-1)}}$$

### **Liquidity.**

The ability of a corporation to fulfil short-term financial obligations on time is called liquidity. The current ratio is used to measure liquidity in this study [50], [52], [93], [98], [101], [104], [106], using a formula:

$$CR = \frac{\text{Current Assets}}{\text{Current Liabilities}} \times 100\%$$

### **Capital Structure.**

The capital structure is a policy adopted by management to obtain a source of financing for the firm, which will be utilized to fund the company's operating activities. The debt-to-equity ratio confirmed the capital structure (Abor, 2007, 2008; Berger et al., 1997; Ooi, 1999). The formula used:

$$DER = \frac{Total\ Debt}{Total\ Debt + Equity} \times 100\%$$

## 4 Data Analysis And Methodology

This study employed two types of statistical analysis: descriptive statistical analysis and inferential statistical analysis. Descriptive analysis was performed to characterize each variable in more detail. Furthermore, inferential statistical analysis was plotted to determine the independent effect on dependent variables.

### 4.1 Regression Model

In this investigation, the regression equation model is as follows:

$$CS = a + \beta_1 SIZE + \beta_2 AGE + \beta_3 PRF + \beta_4 DTS + \beta_5 BR + \beta_6 GRO + \beta_7 LIQ + e$$

Where:

- SIZE: firm size
- AGE: firm Age
- PRF: Profitability
- DTS: Debt Tax Shield
- BR: Business Risk
- GRO: Growth
- LIQ: Liquidity
- CS: Capital Structure

### 4.2 Empirical Result

#### Descriptive Statistics.

We used descriptive statistics to summarize the research data and provide a summary of data dissolution and distribution size. The following Table 1 summarizes the results of descriptive statistics:

**Table 1.** Descriptive Statistics

Variables	The proportion of Debt < 50%					The proportion of Debt ≥ 50%				
	N	Min	Max.	Mea n	Std. Deviatio n	N	Min	Max	Mea n	Std. Deviatio n
<b>Firm Size</b>	35 5	25,6	33,3	28,4	1,7	26 3	25,6	33,0	28,6	1,5
<b>Firm Age</b>	35 5	1,0	39,0	20,3	8,2	26 3	1,0	40,0	20,2	8,1

<b>Profitability</b>	35 5	- 13, 6	65,7	7,4	8,6	26 3	- 29, 9	52,7	2,5	9,7
<b>Debt Tax Shield</b>	35 5	0,0	29,0	12,4	11,2	26 3	,0	27,2	15,4	11,0
<b>Business Risk</b>	35 5	18,2	30,6	24,3	2,0	26 3	17,8	28,4	24,4	1,9
<b>Growth</b>	35 5	- 80, 1	204,9	5,6	26,6	26 3	- 71, 8	594, 7	9,0	42,6
<b>Liquidity</b>	35 5	40,3	46498, 4	498, 0	2780,1	26 3	33,7	830, 5	125, 4	66,2
<b>Capital Structure</b>	35 5	0,0	49,8	29,8	12,0	26 3	50,1	98,8	65,0	11,2

Based on Table 1, for both groups of samples in terms of firm size, the standard deviation value smaller than the average indicates that the overall sample companies have relatively even company sizes. In addition, the average value was inclined to the minimum, indicating that most sample companies had firm sizes below the average. The standard deviation value of the firm's age was smaller than the average, meaning that the company's age was evenly distributed at all points between 1 year to 40 years. However, further examination showed that 40.3% of sample companies were below the average age, and the remaining 59.7% were above the average age.

The sample companies' profitability level in the study period varies between companies. In addition, the average value that is more inclined to the minimum value indicates that most of the sample companies in the study period have a profitability ratio below the average. The debt tax shield of the sample companies is evenly distributed. The average debt tax shield, which is more inclined to the maximum value, indicates that most sample companies have a debt tax shield above the average.

The high and low business risk faced by the sample companies in the study period is relatively the same. The growth rate of the sample company dramatically varies depending on the company's sales achievement level and the group of samples. The standard deviation growth was higher than the minimum value for the sample with the proportion of debt  $\geq 50\%$ , indicating that the growth of the sample companies is not evenly distributed.

The sample company's ability to guarantee short-term liability with its current assets was different in terms of liquidity. The standard deviation of liquidity was higher than the average for the sample with the proportion of debt  $< 50\%$ , indicating that the company's liquidity is not evenly distributed. However, most sample companies were below the rule of thumb for liquidity (2x or 200%). In other words, most of the sample companies did not have sufficient ability to guarantee their short-term debt.

The proportion of debt in the sample companies' capital structure showed analogous statistics. For each sample group, the standard deviation appears below the average, indicating that the sample companies' capital structure is evenly distributed.

### Regression Analysis.

The results of the regression analysis can be seen in Table 2 as follows:

**Table 2.** Empirical Finding

Descriptio ns	The proportion of Debt < 50%				The proportion of Debt ≥ 50%			
	POT Predicti on	Coeffici ents β	t	p- value	TOT Predicti on	Coeffici ents β	t	p- value
(Consta nt)		-13,267	- 1,3 20	0,1 88		97,613	7,8 57	0,0 00
Firm Size	-	2,397	4,8 01	0,0 00	+	-2,277	- 3,5 42	0,0 00
Firm Age	-	-0,219	- 2,9 06	0,0 04	+	0,243	2,9 50	0,0 03
Profitabi lity	-	-0,201	- 2,6 82	0,0 08	+	-0,225	- 3,1 94	0,0 02
Debt tax shield	-	0,141	2,6 45	0,0 09	+	-0,097	- 1,5 77	0,1 16
Busines s Risk	+	-0,842	- 1,9 86	0,0 48	-	1,394	2,7 68	0,0 06
Growth	+	0,033	1,4 57	0,1 46	-	-0,001	- ,06 4	0,9 49
Liquidit y	-	-0,001	- 3,8 38	0,0 00	+	-0,035	- 3,4 84	0,0 01
Adj. R Square F Test				0,170				0,158
		11,333		(p-value 0,000)		8,032		(p-value 0,000)

Based on the empirical finding as presented in Table 2, it can be explained as follows:

#### 1. The effect of firm size on capital structure

For the group sample with a proportion of debt <50%, the results show that the relationship between firm size and capital structure differs from predictions. Firm size positively affects capital structure with a coefficient of 2.397 and a t-test of 4.801 (p-value 0.000). These results are also in line with TOT's view. Larger companies tend to be more diversified, have lower bankruptcy chances, and transaction costs of issuing debt smaller, have higher investment opportunities than smaller companies, have lower debt agency costs, relatively lower monitoring, easier access to credit markets, and

require more debt to benefit from tax protection fully. Empirically these results support the research of Czerwonka & Jaworski (2021), Saif-Alyousfi et al. (2020), Arsov & Naumoski (2016), Forte et al. (2013), Lei (2020), Matias & Serrasqueiro (2017), Ahmad & Aris (2015), and Bassey et al. (2014) which can prove that the company's capital structure is positively influenced by company size.

On the other hand, for the group sample with a proportion of debt  $\geq 50\%$ , the results also show that the relationship between firm size and capital structure differs from predictions. Firm size negatively affects capital structure with a coefficient of -2.277 and a t-test of -3.542 (p-value 0.000). This result is also in line with the POT view, which states that the information asymmetry between company insiders and the capital market is lower for large companies compared to small companies. Therefore, large companies are better able to issue new equity (Chen, 2004). Other researchers also stated that small companies have to pay more compared to large companies when issuing new equity so that larger companies will use less debt [17]. Empirically, these results support the research of Rajan & Zingales (1995), Cooley & Quadrini (2001), Bevan & Danbolt (2002), Faulkender & Petersen (2006), Ali et al. (2022) and Ezeoha (2008) in their research obtained evidence of a negative effect of company size on capital structure.

## 2. The effect of firm age on capital structure

For the group sample with a proportion of debt  $< 50\%$ , the results show that the relationship between firm age and capital structure is as predicted. Firm age negatively affects capital structure with a coefficient of -0.219 and a t-test of -2.906 (p-value 0.004). This result is also in line with the POT view. Mature companies have fewer resources to leverage (Adair & Adaskou, 2015:4). A similar opinion was also conveyed by Pandey & Singh (2015:172) that new companies cannot use more debt because the profits generated are still low. These companies cannot benefit from interest tax shields because bankruptcy costs are high. Several researchers also obtained evidence that firm age negatively affects capital structure [67], [76].

On the other hand, For the group sample with a proportion of debt  $\geq 50\%$ , the results also show that the relationship between firm age and capital structure is also in line with predictions. Firm age positively affects capital structure with a coefficient of 0.243 and a t-test of 2.950 (p-value 0.003). This result is also in line with the view of TOT, which assumes a positive effect of age on capital structure based on the fact that mature firms with a better reputation and more experience can reduce agency costs through positive signals on the quality of potential investments. Empirically, these results support Sibindi (2016), Saif-Alyousfi et al. (2020), Forte et al. (2013), Ahmad & Aris (2015), and Hall et al. (2004), who in their research obtained evidence of a positive effect of firm age on capital structure.

## 3. The effect of profitability on capital structure

For the group sample with a proportion of debt  $< 50\%$ , the results show that the relationship between profitability and capital structure is as predicted. Profitability significantly negatively affects capital structure with a coefficient of -0.201 and a t-test

of -2.682 (p-value 0.008). This result is also in line with the POT view; profitability has a negative impact on the debt ratio. Profitable companies will prioritize cash flow funding to secure their independence and avoid exposure to information asymmetry. Companies will use debt after they have exhausted their ability to generate internal funds. Profitable companies will use less debt [72]. Empirically, research that analyzes the impact of profitability on the capital structure has been carried out before, most of which can prove that there is a negative effect of profitability on capital structure [27], [29], [63], [64], [66], [68], [77]–[79].

On the other hand, for the group sample with a proportion of debt  $\geq 50\%$ , the results show that the relationship between profitability and capital structure is not as predicted. Profitability significantly negatively affects capital structure with a coefficient of -0.225 and a t-test of -3.194 (p-value 0.002). This result is also in line with POT's view that profitability has a negative impact on debt ratios.

#### 4. The effect of debt tax shield on capital structure

For the group sample with a proportion of debt  $< 50\%$ , the results show that the relationship between the debt tax shield and capital structure is not as predicted. Debt Tax Shield positively affects capital structure with a coefficient of 0.141 and a t-test of 2.645 (p-value 0.009). This result is also in line with TOT's view, which predicts that companies will use more debt when tax rates are higher to take advantage of the tax benefits of higher interest [26]. The tax shield that arises due to the company's ability to reduce its taxable income through reducing interest payments on debt is the main factor that motivates businesses to take on more debt [31]. Empirically, several researchers also obtained evidence that Debt Tax Shield has a positive effect on capital structure [26], [31], [64], [83], [84].

On the other hand, for the group sample with a proportion of debt  $\geq 50\%$ , the results show that the relationship between the debt tax shield and the debt ratio is not as predicted. Debt tax shield has a negative and insignificant effect. This result is an interesting discussion because, for companies whose proportion of debt is  $\geq 50\%$ , the debt tax shield is no longer a consideration in determining the proportion of debt in their capital structure.

#### 5. The effect of business risk on capital structure

For the group sample with a proportion of debt  $< 50\%$ , the results show that the relationship between business risk and capital structure is not as predicted. The business risk negatively affects capital structure with a coefficient of -0.842 and a t-test of -1.986 (p-value 0.048). These results also align with TOT's view of predicting the negative effect of business risk on capital structure. In other words, companies with highly volatile cash flows should avoid debt financing because highly volatile cash flows can lead to financial difficulties. Thus to avoid bankruptcy, companies with fluctuating cash flow levels must stop using debt financing (Sibindi, 2016:231). Several researchers also obtained evidence that business risk negatively affects capital structure [63], [68], [77], [87].

On the other hand, for the group sample with a proportion of debt  $\geq 50\%$ , the results show that the relationship between business risk and capital structure is not as predicted. Business risk has a significant positive effect on capital structure. This result is also in line with the POT view, which predicts a positive effect of business risk on capital structure based on the idea that cash flow volatility implies income volatility which causes companies to be constrained in their funding using retained earnings. Therefore, companies must seek funding from the debt market (Sibindi, 2016:231). Empirically, these results support several previous studies [68], [88], [89], which in their research obtained evidence of the positive effect of business risk on capital structure.

#### 6. The effect of growth on capital structure

For the group sample with a proportion of debt  $< 50\%$ , the results show that the relationship between growth and capital structure is as predicted but not statistically significant. Furthermore, the group sample with a proportion of debt  $\geq 50\%$  shows that the relationship between growth and debt ratio is also as predicted but not significant. These results also indicate that growth is not a factor considered in determining the proportion of debt in the capital structure of the sample companies.

#### 7. The effect of liquidity on capital structure

The results showed that the sample data with the proportion of debt  $< 50\%$  and  $\geq 50\%$  liquidity had a significant negative effect. This result also aligns with POT's view that companies with higher liquidity ratios tend to rely on internal funds to finance their projects. Empirically, several researchers also obtained evidence that liquidity has a negative effect on capital structure [51]–[53], [60], [68], [100].

## 5 Research Implication

The research results are very interesting to be studied in more depth in further research. The pecking order theory states that companies prefer to meet their funding needs by prioritizing internal funds that are lower risk first. This study is represented by a sample that uses a debt proportion of  $< 50\%$  in its capital structure. According to POT predictions, firm age, profitability, and liquidity have coefficient directions. In contrast, Firm Size, Debt tax shield and Business Risk do not match POT predictions but are more in line with TOT. On the other hand, the trade-off theory states that companies will try to optimize their capital structure to obtain a tax shield. This study is represented by a sample that uses a debt proportion of  $\geq 50\%$  in its capital structure. Firm age has a coefficient direction according to TOT predictions. In contrast, firm size, profitability, business risk, and liquidity do not match TOT predictions but are more in line with POT predictions.

### *Limitation*



This study observed manufacturing companies listed on the Indonesia Stock Exchange, consisting of various industrial sectors and sub-sectors or heterogeneous. The generalizability might only be applied to the companies.

The result of R Square was relatively low, indicating that many other variables outside the model affected the capital structure.

## 6 Conclusions

The group sample with a proportion of debt < 50%, firm age, profitability, and liquidity have a coefficient direction according to POT predictions, while firm size, debt tax shield and business risk do not match POT predictions, and growth is not significant. For the group sample with a proportion of debt  $\geq$  50%, firm age has a coefficient direction according to POT predictions. In contrast, firm size, profitability, business risk, and liquidity do not match POT predictions, and growth is insignificant.

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## Appendices

### 6.1 Appendix 1 Descriptive Statistics

#### Descriptives.

Variables	The proportion of Debt < 50%					The proportion of Debt ≥ 50%				
	N	Min.	Max.	Mean	Std. Deviation	N	Min.	Max.	Mean	Std. Deviation
<b>Firm Size</b>	355	25,6	33,3	28,4	1,7	263	25,6	33,0	28,6	1,5
<b>Firm Age</b>	355	1,0	39,0	20,3	8,2	263	1,0	40,0	20,2	8,1
<b>Profitability</b>	355	-1,36	65,7	7,4	8,6	263	-2,99	52,7	2,5	9,7
<b>Debt Tax Shield</b>	355	0,0	29,0	12,4	11,2	263	,0	27,2	15,4	11,0
<b>Business Risk</b>	355	18,2	30,6	24,3	2,0	263	17,8	28,4	24,4	1,9
<b>Growth</b>	355	-8,01	204,9	5,6	26,6	263	-7,18	59,47	9,0	42,6
<b>Liquidity</b>	355	40,3	4649,84	49,80	2780,1	263	33,7	830,5	12,54	66,2
<b>Capital Structure</b>	355	0,0	49,8	29,8	12,0	263	50,1	98,8	65,0	11,2

6.2 Appendix 2 Regression Result

Regression (Group of Sample 1).

Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	Liq, DTS, BR, Gro, FA, Prof, FS <sup>b</sup>	.	Enter

- a. Dependent Variable: CS
- b. All requested variables entered.

Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,431 <sup>a</sup>	,186	,170	10,9711316	1,986

- a. Predictors: (Constant), Liq, DTS, BR, Gro, FA, Prof, FS
- b. Dependent Variable: CS

ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9548,750	7	1364,107	11,333	,000 <sup>b</sup>
	Residual	41766,908	347	120,366		
	Total	51315,658	354			

- a. Dependent Variable: CS
- b. Predictors: (Constant), Liq, DTS, BR, Gro, FA, Prof, FS

Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics
	B	Std. Error	Beta			Tolerance



	(Constant)	-13,267	10,050		-1,320	,188	
	FS	2,397	,499	,333	4,801	,000	,486
	FA	-,219	,075	-,148	-2,906	,004	,902
1	Prof	-,201	,075	-,144	-2,682	,008	,813
	DTS	,141	,053	,131	2,645	,009	,958
	BR	-,842	,424	-,139	-1,986	,048	,477
	Gro	,033	,023	,074	1,457	,146	,911
	Liq	-,001	,000	-,188	-3,838	,000	,977

**Regression (Group of Sample 2)**

**Variables Entered/Removed<sup>a</sup>**

Model	Variables Entered	Variables Removed	Method
1	Liq, Prof, Gro, BR, FA, DTS, FS <sup>b</sup>	.	Enter

- a. Dependent Variable: CS
- b. All requested variables entered.

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,425 <sup>a</sup>	,181	,158	10,2308882	1,892

- a. Predictors: (Constant), Liq, Prof, Gro, BR, FA, DTS, FS
- b. Dependent Variable: CS

**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
-------	----------------	----	-------------	---	------

1	Regression	5884,871	7	840,696	8,032	,000 <sup>b</sup>
	Residual	26691,124	255	104,671		
	Total	32575,995	262			

a. Dependent Variable: CS

b. Predictors: (Constant), Liq, Prof, Gro, BR, FA, DTS, FS

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics
	B	Std. Error	Beta			Tolerance
(Constant)	97,613	12,424		7,857	,000	
1 FS	-2,277	,643	-,307	-3,542	,000	,427
FA	,243	,082	,177	2,950	,003	,888
Prof	-,225	,070	-,195	-3,194	,002	,862
DTS	-,097	,061	-,096	-1,577	,116	,877
BR	1,394	,504	,239	2,768	,006	,430
Gro	-,001	,015	-,004	-,064	,949	,976
Liq	-,035	,010	-,208	-3,484	,001	,903

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# The Influence of Corporate Image on Customer Loyalty through Customer Engagement as a mediating variable (Study on Customers of PT. Bank Syariah Indonesia in Malang City)

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**Abstract.** The study analyzed how the influence of corporate image on customer loyalty to customers of PT. Bank Syariah Indonesia in Malang City, the influence of corporate image on customer engagement on customers of PT. Bank Syariah Indonesia in Malang City, the influence of customer engagement on customer loyalty to customers of PT. Bank Syariah Indonesia in Malang City and the influence of corporate image mediated by customer engagement on customer loyalty to customers of PT. Bank Syariah Indonesia in Malang City. This study the sample that will be taken is 211 Islamic bank customers spread across the city of Malang Data analysis using SEM-PLS. The results indicate all hypotheses are accepted, the first hypothesis test, it shows that corporate image has a positive and significant effect on customer loyalty. The second hypothesis shows that corporate image has a positive and significant effect on customer engagement. The third hypothesis show that customer engagement has a positive and significant effect on customer loyalty. The fourth hypothesis shows that the indirect effect of corporate image through customer engagement on customer loyalty has a positive and significant effect.

**Keywords:** Corporate Image, customer engagement, customer loyalty.

## 1 Introduction

Indonesia, as the country with the largest Muslim population in the world, has the potential to be at the forefront of the Islamic finance industry. Increased public awareness of halal matter and strong stakeholder support are important factors in the development of the halal industry ecosystem in Indonesia, including Islamic banks. On February 1, 2021, which coincided with 19 Jumadil Akhir 1442 H, it marked the history of the merging of Bank Syariah Mandiri, BNI Syariah, and BRI Syariah into one entity, namely PT. Bank Syariah Indonesia (BSI). The merger of the three Islamic Banks is an effort to create a Sharia Bank that is the pride of the people, which is expected to become a new energy for national economic development and contribute to the welfare of the wider community. The existence of Bank Syariah Indonesia is also a reflection

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of the face of Islamic banking in Indonesia which is modern, universal, and provides goodness for all nature (Rahmatan Lil 'Aalamiin).

The population in East Java is 40,994 million people in June 2021. Of this number, 39.85 million people (97.21%) are Muslim or the majority of the population is Muslim. East Java is a province that has the fourth largest Islamic banking institution in Indonesia, with assets of 5.63% of the total assets of Islamic banks in Indonesia. (OJK Snapshot, September 2021). Malang City is the second largest city in East Java, after Surabaya, and is well known as a city of education. The majority religion in Malang City is Islam, with a percentage of 89.70%, of the total population of Malang city. Based on this data, it is an opportunity for Islamic banks to continue to grow and must compete by providing the best service to their customers. ([https://id.wikipedia.org/wiki/Kota\\_Malang](https://id.wikipedia.org/wiki/Kota_Malang)).

The result of the merger of the three largest Islamic banks in Indonesia to become PT. Bank Syariah Indonesia, it is suspected to have an impact on the influence of corporate image and customer loyalty in Malang City. So the banking sector must make various efforts to maintain the existence of Islamic banks and customer loyalty. One way to increase customer loyalty is to improve corporate image. Corporate image significantly influences customer retention either directly or indirectly on customer loyalty (Andreassen & Lindestad, 1998). Kotler, (2008), states that when companies should be able to understand better about the impact of corporate image on customer loyalty, because of the highly competitive environment and the importance of customer retention and customer loyalty.

Nguyen, N. and Leblanc (2001), stated that corporate image is related to the business name, architecture, various products/services, traditions, ideology and the impression of quality communicated by everyone interacting with corporate clients. According to Keller (2011), the desired corporate image increases the likelihood of brand choice, as well as resulting in greater consumer loyalty and decreased vulnerability to competitive marketing actions. This is supported by Bloemer, J., et al, (1998), Andreassen & Lindestad, (1998) and Johnson, et al, (2001) which state that there is a positive relationship between corporate image and customer loyalty. Corporate image is defined as the perception of an organization that customers hold in their memory.

Corporate image is used as an important factor to increase customer loyalty (KandamPully and Hsin, 2007). Dijkmans et al., (2015), stated that to create customer engagement in online stores, companies can take advantage of corporate image, which is referred to as "the process of positioning, monitoring, measuring, speaking, and listening to the organization perceived by online store consumers". The conclusion is that a high corporate image will result in a more positive and high customer engagement. Based on the phenomena and background above, it is necessary to conduct research related to the Effect of Corporate Image on Customer Loyalty through Customer Engagement as a mediating variable (Study on Customers of PT. Bank Syariah Indonesia in Malang City).

The study analyzed how the influence of corporate image on customer loyalty to customers of PT. Bank Syariah Indonesia in Malang City, the influence of corporate image on customer engagement on customers of PT. Bank Syariah Indonesia in Malang City, the influence of customer engagement on customer loyalty to customers of PT.

Bank Syariah Indonesia in Malang City and the influence of corporate image mediated by customer engagement on customer loyalty to customers of PT. Bank Syariah Indonesia in Malang City.

## **2 Literature Review**

### **2.1 Corporate Image**

Corporate image as a filter that reflects the overall reputation of the company and is a customer experience (Aydin, 2005). Corporate image according to Keller, (2011) is the perception of the organization's image, the perception of sound, smell, touch, taste and feeling experienced through the use of products, customer service, commercial environment and corporate communications. Bank corporate image indicators according to Abu Saleh, et al (2017), consist of:

1. Security, including physical safety, risk and uncertainty avoidance, financial security and keeping clients' personal and financial information confidential.
2. Accessibility, means the ease and convenience in which customers can access the services provided by the bank.
3. The services offered, must be attractive in the eyes of their customers and this includes interest paid on savings, commissions charged for services and interest charged on loans.
4. Reputation, as a property that includes many attributes such as product and service quality, ability to innovate, financial stability, ability to attract, develop, use of company assets and management quality.

### **2.2 Customer Engagement**

Brodie et al. (2011), customer engagement represents a psychological state, which is characterized by a certain level of intensity that plays a central role in the relational exchange process. Patterson, et al, (2006) define customer engagement as the level of physical, cognitive, and emotional customers associated with service organizations. Customer engagement indicators according to Vivek, (2012) consist of:

1. Awareness, the level of attention, focus, and relationship owned by the customer to the brand.
2. Enthusiasm, the level of excitement and customer interest in the brand.
3. Interaction, various participations made by customers (offline and online) to the company or other customers outside of purchases.
4. Activity, the level of unity and sense of belonging felt by the customer towards the brand.
5. Extraordinary experiment, a condition that describes that the customer has full concentration, is happy, and really enjoys his role as a customer of a brand.

### 2.3 Customer loyalty (customer loyalty)

Kotler, (2008), states that customer loyalty is a strong commitment to repurchase or subscribe to a particular product or service in the future despite situational and marketing efforts causing transitional behavior. Indicators of customer loyalty according to Tabrani et al., (2018), consist of:

1. Customers say positive things about Islamic banks to others
2. Customers recommend sharia banks to their family and relatives
3. Customers suggest choices of Islamic banks to new customers
4. Customers have more than one sharia bank service

## 3 Research Methodology

This type of research uses quantitative research, namely research based on the philosophy of positivism, used to examine certain populations or samples, data collection using research instruments, quantitative/statistical data analysis, with the aim of describing and testing predetermined hypotheses. (Sugiyono, 2010).

### 3.1 Conceptual framework

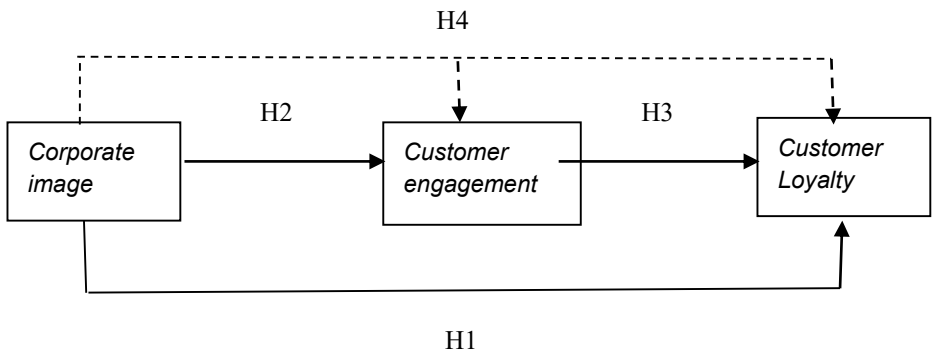


Fig. 1.. Conceptual framework

### 3.2 Research Hypothesis

Corporate image has an important influence in maintaining customer loyalty. Research by Setyono et al. (2015), shows that company image has a significant influence on customer loyalty.

H1. There is an influence between corporate image on customer loyalty to customers of PT. Bank Syariah Indonesia in Malang City.

Corporate image is a valuable intangible asset for companies, Dijkmans et al., (2015), researching online companies to see the benefits of customer engagement that affect corporate image. shows that customer engagement is positively related to corporate image.

H2. There is an influence between corporate image on customer engagement on customers of PT. Bank Syariah Indonesia in Malang City.

Fernandes and Esteves (2016), show that loyalty is significantly related to customer engagement. Hapsari et al. (2017), shows that customer engagement has the most influential effect on passenger loyalty.

H3. There is an influence between customer engagement on customer loyalty to customers of PT. Bank Syariah Indonesia in Malang City.

H4. There is an influence between corporate image on customer loyalty through customer engagement on customers of PT. Bank Syariah Indonesia in Malang City.

### **3.3 Population and Sample**

The population in this study were customers from PT. Bank Syariah Indonesia in Malang City. The sampling method is a non-probability sampling technique by means of incidental sampling. (Sugiyono, 2010). Regarding the minimum sample size in SEM analysis, according to Hair et al., (2018) found that the appropriate sample size for SEM is between 100 – 200 samples. So in this study the sample that will be taken is 211 Islamic bank customers spread across the city of Malang.

### **3.4 Data analysis technique**

In this research, the technical analysis used is SEM based on variance or Component based SEM, which is known as Partial Least Square (PLS). Hair et al., (2018), checking the validity with Pearson correlation, the instrument is declared valid if the correlation value is  $> 0.3$ .

## **4 Results**

### **4.1 Description of Respondent Characteristics**

1. Gender-based respondents showed that the percentage of male and female respondents was almost balanced, at 51.20% of male respondents and 48.80% of female respondents.
2. Age-based shows that the majority of respondents are aged 20-30 years. In addition, the number of respondents aged 21-50 years is quite a lot. Respondents over the age of 50 were only 8.1%.
3. Based on educational background shows that the majority of respondents have studied Strata 1 (S1). The number of respondents who have studied S1 almost reached half the total number of respondents involved. On the other hand, only a few

respondents have a Diploma education background, which is only 9 out of 211 people or equivalent to 4.30%.

4. Work based on employment shows that the majority of respondents work as private employees, which is as much as 91 out of 211 people or equivalent to 43.1%. On the other hand, only a few SOE employees were involved in this study as respondents.
5. Based on income shows that the percentage of respondents with income of Rp 2,000,000 to Rp 5,000,000 reached 42.70%. On the other hand, respondents with incomes of more than Rp 10,000,000 were only 10.90%.
6. The description shows that as many as 58.3% became customers of Islamic banks for 3 years - 5 years. A total of 41.70% of respondents have been customers of Islamic banks for > 5 years.

### 4.2 PLS SEM Analysis

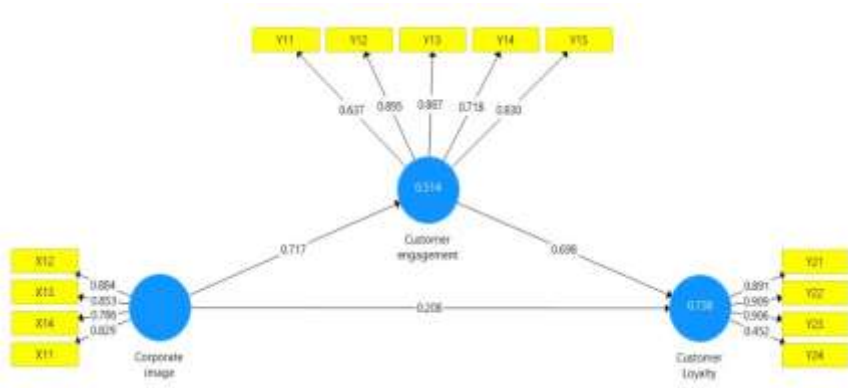


Fig. 2. Bootstrapping initial model based on conceptual model

Based on the model above, it can be seen that from the measurement model on the corporate image variable, it is reflected in 4 indicators, customer engagement is reflected in 5 indicators, and customer loyalty is reflected in 4 indicators.

### Validity and Reliability Test.

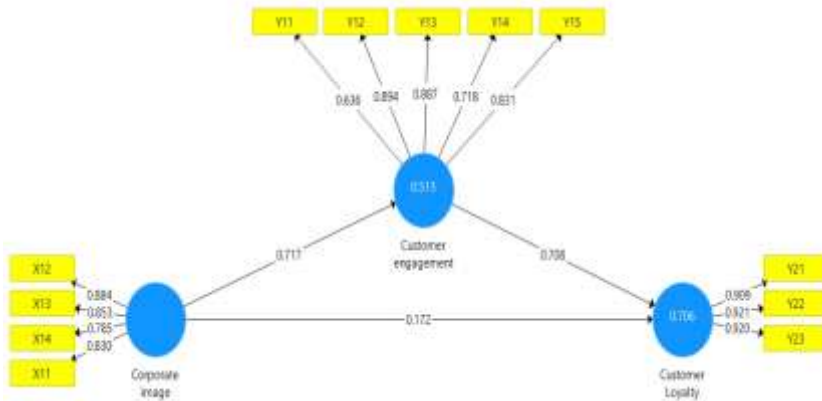
Table 1. Convergent Validity Test

Average Variance Extracted (AVE)	Indikat or	Corporate image	Customer Loyalty	Customer engagement
0,704	X11	0,829		
	X12	0,884		
	X13	0,853		
	X14	0,786		
0,639	Y11			0,637
	Y12			0,895
	Y13			0,887



	<b>Y14</b>	<b>0,718</b>
	<b>Y15</b>	<b>0,830</b>
0,661	<b>Y21</b>	<b>0,891</b>
	<b>Y22</b>	<b>0,909</b>
	<b>Y23</b>	<b>0,906</b>
	<b>Y24</b>	<b>0,452</b>

The results of testing the model after being revised are as follows.



**Fig. 3.** PLS Algorithm Model after Revision

**Table 2.** Discriminant Validity Test (cross loading) of the model after revision

	Corporate image	Customer Loyalty	Customer engagement
X11	0,830	0,640	0,599
X12	0,884	0,617	0,650
X13	0,853	0,516	0,567
X14	0,785	0,492	0,584
Y11	0,447	0,487	0,636
Y12	0,697	0,747	0,894
Y13	0,652	0,756	0,887
Y14	0,476	0,517	0,718
Y15	0,552	0,757	0,831
Y21	0,649	0,909	0,759
Y22	0,605	0,921	0,738
Y23	0,613	0,920	0,787

**Table 3.** Composite Reliability

Variable	Composite Reliability
Corporate image	<b>0,905</b>
Customer Loyalty	<b>0,940</b>
Customer engagement	<b>0,897</b>

The construct values of Corporate image, Customer engagement, and Customer Loyalty have composite reliability  $>0.6$ , then Corporate image, Customer engagement, and Customer Loyalty have met the criteria of good reliability (reliable).

### Results from Analysis of Measurement Model (Outer Model).

**Table 4.** Output Model Measurement of corporate image variable

Indicators	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
X11 <- Corporate image	0,830	0,830	0,025	33,887	<b>0,000</b>
X12 <- Corporate image	0,884	0,884	0,015	58,204	<b>0,000</b>
X13 <- Corporate image	0,853	0,849	0,030	28,269	<b>0,000</b>
X14 <- Corporate image	0,785	0,785	0,034	22,773	<b>0,000</b>

Original Sample (O) = loading factor

**Table 5.** Output Model Measurement of Customer engagement variable

Indicators	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
Y11 <- Customer engagement	0,636	0,639	0,067	9,503	<b>0,000</b>
Y12 <- Customer engagement	0,894	0,894	0,017	52,096	<b>0,000</b>
Y13 <- Customer engagement	0,887	0,886	0,021	42,469	<b>0,000</b>
Y14 <- Customer engagement	0,718	0,718	0,057	12,579	<b>0,000</b>
Y15 <- Customer engagement	0,831	0,831	0,025	32,818	<b>0,000</b>

Original Sample (O) = loading factor

**Table 6.** Output Model Measurement of Customer Loyalty variable

Indicators	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
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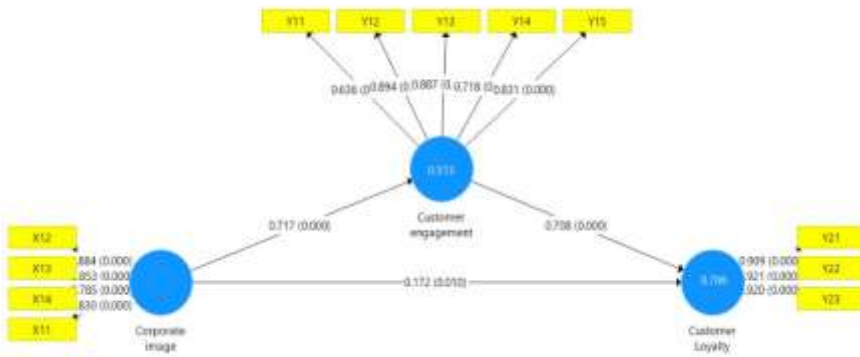
Y21	<-	0,909	0,908	0,015	58,848	<b>0,00</b>
Customer Loyalty						<b>0</b>
Y22	<-	0,921	0,921	0,020	45,544	<b>0,00</b>
Customer Loyalty						<b>0</b>
Y23	<-	0,920	0,920	0,016	58,877	<b>0,00</b>
Customer Loyalty						<b>0</b>

Original Sample (O) = loading factor

Based on table 6, the Y22 indicator with a value of 0.921 is the best indicator that represents the customer loyalty variable. While the Y21 indicator with a value of 0.909 has the lowest value among the 3 indicators of the customer loyalty variable. However, the 3 indicator items have met the criteria with a factor loading coefficient value > 0.5, so all items can be used for further testing.

**Results of Structural Model Analysis (inner model).**

Output of structural model (inner model) after bootstrap 500 times can be seen in the following image.



**Fig. 4.** Inner Model

**Table 7.** R-square

Construct	R Square
Customer Loyalty	0,706
Customer engagement	0,513

Based on the table, it is known that the R-square for the customer engagement variable is 0.513, which means that customer engagement is influenced by corporate image by 51.3%, while the other 48.7% is influenced by other factors. The R-square value for the Customer Loyalty variable is 0.706, which means that Customer Loyalty

is influenced by customer engagement by 70.6%, while the other 29.4% is influenced by other factors.

### The direct effect of exogenous variables on endogenous variables.

**Table 8.** Direct effect

Direct effect	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
Corporate image -> Customer Loyalty	0,172	0,171	0,067	2,579	<b>0,010</b>
Corporate image -> Customer engagement	0,717	0,720	0,046	15,582	<b>0,000</b>
Customer engagement -> Customer Loyalty	0,708	0,710	0,057	12,483	<b>0,000</b>

Original Sample (O)= koefisien path

The estimation results of the inner model for the direct influence of Corporate image on Customer Loyalty show the path coefficient value of 0.172 with a p-value of 0.010 which is smaller than alpha 0.05 (error level =5%), which shows the direct influence of Corporate image on customers. Loyalty is significant. The resulting effect is positive, which means the better the corporate image, the more customer loyalty will increase and vice versa.

The estimation results of the inner model for the direct influence of corporate image on customer engagement show a path coefficient value of 0.717 with a p-value of 0.000 which is smaller than alpha 0.05 (error level = 5%), which shows the direct influence of corporate image on customers. engagement is significant. The resulting effect is positive, which means the better the corporate image, the higher the customer engagement and vice versa.

The estimation results of the inner model for the direct influence of customer engagement on customer loyalty show a path coefficient value of 0.708 with a p-value of 0.000 which is smaller than alpha 0.05 (error rate =5%), which shows the direct influence of customer engagement on customers. Loyalty is significant. The resulting effect is positive, which means that the better the customer engagement, the greater the customer loyalty and vice versa.

### Indirect effect of exogenous variables on endogenous variables.

**Table 9.** Specific Indirect Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
Corporate image -> Customer engagement -> Customer Loyalty	0,508	0,511	0,055	9,215	<b>0,000</b>

The path coefficient value for the indirect effect between corporate image through customer engagement on customer loyalty is 0.508 indicating a p value of 0.000 which is smaller than 0.05, so it can be concluded that the indirect effect between corporate image through customer engagement on customer loyalty is significant. This means that, the better the corporate image, the greater the customer engagement, so that the increase in customer engagement will affect the increase in customer loyalty and vice versa.

### 4.3 Measurement of Goodness Of Fit

Goodness Of Fit is used to assess the overall model (measurement model and structural model). GOF assessment is by paying attention to the GOF value, if GOF is 0.1 then it can be said GOF is small, if it is 0.25 it can be said to be medium and if it is 0.36 it can be said large. The squared value of the factor loading value is called communalities. This value shows the percentage of constructs able to explain the variations that exist in the indicator. The following is the calculation of the GOF value of the PLS model:

**Table 10.** Calculation of GOF Value of PLS Model

Variable	Indicator	Loading factor	Communality	R square
Corporate image	X11	0,830	0,689	-
	X12	0,884	0,782	
	X13	0,853	0,728	
	X14	0,785	0,617	
Customer engagement	Y11	0,636	0,405	0,513
	Y12	0,894	0,799	
	Y13	0,887	0,786	
	Y14	0,718	0,516	
	Y15	0,831	0,691	
Customer Loyalty	Y21	0,909	0,826	0,706
	Y22	0,921	0,848	
	Y23	0,920	0,846	
<b>Mean</b>			0,711	0,610

$$GOF = \sqrt{Communality \times R^2}$$

$$GOF = \sqrt{(0.711) \times (0.610)} = 0.6583$$

Based on the calculation of the GOF value, a value of 0.6583 (GoF large) was obtained, which means that the PLS model made has a high ability to explain empirical data, so it can be said that the overall prediction of the model is quite good.

## 5 Conclusion

Based on the results of the first hypothesis test, it shows that corporate image has a positive and significant effect on customer loyalty. This is supported by Rosenberger (2004), the result is that the company's image has a positive and significant effect on customer loyalty. Wang & Chaipoopirutana, (2014) also resulted in a positive and significant effect of company image on customer loyalty. Andreas & Andreassen (1998) which states that the company's image has a positive and significant effect on customer loyalty, the higher the corporate image strategy created, the more customer loyalty it will be.

The second hypothesis shows that corporate image has a positive and significant effect on customer engagement. This research is supported by Amriah Amir, Silvy L. Mandey, (2020), showing that customer involvement affects customer loyalty at Indihome Telkom Manado. So companies need to find strategies that can increase customer engagement and customer loyalty with Indihome products.

The results of the third hypothesis show that customer engagement has a positive and significant effect on customer loyalty. This is supported by Cheung & Lee (2014), which states that customer involvement in customer loyalty on the C2C online shopping platform has a positive and significant effect. John et al., (2018), showed that customer engagement affects brand loyalty, using an online survey. Daniel and Tonder, (2019) found that customer engagement can affect customer loyalty in insurance companies. The fourth hypothesis shows that the indirect effect of corporate image through customer engagement on customer loyalty has a positive and significant effect. Supported by Roby Darmadi et al., (2021) which states that social media customer engagement has a significant influence in increasing loyalty to private tourism universities in Jakarta. Arinal Hidayah and Mugiono, (2019), which states that the customer engagement variable has a positive and significant effect on Wardah Cosmetics brand loyalty. Social media marketing variables have a positive and significant effect on brand loyalty at Wardah Cosmetics which is mediated by customer engagement Instagram account @wardahbeauty, where customer engagement has a greater influence on brand loyalty than social media marketing.

### 5.1 Suggestion

To increase customer loyalty, PT. Bank Syariah Indonesia Malang City must always improve its corporate image program, namely by providing security guarantees for customers, facilitating access to Syariah Bank services, providing complete types of financial services and always improving the quality of service to its customers.

PT. Bank Syariah Indonesia Malang City must be able to create a good corporate image program so that it is expected to increase customer engagement. Customers can pay more attention to the existence of Islamic Banks, customers can provide suggestions and criticisms, have a sense of pride in being a Sharia Bank customer, customers have a good relationship with Sharia Banks, customers feel happy to make transactions at Sharia Banks and customers can convey the importance of transacting at Sharia Banks to their customers. other customers. When the corporate image and

customer engagement programs can be implemented properly, it will form customer loyalty to PT. Bank Syariah Indonesia in Malang city.

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# Comparing Investor Behavior During and After Pandemic Era: Dominantly Rational or Irrational Driven?

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**Abstract.** This study is conducted to compare investors' decision-making behavior between two periods, during pandemic and during recovery period in Indonesia. Our focus is on the rationality and irrationality factors that explained their decision-making. We examine the differences of the behavior between during the covid-19 pandemic and during the economic recovery era. This study is comparing the correlation of investors' rationality factors and irrationality factors on stock market return between two periods, during pandemic and during recovery period. Using Spearman Rank Correlation analysis, we examine the correlation of each factors on stock market return. Our empirical results showed that rationality and irrationality factors correlated significantly with the stock return during the pandemic and during the economic recovery era. However, this study couldn't find significant correlation each factor in each of situation separately, during pandemic period and during recovery period. The results contribute to the importance of reasons and emotions for stock-market returns. We believe this study is contributing various insights to many financial market's stakeholders. The results of the study can help investors and traders to identify various factors affecting their trading during pandemic, support managers to make better investment decision making during uncertain situation, and support stock exchanges and regulators to make policy adjustment by considering irrational factors.

**Keywords:** Investors' behavior, rational factors, irrational factors, covid-19 pandemic, the economic recovery

## 1 Introduction

This research was inspired by Pornpikul and Nettayanun (2022) and Thampanya et.al. (2020), which showed that both rational factors and irrational factors of investor behavior, have the ability to explain the stock returns. They found that both of these factors have the same ability to explain stock returns, but under different conditions. In general, rational behavior has the ability to explain changes in stock returns in a wider range than the irrational one. Whereas, in high uncertainty conditions, the irrational behavior has a higher ability to explain than rational behavior. We believe that those studies did not only have a technical contribution, i.e. combining 2 big groups of factors

which have been studied separately, but also as a recognition of human existence assumption in a more complete manner, that humans have both rational and irrational behaviors when they made decisions. Since there were limited researches with such assumptions, we following the research of Pornpikul and Nattayanun (2021).

Basic assumption is crucial aspect in a research. It represent the researcher's belief about the world, so it affects the framework and design of the research built. Basic assumptions of human behavior in financial behavior field had been discussed and studied by numerous scholars. Bloomfield (2010) grouped the discussion based on their human behavior assumption, i.e. traditional finance and behavioral finance. Traditional finance assumes human being are rational as they make a decisions, having unlimited processing power to any available information, and holds risk preferences as described by expected utility theory (Bloomfield, 2010:1). Under this theory, decision maker behavior are captured by the shape of the utility function. They are risk averse if the function is concave (most classical economic theory based on this tenet), and risk seeking when it is convex (Chiu and Wu, 2010:1-2). Numerous research have used this perspective, for exampe Ou & Penman (1989), Hashemijoo et al, (2012), Fama & French, (2015), and Neukirchen et al (2022). All those researches assumed that information is rationally used by the investor to determine stock market.

While behavioral finance signifies the role of psychological biases and their specific behavioral outcome in decision making (Prosad et al, 2015), i.e., irrational (ruled by sentiments) and having limited capabilities in processing information (prone to make biased decisions). There is an interesting and straight forward term by Meir Statman (1999). He stated that "People in standard finance are rational and people in behavioral finance are normal". Behavioral finance relax particular assumptions about individual behavior (Bloomfield, 2010). This assumption brings the study of financial behavior as an interdisciplinary study between the fields of psychology, sociology and finance (Ricciardi and Simon, 2000).

There were growing numbers of researches that applying this perspective. For examples, Nofsinger (2005), studied Social Mood and Financial Economics, Bijl et al (2016), studied Google Search and Stocks Returns, Griffith et al (2020) studied Emotions in the Stock Market, and Chivianti & Sukamulja (2021) studied The Effect of Google Search Volume Index on Underpriced IPOs and Divergence of Opinions.

Recently, there were studies with mix assumptions. They believed that both rational sentiments and irrational sentiments have effect on stock price simultaneously. Neither rational nor behavioral theories alone can fully explain industry returns, that attributing asset-pricing anomalies to a single kind of driving force is too hasty (Chou el (2011). Verma et.al. (2008) have reviewed that literature on investor sentiments and stock prices provide inconclusive results on specific factors affects the prices, whether rational risk factors, or noise or some combination of both. It motivated them to study the impact of rational sentiments and irrational sentiments on stock market returns simultaneously. They found the impact of rational sentiments is greater than that of irrational sentiments for both individual and institutional investors on stock market returns. Moreover, irrational sentiments have a more rapid and pronounced effect than rational sentiments on stock market returns. Chou el (2011) showed in their findings that industries play a dual role with both rational and behavioral components as shown

by its covariance risk and mispricing of the stock return. O’Sullivan et al. (2019) found that both rational and irrational sentiment risk play a strong role in stock returns. While rational has a strong role in the broad class of FTSE All Shares stocks, irrational sentiment risk is detected among subgroups of the FTSE All-Share (FTSE 250 and FTSE 100 stocks).

Rational and irrational behavior is widely studied using research settings in times of crisis or times of high uncertainty. Conditions of high uncertainty are considered as one of the external environments that will trigger the emergence of certain behaviors that are different compared to normal times. Baker and Wurgler (2007) showed the significance of investor sentiment increases in an extraordinary period and when the markets are difficult to predict. Thampanya et al. (2020) study the behavioral (irrational) and fundamental (rational) factors that drive stock returns in the three different crisis periods. The study found that fundamental factors play crucial roles in influencing stock market volatility in Malaysia, Thailand, and Singapore; whereas, behavioral factors affect stock market volatility more significantly than fundamental factors in Indonesia and the Philippines. They concluded that rational and irrational factors explain asset returns, depending on each country’s market development.. While Pornpikul and Nettayanun (2021) showed that rational factors usually explain the volatility of the return to a greater extent than irrational factors, but during a financial crisis, the irrational factors increase their importance in explaining returns.

This research was conducted to continue previous research that examined the rational and irrational behavior of investors simultaneously in the context of the Indonesian capital market. As in all parts of the world, Indonesia is experiencing a bad economy due to the pandemic. The performance of the stock market fell very sharply throughout 2020. However, along with the better handling of the covid virus in Indonesia, the Indonesian economy began to recover. Likewise, the performance of the Indonesian capital market is in the recovery stage. Graph 1 below shows the changing conditions of the capital market in Indonesia from 2020 to 2022.



**Fig. 1.** Graph 1. Development of Trading Volume Stock Exchange in Indonesian Stock Exchange. Source: idx.co.id (2022)

This study aims to examine the behavior of investors in the Indonesian capital market during the Covid pandemic period, and compare it to the period of Indonesia's economic recovery. Pandemic is the representation of the condition with high uncertainty period and economic recovery is representation of more stable period. This study is following Pornpikul and Nettayanun (2021) with adjustment with Indonesia's condition. Research with context of the Indonesian capital market is necessary because investor behavior is influenced by capital market developments in each country (Thampanya et al. (2020)) and influenced by the degree of independence in that country (Erdem, 2020). Topcu and Gulal (2020) show that the effect of a pandemic in emerging markets is greater than that in developing capital markets.

The results of this study will contribute to all stock market stakeholder, i.e. investors, traders, Indonesia Stock Exchange (IDX) and the Indonesian government. Investors and traders increasingly understand their own behavior, especially irrational behavior. Managers make better decisions in their investment decisions by considering irrational factors in certain investment conditions. Decision makers in the capital market will be able to make policy adjustments when investors are dominated by irrational attitudes.

### **1.1 Rational And Irrational Investor Behavior**

Traditional (Standard) finance is the body of knowledge built on the pillars of the arbitrage principles of Miller and Modigliani, the portfolio principles of Markowitz, the capital asset pricing theory of Sharpe, Lintner, and Black, and the option-pricing theory of Black, Scholes, and Merton (Statman, 1999). Under those principles and theories, human are rational, i.e. behave in a manner as to maximize their utility with a given level of income or money and choose higher returns to lower returns for a given level of risk. The assumption explain Fama and French (2015)'s five-factor model. A five-factor model directed at capturing the size, value, profitability, and investment patterns in average stock returns. They believed that size, value, profitability, and investment patterns affect investor's behavior in setting stocks prices.

Theories that are widely used in Behavioral Finance research include Prospect Theory (Kahneman & Tversky, 1979), Bounded Rationality (Simon, 1955), and Cumulative Prospect Theory (Tversky & Kahneman, 1992). Research conducted by Herbert Simon in the 1950s showed that decision-making by humans was laden with cognitive limitations, even though he was encouraged to make decisions rationally (Cherry, 2021). This cognitive limitation is caused by humans naturally having limited time, limited information and human ability to process information, to be able to analyze the benefits and costs of each option from all available options. Meanwhile, Prospect Theory and Cumulative Prospect Theory basically show that risk is perceptual. Due to its perceptual nature, a person's attitude towards risk is influenced by many factors, such as previous experience and expectation.

## 2 Methodology

This study is comparing the correlation of investors' rationality factors and irrationality factors on stock market return between two periods, during pandemic and during recovery period. Using Spearman Rank Correlation analysis, we examine the correlation of each factors on stock market return.

We are using rational factors and irrational factors from Pornpikul and Nettayanun (2021) with adjustment to Indonesia condition. Pornpikul and Nettayanun (2021) used 5 rational factors and 5 irrational factors. Due to data availability in Indonesia, specifically irrational factors, we use 2 factors only, Google Search Volume Index (GSVI) and Trading Volume (TV). Following irrational factors, the rational factors also used only 2 factors, Profitability and Size.

For GSVI we didn't use the same method as Pornpikul and Nettayanun (2021), since we want to capture all search result of the company name during research period. GSVI measured by number of search result as we type the official name of the company in a particular time period. Trading Volume measured by the number of shares traded during a particular time period. The rational factor, Profitability, is measured by Earning per Share (EPS) and Size, is measured by market capitalization (price times shares outstanding). While Stock Return, is measured by changes in stock price between 2 periods.

The data we use in this paper are obtained from Indonesian Stock Exchange website (<https://www.idx.co.id/id>) and Google Trends. The data obtained from [idx.co.id](https://www.idx.co.id/id) include daily closing prices, volumes, earnings and the number of shares outstanding for companies listed in the Food and Beverages sub sectors industry from January 1, 2020 through September 30, 2022. As earnings information available in quarterly base, so as the others follow. Daily data of return, GSVI, trading volume, and market capitalization are adjusted into average of quarterly period.

## 3 Findings and Discussion

The processed data comes from 56 companies in the food and beverage sub-industry listed on the IDX with a total of 301 quarterly data. However, because the completeness of the data for rational factors and irrational factors is different, the amount of data processed for each factor is also different. The data processed for rational factors is 300, consisting of 132 during the pandemic and 168 during the economic recovery. Meanwhile, the data processed for irrational factors was 301, consisting of 133 before the pandemic and 168 during the economic recovery period.

The first analysis performed was descriptive data analysis related to the 5 factors being tested. Descriptive data analysis aims to get a picture of each variable being tested and shown in Table 1

**Table 1.** Descriptive Analysis of Data

	EPS	Market Cap	Google Index	Trading Volume	Stock Return
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<b>ALL</b>	average	78.59	10,422.03	352.12	456,907,647.41	0.06
	max	868.43	119,200.00	979.00	12,779,569,500.00	5.25
	min	(62.05)	24.20	27.00	-	(0.99)
<b>During Pandemic</b>	average	66.95	10,640.36	340.72	552,940,970.96	0.05
	max	733.59	119,200.00	970.00	12,779,569,500.00	2.48
	min	(54.35)	24.20	27.00	-	(0.99)
<b>Economic Recovery</b>	average	87.80	10,249.18	361.08	381,452,893.18	0.07
	max	868.43	115,400.00	979.00	3,178,613,200.00	5.25
	min	(62.05)	49.60	30.00	14,100.00	(0.79)

Interesting findings that can be drawn from Table 1 are as follows:

1. EPS and GSVI experienced an increase in average value from the pandemic period to the economic recovery period. The increase in EPS and GSVI was 25% and 6%, respectively. Meanwhile, Market Cap and TV, on the other hand, experienced a decrease in average value. The declines in Market Cap and TV were 3.7% and 31%, respectively. There is a diversity of data behavior from each factor that represents investor behavior between two different periods.
2. The existence of economic recovery is also supported by an increase in the average stock return which increased from 0.05 during the pandemic to 0.07 during the economic recovery.

The second analysis is the Spearman Rank Analysis correlation. The correlation test was carried out between stock returns and each of the 4 factors tested, namely EPS, Market Cap, GSVI and Trading Volume. This test was carried out in 2 stages, first, the overall test, which tested all data during the observation period, and second, the separated test, which tested data during the pandemic period and data during the economic recovery period. A separate test was conducted to compare the results of the correlation values between during the pandemic and during the recovery period.

The results of the correlation test on overall data during the study period show that each rational and irrational factor has a significant correlation with stock returns. The rational factor that has a significant correlation with return is EPS, while the irrational factor GSVI. These findings support the (Chou et al. (2011). Verma et al. (2008) and O'Sullivan et al. (2019) studies which show that there were rational and irrational factors simultaneously in the formation of stock prices. The results of this test are shown

in the table 2 below. This result showed that during Pandemic and also during economic recovery, investors need rational and irrational refference to build their investment decision.

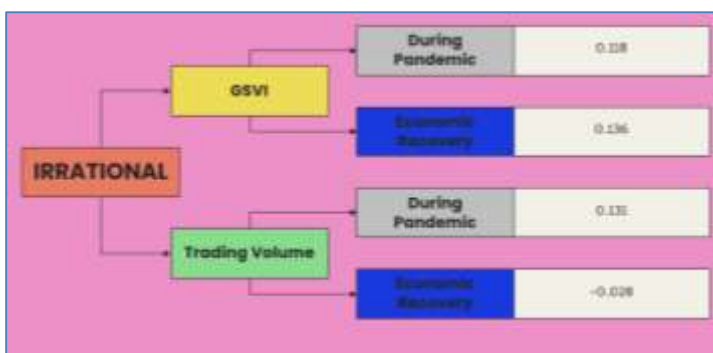
**Table 2.** Correlations of Irrational and Rational Factors with Stocks Return

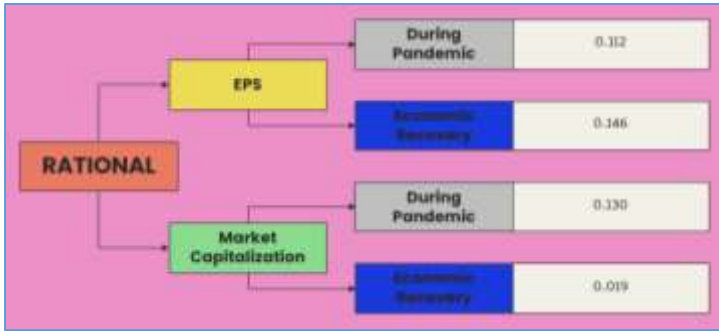
<b>IRRATIONAL</b>	<b>GSVI</b>	0.125 SIGNIFICANT
	<b>TRADING VOLUME</b>	0.061 NOT SIGNIFICANT
<b>RATIONAL</b>	<b>EPS</b>	0.125 SIGNIFICANT
	<b>MARKET CAPT</b>	0,074 NOT SIGNIFICANT

There were studies that correlated EPS and Google search with return during Pandemic in Indonesia. Anto et al (2022) found EPS has a positive effect on stock returns in Food and Beverages sector Industry. Contrary to our study, Triwahyuni et al (2022) and Wibowo et al (2022) found EPS has no significant effect to stock return during Pandemic in Indonesia. The differences with our results reffered to the different object. Triwahyuni et al (2022) and Wibowo et al (2022) both studied in banking industry.

Chundakkadan, & Nedumparambil (2022) found that the Google search volume of the pandemic is negatively associated with daily returns. While Anastasiou et al (2022) showed positive sentiment index for COVID-19 were increasing stock return and decreasing stock market volatility. In Indonesian context, Imelda and Pratiwi (2022) found that Google search affect the bond price during Pandemic. During the pandemic, investors have greater information needs to make their investment decisions. Information derived from Google search is widely used for this purpose, because it is easy to do and the results are quickly obtained.

2. The results of the second correlation test, a separate test for each factor during the pandemic and during the recovery period. The test results are shown in Figure 1 and Figure 2 below



**Fig. 2.** Correlations of Irrational Factors with Stocks Return**Fig. 3.** Correlations of Rational Factors with Stocks Return

The analysis showed that there is no significant correlation between EPS, Market Cap, GSVI and Trading Volume and stock returns in both period. There were no significant differences of the investor behavior between during pandemic and during economic recovery. These results do not support Baker and Wurgler (2007), Thampanya et al. (2020) and Pornpikul and Nettayanun (2021) studies which show that there are differences behavior as the effects of the uncertainty condition on the rational and irrational behavior. Interestingly, ignoring significancy level, there are increasing correlation number for EPS and GSVI, while decreasing for Market Cap and TV. EPS and GSVI are the factors that have significant correlation in the overall data test correlation. We conclude investor behavior in Indonesia stock market were not affected by the stability of the economic condition after pandemic. They still need psychological aspect to support their decision even in relatively stable economy.

We believe our results had statistical issue here, due to the number of the data. In first correlation test we processed 300 data (overall data), while in second test (partial test), data processed is fewer, only the half. This affect the result of test statistically.

## 4 Conclusion

This study supported previous studies showed that there were rational and irrational behavior of the investor when they made decision. But this study failed to showed different behavior of both behavior during two different condition, during pandemic and during economic recovery. The different result shown between overall data test and partial data test, i.e. significant and not significant, showed that it is affected by the number of the data. Due to the data availability that only can be accessed minimum quarterly data, especially for earning data from idx.co.id, the future research are strongly suggested to get more data with shorter unit measurement, i.e. daily data. With more frequent measurement, investor behavior can be explained better.

We believe this study is contributing various insights to many financial market's stakeholders. The results of the study can help investors and traders to identify various factors affecting their trading during pandemic, support managers to make better



investment decision making during uncertain situation, and support stock exchanges and regulators to make policy adjustment by considering irrational factors. Information availability and its contents have crucial effect on the stock market performance in Indonesia. As showed by previous studies, investor behavior is influenced by capital market developments in each country (Thampanya et al., 2020), and by the degree of independence in that country (Erdem, 2020). Topcu and Gulal (2020) show that the effect of a pandemic in emerging markets is greater than that in developing capital markets

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# Performance Analysis of Furniture Product Supply Chain Using SWOT Method to Build Strength by Considering Key Factors of ISM Approach

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**Abstract.** The supply of furniture products desired by consumers was not on time, because the delivery of supplies of wood raw materials for the production process was delayed. Management of the supply chain system is not going well. Supply chain system management is based on activities related to the flow and transformation of goods, starting with the flow of materials, then following up to the end user, by connecting the flow of information. The integration of the entire supply chain system provides a sustainable competitive advantage. In maintaining a sustainable furniture supply chain system, self-evaluation is required using the SWOT method. This method is able to build on the potential strengths of furniture SMEs resources, and is able to improve the weaknesses of furniture SMEs. The SWOT method can open up wide business opportunities in serving consumers and understanding the threats that will occur in furniture SMEs. Analysis of the performance of the furniture SME supply chain in a sustainable manner considers economic, social and environmental aspects. Performance evaluation is formulated using an Interpretative Structural Modeling (ISM) approach. The research objective is to determine alternative strengthening strategies for key variables through a structured system model of strengths, weaknesses, opportunities and threats. Based on the four factors, the strength factor is the main indicator of strengthening improvement in the supply chain system in furniture SMEs in a sustainable manner.

**Keywords:** Supply Chain, Furniture, SWOT, ISM

## 1 Introduction

The furniture supply chain system at the Jombang-Indonesia furniture SME center has changed due to the Covid 19 pandemic. The post-Covid 19 pandemic has had an impact on delays in the delivery of furniture products from upstream to

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downstream [1,2]. Delays in supply chain activities are caused by a strategic system built to support supply chain activities that is not properly planned. The supply of teak wood materials from forests is not going well due to a new policy that must be followed from Perhutani [3,5]. Teak wood material that has been sent to UKM furniture is produced into furniture products according to consumer wishes. Demand for furniture products that are in accordance with consumer desires will have an impact on sustainable sales activities [4,6,7]. The furniture product supply chain seeks to integrate all systems involved in meeting consumer needs. The involvement of all parties in supporting the supply chain system will provide mutual benefits. The profits derived from the business results of furniture production activities are able to provide sustainable benefits.

In maintaining a supply chain system for furniture products in a sustainable manner, it is necessary to self-evaluate using the SWOT method which consists of Strengths, Weaknesses, Opportunities and Threats [8,9]. The strategy that will be carried out by furniture SMEs in carrying out business activities in a sustainable manner must meet the strengths possessed by SMEs. The strategy used seeks to reduce the weaknesses of furniture SMEs to get maximum results. Furniture SMEs seek to open business opportunities that are still wide open by using online marketing in the form of digital marketing. The activities of furniture SMEs are not running smoothly because there are still many threats caused by the central environment of furniture SMEs themselves and furniture products from abroad [10,15,17].

Production activities carried out at the Jombang-Indonesia furniture UKM center provide great benefits to the surrounding community, because they are able to absorb labor and increase people's income [11,12]. Problems in furniture SMEs arose due to sales restrictions due to the Covid 19 pandemic and have continued to this day. The habit of selling is done face-to-face, now experiencing changes in online sales. The ability of furniture SMEs to sell online has not been implemented optimally due to limited resources owned by furniture SMEs [8,18]. Problem solving can be done using an Interpretative Structural Modeling (ISM) approach to find out exactly the root of the problems faced by furniture SMEs. The benefits of the ISM method are that it is able to provide a fundamental understanding of complex conditions to be solved in a simple way [5,6]. Business management in a sustainable supply chain can be identified by using the ISM method, because this method is able to carry out quantitative analysis related to the sub-elements in each influential aspect [6,14].

Making the right decisions with a high level of efficiency and effectiveness is needed to support the strategic direction of furniture SMEs. After the end of the Covid 19 pandemic, business activities engaged in the furniture SME sector still provide many sizable opportunities. Furniture SMEs have a strategic role in building the national economy [3,15,17]. The procurement of teak wood raw materials has not met the expectations of furniture SMEs, so replanting is needed in unproductive forests with better forest management.

In developing a sustainable supply chain system strategy for furniture SMEs, an Interpretative Structural Modeling (ISM) approach is needed. Limitations of

movement due to the Covid 19 pandemic gave the idea to carry out a supply chain system strategy analysis in a sustainable manner using the ISM method approach. The ISM analysis is carried out by considering the Economic, Social and Environmental factors called the 3 pillars of a sustainable supply chain [13,18]. The preparation of the ISM analysis is set at 31 sub-elements consisting of 10 sub-elements of the economic element, 10 of the social elements, and 11 of the environmental elements. Based on the ISM analysis, from 31 sub-elements, we will look for sub-elements that are very influential in increasing furniture business activities.

The research aims to strengthen the strategic management model with the integration of conducting studies on elements of economic, social and environmental aspects by using the Interpretative Structural Modeling (ISM) analysis tool. The study was conducted to determine the strategy by evaluating the interaction strategy with the capabilities of the available resources based on the ISM approach.

## 2 Research Method

### 2.1 Interpretative Structural Modeling (ISM)

The structural mapping step of interconnections between attributes that involves qualitative and interpretive to transform in the form of a multi-level structural model on complex problems is the ISM method. This method approach is able to decompose a complex system into sub-systems so as to form a multi-level structural model [17]. The ISM method will provide a description of the most influential sub-elements of each element. The results of the analysis of dependencies and drive power will be connected to find out the position of the sub elements [14].

The ISM method is able to provide a clear description of the elements of the problem that has been determined, so that it can move the description into more detailed sub-elements. The management strategy classification is divided into 4 quadrants, namely:

1. Quadrant I: Autonomous, weak relationship between Drive Power (DP) and Dependence (D), does not have a strong system relationship between sub elements in the position of Drive Power (DP) value  $< 0.5 \cdot X$  and Dependent (D) value  $< 0.5 \cdot X$ , with  $X$  = the number of sub elements in one Element.
2. Quadrant II: Dependent, the relationship is weak on Drive Power (DP) and strong on Dependence (D), in this quadrant the sub elements are not independent because they influence each other with the position of the Drive Power (DP) value  $< 0.5 \cdot X$  and the Dependent value (D)  $> 0.5 \cdot X$ .
3. Quadrant III: Linkage, a strong relationship between Drive Power (DP) and Dependence (D), in this quadrant the sub elements are unstable, the position value of Drive Power (DP)  $> 0.5 \cdot X$  and Dependent value (D)  $> 0.5 \cdot X$ .
4. Quadrant IV: independent, a strong relationship between Drive Power (DP) and a weak Dependence (D), this quadrant enters the remaining part of the system

and the independent variable, at the position of the Drive Power (DP) value  $> 0.5 * X$  and the value Dependent (D)  $< 0.5 * X$ .

## 2.2 Furniture Supply Chain Structural Model

Each system element will be described clearly in the form of sub-elements aimed at understanding the behavior of the system as a whole so as to form a structural model [17]. Each sub element has a relationship in one element, then analyzed using the ISM method. The results of opinions from experts who are competent in the field of furniture are used as a basis for conducting analysis. Data analysis also uses literature review that comes from previous research. The main aspects used as data analysis use economic, social and environmental aspects.

In carrying out the linkage analysis of each sub-element, it is carried out using the ISM-VAXO technique. Based on the results of the answers from the experts, the data generated form the SSIM Matrix. The results of the SSIM Matrix data are then transformed into a Reachability matrix in the form of binary numbers. The transitive test obtained from the Reachability Matrix (RM) in the final form is the ultimate goal of the relationship between sub-elements. The next step of the key sub-elements of the system is based on the largest value of the driver power (DP) as the total relationship of the sub-elements with the highest level (L) position which is seen in the dependent level position (D) at the lowest part.

## 2.3 Research Stages

### 1. Identification of indicators for strengthening sustainable supply chains.

Economic, social and environmental aspects are used as considerations in determining the strengthening of a sustainable supply chain system. In influencing the identification of Furniture SMEs are the diversity of SMEs, regional characteristics, optimizing the role of SMEs and the relationship between SMEs behavior. All elements of strengthening a sustainable supply chain can be described in the form of a sub-element system.

### 2. Data Analysis and Deployment

Data analysis was carried out to determine the need for designing or engineering a supply chain system implemented in Jombang-Indonesia furniture SMEs. Application using the ISM method according to self-evaluation studies using the strengths, weaknesses, opportunities, threats (SWOT) method. Elements of the economic aspect of strengthening the furniture supply chain are internal data according to the strength factor (S) and opportunity factor (O) which consists of 10 sub-elements, 10 social aspects and 11 sub-elements to environmental aspects. Respondents who filled in data for analysis materials were determined to be 5 competent experts in the field of furniture. The selection of respondents must be able to represent the population of furniture SMEs.

### 3. Evaluation of a Sustainable Supply Chain System

Evaluation is used to determine the ability of the model that has been made to represent real conditions. The evaluation stage is an important stage in determining the right strategy in making a study on the interaction of the capabilities of the resources owned according to the strategy in making various alternative strengthening scenarios. Based on the evaluation and modeling results, it can be seen that the key sub-elements of the economic, social and environmental aspects are identified.

## 3 Results and Discussion

### 3.1 ISM Simulation and Analysis

The method used in this research is Interpretative Structural Modeling, while the respondent's data aggregation technique uses the initial reachability matrix (RM) data mode for each respondent. The form of the ISM-VAXO technique shows the relationship between sub-elements on the economic aspect. Data entry is based on the opinions of experts in their fields which are formed into a Structural Self Interaction Matrix (SSIM). Furthermore, it is transformed in the form of binary numbers into the Reachability Matrix (RM) matrix form, after which the transitivity test is carried out.

### 3.2 Simulation of Elements of Economic Aspects

Based on the elements of the economic aspect using the SWOT analysis, sub-elements of the economic aspect are made, consisting of 10 sub-elements as follows:

- E1. Profitability of the furniture supply chain.
- E2. Increasing the Welfare of employees and SMEs.
- E3. Development of the Office of Cooperatives in the field of furniture SMEs.
- E4. Creating jobs for the community.
- E5. Financial Institution Support for venture capital.
- E6. Industry & Trade Office Support.
- E7. Increasing standardization of product quality and quantity.
- E8. Product price warranty discrepancies.
- E9. Production capacity that is able to meet consumer needs.
- E10. The supply of wood has an impact on production activities.

1. Determine the comparison of each sub-element of the economic aspect.

In this study to determine the comparison of each element using a comparison between the sub-elements of the economic aspect from expert opinion in the form of the ISM-VAXO matrix contained in table 1.

**Table 1.** Reachability Matrix Elements of Economic Aspects

SYMBOL PROGRAMS	e1	e2	e3	e4	e5	e6	e7	e8	e9	e10
e1		V	X	X	O	O	A	X	V	V
e2			V	X	X	V	O	V	V	V
e3				X	A	V	V	X	X	O
e4					A	X	V	V	O	X
e5						O	X	V	V	V
e6							X	V	A	A
e7								O	V	V
e8									V	V
e9										A
e10										

2. The stage of changing the Reachability Matrix (RM) into a binary sub-element of the economy.

This stage changes data from respondents who are experienced and have skills in their fields, then entered in the SSIM matrix and transformed in the form of binary numbers into an RM matrix as shown in table 1. Reachability Matrix. Data processing converts data from the letters V, A, X and O to binary numbers (0 and 1). The RM matrix is prepared based on the calculation of the number data that often appears (mode) from the respondent's answers. Determination of values is based on filling in questionnaires from experts with numbers that appear frequently, as shown in table 2.

**Table 2.** Reachability Matrix of Binary Numbers Elements of Economic Aspects

SYMBOL PROGRAMS	e1	e2	e3	e4	e5	e6	e7	e8	e9	e10
e1	1	1	1	1	0	0	0	1	1	1
e2	0	1	1	1	1	0	0	1	1	1
e3	1	0	1	1	0	0	1	1	1	0
e4	1	1	1	1	0	1	1	1	0	1
e5	0	1	1	1	1	0	1	1	1	1
e6	0	1	1	1	0	1	1	1	0	0
e7	1	0	0	0	1	1	1	0	1	1
e8	1	0	1	0	0	0	0	1	1	1
e9	0	0	1	0	0	0	0	0	1	0
e10	0	0	0	1	0	0	0	0	1	1

3. Adjustment of the Reachability Matrix of Economic Aspect Elements

The results of adjusting the Rank value (R), the Driver Power value (DP), the Level value (L), and the Dependent value (D). The final DP result is achieved by adding the binary digits in one line. The R value is obtained by sorting the DP values. The value of D is obtained by adding up the binary numbers in one column. The value of L is obtained by sorting the value of D. The table results from the process of



adjusting binary numbers from expert opinion in the reachability matrix of the relationship between sub-elements of the economic aspect can be seen in table 3.

**Table 3.** Reachability Matrix of Adjustment of Economic Aspect Elements

SYMBOL PROGRAMS	INTERVENTION OF SUPPORTING SUB-ELEMENTS SUPPLY CHAIN SYSTEM										DP	R
	e1	e2	e3	e4	e5	e6	e7	e8	e9	e10		
e1	1	1	1	1	0	0	0	1	1	1	7	3
e2	0	1	1	1	1	0	0	1	1	1	7	2
e3	1	0	1	1	0	0	1	1	1	0	6	4
e4	1	1	1	1	0	1	1	1	0	1	8	3
e5	0	1	1	1	1	0	1	1	1	1	8	1
e6	0	1	1	1	0	1	1	1	0	0	6	1
e7	1	0	0	0	1	1	1	0	1	1	6	3
e8	1	0	1	0	0	0	0	1	1	1	5	4
e9	0	0	1	0	0	0	0	0	1	0	2	6
e10	0	0	0	1	0	0	0	0	1	1	3	5
D	5	5	8	7	3	3	5	7	8	7		
L	4	5	3	4	6	6	4	3	1	2		

4. Final Reachability Matrix, sub-element of Economic Aspect

The final result of the Reachability Matrix (RM) is used to test the transitive properties of each cell until a final RM is produced according to the ranking order of the sub-elements of the economic aspect in table 4. The DP value ranking based on the R value is E5. The results at the D Value Level are based on the L value, namely E9. The results of the ranking with the highest DP value are Financial Institution Support for business capital (E5), Industry & Trade Office Support. (E6). The E5 and E6 sub-elements are the key sub-elements contained in the economic aspect, while the highest level in the D value is production capacity that is able to meet consumer needs (E9).

**Table 4.** Final Reachability Matrix Elements of Economic Aspects

SYMBOL PROGRAMS	INTERVENTION OF SUPPORTING SUB-ELEMENTS SUPPLY CHAIN SYSTEM										DP	R
	e1	e2	e3	e4	e5	e6	e7	e8	e9	e10		
e1	1	1	1	0	0	0	0	1	1	1	6	3
e2	0	1	1	1	1	0	0	1	1	1	7	2
e3	1	0	1	0	0	0	1	1	1	0	5	4
e4	1	0	0	1	0	1	1	1	0	1	6	3
e5	0	1	1	1	1	0	1	1	1	1	8	1
e6	0	1	1	1	0	1	1	1	1	1	8	1
e7	1	0	0	0	1	1	1	0	1	1	6	3
e8	1	0	1	0	0	0	0	1	1	1	5	4
e9	0	0	1	0	0	0	0	0	1	0	2	6
e10	0	0	0	1	0	0	0	0	1	1	3	5
D	5	4	7	5	3	3	5	7	9	8		
L	4	5	3	4	6	6	4	3	1	2		

5. Determine the Hierarchical structure model of the sub-elements of the economic aspect

The results of the ISM-VAXO model show, the structure of the positional arrangement of the relationship between sub-elements in the economic aspect element consists of 6 levels as shown in Figure 1. Based on the assumption that the relationship between the sub-elements of the economic aspect shows a relationship that supports and influences each other on the sub-elements economic aspects that are at the lower level.

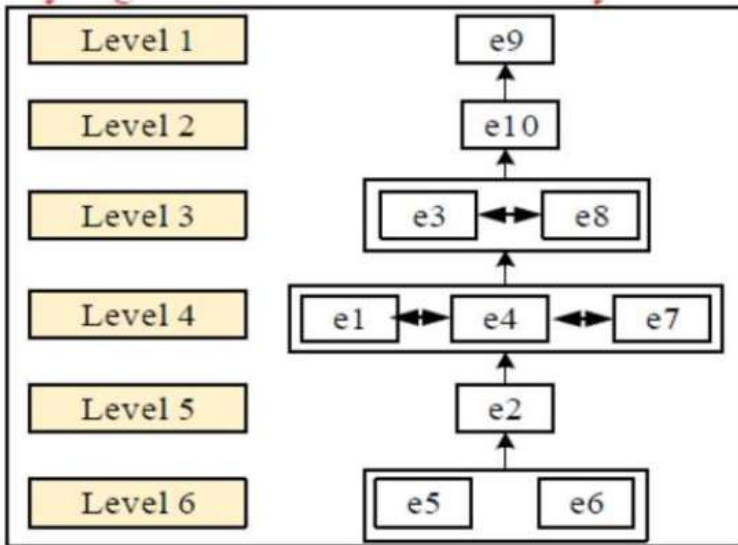


Fig. 1. Economic Sub-Elements Hierarchical Structure Model

Making the arrangement of positions in the structural model grouping of the economic sub-elements is carried out sequentially by entering the coordinates of the Driver Power and Dependence values into the calcification image. The results shown by the ISM-VAXO will then be classified in the economic aspect sub-element group as shown in Figure 1.

The ISM-VAXO results illustrate that the position of sub-elements (E5, E6) as key sub-elements in the economic aspect of the leading furniture SMEs in Jombang is at level 6 (the highest level) based on the largest total DP value. All of the sub-elements of the economic aspect are classified according to the level of driver power (DP) and the level of dependency (D). can be seen in Figure 2.

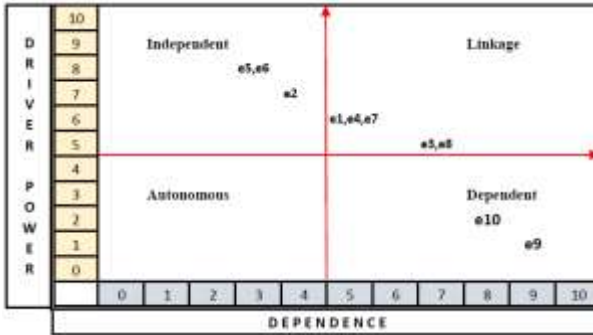


Fig. 2. Classification of Economic Aspect Sub-Elements

The results of the classification in Figure 2 illustrate that there are no sub-elements of the economic aspect that are in quadrant I (Autonomous = 0). In the Linkage quadrant there are sub elements E1, E3, E4, E7 and E8, so a careful study is carried out because they have an unstable relationship, but are very related and have an impact on other variables, especially in the Dependent quadrant variable. The classification also shows that the Dependent quadrant is occupied by sub-elements E2, E5, and E6, which are dependent variables that depend on the input and action corrections delivered in the system (Independent quadrant) with independent variables (E10, E9)

### 3.3 Social Aspect Element Simulation

The results of the SWOT analysis show that based on the social aspect elements, then the social aspect sub-elements are made, there are 10 sub-elements as follows:

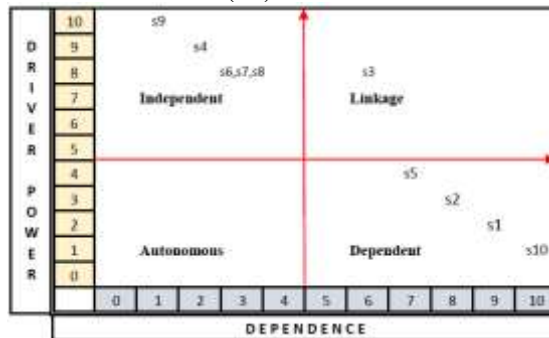
- S1. Stakeholder needs for SME products.
- S2. Limited technology for production activities.
- S3. Increased demand for wood for households/housing.
- S4. Partnership with other parties in terms of capital, marketing and technology
- S5. Growing public awareness of environmentally friendly production.
- S6. Product protection by YLKI (Indonesian Consumers Foundation).
- S7. Fostering the motivation of human resources in the field of production and marketing.
- S8. Ownership of community forest land area is limited.
- S9. Control during a pandemic to prevent the spread of the Covid 19 virus.
- S10. Communities/consumers who use products according to their needs.

Based on studies from experts/experts on the social aspect of the furniture supply chain reinforcement system consisting of 10 sub-elements, the analysis of the relationship between the social aspect sub-elements of the furniture supply chain reinforcement system was carried out using the ISM-VAXO technique.

**Table 5.** SSIM Matrix – VAXO Social Aspect Elements

Ei \ Ej	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10
s1		A	A	A	A	A	X	X	X	V
s2			A	A	A	A	A	A	A	V
s3				A	V	O	X	X	A	V
s4					V	V	O	V	A	V
s5						A	A	O	A	V
s6							X	X	A	V
s7								X	A	V
s8									A	V
s9										V
s10										

Based on the same calculation as the economic element aspect, the results of the analysis based on the overall social aspect sub-elements are classified according to the level of driver power (DP) and the level of dependency (D) into 4 quadrants, namely quadrant I (Autonomous), quadrant II (Dependent), quadrant III (Linkage), and quadrant IV (Independent). The result of the ISM-VAXO matrix model is the grouping of social aspect sub-elements that have a big influence on controlling during a pandemic to prevent the spread of the Covid 19 (S9) virus.



**Fig. 3.** Classification of Social Aspect Sub-Elements

The results of grouping/classifying the sub-elements of the social aspect of the strengthening system in the figure shows that:

1. Quadrant I (Autonomous) is that there are no (0) social aspect sub-elements in this quadrant and is not related to the strengthening of the furniture supply chain system.
2. Quadrant II (Dependent) is a sub-element Stakeholder needs for SME products (S1), Limited technology for production activities (S2), Growing public awareness of environmentally friendly production (S5), and Communities/consumers who use products as needed (S10).
3. Quadrant III (Linkage) is a sub-element for increasing the demand for wood for households/housing (S3).

4. Quadrant IV (Independent) is a sub-element, Partnership with other parties in terms of capital, marketing and technology (S4), Protection of product users by YLKI (Indonesian Consumers Foundation) (S6), Increasing motivation of human resources in the field of production and marketing (S7), Ownership of limited community forest land (S8), and Control during a pandemic to prevent the spread of the Covid 19 virus (S9).

**3.4 Simulation of Elements of Environmental Aspects**

In forming the sub-elements of environmental aspects according to the SWOT analysis, there are 11 sub-elements of environmental aspects as follows:

- L1. Imposition of activity restrictions during a pandemic in the red zone area.
- L2. Perhutani implementing forest activities.
- L3. Build community settlements in forest areas according to regulations.
- L4. Building institutional development for NGOs concerned with the forest environment.
- L5. Determination of rules and policies that provide guarantees for SMEs.
- L6. Public awareness of the function of the forest as a regulator of wood supply.
- L7. Supervision of the level of spatial planning violations and the forest environment.
- L8. Cooperation of furniture SMEs.
- L9. Collaboration with the Regional Environmental Agency (BLHD).
- L10. Air and water pollution levels in forest environments.
- L11. Level of forest destruction and rehabilitation.

Based on studies from experts/experts on the environmental aspects of the furniture supply chain reinforcement system consisting of 11 sub-elements, the analysis of the linkages between the environmental aspects of the sub-elements uses the ISM-VAXO matrix technique. Based on the discussions and opinions of experts, the results are shown in table 6.

**Table 6.** SSIM – VAXO Matrix Elements of Environmental Aspects

Ei \ Ej	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11
L1		V	V	O	V	V	O	V	V	V	V
L2			A	A	O	O	A	A	A	A	A
L3				V	V	V	V	V	V	V	V
L4					A	A	A	A	V	V	V
L5						X	X	X	V	A	V
L6							X	X	V	V	V
L7								X	V	V	V
L8									V	V	V
L9										A	A
L10											X
L11											

Based on the same calculation as the economic element aspect, the results of the analysis show that all sub-elements of the environmental aspect are classified according to the level of driver power (DP) and the level of dependency (D) into 4

quadrants, namely quadrant I (Autonomous), quadrant II (Dependent), quadrant III (Linkage) and quadrant IV (Independent). The results based on the ISM-VAXO matrix model show the highest level position (Level 7), namely sub-element (L1) imposing restrictions on community activities during a pandemic in the red zone environment as a key sub-element in the environmental aspect of the furniture SME strengthening system in Jombang.

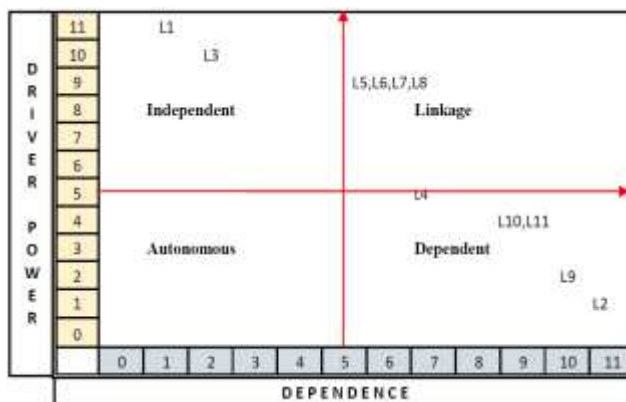


Fig. 4. Classification of Sub-Elements of Environmental Aspects

The results of the grouping/classification of the environmental aspects of the strengthening system sub-elements in the figure shows that:

1. Quadrant I (Autonomous) is that there are no (0) sub-elements of environmental aspects in this quadrant and it is not related to the strengthening of the furniture supply chain system.
2. Quadrant II (Dependent) is the Perhutani sub-element implementing Forest activities (L2), Building institutional development for NGOs concerned with the forest environment (L4), Collaborating with the Regional Environmental Agency (BLHD) (L9), Levels of air and water pollution in forest environments (L10), and Level of forest destruction and rehabilitation (L11).
3. Quadrant III (Linkage) is a sub-element for setting rules and policies that provide guarantees for SMEs (L5), community awareness of the function of the forest as a regulator of wood availability (L6), monitoring of the level of violations of spatial planning and the forest environment (L7), and work the same as UKM furniture (L8).
4. Quadrant IV (Independent) is the sub-element Imposing restrictions on community activities during a pandemic in the red zone environment. (L1) and build community settlements in forest areas according to regulations (L3).

## 4 Conclusion

Based on the results of the analysis using the ISM method in supporting the strengthening of the supply chain in a sustainable manner which is reviewed based on

economic, social and environmental aspects. The results of the analysis in terms of economic aspects/elements show that the highest level as a key sub-element is support from financial institutions for business capital (E5) and support for the Office of Industry & Trade (E6), while the next level is increasing the welfare of employees and SMEs (E2). In terms of social elements, the key sub-element is Control during a pandemic to prevent the spread of the Covid 19 virus (S9) and the next sub-element Partnership with other parties in terms of capital, marketing and technology (S4). Implementation of activities to support a sustainable supply chain based on the social aspect is that the government must exercise control during a marketing pandemic using a digital marketing system. In terms of environmental elements, the key sub-element is that it is necessary to impose restrictions on community activities during a pandemic in the red zone environmental areas. (L1) and build community settlements in forest areas according to regulations (L3). Implementation of activities must refer to government programs in the framework of preventing the Covid 19 virus by imposing restrictions on community activities by not holding mass gatherings in a place that will facilitate the spread of the Covid 19 virus.

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# Buy now or regret later! How does peer influence, reviews, and viral marketing affect online impulse buying behaviour? A study of gender differences

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**Abstract.** Over the last few of decades, technology improvements have sped dramatically, particularly in the domain of social media. Social media has altered consumer behaviour and the ways in which companies conduct their business. Though previous evidence from practical and academic literature shows that peer influence, online reviews, and viral marketing may lead impulse buying, very little is used social media e-commerce marketplace as an object of the study. Hence, this study makes a novel attempt to explore whether these factors influence consumers to buy impulsively within social media e-commerce marketplace context namely TikTok Shop with the regards of gender differences. The study used a two-step sampling procedure which is purposive and snowball sampling. Thus, a five-point Likert scale survey employed as a data collection method. The study was conducted with 217 participants. The study used regression modelling analysis to validate the proposed hypothetical model. The findings suggest that peer influence, reviews, and viral marketing affect online impulse buying simultaneously for both gender segmentations within study. However, the role of viral marketing failed to influence impulse buying for both gender segmentations within study. Even though viral marketing is faster than traditional marketing campaign as well as less expensive but not preeminent way for creating effective marketing campaign. In sum, this study is thought an additional stage in understanding consumer attitudes and behaviour in social media e-commerce marketplace in the age of new media with multidirectional, linked, and unpredictable flow of information.

**Keywords:** Peer influence, Online review, Viral marketing, Impulse buying, Online shopping.

## 1 Introduction

Digital marketing was greatly aided by the social media trend, which altered and revolutionized traditional marketing activities (Piñeiro-Otero & Martínez-Rolán, 2016). The prominence of social media has grown significantly since the arrival of millennial generation, notably in recent years. Social media is becoming more integrated into personal, social, and professional life and is altering how we interact with people (Alalwan, Rana, Dwivedi, & Algharabat, 2017; Teng, Khong, Chong, & Lin, 2016, Feito & Brown, 2018). Xu, Islam, Liang, Akhtar, & Shahzad (2021) added that social media platforms has enabled hyper-connectivity that gives significant impact

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on consumer behaviour. The change prompted by the emergence of social media also applies to the consumer decision making process and marketing communications (Wang, Yu, & Wei, 2012). Social commerce has evolved into a wide range of business models, including the mixing of online and offline business processes. Social commerce connects buyers and sellers over websites and social platforms using the business ideas of online shopping and social networks. With online social networks, social commerce not only relies on commerce, but social networking is also important, and online social media can promote the sale of goods or services online and offline (Riyahi, 2020, Tewari, 2020, Liao, Widowati, Hsieh 2021). Social commerce has revolutionized the consumption experience due to complex interactive factors. Even more, growing evidence suggests that in such a setting, people are more likely to make impulsive buying (Zafar, Qiu, Li, Wang, & Shahzad 2021). Liu, Li, & Hu (2013) stated that there was around 40% of all online consumer expenditure considered as impulsive.

One of the most popular social media commerce platforms in the recent days was TikTok. China's social media platform was confirmed to be fourth among the top five social media platforms as of January 2021 (Indrawati, Yones, & Muthaiyah, 2022). This ranking was based on users' cumulative time spent, which was 13.8 hours per month on average (Kemp, 2021). Handy & Wijaya (2020) and Barta, Belanche, Fernandez, & Flavian (2023) stated that Tiktok has triumphed over a number of other well-known platforms, including YouTube, Facebook, and Instagram as the most downloaded application globally in 2020 and 2021, achieving 1506 million downloads. In Indonesia itself, they have more than 106.9 million adult users with the chemical, pharmaceutical and traditional medicine industries (including cosmetics) experienced positive growth of around 5.59% (Yuliatuti, 2020).

Existing studies on social media has predominantly focussed on rational buying behavior (Hajli, 2013, Shin, 2013), even though impulse buying may also occur in social commerce context. According to Chan, Cheung, & Lee (2017), the literature on online impulse buying has two main research streams. While the first research stream examines how website cues affect online impulse buying, the second stream of research explores into characteristics that influence offline impulse buying and how they relate to online impulse buying. However, researchers have argued that the online shopping atmosphere is now more beneficial to impulse buying behaviour compared to the traditional/conventional store since it frees consumers from the constraints (such as in-store marketing and peer pressure from staff and other customers) that they could experience during physical shopping activities (Eroglu, Machleit, & Davis, 2001; Melović, Šehović, Karadžić, Dabić, & Ćirović, 2021; Xi, Cao, & Zhen, 2020; Eger, Komárková, Egerová, & Mičík, 2021). There hasn't been much studies have explored impulse buying behaviour in the online context, despite the advances of information technology and the tremendous growth of e-commerce types, including social commerce.

Following the mentioned gap above, this study aims to investigate online impulse buying determinants. Previous literature proposed three dominant factors that may affect online impulse buying, namely peer influence (Chen, Lu, Wang, & Pan, 2019; Balakrishnan, Foroudi, & Dwivedi, 2020, Zafar, Qiu, Li, Wang, & Shahzad, 2021), online reviews (Chan, Cheung, Lee, 2017; Ampadu, Jiang, Debrah, Antwi, Amankwa,

Gyamfi, & Amoako, 2022; Tata, Prashar, & Gupta, 2020; Bigne, Chatzipanagiotou, & Ruiz, 2020), and viral marketing (Mochalova & Nanopoulos 2014; Koch & Benlian, 2015, Sung, 2021). Moreover, gender is important in distinguishing online impulse buying as male or female may have different interactional approaches in make such consumer decision process (Chen, Lu, Wang, & Pan, 2019; Wu, Chiu, & Chen, 2020; Zhang, Shao, Li, & Feng, 2021; Liang, Yu, & Le, 2021). Therefore, this study tried to address the gap with the main question: Whether and how peer influence, online reviews, and viral marketing arouse consumer to buy impulsively in the online social commerce?

## **2 Literature Review**

### **2.1 Impulse Buying**

Impulse buying has been growing topic in the past few decades. Rook (1987) stated that Impulse buying occurs when a consumer experiences a sudden, often powerful and persistent urge to buy some-thing immediately. The impulse to buy is hedonically complex and may stimulate emotional conflict. In addition, impulse buying is prone to occur with diminished regard for its consequences. In 1998, Beatty and Ferrell argued that impulse buying refers to the purchase consumers carry out immediately without any pre-shopping intention to purchase a particular product or to satisfy a specific need. Early approaches, taking a marketing perspective, defined impulse buying as any unplanned purchase and accordingly focussed on specific product categories or product features (Stern, 1962) that may increase the likelihood of impulse buying. Research then assumed the perspective of the consumer and investigated personal characteristics related to impulse buying, including demographics (Kollat and Willett, 1967) and personality (Rook,1987). In general, consumers' impulse buying tendencies were instinctive, and indicated a general inclination for impulse buying. Previously, impulsive customers valued online reviews for their hedonic values, whereas now impulsive customers value online reviews for their utility values (Zhang et al., 2018). External stimuli are marketing indicators used by marketers to entice customers to make a purchase (Yoon and Faber, 2000), whereas internal stimuli are aspects of a person's personality (Luo et al., 2018). Furthermore, in the context of live-stream commerce, social presence also affects impulse buying (Ming et al., 2021). Impulse buying also created when other consumer post and comment in social media as regard their feeling and cognition about product and service (Chang, 2017; Ju & Ahn, 2016; Zhao et al., 2019) and likewise they will see review about this product or service (Zafar, Qiu, Shahzad, et al., 2021).

### **2.2 Peer Influence**

Peer influence refers to recommendations and support obtained from social network members such as family members and friends (Thoits,2011). According to Bristol and

Mangleburg (2005), peer influence stands for the extent peers exert influence on the attitude thoughts and action of an individual. For instance peer influence varies on the extent of its effect on the buying behaviour and decision to purchase different product (Bearden and Etzel (1982). Sacerdote (2014) argued that peer influence is an umbrella term that refers to when the attitudes, values or behaviours of an individual are influenced by the behaviours of members within a peer group. There are other cases where the peer group is defined more narrowly, based on connections within a social network or membership in a group, such as employees within an organization or members of a church congregation (Graham,2018). While browsing social commerce platforms, consumers are likely to encounter and interact with various social cues and engage in impulse buying as a result (Kimiagari & Malafe, 2021; Zafar et al., 2020). Posts and comments on social media make shoppers feel connected to an online community activating emotions of pleasure and arousal and leading to impulse buying (Chang, 2017; Ju & Ahn, 2016; Zhao et al., 2019). Furthermore, digital celebrities' endorsements on social media can induce impulse buying among young adults during hedonic browsing (Chen, Kassas, & Gao, 2021; Zafar, Qiu, Shahzad, et al., 2021). Based on the background we proposed the following hypotheses:

H1 : Peer influence has significant effect on impulse buying behaviour

### 2.3 Viral Marketing

Terms such as "word of mouth marketing" or "buzz marketing" are often used synonymously instead of "viral marketing" (Stevenson, 2008). According to Palka et al. (2009), the term Viral explained as "a type of marketing in which advertising messages are spread from one customer to others like a spread of a flu virus". Kim and Lowrey (2010) also stated that viral marketing is a "marketing tool or marketing phenomenon to encourage and urge people to share messages". Viral marketing is known as word-of-mouth or buzz marketing as well and it is basically about consumers sharing information with each other (Kozinets et al., 2010). Viral marketing includes any strategy that persuades individuals to transfer a marketing message to others, and build the potential for exponential growth in the message's disposal and penetration (Kirby, 2006). Like viruses, such strategies use fast multiplication to spread the message to potential costumers (Vilpponen et al., 2006). In other words, viral marketing entails the consumers' function of electronic word-of-mouth (eWOM) on social network and media (SNM) sites (Gunawan and Huarng, 2015). Studies indicate that the product information gained product information from online discussions of internet users is more interesting than the information provided by marketing companies (such as web pages of big companies) (Bickart and Schindler, 2001). Viral Marketing is a strategy involving digital content that has the ability to create rapid growth in a short time. The previous research studies confirmed that there is a positive relationship between viral marketing and impulse buying (Abdullah & Artanti,2021; Baker et al.,2019; Khokar et al., 2019; Husnain et al.,2016). Based on the previous study we proposed the following hypothesis:

H2 : Viral Marketing has significant effect on impulse buying behaviour

### 2.4 Online Review

The influence of online reviews has been widely explored in the literature of consumer behavior, marketing, and information systems. Due to the potential risks of online shopping (e.g. product performance risk and financial risk), many consumers infer product quality and reduce uncertainty by referring to online reviews from other consumers. Chen Yubo (2008) argues that online reviews, which acts as a free "marketing" function, are usually describe product attributes according to the usage of reviewers and reviews products performance from the perspective of the user, which can help consumers especially novices of network shopping to find the products which can meet their specific needs. Zhang et al (2012) make a more comprehensive definition of online word of mouth that the masses can get potential, real evaluations of the quality of goods, services, and enterprise and experiences of using a product or service, which are mainly in the form of text, via the Internet, positive or negative. Online reviews can trigger impulse buying urges during browsing (Ampadu et al., 2022). They also increase positive affect, enticing impulse buying if the review is of good quality, that is, highly useful to a consumer and originating from a credible source (Xu et al., 2020). In particular, online reviews with a strong hedonic message are more effective in triggering impulse buying than those that emphasize utilitarian information (Zafar, Qiu, Shahzad, et al., 2021; Zhang et al., 2018). Park et al. (2007) used an experimental method and found that consumer purchase behavior is closely associated with online reviews. Affective component of online reviews plays a more important role in driving consumer browsing and impulse buying behavior. Marketers and retailers traditionally utilize external stimuli, such as in-store promotions and advertising, to trigger impulse shopping (Grigsby et al., 2021; Yi & Jai, 2020). We propose that online review can drive consumers to buy impulsively. The following hypothesis is provided:

H3 : Online review has significant effect on impulse buying behavior

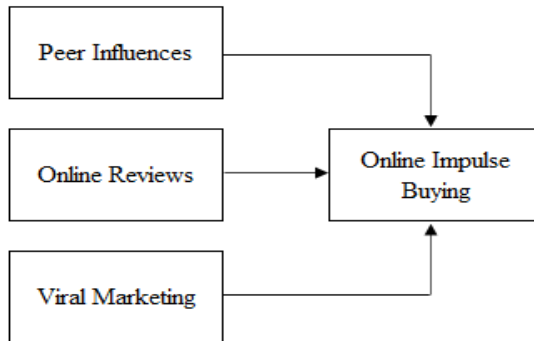


Fig. 1. Research Framework

## 3 Methods

Popular Chinese social commerce, namely TikTok Shop, were selected as the object of the study as this platform had a massive user growth since the COVID pandemic and

frequently offer discount price to their consumers. Therefore, in this kind of situation, we assume that impulse buying is likely to take place. In our study, only participants who are classified as younger adult and had previously purchase experience in TikTok Shop were considered. Since it was difficult for us to find those match people, we conducted a snowball sampling (also known as chain-referral sampling) approach Leighton, Kardong-Edgren, Schneidereith, & Foisy-Doll (2021), allowing participants to propose other participants by submitting their email addresses. We also posted the survey link on many social media platforms including TikTok, Facebook, Instagram, and WhatsApp to aid in snowball recruiting. Before the final survey, we did a pre-test by inviting 30 TikTok Shop consumers to participate in filling out the questionnaire and provide feedback. During this process, the questionnaire was further improved. Moreover, to avoid response biases, we also compared the demographic profiles of the first 50 and the last 50 participants in the sample to examine the non-response bias. Fortunately, there is a no significant differences between these comparison, indicating that bias might not have been a major issue in this study. A total of 315 participants agreed to take part in the survey. Of these, however, 33 participants never had online impulse experience, 15 participants never buy in TikTok Shop, and 50 participants failed to complete the questionnaire, resulting in a total of 217 usable surveys for analysis. Table 1 of demographics profile shows that over half of the participants were female (52 percent) while 48 percent were male. The majority of participant of the study were in the age range of less than 20 to 30 years old (69 percent). And lastly, 75.6 percent of our participants are university students and graduates. This demographic profile, however, aligned with Wu, Ing-Long; Chiu, Mai-Lun; Chen, Kuei-Wan (2020) study that described online consumers are generally younger and higher education than conventional consumers.

**Table 1.** Demographic Profiles

<b>Characteristics</b>	<b>Frequency</b>	<b>Percent (%)</b>
<b>Gender</b>		
<b>Male</b>	104	48
<b>Female</b>	113	52
<b>Age</b>		
<b>&lt; 20</b>	74	34
<b>20 – 30 (less than)</b>	85	39
<b>30 – 40 (less than)</b>	41	19
<b>&gt; 40</b>	17	8
<b>Education</b>		
<b>Higher School</b>	24	11
<b>College</b>	193	89

The current study has adapted the scale items validated in the prior studies to measure the study constructs. We made minor modifications on the measures to fit our context. Responses to all items of the study were measured by using a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). For instance, peer influences asked “My friends/family members recommend that I should buy product from TikTok Shop”, “My friends/family members would be happy if they knew that I

buy product from TikTok Shop” (Ozdemir, Sena; Zhang, ShiJie; Gupta, Suraksha; Bebek, Gaye (2020); Mohd Suki, Norazah (2019). While online reviews had been adapted from Jiménez, Fernando; Mendoza, Norma (2013) scale of items (“I typically read the reviews before making a decision”, “I think consumer reviews are helpful”, and “Consumer reviews often influence my purchase decisions”), viral marketing was measured with the scale items developed by Hendijani Fard, Morteza; Marvi, Reza (2020) like “I always get product promo-message in my TikTok”, “I think the person who produce video promo-message in TikTok, is trustworthy”, and “The arguments of video promo-message in TikTok are convincing” . Furthermore, the scale of online impulse buying tendency measured by using three items of Wu, Ing-Long; Chiu, Mai-Lun; Chen, Kuei-Wan (2020). The items were “When shopping online, I often have the idea "buy now and think about it later", “When shopping online, I often buy things without thinking”, and “When shopping online, I often buy things according to how I feel at the moment”. The results of the reliability of the study revealed that all the values of Cronbach’s  $\alpha$  are higher than 0.7 (0.88, 0.91, 0.85, 0.94). Therefore, according to Cronbach (1951) and Nunnally (1978), it can be concluded that the research measure has good reliability. Following that, in order to test our hypotheses systematically, we utilize multiple regression analysis (MRA) to prove our hypothesis and to make comparisons results between gender classification. Because it allows researchers to explicitly control for numerous different factors that simultaneously affect the dependent variable, multiple regression analysis is more amenable to ceteris paribus analysis (Das (2019).

#### 4 Result AND DISCUSSION

In this study we report result of study examining the relationship between peer influence, online review and viral marketing toward impulse buying behaviour in social commerce namely Tiktok. To testing the hypothesis we used regression analysis. We first provide comprehensive, but simple regression for the research. We also distinguish between male and female whether both genders had differences toward impulse buying behavior.

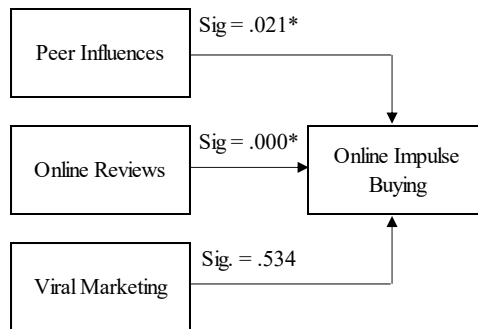
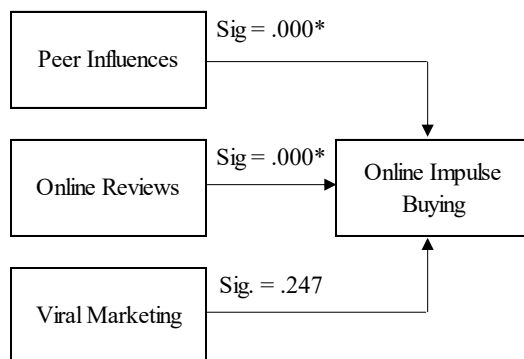


Fig. 2. : Regression Result for Male

Figure 2 shown the result of regression analysis for male. Based on the data peer influences had significant effect on impulse buying with p-value 0.021. Thus, online review also had significant effect on impulse buying with p-value 0.000. However, in this research we found interesting finding to wit viral marketing had no significant effect on impulse buying behavior with p-value 0.534. This indicates male is more rational consumer, when to bough product or service they used cognitive affirmation to make buying decision. They were not influence with trend or viral toward product or service.



**Fig. 3.** Regression Result for female

Figure 3 describe the result of regression analysis for female. In this study we found that peer influence had significant effect on impulse buying behavior with p-value 0.000. furthermore, online review had significant effect on impulse buying behavior with p-value 0.000. Thus viral marketing had no significant effect on impulse buying behavior with p-value 0.247. In female perception there was a lot of information about current viral product or service, they could browsing through the internet to found match information about newest viral so as they could not prone against viral marketing.

**Table 2.** Summary of Hypothesis

Hypothesis	Male (n =104)		Female (n =113)	
	Sig.	Decision	Sig.	Decision
<b>Peer Influence -&gt; Online Impulse Buying</b>	0.021	Accepted	0.000	Accepted
<b>Online Reviews -&gt; Online Impulse Buying</b>	0.000	Accepted	0.000	Accepted
<b>Viral Marketing -&gt; Online Impulse Buying</b>	0.534	Rejected	0.247	Rejected



There were no differences between male and female toward peer review and online review to impulse buying behavior. The present research indicates that peer influence on impulse buying leads to automated responding. Beyond peer influence on impulse buying, the present research has implications for consumer behavior more generally. Much of what consumers do is automatic. In addition, online review also had no differences between male and female. Online reviews can trigger impulse buying urges during browsing (Ampadu et al., 2022). In other words, these consumers are more likely to focus on the fun part of online reviews and are easier to develop the impulse buying while browsing shopping websites.

A lot of research on viral marketing supports the positive relationship between impulse buying behavior. Previous research suggested viral marketing has a positive impact on impulse buying. This complies with the existing literature which stated, viral marketing positively impacts impulse buying (Abdullah & Artanti, 2021; Baker et al., 2019; Khokar et al.,). However this research were slightly different stated that viral marketing had no significant effect between male and female. Both genders perceived that viral marketing cannot influence them to buy impulsively. This indicates because they could find a lot information on internet about the happening issue such viral marketing. Even though viral marketing is faster than traditional marketing campaign as well as less expensive but not preeminent way for creating effective marketing campaign. In sum, this study is thought an additional stage in understanding consumer attitudes and behaviour in social media e-commerce marketplace in the age of new media with multidirectional, linked, and unpredictable flow of information.

In addition to the theoretical implications, we believe that our findings can also provide several practical implications. First, a recent review moreover concludes that sharing information and opinions about products (i.e. word of mouth) is driven by self-serving motives that people may not be aware. So that, retailer should utilize this kind of information to take marketing campaign with encourage customer to write good comment through online store or store website. Second, this study emphasizes the importance of online reviews in driving consumers online impulse buying behavior. Online retailers may consider using these reviews as marketing tools to act as effective environmental and social influence and to promote consumers impulse buying behavior. Third, actually viral marketing can enhance impulse buying behavior. It is important for e-commerce to make sure that messages sent through viral marketing are informative to the customer. This should be reflected in social media and emails sent to customers. Information sent to customers related to products and services should be useful to customers, and customers should respond positively. In addition, it is important to manage to make sure that messages sent through viral marketing are fun. This helps maintain customer interest.

## **5 Conclusion**

In a fiercely competitive world market, customers have increasingly more choices and power, and customer psychology changes accordingly. Impulse shopping has become increasingly popular. People buy something that is not based on their original intention. Impulse buying is influenced by many direct and indirect factors such that peer influence, online review and viral marketing. Hence, this study makes a novel attempt to explore whether these factors influence consumers to buy impulsively within social media e-commerce marketplace context namely TikTok Shop with the regards

of gender differences. The findings suggest that peer influence, reviews, and viral marketing affect online impulse buying simultaneously for both gender segmentations within study. However, the role of viral marketing failed to influence impulse buying for both gender segmentations within study. Even though viral marketing is faster than traditional marketing campaign as well as less expensive but not preeminent way for creating effective marketing campaign. In sum, this study is thought an additional stage in understanding consumer attitudes and behaviour in social media e-commerce marketplace in the age of new media with multidirectional, linked, and unpredictable flow of information.

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# The Role of Motivation to Strengthen Posyandu Cadres Performance

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**Abstract.** This study aims to analyze the effects of motivation factors on posyandu cadres' performance. The performance indicator of this study is service implementation to the citizens in the Pagelaran district. The data that is used in this study was collected by questionnaire to all members of posyandu in Pagelaran district, 125 cadres. Census method used in this study (all of the population used to sample). Findings in this study, although the cadres that categorized as volunteerism, show that motivation factor has significant effects on posyandu cadres' performance in Pagelaran district.

**Keywords:** Performance, Motivation, Posyandu Cadres, Volunteerism

## 1 Introduction

Health in mothers and children is a problem that often has a domino effect. Mothers have an important role in child development. On the other hand, married couples sometimes still lack information about the health of mothers and children. Whether it's health before pregnancy, during pregnancy, and after childbirth and breastfeeding. The size of Indonesia's territory and a large number of people are obstacles to the equitable distribution of information. The government has formed service centers that serve the needs of mothers and children, especially in quite remote access to healthcare areas. The service center is known as the Integrated Service Post (POSYANDU). The presence of posyandu cadres is very helpful for healthcare personnel in maximizing the programs that have been prepared by the government.

Posyandu cadres are community members who are willing, able and have the time to organize Posyandu activities voluntarily [4]. Posyandu Cadres can be categorized as volunteerism because volunteerism is. The characteristics of volunteerism are: (a) always look for opportunities to help, (b) the commitment is given over a relatively long time, (c) it takes time, effort, money, and so on, (d) they don't know the person they are helping, and (e) their behavior what volunteers do is not mandatory. Based on this, cadres are usually not given a salary like employees. The cadres will only be given money for posyandu operations. This is one of the reasons the cadre's performance is less than optimal. On the other hand, the program must run well. Performance measurement for cadres will be based on the achievement of the programs being implemented. According to [7], performance is a measure of the quality and quantity

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of human resources in carrying out their duties in accordance with the responsibilities assigned per unit time period [6].

Achieving a good level of performance requires support from all parties. Cadres have an important role in achieving the programs that have been prepared. On the other hand, the performance of cadres sometimes fluctuates. It requires encouragement to create a good performance. The driving factors are ability factors and motivational factors [7]. Motivation is encouragement from within and outside oneself to do something that can be seen from the dimensions of internal and external motivation [11].

Based on this description, the research problem in this study is to analyze the influence of factor motivation on posyandu cadres' performance using the SEM with PLS method. This study aims to examine the effect of motivation on posyandu cadres' performance. The results of this study provide an overview of the situation that occurs in the posyandu and can be a reference to improve performance in certain sections. In addition, this research is expected to find out the low motivation factor, so it needs to be repaired and improved.

## **2 Body of paper**

### **2.1 Introduction**

Motivation is defined as the desire to do something and the ability to act to satisfy individual needs [9]. Generally, motivation can appear from the intrinsic and extrinsic of the individual. Intrinsic motivation comes from the desire/encouragement within the individual to take an action. While extrinsic motivation comes from the encouragement of factors outside the individual that influence the actions taken [8]. The motivation of cadres in this study was assessed using the Level of Performance Motivation Among the Community Health Workers. The conceptual framework for this assessment consists of two main elements, namely individual and community assessment. At the individual level, the assessment includes social responsibility, self-worth, self-satisfaction, motivational drive, autonomy, and respect. Meanwhile, at the community level, it consists of the community environment and the health service system. Assessment of the health service system includes responsibilities, workload, incentives, infrastructure support, work skills, training, supervision, and teamwork [3].

Performance is a degree of accomplishment of the tasks that make up an employee's job [2]. The performance is the result of work in quality and quantity achieved by an employee in carrying out his duties in accordance with the responsibilities given to him [6]. The accomplishment of the posyandu cadres can be approached by using performance indicators. Performance appraisal criteria consist of quality of work, the quantity of work, time used, mandated position, attendance, and safety while carrying out work [1]. Based on [6], there are two factors that influence performance, both the ability factor and the motivation factor.

Based on this description, the hypothesis of this study:

H1: Two Levels of Motivation such as the Health System Level and Individual Level have a positive effect on posyandu cadres' performance, which is the quality of work.

H2: Two Levels of Motivation such as the Health System Level and Individual Level have a positive effect on posyandu cadres' performance, which is the quantity of work.

H3: Two Levels of Motivation such as the Health System Level and Individual Level have a positive effect on posyandu cadres' performance, which is time utilization.

H4: Two Levels of Motivation such as the Health System Level and Individual Level have a positive effect on posyandu cadres' performance, which is cooperation.

H5: Two Levels of Motivation such as the Health System Level and Individual Level have a positive effect on posyandu cadres' performance, which is attendance rate.

### 3 Methods

The method used in this study is quantitative. This research was conducted on the Posyandu cadres of the Pagelaran district. The data collection method used primary data, using a questionnaire that was distributed to all Poyandu cadres of the Pagelaran district. The Likert scale was used in the questionnaire with an assessment of 1-5. Furthermore, the data obtained were processed and analyzed descriptively and inferentially.

### 4 Result

The results of this study consisted of 125 respondents. All respondents are posyandu cadres of Pagelaran district. Characteristics of respondents consisting of age, education, and kind of work of poyandu cadres are shown in table 1.

**Table 1.** Sample Characteristics and Percentage

Characteristics	N	Percentage (%)
Age		
22-27 years old	14	11,2%
28-33 years old	23	18,4%
34-39 years old	23	18,4%
40-45 years old	23	18,4%
46-51 years old	25	20%
52-57 years old	11	8,8%
58-63 years old	4	3,2%
> 64 years old	2	1,6%
Education		
Elementary School	25	20%
Junior High School	48	38,4%
Senior High School	44	35,2%
Bachelor Degree	8	6,4%
Kind of Work Housewife		
Private	88	70,4%
Farmer	24	19,2%
Teacher	6	4,8%
Nurse	6	4,8%
		0,8

(source: primary data)

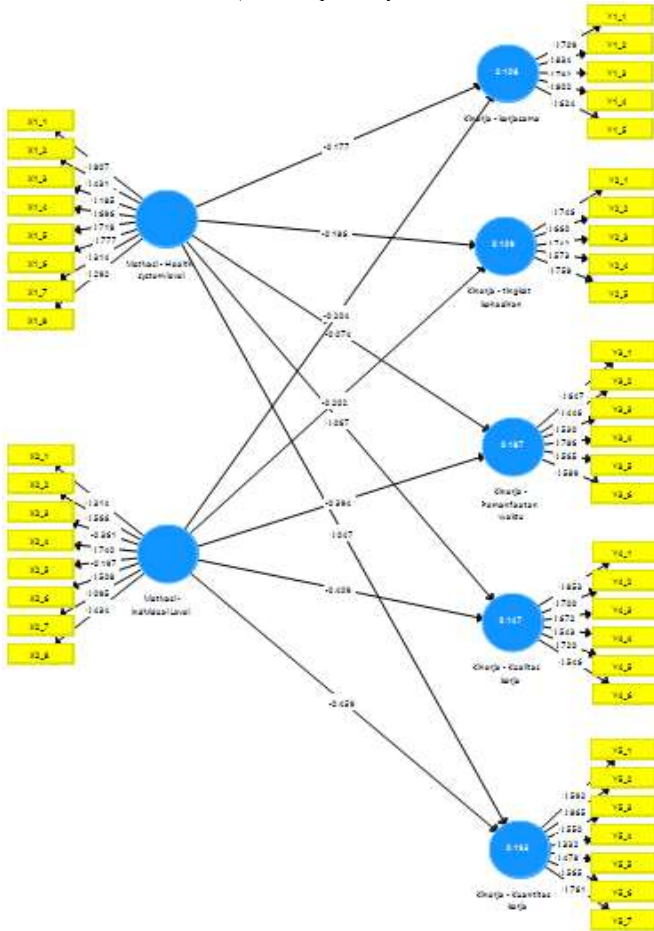


Fig. 1. Model 1 SEM PLS Posyandu Cadres Performance

Based on the loading factor, it is said to be valid if the loading factor value is more than 0.5, so some of the indicators above need to be removed, X1\_2, X1\_3, X1\_4, X1\_7, X1\_8, X2\_1, X2\_2, X2\_3, X2\_5, X2\_6, X2\_7, X2\_8, Y1\_5, Y2\_2, Y2\_4, Y3\_1, Y3\_2, Y3\_3, Y3\_5, Y3\_6, Y4\_3, Y4\_4, Y4\_5, Y5\_1, Y5\_3, Y5\_4, Y5\_5, and Y5\_6. SEM-PLS remodeling in Figure 1 becomes as follows.

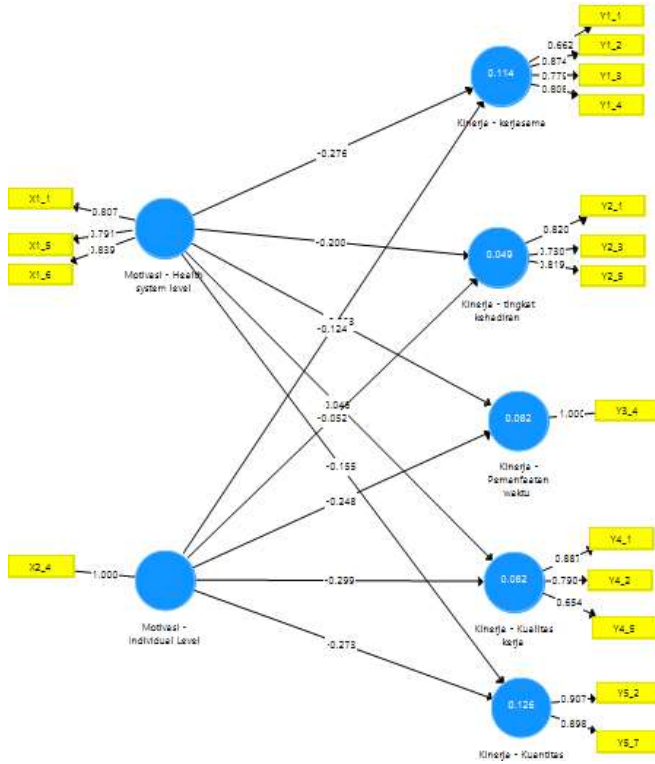


Fig. 2. Model 2 SEM PLS Posyandu Cadres Performance

Figure 2 is model 2 of SEM-PLS after several invalid indicators were removed. In the Y1\_1 and Y4\_5 indicators, there are values that still do not meet the criteria, so the indicator needs to be removed as well. Based on this, the following model is obtained.



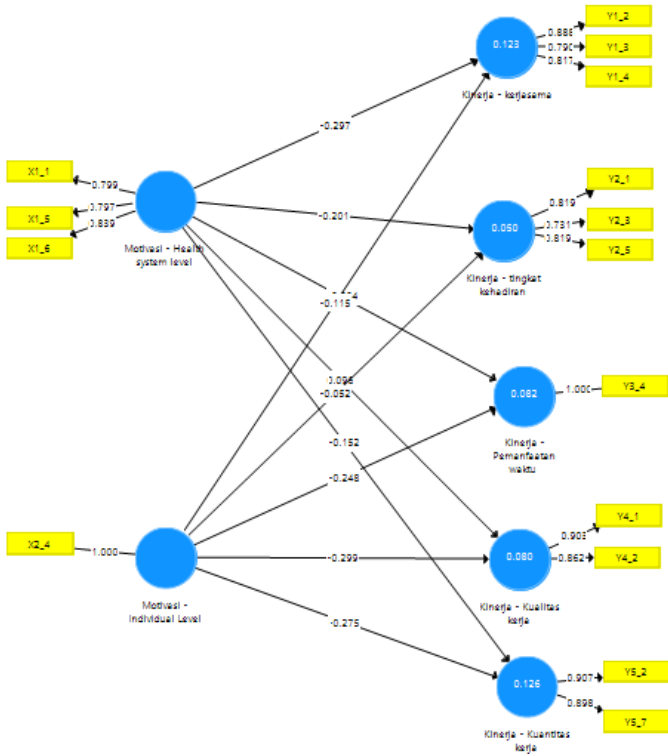


Fig. 3. Model 3 SEM PLS Posyandu Cadres Performance

Figure 3 is the 3 SEM-PLS model after the Y1\_1 and Y4\_5 indicator is removed. The next step is to calculate PLS Algorithm to test the reliability and validity variables. The result of the analysis is as follows.

	Cronbach's Alpha	rho_A	Composite Reliability	Average Varian Extracted (AVE)
Quality of Work	0.719	0.733	0.876	0.779
Quantity of Work	0.772	0.733	0.898	0.814
Time Utilization	1.000	1.000	1.000	1.000
Cooperation	0.788	0.855	0.871	0.693
Attendance Rate	0.706	0.728	0.833	0.625
Cont...	Cronbach's Alpha	rho_A	Composite Reliability	Average Varian Extracted (AVE)
Health System Level	0.745	0.749	0.853	0.659
Individual Level	1.000	1.000	1000	1.000

Based on the calculation results, all variables have Cronbach's alpha values above 0.7, so all variables can be declared reliable. In the AVE calculation, all variables have values above 0.5, so it can be concluded that all variables are valid. The next step is

bootstrapping. The results of bootstrapping after removing invalid indicators are as follows.

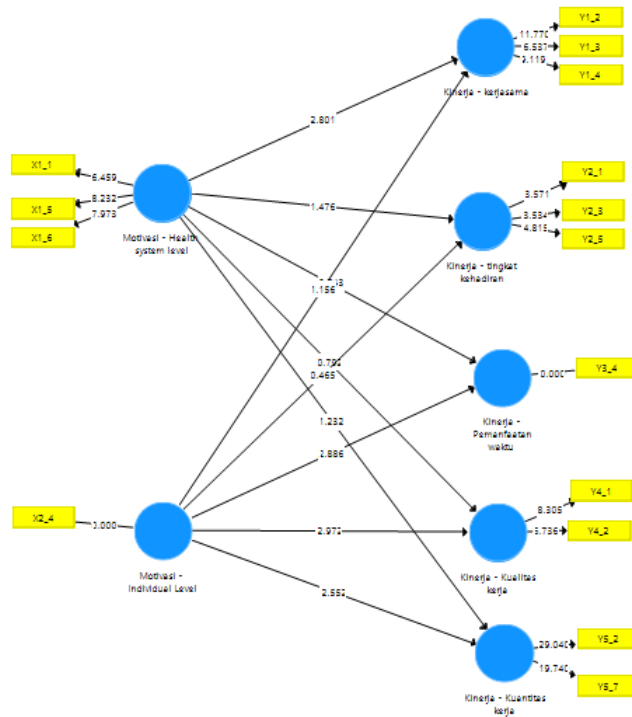


Fig. 4. Model 4 SEM PLS Posyandu Cadres Performance

Figure 4 is a model of 4 SEM-PLS after bootstrapping. Based on the result of bootstrapping there are four components of motivation that have a positive and significant influence on posyandu cadres' performance, their health system level that affects cooperation, individual level on work quality, individual level on work quantity, and individual level on time utilization.

### 4.1 Hypothesis Test

Table 2. Results of Bootstrapping Research Data Calculations

	Original Sample Estimate (O)	Sample Mean (M)	Standard Deviation (STD)	t Statistics (IO/STDEVI)	P Value
Health System Level (X1) -> Quality of	0.096	0.090	0.121	0.792	0.429

Work					
Health System Level (X1) -> Quantity of Work	-0.152	-0.164	0.124	1.232	0.218
Health System Level (X1) -> Time Utilization	0.084	0.093	0.113	0.743	0.458
Health System Level (X1) -> Cooperation	-0.297	-0.319	0.106	2.801	0.005
Health System Level (X1) -> Attendance Rate	0.201	0.217	0.136	1.476	0.141
Individual Level (X2) -> Quality of Work	0.299	0.304	0.101	2.972	0.003
Individual Level (X2) -> Quantity of Work	0.275	0.274	0.108	2.552	0.011
Individual Level (X2) -> Time Utilization	0.248	0.243	0.086	2.886	0.004
Individual Level (X2) -> Cooperation	0.115	0.116	0.099	1.156	0.248
Individual Level (X2) -> Attendance Rate	0.052	0.066	0.111	0.465	0.642

*Source: Processed primary data output, 2022*

Based on the output results in table 2 T statistics for the Health System Level (X1) on Quality of Work (Y1) of  $0.792 < 1.96$ . The P-Value is  $0.429 > 0.05$ , which means it is not significant. Thus the hypothesis is rejected, Health System Level has no significant effect on the Quality of Work.

Based on the output results in table 2 T statistics for the Health System Level (X1) on Quantity of Work (Y2) of  $1.232 < 1.96$ . The P-Value is  $0.218 > 0.05$ , which means

it is not significant. Thus the hypothesis is rejected, Health System Level has no significant effect on the Quantity of Work.

Based on the output results in table 2 T statistics for the Health System Level (X1) on Time Utilization (Y3) of  $0,743 < 1.96$ . The P-Value is  $0.458 > 0.05$ , which means it is not significant. Thus the hypothesis is rejected, Health System Level has no significant effect on Time Utilization.

Based on the output results in table 2 T statistics for the Health System Level (X1) on Cooperation (Y4) of  $2.801 > 1.96$ . The P-Value is  $0.005 < 0.05$ , which means it is significant. Thus the hypothesis is accepted, Health System Level has a significant effect on Cooperation.

Based on the output results in table 2 T statistics for the Health System Level (X1) on Attendance Rate (Y5) of  $1.476 > 1.96$ . The P-Value is  $0.141 > 0.05$ , which means it is not significant. Thus the hypothesis is rejected, Health System Level has no significant effect on Attendance Rate.

Based on the output results in table 2 T statistics for the Individual Level (X2) on Quality of Work (Y1) of  $2.972 > 1.96$ . The P-Value is  $0.003 > 0.05$ , which means it is significant. Thus the hypothesis is accepted, Individual Level has a significant effect on the Quality of Work.

Based on the output results in table 2 T statistics for the Individual Level (X2) on Quantity of Work (Y2) of  $2.552 < 1.96$ . The P-Value is  $0.011 > 0.05$ , which means it is significant. Thus the hypothesis is accepted, Individual Level has a significant effect on the Quantity of Work.

Based on the output results in table 2 T statistics for the Individual Level (X2) on Time Utilization (Y3) of  $2.886 > 1.96$ . The P-Value is  $0.004 > 0.05$ , which means it is significant. Thus the hypothesis is accepted, Individual Level has a significant effect on Time Utilization.

Based on the output results in table 2 T statistics for the Individual Level (X2) on Cooperation (Y4) of  $1.156 < 1.96$ . The P-Value is  $0.248 < 0.05$ , which means it is not significant. Thus the hypothesis is rejected, Individual Level has no significant effect on Cooperation.

Based on the output results in table 2 T statistics for the Individual Level (X1) on Attendance Rate (Y5) of  $0.465 > 1.96$ . The P-Value is  $0.642 > 0.05$ , which means it is not significant. Thus the hypothesis is rejected, Individual Level has no significant effect on Attendance Rate.

## 5 Discussion

The result of this study indicates that the two levels of motivation (health system level and individual level) influence cadres' posyandu performance. Referring to the statistical results, both levels of motivation have a significant effect on the four dimensions of posyandu cadres' performance. The health system level has a significant effect on cooperation. The existence of high social enthusiasm forms motivated cadres to inspire, enthusiasm, activate, stimulate, mobilize, and the community to live a healthier life [10]. The individual level has a significant effect on the quality and

quantity of work and time utilization. The existence of high motivation can increase the activity of cadres better which also affects the quality of their performance compared to cadres who have low motivation [12]. This result indicates that good relationships are needed from each line in order to create a comfortable and conducive atmosphere at work. The relationship with health workers is something that needs attention, there is support from local healthcare. The existence of good interpersonal relationships of mutual trust, communication, and interactive dialogue between cadres and local health workers also motivates cadres to carry out their duties optimally [5].

## 6 Conclusion

Based on the result of the study, it can be concluded that if cadres have good motivation for example feeling care for others, their performance will increase. Because cadres include volunteerism, they work not oriented by wages. They will work as a society to help others. cadres want Indonesian children to grow and develop as healthy and smart children. Motivation gives an important role to increase the posyandu cadres' performance.

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# The relationship between Strategy of Circular Economy (CE) Product Fertilizer of A3N 766HI toward Sustainable Economic (SE), Sustainable Social (SS) and Legal Development (LD) through the Strengthening Awareness of Gotong Royong (GG) as the Result of the Independent' Learning and Campus (ILC) in the Landfill Waste Water Pakusari Jember

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**Abstract.** The aims of the study is to see the relationship between Circular Economy (CE) product fertilizer of A3N 766HI toward Sustainable Economic (SE), Sustainable Social (SS) and Legal Development (LD) through the strengthening awareness of Gotong Royong (GG) as the result of the Programs' Independent' learning and Campus (ILC) in the Pakusari Jember Landfill Waste Water. The research's questions namely: 1. Is there a relationship between circular economy product fertilizer of A3N 766HI toward strengthening awareness of gotong royong as a result of the Programs' Independent' Learning and Campus (ILC) in the landfill waste water Pakusari Jember? Is there a relationship model 1 (one) between strategy of economic circular toward strengthening awareness Gotong Royong and model 2 (two) circular economy strategy toward sustainable economic & social and legal development throughout strengthening awareness of gotong royong as the result of the Programs' Independent' Learning and Campus (ILC) in the Landfill Waste Water Pakusari Jember? The research design is quantitative research and the data collection method by questionnaires' instrument, being distributed to 89 respondents. The results of this study are as follows: 1. The R-square value and F-Square value of Model II (two) > Model I. It shows that the contribution of model two namely CE and GR toward SESL = 0.669 (66.9%), and the F-square value model II (two) EC and GR toward SESL is 0.678 or 67.8%. 2. Model two, namely the circular economy towards sustainable economic & social and legal development through strengthening awareness of the value of Gotong Royong has a positive contribution. There were eleven positive contributions had been identified from seventeen goals from Sustainable Development Goals (SDGs). The recommendation of this research is that the achievement of a circular economy must be included the strengthening the awareness of the value of gotong royong.

**Keywords:** Strategy of Circular Economy (CE), Gotong Royong (GG), Sustainable Economic (SE), Sustainable Social (SS), Legal Development (LD), Learning and Independent Campus, and A3N 766HI Organic Fertilizer.

## 1 Introduction

The scavengers who live in the Final Disposal Site (FDS) in Pakusari Jember are residents who earn “rupiah” (an Indonesian currency) in order to survive and this happens because their level of education and expertise is so low that it is difficult to get a job in this era of competition. In addition, the residents who live in the FDS location Pakusari Jember use liquid fertilizer derived from waste water from the FDS to be used as fertilizer for their needs in their fields. The farmers do this because they are not aware of the content in the waste water. It is certain that the waste water from the FDS contains pathogenic bacteria and E-coli which is not good for plants, animals and humans as mentioned by Lim JY, et. al. (since pathogenic, E-coli bacteria can cause bloody diarrhea). The lack of knowledge about the effects of the two bacteria, it is necessary to kill the bacteria by using bio starter of the A3N 766HI in order to neutralize the two kinds of bacteria from the waste water. This waste water will bring environmental pollution in the surrounding area.

The portrait of the problems above shows that there are problems: 1. Education: ignorance on the fertilizer content of pond waste water, 2. Social: health and poverty issues, 3. Economic: inadequate work life and livelihoods for scavengers, 4. Legal: implementation laws for people who pollute the environment have not been acted upon.

Portraits of social, economic and legal development problems can be restored by carrying out circular economics as mentioned by Fasa, 2021:339, that “a circular economy to pursue production and economic growth and sustainable development goals” and Krehher, Julian, Denise Reike: “increasing economic prosperity followed by improving environmental quality” and strengthened by increasing awareness of the value of Gotong Royong. Actions to deal with social, educational, legal, economic problems cannot be carried out individually; collective values must be needed to run a circular economy so that it can reduce the negative impact of the problems mentioned above.

Responding to the social, economic and legal development problems above, the variables that will be included in this study are: 1. The independent variable (X) is circular economy, 2. The moderate variable (Z) is strengthening awareness of the value of mutual cooperation (Gotong Royong) and 3. The variable bound (Y) is economic and social sustainability and legal development.

Understanding the phenomenon of the problem above, each variable included in this study will be studied so that the understanding of each variable is clearer and can make assumptions before being tested and conclusions drawn.

The moderate variable in this study is Strengthening Awareness of the Value of Mutual Cooperation (Z). The word gotong-royong comes from two words, namely “Gotong” means work, and “Royong” means a sense of togetherness, Koentjaraningrat, 1984. So gotong royong is a collective value of selfless action and as a form of calling to serve and provide benefits for the progress of humanity. The collective value of



gotong royong [16] to solve problems of economic, social and legal sustainability by implementing a circular economy. Strengthening awareness of the value of gotong royong is by means of Widodo Brontowiyono et. al, 2022 "participation and contribution": 1. The value for an influential role in every social way by creating A3N 766HI products to support sustainable economic, social and legal development 2. The value as a form of togetherness in the society by way of completing a job, both for personal and community interests to process landfill waste water into organic fertilizer A3N 766HI to help scavengers and farmers get out of poverty. 3. Helping is an action Kuku Lukiyanto and Maranatha Wijayaningtyas, 2020, circular economy that produces or benefits others, by filling A3N 766HI fertilizer products into bottles collected by scavengers and selling them to farmers around the Pakusari TDS thereby reducing the pressure environment for now and next generation to come.

The intervening variable is strengthening the awareness value of mutual cooperation (Z). the value of gotong royong is included in this research variable because the problem of scavengers and farmers below the poverty line cannot be helped if there is no spirit of mutual cooperation. The spirit of gotong royong is created when there is: an influential role innovator, there is a spirit to form togetherness with scavengers and farmers and there is a passion to help in action to the problem of scavengers and farmers by carrying out an economic circular. This spirit of mutual cooperation can be realized from nine activities from independent learning and independent campus <https://industrial.uui.ac.id/ip/academic/merdeka-belajar-kampus-merdeka/> adalah: research (aktivitas 7) entrepreneurship (aktivitas 9), rural development/thematic community service (aktivitas 4), humanitarian projects (aktivitas 6) and independent/study/projects (aktivitas 8).

The spirit of mutual cooperation that is carried out in solving the problems of scavengers and farmers is by doing entrepreneurship from FDS waste water with innovations. This is done because the entrepreneurial spirit starts from looking for opportunities from the problems of scavengers and farmers in the final landfill in Pakusari Jember.

The independent variable, namely Economic Circular (X), is one of the strategies for protecting the environment for future generations. The circular economic strategy is carried out [21]. ...the change from a linear economy (take, make, dispose) to a circular economy (renew, remake, share) is expected to significantly support the attainment of the Sustainable Development Goals (SDGs), particularly SDG on responsible consumption and production) to reduce new raw materials and reuse products that have been used to improve environmental, social and economic quality.

The implementation circular economy to achieve the goal of the smarter product the use and manufacture by applying the innovation transforming waste water Final Disposal Site (FDS) and technology of permentation by using Bio starter A3N 766HI. The action was done in this acitivites namely refuse (the liquid waste becomes organic fertilizer) and the second action is Rethink (liquid waste water is more use as organic fertilizer for the need of the farmers. And the thid action is reducing (increase efficeincy by using the technology permentation that has less used water and electricity and raw used raw material.

The implementation of circular economy to achieve the goal the extend lifespan of product and through innovations in revenue model and Socio-institutional change by doing Reuse (the used drums for fermentation and the used mineral water as a product packaging for A3N 766HI fertilizer which will benefit by how to fill the used bottles they collect with A3N 766HI fertilizer so that their social life is getting more attention. The second action through repair, refurbish and remanufacturing is not done because waste water cannot be repaired, refurbish and remanufacturing like electronic goods. The third action is repurposed by changing the waste water that needs to be disposed of into organic fertilizer that is used to fertilize plant growth.

Implementation of circular economy to achieve the goal of useful application of materials by changing social institutions by implementing rules and laws for all individuals and society as a whole. This is done by recycle (recycle waste water into organic fertilizer, reuse used bottles into packaging containers for A3N 766HI organic fertilizer and reuse used drums for storage.

The first dependent variable is a sustainable economy (Y1) which will examine whether production and growth activities apply circular economy [12] The main goal of the circular economy is to increase economic welfare followed by an increase in environmental quality) and strengthen the awareness of the value of mutual cooperation through innovation in the income model by strengthening (reuse activity: consumers can reuse, repair: make product improvements damaged or defective products and maintenance of products that are still usable; Refurbish: returning old products and renewing them, remanufacturing: using parts of discarded products in new products with the same function, repurpose:using discarded products or parts of them in new products with different functions) will get profit and reduce the risk of loss and survival to improve the livelihood of scavengers and farmers to reduce hunger and poverty around the FDS Pakusari Jember.

The second dependent variable is social sustainability (Y2). This independent variable will examine whether increased production and growth have paid attention to social aspects compared to the opinion of Jacobi, 2003; Jacobi and Bensen, 2011 by strengthening the awareness of the value of gotong royong and circular economy by strengthening social institutions to make policies about recycling and recovering energy. Strengthen social institutions by making regulations regarding the repair, remanufacturing and reuse of products that have been discarded, either part or all of a product that can be used to improve the livelihood of farmers and scavengers around the FDS Pakusari Jember. This can be done by strengthening the awareness of the value of gotong royong.

The third dependent variable is legal development (Y3) which aims to strengthen social institutions by disseminating and enforcing laws regarding circular economic activities and strengthening awareness of the value of gotong royong as stipulated in laws and government regulations (PP President RI Number 59 of 2017 regarding increasing production and economic growth must pay attention to social aspects and environmental preservation, compare with studies from [9] and (Fasa. 2021). Law no. 20 of 2008 concerning doing/conserving the environment is given incentives, 3. Law no. 18 of 2008 concerning systematic, comprehensive and sustainable waste

management by implementing a circular economy) as a standard for producing and growing sustainably to support sustainable economic and social and legal development.

Based on the problems and literature review of each of the variables above, questions are followed to help make goals, hypotheses and draw conclusions. The questions raised in this research article are as follows:

a) Is there a relationship between the circular economic strategy of A3N 766HI products towards economic, social and legal development sustainability through strengthening awareness of the value of gotong royong from the results of the implementation of independent learning and an independent campus at the Final Waste Dump Pakusari Jember?

b) Is the relationship of model 1 (one) circular economy to strengthening awareness of the value of mutual assistance greater than model 2 (two) circular economy to economic, social and legal development sustainability from the results of the implementation of independent learning and an independent campus at the landfill Pakusari Jember?

## 2 Method

This study was designed with quantitative research methods by testing hypotheses and using data collection tools with questionnaires and conducting reliability and validity tests from 89 respondents and using data processing tools with SmartPLS to determine the Path Model.

The circular economy (X) constructed by: 1. Smarter product use strategy through technology-based innovation by way of refuse, rethink, and reduce; 2. Strategies to extend product life cycles by means of reuse, repair, refurbishment, remanufacturing, and repurposing; 3. Useful application of materials strategy by recycling and recovering by raising awareness of the value of mutual cooperation (Gotong Royong).

Strengthening the awareness of the value of gotong royong (Z) is constructed by: influential role innovator; 2. A form of togetherness with scavengers and farmers; 3. Helping in action to the problem of scavengers and farmers by carrying out an economic circular.

The sustainable economy (Y1) constructed by: increasing awareness of the value of mutual cooperation in production and growth by carrying out efficiency and risk management to preserve the environment through circular economic activities.

The sustainable social (Y2) constructed by: increasing awareness of the value of mutual cooperation to extend the product life cycle (from the aspect of scavengers: the collected bottles are filled with organic fertilizer from the results of FDS waste water treatment which are accommodated in holding ponds and from the farmer's aspect: increasing productivity farmers) in circular economic activities so that farmers get income to get a decent life and reduce poverty.

The legal development net (Y3) constructed by: increasing awareness of the Republic of Indonesia Presidential Regulation No. 59 of 2017 and law no. 20 of 2018 to be complied with in carrying out a circular economy so as to create public order, justice and peace.

### 3 Result and Discussion

#### 3.1 Results

**Table 1.** Construct Reliability

	Cronbach's Alpha	rho_A	Composite Reliability	Average Extracted (AVE)	Variance
CE	0.765	0.765	0.865	0.680	
gr	0.793	0.810	0.879	0.708	
SESL	0.806	0.820	0.885	0.720	

*Source of Data: Output data from SmartPLS.*

From the results of calculations using SmartPLS obtained  $r_{11} \geq r$  table, and the reliability of a variable construct is said to be strong if it has a value of  $r_{11} > 0.60$  (in Riduwan, 2009:136). So it can be concluded that all the questions are reliable questions. The data reliability on the model above can be seen in the three indicators in circular economy (x)  $0.811 - 0.841 > 0.60$ , the three indicators in strengthening awareness the value of Gotong Royong (z)  $0.804-0.903 > 0.60$  and sustainable economic, social and legal development (Y 1-3 )  $0.797-0.893 > 0.60$ .

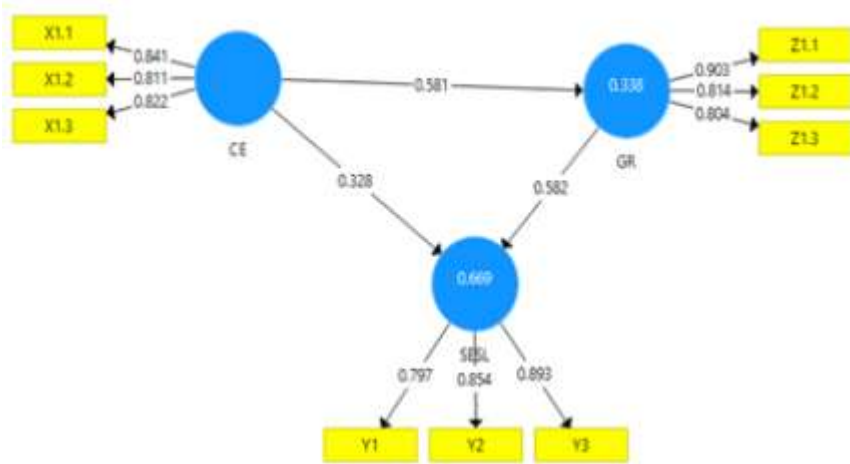
The picture from the model of Conformity Factor Analysis and Reliability shows the results of the reliability test with Cronbach's alpha. The test was within acceptable limits (Cronbach's alpha  $p > 0.70$ ). Moreover, the average variance extracted had to be greater than 0.5. The picture from the model shows that the results of the analysis of reliability are high.

**Table 2.** The Discriminate Validity

Variables	CE	gr	SESL
CE	0.825		
gr	0.581	0.841	
SESL	0.667	0.773	0.849

*Source of Data: Output data from SmartPLS.*

The Discriminate Validity test was performed as shown in the table above. This test revealed that there was discriminant validity between the combinations of the hypothesis model and the sub- dimensions. This showed the reliability of the entire study scale to test the hypotheses. Moreover, the correlation matrix shows the existence of a positive and significant correlation ( $p < 0.01$ ) between the studies.



**Fig. 1.** Overview of the Research Model in this Article

The description of this research model is closely related to the construct reliability & validity data in tables 1 & 2, R Square & F Square in tables 3 & 4.

**Table 3.** R Square

Model	R Square	R Square Adjusted
CE (X) Toward GR (Z): Model 1	0.338	0.330
CE (X) Toward GR (Z) Throughout SESL (Y): Model 2	0.669	0.661

*Source of Data: Output data from SmartPLS.*

Table 3 describes the R-Square value for model 1 (one) is 0.338 or 33.8% and the R-Square value for model 2 (two) is 0.66.9 or 66.9%. The values for model 1 (one) and the values for model 2 (two) can also be seen in Figure 1 above.

**Table 4.** F Square

	CE	GR	SESL
CE		0.510	0.215
GR			0.678
SESL			

*Source of Data: Output data from SmartPLS.*

The table 4 shows that the value F-Square result for CE toward GR is 0.307 > F-table is 3.10 and the value F-square of CE toward SESL is 0.215 < from F-table is 3.10 and the value of F-square from the GR toward SESL variable is 0.678 < F table is 3.10.

### 3.2 Discussion

The contribution of the R-Square value to the circular economic model towards strengthening awareness of the value of gotong royong in model 1 (one) is 0.338 or 33.8% and the contribution of the value of the R-Square value circular economic model through strengthening awareness of the value of mutual cooperation towards sustainability, economics, social and legal development in model 2 (two) is 0.66.9 or 66.9%. If you look at table 4 above, the contribution of the circular economy to economic, social and legal development sustainability is 0.215 < the value of f-table is 3.10 which is not significant because  $f_{count} > f_{table}$ . This confirms that achieving sustainable economic and social and legal development requires strengthening awareness of the value of gotong royong.

Strengthening awareness of the value of gotong royong will increase the value contribution of the circular economic variable (please compare the opinions of Jacobi, 2003; Jacobi and Bensen, 2011) and Muktadir et.al 2018) and the opinions of Saenz et al. 2022 and This can happen because of the collective role that drives innovation to strengthen togetherness through real action to turn waste water Pakusari Jember into organic fertilizer which can increase the income of scavengers because waste in the form of aqua bottles will increase in value if the bottles are filled with A3N organic fertilizer 766HI which has been fermented from the raw material for waste water from FDS Pakusari Jember. Likewise strengthening awareness of the values of mutual cooperation will have an impact on farmers around the FDS.

The production of A3N 766HI organic fertilizer is a form of circular economy because it uses FDS waste water as a raw material and is processed using fermentation technology using the A3N 766HI bio starter. The fermentation technology will reduce the use of water and electricity to produce organic fertilizer so that production costs will save costs and generate income. Revenue is obtained from reducing raw materials and fertilizer making equipment that do not use electricity and the fermentation technology makes the product life cycle even longer.

Fulfilling the need for fertilizer for farmers by adjusting the standards of their purchasing power and product costs will lead them to live a more prosperous life and reduce the poverty rate of farmers and scavengers around the landfill site. The scavengers' standard of living will also increase because they can sell A3N 766HI fertilizer products at 5 to 10 times the proceeds from selling used bottles. WHO Regional Office for Europe 2018. The concept of a circular economy offers an avenue for sustainable growth, good health and decent jobs, while saving the environment and its natural resources. Further, the change from a linear economy (take, make, dispose) to a circular economy (renew, remake, share) is expected to significantly support the attainment of the Sustainable Development Goals (SDGs),

To increase the income of farmers and scavengers, efforts should be made to increase sales of A3N 766HI fertilizer products by turning the FDS into a tourist location in order to increase the awareness of visitors and actors of independent learning and independent campuses (Directorate General of Higher Education Kemdikbud RI. 2020) about the value of mutual cooperation to buy products fertilizer A3N 766HI as a circular economic product that improves environmental quality (WHO Regional Office for

Europe 2018. .. implementing circular processes that can be the source of key direct and indirect benefits for both public and occupational health (eg by reducing air and water pollutant and GHG emissions in extraction, manufacturing and consumption processes) and embedding characters of social care such as scavengers and farmers who have so far needed a helping hand from others to break the chain of their poverty.

## 4 Conclusion

### 4.1 Conclusion

The conclusion of the research namely:

1. There is a relationship between circular economy toward increasing awareness of the value of gotong royong marked by the value R-square CE (x) toward GR (z) = 0.338 (33.8%) and the value R-Square CE and GR toward SESL = 0.669 (66.9%),
2. The F-square value model 1 (one) CE toward GR = 0.510 (51%) > f table 3.10 and the F-square value model 2 (two) EC and GR toward SESL is 0.678 or 67.8 % > f table 3.10,
3. Circular economic strategies that have less than optimal impact on economic and social sustainability and legal development are indicated by the calculated f value of CE toward SESL of 0.215 <f table of 3.10. Therefore, by including increasing awareness of the value of gotong royong as an intervening variable (moderate), the circular economy towards sustainable economic and social development will be maximized to 66.9%,
4. The second research model is CE on SESL. Through increasing awareness of the value of gotong royong, it contributes positively to sustainable development goals, such as: 1. Social Aspects: goal 1: no hunger, goal 2. no poverty, goal 3: good health and well being; 2. Environmental aspects: Goal 12: responsible consumption and production, Goal 13: climate action, goal 14: life below water, Goal 15: life on land; 3. Economic aspects: goal 8: decent work and economic growth, Goal 10: reduce inequalities, goal 17: partnership for the goal; and 4. Aspects of the Pillar of legal development and governance: goal 16: peace, justice and strong institutions.

### 4.2 Suggestions for Future Research

The suggestions for further research are:

1. It is good if the strengthening awareness of the value of gotong royong should be included as moderating variables in order to increase the value of sustainable economic, social and legal development;
2. It is good to also add the FDS tourist location variable to increase awareness about the importance of the environment and increase the role of creativity and innovation of students and lecturers to carry out independent learning and an independent campus as a form of higher education's tridharma activities.

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# Profit Efficiency Of Small Medium Enterprises And Its Effect On Labor Absorption In Malang City

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**Abstract.** Small and medium enterprises are a real sector that has an important role in economic development. There are 64 million SMEs that contribute 97% of total employment and 60% of Indonesia's GDP in 2021. Based on these data, SMEs have an important role in absorbing labour and economic development. However, in practice, SMEs have problems in terms of managerial and financial performance. This study uses an efficiency analysis statistical approach with a transcendental logarithmic profit efficiency model and multiple linear regression analysis to investigate the effect of performance efficiency and income levels as indicators of the quality of work of SMEs on employment. The results showed that the average efficiency score of UKM in Malang City was only 26%, which means that the performance of UKM in terms of efficiency is still very low. Furthermore, based on multiple regression analysis, it was found that the performance efficiency variable has a negative effect on the labour absorption variable. In contrast, the income level variable significantly positively affects employment. The results of this regression explain that efficient SMEs tend not to employ many workers, while SMEs with high-income levels tend to use a lot of workers.

**Keywords:** Efficiency, UKM, Income, Labour.

## 1 Introduction

[12] explained that SMEs are a business sector that can encourage the economic development of a region. The SME sector has a role in the distribution process of increasing and equalizing income in Indonesia [5]. Press conference data from the Ministry of BUMN show that approximately 64 million SMEs contribute to the employment of 97% of the total and 60% of the total national GDP (public.bumn.go.id). Based on these data, SMEs have an essential role in absorbing labor and economic development.

However, [16] stated that the large number of SMEs tends not to be balanced with performance efficiency, so the problem faced by SMEs is performance efficiency. Efficiency can explain the number of results from physical production activities that can be obtained from the unity of production input factors. [17] states that efficiency occurs when producers can make the marginal product value for an input equal to the

price of the input. In addition, efficiency can be used as a benchmark for the production performance of a business unit.

Permatasari (2018) states that SMEs cannot maximize their production. This means that SMEs cannot achieve optimal output capacity in the production process. This problem is caused by problems with financial management and poor production managerial systems. The structure of SMEs is straightforward, consisting on average of only one owner and a few workers. As a result, the entire task will be assigned to only one person, affecting the quality of the production output.

[6] explained that SMEs have an important role in employment absorption. His research states that SMEs have a higher labor absorption than large businesses. However, the occurrence of the industrial revolution 4.0 encouraged the creation of business efficiency by using machines and technology. This can have a negative impact on the workforce through termination of employment (PHK). One type of layoff is redundancy, namely termination of employment because the company is developing using new machines and technology [11].

In the era of industrial revolution 4.0 and social society 5.0, the SME sector negatively and positively impacted the economy. The positive impact is the abundance of information and technological developments that can help technical business activities. In contrast, the negative impact is sacrificing labour through layoffs and then being replaced with new technology and machines. So, it is essential to prove it empirically through this research, namely by measuring the performance of SMEs with an efficiency approach and then identifying its relationship to employment.

## 2 Literature Reviews

### 2.1 Production Theory

[18] explained that production is a series of activities intended to turn input into output. So, production activities are interpreted as combining various inputs to produce output. The production function, according to [13], is expressed in the form of the equation:

$$Q = f(K, L, R, T, S) \quad (1)$$

Soekartawi (2003) states that efficiency occurs when producers can make the marginal product value for an input equal to the price of the input. Efficiency is the ratio between output and input related to achieving maximum output with several inputs owned. Efficiency can explain the number of results from physical production activities that can be obtained from the unity of production input factors.

Profit efficiency is defined as a measurement of efficiency that uses profit as an output variable and the amount of primary income, other income, and the price of production inputs as input. The output in the production function is constant, while the input varies freely and affects the profit generated [3].

## 2.2 Previous Research

[2] measured the efficiency level of small, medium, and large-scale banking in America from 1995-2001. The results conclude that small banks (75%) are less profitable than medium banks (82%) and large banks (86%). Kolawole (2006) examined the determinants of profit efficiency in small-scale rice farmers in Nigeria using the stochastic Cobb-Douglas profit frontier model. The results show a profit efficiency of 61% and are positively related to age, education level, farming experience, and household size.

[9] examined the efficiency of 31 tofu SMEs in Salatiga using data envelopment analysis. The results showed that only two SMEs were efficient overall, four were efficient in scale, and eight were technically efficient. The remaining 23 SMEs are not efficient. [12] research calculate profit efficiency and its determinants in small and medium enterprises. Stochastic boundary methodologies and models are used to determine the impact of technological and environmental differences between SMEs to achieve efficiency. The results showed that the average efficiency of food SMEs was 49.37%.

The results of research by [6] show that the role of SMEs in absorbing labour is very large. This is caused by SMEs, which continue to experience a significant increase in number, which will affect employment levels. Based on this research, further research should be carried out regarding the role of SMEs in employment absorption.

Research by [19] aims to analyse the factors that influence employment opportunities and the most dominant factors influencing employment in micro and small, and medium enterprises (SMEs) in Jambi City. The results of the analysis show that real wages have a significant negative effect on employment opportunities. Furthermore, the amount of capital positively and significantly affects employment opportunities. Interest rates have a negative effect, and real regional wages have a significant positive effect.

Research by [4] examines and describes the role of SMEs in absorbing labour. A research method is a qualitative approach with data sources in documents. Data analysis techniques use qualitative techniques, including data presentation, data reduction, and conclusion. The results show that the small and medium business sector in Pontianak City absorbs labour as much as 36.33% of the entire workforce. The most absorbed labour force is the uneducated, low-educated, and unskilled workforce. SMEs also play a role in improving the workforce's skills through an intensive mentoring process.

## 3 Research Methods

### 3.1 Research Approach

This study uses a quantitative approach using efficiency analysis statistical methods stochastic frontier analysis, and multiple linear regression analysis.

### 3.2 Data and Samples

The data sample used is 100 data from fast food and beverage SMEs spread across Malang City, which were obtained by distributing questionnaires and interviewing owners and employees.

### 3.3 Data Analysis

Calculation of profit efficiency stochastic frontier analysis is carried out using the model owned by Pilar et al. (2018), which is written as follows:

Profit Efficiency Model Transcendental Logarithmic

$$\begin{aligned}
 &Ln \left[ \left( \frac{\pi}{w_5} \right) + \left| \frac{\pi}{w_5} \right|^{min} + 1 \right] \\
 &= \alpha_0 + \sum_{j=1}^2 \alpha_j Ln y_{j,i} + \sum_{l=1}^4 \beta_l Ln \left( \frac{w_{s,i}}{w_{5,i}} \right) \\
 &+ \frac{1}{2} \sum_{j=1}^2 \sum_{k=1}^2 \alpha_{jk} Ln y_{j,i} Ln y_{k,i} + \frac{1}{2} \sum_{s=1}^4 \sum_{r=1}^4 \beta_{s,r} Ln \left( \frac{w_{s,i}}{w_{5,i}} \right) Ln \left( \frac{w_{r,i}}{w_{5,i}} \right) \\
 &+ \sum_{j=1}^2 \sum_{s=1}^4 \rho_{js} Ln y_{j,i} Ln \left( \frac{w_{j,i}}{w_{5,i}} \right) + v_i - u_i
 \end{aligned}
 \tag{2}$$

Where:

- $\theta_n$  Minimum Absolute Value Profit SMEs n. Constant  $\theta_n = |(\pi_n)^{min}| + 1$
- $\pi_n$  Total Profits of SMEs n
- $w_i$  Input Cost of SMEs n
- $w_5$  Asset SMEs n
- $y_i$  Total Output of SMEs n
- $u_i$  Controllable error factor
- $v_i$  The random error factor cannot be controlled

Furthermore, regression analysis was carried out to determine the effect of profit efficiency variables and income variables on labor absorption variables with the following equation:

$$y = \alpha + \beta_1(x_1) + \beta_2(x_2) + \varepsilon
 \tag{3}$$

Where y is the labor absorption variable,  $\alpha$  is a constant,  $\beta$  is the coefficient of the efficiency variable,  $x_1$  is the efficiency variable,  $x_2$  is the business income variable, and  $\varepsilon$  is the error or disturbance variable.

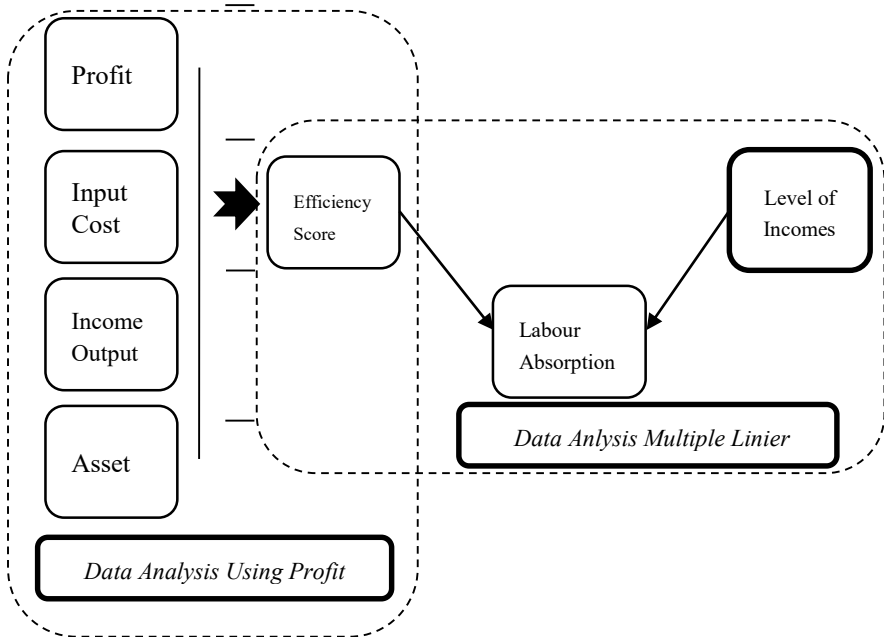


Fig. 1. Research Framework Data Analysis Using Profit Efficiency and Data Analysis Multiple Linier Regression

## 4 Result and Discussion

### 4.1 Analysis of Profit Efficiency.

Table 1. Maximum Likelihood Estimate (MLE)

Var.	Coefficient/Sig.	Var.	Coefficient/Sig.
<i>lny1</i>	51.86***	<i>lny1*lnw1</i>	1.32***
<i>lny2</i>	100.52***	<i>lny1*lnw2</i>	-1.49***
<i>lnw1/w5</i>	-22.95***	<i>lny1*lnw3</i>	1.21**
<i>lnw2/w5</i>	62.91***	<i>lny1*lnw4</i>	0.19***
<i>lnw3/w5</i>	61.63***	<i>lny2*lnw1</i>	-2.18***
<i>lnw4/w5</i>	129.22***	<i>lny2*lnw2</i>	0.02
$\frac{1}{2}\ln(y1)2$	1.19**	<i>lny2*lnw3</i>	2.27***
<i>lny1*lny2</i>	-1.08***	<i>lny2*lnw4</i>	0.05
$\frac{1}{2}\ln(y2)2$	-0.11	<i>T</i>	-592.29***
$\frac{1}{2}\ln(w1)2$	-0.44	$\frac{1}{2}(t)2$	17813.84***
<i>lnw1*lnw2</i>	-0.98***	<i>t*y1</i>	-826.17***
<i>lnw1*lnw3</i>	3.72***	<i>t*y2</i>	-1094.68***
<i>lnw1*lnw4</i>	0.21**	<i>t*ln(w1/w5)</i>	-74.40***
$\frac{1}{2}\ln(w2)2$	1.90***	<i>t*ln(w2/w5)</i>	-428.03***
<i>lnw2*lnw3</i>	-1.05*	<i>t*ln(w3/w5)</i>	-1049.35***

$\ln w_2 * \ln w_4$	-0.27***	$t * \ln(w_4/w_5)$	-1565.46***
$\frac{1}{2} \ln(w_3)^2$	-3.67***	$\text{Sigma}^2$	11.28***
$\ln w_3 * \ln w_4$	-0.02	$\text{gamma}$	1.00***
$\frac{1}{2} \ln(w_4)^2$	-0.05**	Likelihood	-203.18

Source: Data processed using the Frontier 4.1 application

The MLE table above is the result of calculations to measure efficiency scores. Efficiency measurement involves 35 transformation variables from profit, input costs, assets, income, and other income variables, which are transformed using a transcendental logarithmic approach, an efficiency approach used to check input substitution, a separateness between inputs, and aggregation between inputs for the best output results. In addition, using the translog model can also solve multicollinearity problems [7].

These results show the coefficient and significance level of each variable's estimated frontier used to calculate the efficiency score. MLE is only used as statistical evidence of data processing results and is not used for data interpretation. Furthermore, data interpretation is carried out using the efficiency score table below:

Table 2. Efficiency Score

SMEs	Score	SMEs	Score	SMEs	Score	SMEs	Score	SMEs	Score
1	0,253	21	0,530	41	0,784	61	0,085	81	0,056
2	0,323	22	0,169	42	0,204	62	0,999	82	0,089
3	0,795	23	0,396	43	0,002	63	0,221	83	0,069
4	0,009	24	0,122	44	0,006	64	0,533	84	0,007
5	0,012	25	0,025	45	0,090	65	0,001	85	0,999
6	0,072	26	0,827	46	0,043	66	0,131	86	0,541
7	0,042	27	0,011	47	0,680	67	0,074	87	0,016
8	0,412	28	0,026	48	0,176	68	0,397	88	0,493
9	0,246	29	0,457	49	0,001	69	0,203	89	0,371
10	0,070	30	0,784	50	0,001	70	0,332	90	0,565
11	0,029	31	0,186	51	0,142	71	0,352	91	0,223
12	0,426	32	0,186	52	0,001	72	0,001	92	0,910
13	0,055	33	0,314	53	0,101	73	0,539	93	0,042
14	0,463	34	0,042	54	0,005	74	0,246	94	0,189
15	0,625	35	0,493	55	0,170	75	0,237	95	0,908
16	0,001	36	0,009	56	0,012	76	0,001	96	0,159
17	0,294	37	0,751	57	0,072	77	0,339	97	0,165
18	0,067	38	0,076	58	0,756	78	0,472	98	0,532
19	0,021	39	0,313	59	0,015	79	0,130	99	0,070
20	0,933	40	0,015	60	0,001	80	0,103	100	0,017

Source: Data processed using the Frontier 4.1 application

The highest efficiency score for food and beverage SMEs in Malang is 99%, and the lowest is 1%. While the average efficiency score for SMEs in Malang is only 26%, the level of efficiency or performance from a production point of view, namely from the

use of inputs to produce output, is only 26%. The efficiency level can be influenced by several factors, such as the length of time the business has been established and the characteristics of the business owner [5]. However, this calculation has yet to be investigated in this paper.

The results of these varying efficiency scores mean that some SMEs have been operating optimally, namely managing their production inputs to maximum output. However, on the other hand, some SMEs need to maximize the use of their production inputs to the fullest. SMEs that are 99% efficient, meaning that their business can use up to 99% of inputs from raw material costs, operational costs and assets to produce quality products and get maximum profit. Conversely, SMEs with a score of 1% mean that the business can only use 1% of its production inputs to produce output.

**Table 3.** Multiple Linear Regression

	<i>Unstandardized Coefficients</i>	<i>Std. Error</i>	<i>Standardized Coefficients</i>	<i>t</i>
<i>(Constant)</i>	3,373	0,612		5,515
<i>Efisiensi_Kinerja</i>	-1,692	1,369	-0,116	-1,236
<i>Omset</i>	8,25E-08	0	0,39	4,163

*Source: data processed with SPSS 25 application*

Multiple linear regression analysis found that the level of efficiency has a negative effect on employment. That is, the lower the efficiency, the less the number of workers employed. An efficient business unit means that the business only uses minimal inputs (costs, raw materials and labour). The concept of profit is income minus costs. The lower the costs incurred to produce a certain output (income), the more efficient the business will be. SMEs must work efficiently because this business has a fast financial flow. The financial flow in question is from spending costs for production and producing products that generate income quickly. If SMEs cannot minimize costs or maximize income, it will affect the survival of their businesses. This is what often happens to SMEs in Indonesia; even though their number and growth continue to increase, many SMEs have also had to go out of business.

Furthermore, the income variable has a positive and significant influence on labor absorption, this indicates that the higher the income, the higher the labor absorption. Income has a different influence on labor absorption compared to efficiency. Efficiency describes the use of input to produce output, while income only describes the output side, therefore it can be interpreted that if a business is able to generate high income then the business can expand its business unit and increase the number of employees. This business expansion activity can have an impact on the large number of employees used.

## 5 Conclusion

The average efficiency score of SMEs in Malang City is 26%, indicating that the performance of SMEs with an efficient input-use approach in maximizing the resulting



output still needs to improve. SMEs in Malang City require special attention from the local government. Several formulations, such as money management and managerial training, are significant for SMEs' future resilience.

Efficiency can be used as an indicator of a business's performance quality. The higher the efficiency, the better the quality of performance. However, an efficient business tends to hire only a few employees to minimize costs.

This demand for efficiency has the opposite relationship with the absorption of labour which is one of the instruments of macroeconomic success. Thus, there is a level of trade-off between production efficiency and unemployment that must be discussed in depth by stakeholders. The alternative is that the workforce must have exceptional skills in mastering technology. Furthermore, determining the minimum wage for workers is an alternative that has been carried out in Indonesia. A fair decision between the interests of business and workers must be made through policies that are right on target.

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# Influences Of Information Technology Development On The Concept Of Shares Ownership Transfer In Scripless Trading In Indonesia Stock Exchange

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**Abstract.** This research aims to find out the influences of information technology development on the concept of shares ownership transfer in scripless trading and how this scripless trading looks like in the Indonesian Stock Exchange. This research employed a normative research method, statutory and conceptual approach, with also primary, secondary, and tertiary legal materials to support the research data, all of which were analyzed based on descriptive-qualitative analysis technique. The research results came to the following conclusions: (1) the development of information technology (IT) manages to transform jurisprudence especially regarding the concept of transfer of rights of a moveable and intangible object which is more like in the transfer of shares ownership in scripless trading, (2) in the execution of scripless trading, the stock exchange offices serve as the front office fully supported by several institutions backing up transactions going on in the stock exchange, the institutions include Securities Clearing Agency (henceforth LKP) executed by PT Kliring Penjamin Efek Indonesia (henceforth KPEI) and Depository and Settlement Agency (henceforth LPP) executed by PT Kustodian Sentral Efek Indonesia (KSEI), both of which are to assist in scripless trading in a stock exchange.

**Keywords:** Information Technology, Transfer Of Ownership Right To Share, Scripless Trading.

## 1 Introduction

The shifts of law and social trends, no matter how slight, are inextricable from information and technology development. People tend to shift from their traditional way of life to the new one once they interact with science and technology.

Maskoeri Jasin confirms that the development of science of an individual is triggered by two factors:

1. Practical stimulus. Humans are blessed with thoughts, characters, feelings, and willingness to push themselves to the limit to be superior above all, and this stimulus has brought humans further to applied science and technology.

2. Non-practical and theoretical stimulus. Humans are always extremely curious about things around them. This drive gives rise to pure science [1]

Science and technology can benefit or even pose a threat to people. The good side of it is that it helps people with their primary human needs including their needs for clothes, roofs, and food. On the other hand, science and technology could even present drawbacks or even jeopardize their life when science and technology are not properly implemented.

It is essential to take a closer look at the process of change in law triggered by the development of science and technology due to rapid globalization, global influences on technology, the increasing number of websites, and many more. The utilization of the technology, as in Law Number 8 of 1995 concerning Capital Market, is the harbinger of the existence of adaptation of law.

One of the significant issues in all existing systems always involves efforts to survive amidst shifts and changes, and this challenge can be faced with adaptation to the changes to allow people to live their life. A system is deemed crippled when it fails to exist, pushed away by the shifts and changes. On the other hand, when such a challenge is well responded by adaptation, a system will manage to survive.

Changes in law are paramount because these days law is written. This form guarantees certainty but at the same time, it can be costly in terms of the amount of money involved in quick adaptation to changes taking place in the surrounding. Written laws are rigid in comparison to customary law that is more fluid and open to adaptation [2]

Modern technology involves the development that demands a specific adaptation given by law. In the last years of the twentieth century, it is getting more and more obvious that this technology is taking control of human life. In comparison to human history, the civilization of modern technology is much too young. Nevertheless, influences sparked by social life seem to be unrivaled to other events in history. Before coming into the age of modern technology, this world looked as if it had been asleep and then awoken by interruptions arising from the revolution of technology. Adaptation of law to modern technology could also be performed by utilizing the technology per se. Being left behind by this technology is an indication of a failure of adaptation. Among the utilizations of the technology and modern techniques is the use of computer technology in scripless trading in a stock exchange.

The above elaboration also indicates several changes represent the nature of this 21st century. These changes are inextricable from human life and these 21st-century changes are considered exceptional and come as a challenge for the law and this challenge deserves responses. These responses indicate that the law is doing the adaptation. Otherwise, the law not capable of doing this will collapse.

Departing from the above issue, this research aims to investigate whether there are influences of information technology development on the concept of transfer of shares ownership rights in scripless trading, and how scripless trading looks like in the Indonesian Stock Exchange.

This research employed normative-juridical method with a statutory and conceptual approach. With legal materials including primary, secondary, and tertiary data,<sup>1</sup> the analysis was conducted based on the descriptive-qualitative method.

## **2 Discussion**

### **2.1 Influences of Information Technology Development on the Concept of Shares Ownership Rights Transfer in Scripless Trading**

Globalization has been pervading all aspects of human life, and the impacts are obvious especially in developing countries, including Indonesia. The changes globalization has brought have also affected law since human needs also experience changes both quantitatively and qualitatively. However, the change in law also sparks another problem over to what extent this law could adjust to the changes caused and what this law can do to stay in line with social change. Moreover, it is essential to notice to what extent people could be congruent with the changes in the law since harmony needs to be created for social order and peace as expected. Globalization also triggers shifting values in society, causing some problems that require the existence of lawmaking and law enforcement, and this is important to consider since these shifting values are inevitable.

The dominant implication is related to the change in the law. There is always a law growing in society and this social change will affect the development of law. Thus, law plays an important part in the life of the people, and the law also influences the law reform intended to build the rule of law. Logically, these changes are understandable since they are congruent with what people have expected, an improvement. The development of science and technology is one of the factors affecting the development and change of law in social life. Society will shift from traditional to the modern way of life once they get in touch with science and technology.

This research discusses how science and technology are connected to the law in terms of a shifting law, how science and technology could change a law, to what extent technology can play its role as a law changer, and how the process of change of law takes place resulting from the development of science and technology these days, especially regarding shares ownership transfer in scripless trading.

Science and technology have opened access to fulfilling the ever-increasing needs of human life. Humans survive, develop culture, give meaning to life, respect others, and encourage others to keep observing and to increase their knowledge. Several aspects of science and technology have changed the nature of human life, including their law life.

The development of science and technology is advanced and rapid, and it has also accelerated the information current to every corner of the world, like electronic commerce in world trade. E-commerce is indicated by paperless information exchange on businesses through EDE (Electronic Data Exchange), email, EBB (Electronic

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bulletin board), EFT (Electronic Fund Transfer), and other technologies utilizing internet networks. That is, e-commerce involves the transaction of goods and services through electronic media [2]

The vast development of e-commerce is seemingly due to the efficiency it promises. E-commerce is believed to save time and cost in transactions in comparison to the conventional way. With e-commerce, business principles can also be performed as expected recalling that online businesses also promise low operational cost, not like in conventional businesses where they require far higher cost than in cyberspace.

United Nations (UN) and several states issued several regulations concerning e-commerce, and every state is expected to contribute relevant regulations on electronic contracts that are in progress [2]. Regulations regarding the impacts arising from the utilization of computer and computerized data in positive law in Indonesia are still around criminal aspects in a traditional scope, such as the imposition of criminal punishment on criminal offenses whose impacts are real. The law is still emphasized more on the loss caused, not on the criminal aspects committed on computers. Law Number 8 of 1997 concerning Company's Documents governs electronic data, but this law is deemed imperfect and needs more improvement in the future despite its relation to the company's documents saved in microfilm or other forms of media.

In terms of regulating e-commerce transactions between sellers and buyers, the law concerned should govern the content, domain name, clickwrap contract, choice of law, taxation, and email spamming. Problems regarding consumer protection against unfair practices done electronically such as price fixing, boycott, linked ATM networks, transactions of securities in the cyber capital market also deserve attention. Some matters such as the confidentiality of customers' data also need to be taken into account. To what extent a service provider needs to keep the data of the customers confidential is comparable to the liability of a bank in keeping its clients' data from any illicit access by another irresponsible party. The method of payment on electronic transactions with a credit card, electronic L/C, electronic negotiable instrument, and other aspects in electronic commerce also needs to be considered [2]. This consideration is deemed important since Law Number 8 Year 1997 concerning Company's Documents only touches the tip of a huge problem possibly arising from e-commerce activities. That is, the development of science and technology especially regarding information technology has the power to affect jurisprudence, especially that concerning the concept of rights transfer of moveable and intangible objects such as shares.

Conceptually, according to the notion of Abdul Kadir Muhammad, moving or transferring ownership rights requires an agreement regulating the rights of moving objects as a result of obligatory legal consequences. An agreement on the transfer of rights of objects is to realize the obligatory requirements [2]

In reference to this notion, only those who own the properties or who have control over the properties under provisions set forth on a notarial deed (a legal connection serving as a fundamental of the transfer) have a legitimate authority to transfer the rights, as those people have an absolute authority to do so. The actual transfer of moving objects must be indicated by hand-to-hand transfer,[2] and the transfer of intangible objects such as the transfer of account receivables of *opnam* is indicated by *cassie* [2]. The transfer of *aan order* as account receivables must be done based on the submission

of this statement along with *endossemen* that constitutes a written clause stating to whom the account receivables are transferred [3]

Scripless shares are categorized as a movable and intangible object whose right transfer is done based on *cessie* and *endossemen* according to Article 613 of Civil Code, but not according to Article 55 paragraph (1) of Law Number 8 of 1995 concerning Capital Market stating that the right transfer is based on book entry settlement which, in this paragraph, refers to the fulfillment of rights and obligations arising from an electronic exchange transaction using debits and credits to securities accounts with a custodian [2]

Regarding book entry settlement as referred to in the provision of Article 55 paragraph (1) of Law Number 8 of 1995 concerning Capital market and its explanation, Bapepam issued a regulation requiring shares to be distinguished based on (1) beneficial ownership of shares, including the rights of the shareholder's account over particular benefits related to recorded shares in collective deposit in the accounts of shares under a company, custodian bank, or depository and Settlement Agency arising from the contract of securities accounts between an account holder and the custodian; and (2) registered ownership of shares, in this case, a shareholder towards an issuer of shares related to the registered shares in the book of issuers under the name of a shareholder [2]

Proof of beneficial ownership of shares must be given by the custodian to securities account holders in writing, while the transfer of the ownership of shares benefits must be recorded based on credits and debits of the securities account of the custodian and this must be communicated to the securities account holder. Following the transfer of shares ownership, the custodian is required to confirm the purchase and sale of shares, issue the receipt of the shares to the securities account, confirm the receipt and transfer of shares, make a monthly report of the securities account regarding debits and credits on securities account, and submit other documents published by the custodian regarding debits and credits on the securities account, including electronic confirmation. The ownership of shares benefits on the securities account can be proven based on the notification of an issuer regarding the distribution of rights to registered shareholders if shares are registered in the securities account on a certain date, including the distribution of bonus shares or stock dividend, consolidation or stock split, rights issue, bonds payment in maturity, or conversion shares, and other kinds of right distribution.

The Regulation of Capital Market Supervisory Body (henceforth Bapepam) Number VI.A.3 concerning Securities account of Custodian further explains that the method of transfer of shares rights in the system of scripless trading refers to the fulfillment of rights and obligations arising from an electronic exchange transaction using debits and credits to securities accounts with a custodian during book entry settlement. The transferred ownership due to stock exchange involves beneficial ownership of shares, while the registered ownership of shares is proven on an issuer notification regarding rights distribution to registered ownership only if the shares are recorded in securities account on a particular date after the shares registered on an issuer book under a shareholder's name are converted to scripless shares or online trading.

According to the theory of responsive law from Philippe Nonet and Philip Selznick, the effectuation of Article 55 paragraph (1) of Law Number 8 of 1995 concerning

Capital Market and the Regulation of Bapepam Number VI.A.3 through the Decision issued by the Head of Bapepam Number Kep-/PM/1997 in December 1997 concerning securities accounts of custodians, which serves as the legal basis of electronic scripless trading system, is the response to social change and public aspiration. The theory of responsive law puts forward openness to accept social change for the sake of justice and public emancipation[2]. Law is an instrument for humans by which their needs are served. The scripless trading going on in the stock exchange represents the vast development of information technology.

According to the theory of law, the provision of Article 613 of Civil Code is deemed not pro-people. During the time like these days where human life has experienced massive changes due to this unbelievably rapid development of technology that should make all the systems efficient, effective, and practical, the technology does not entirely give benefits and justice to the people. The conflict of norms between the provision of article 55 paragraph (1) of Law Number 8 of 1995 and that of Article 613 of Civil Code, requires improvements and judicial review of the provision of Article 613 of Civil Code. When this article is linked to the system of scripless trading in the stock exchange, an improvement and adaptation of Article 613 of Civil Code to modern technology are necessary. This is all is intended to ensure that the law is not left behind this rapid development. The provisions in the legislation specifically governing levering mechanism towards the shares traded in the capital market as mentioned in Article 55 paragraph (1) of Law Number 8 of 1995 will just rule out general regulations regarding levering mechanism in civil law. When this is the case, the principle of *lex posteriori derogate lex priori* should be applied, meaning that a new regulation rules out a former regulation or *the principle of lex specialis derogate lex generalis*, meaning that a specific regulation rules out a more general regulation. In terms of these human needs, Satjipto Rahardjo once expressed his view through the theory of progressive law, implying that law is for people, and not the other way around [3]. Progressive law does not take the law as an absolute and final institution, but it relies on its capability to serve people. Progressive law is a correction of the shortcomings of the system of modern law laden with bureaucracies. This law does not exist for its own sake, but it is for the people.

Jeremy Bentham, however, argues that law should be able to bring contentedness to people. A good law should give the greatest happiness for the greatest number [4]. The law made should represent justice for all individuals to allow the contentedness for all in great number. Bentham's perspective indicates that elements such as legal certainty, benefits, and justice are there for us to distinguish, but they are not to be separated from one another [2].

In the context of scripless trading in the stock exchange, the presence of law governing capital market gives benefits to the majority of people since, with this law, the stock exchange can be practically and efficiently implemented. On the other hand, the provisions in civil law regarding shares ownership transfer applied in scripless trading will surely spark injustice. Thus, the effectuation of a policy issued by exchange authorities through the Regulation of Bapepam (now OJK) is intended to provide legal certainty in the stock exchange.



Congruent with the notion of Bentham, John Stuart Mill much further linked the benefits to justice in law. Mill argues that justice should mainly be based on benefits [2]. Furthermore, Rudolf von Jhering linked the perspectives of Bentham and Mill to that of John Austin based on legal positivism. Jhering opines that the objectives of law lie in practical motive, where the law was intentionally made by humans to achieve certain objectives as expected by the people [3]. Jhering also stated that law exists to protect interests, and the definition of interests are in line with the notion expressed by Jeremy Bentham commonly described as the pursuit of happiness (pragmatic), avoid sufferings, and making individual interests as a part of social objectives by linking them to the interests of others [3]. Even though Jhering shared the same opinion as Bentham's, implying that law is intended to bring the greatest happiness for the greatest number and reduce the sufferings of the people, in terms of individual objectives, this is considered as a social objective of the law.

Law is a social institution that keeps growing, and what is expected should come true. On the other hand, laws applied these days will probably fade away and finally be gone due to the time since they may no longer be applicable as time changes [4]

## **2.2 Scripless Trading in Indonesian Stock Exchange**

In electronic scripless trading, stock exchange offices as the front offices responsible to execute transactions are fully backed up by several institutions in the settlement of transactions in the stock exchange. The institutions involve LKP performed by PT Kliring Penjaminan efek Indonesia (KPEI), and LPP performed by PT Kustodian Sentral Efek Indonesia, both of which are institutions responsible to assist in the execution of the system of scripless trading in the stock exchange [4]

In capital market, KPEI and KSEI are Self-Regulatory Organizations (SRO) other than stock exchange. The KSEI, according to the provision of Law Number 8 of 1995 concerning Capital Market, runs its function as LPP in the capital market of Indonesia by providing central custodian services and facilitating the settlement of transactions of shares in a regularly, acceptably, and efficiently. The KSEI runs its operations consisting of the settlement of transactions of shares with scrips that take over the function similar to that of PT Kliring Deposit Efek Indonesia (KDEI) which formerly served as Clearing, Depository, and Settlement Organization.

The LPP is an agency responsible for the settlement of all transactions recorded by LKP. To date, the function of LPP is run by KSEI. The LPP is principally a party responsible to hold central custodian events for custodian bank, stock exchange offices, and other parties. These services have to comply with the standards in service use. The custodian services provided by LPP have to be able to provide full services including the distribution of rights over stocks such as dividend and bonuses, the administrative process for events held by an issuer regarding the interests of account holders as in General Meeting of Shareholders (RUPS). Like its function, KSEI provides services consisting of the electronic deposit of shares, the administration of securities accounts, shares transactions settlement, the distribution of the results of corporate action, and other related services such as post trade processing (PTP) and the availability of reports on central custodian services. To protect the parties involved in LPP events, Law

requires the LPP to issue a regulation governing rights and obligations for LPP service users to comply with, and this regulation must be approved by Bapepam. Since LPP is a non-profit organization, the cost spent on the services provided by LPP must be relevant to the budget and the need of the development of the organization concerned following the decision on using the services.

In scripless trading these days, the role of KSEI is even more massive since it plays its significant role as a central custodian, meaning that all shares/stocks are kept in electronic records. The shares that were formerly in the form of certificate are now converted to electronic records owned by KSEI, commonly known as C-BEST (Central Depository and book Entry Settlement System). Since this system records securities accounts, the transaction settlement is more effective and efficient because the settlement only requires book entry settlement from one account to another. KSEI succeeds to settle all conversion programs in all stocks recorded in the stock exchange from scrip to scripless trading.

The KPEI, established by Law Number 8 of 1995 concerning Capital Market, provides regular, acceptable, and efficient clearing and guarantee for stock exchange. The KPEI was established in 1996 and is recognized as a legal entity under the legalization of the Justice Minister of the Republic of Indonesia. The KPEI is an institution of Clearing and Guarantee according to the Decision of Bapepam Number Kep-26/PM/1998. The KPEI is an SRO that plays a role in determining where the capital market development in Indonesia is led to. As Central Counterpart (CCP), the KPEI provides clearing and guarantee services in stock exchange settlement. The presence of KPEI as CPP is required to improve the efficiency and certainty in the settlement of transactions in the Indonesian stock exchange.

### **3 Conclusion**

This research has concluded that:

1. The development of science and technology, particularly in information technology, can also change jurisprudence especially regarding the concept of transfer of rights over movable and intangible objects such as the transfer of shares ownership in the system of scripless trading.
2. Scripless trading is performed electronically with stock exchange office as a front office is responsible to execute transactions fully supported by several institutions backing up the settlement of transactions in stock exchange. The institutions consist of LKP by KPEI, and LPP by KSEI, both of which are the institutions assisting in the running of the system of scripless trading in a stock exchange.

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# Economic Inclusion of Islamic Boarding Schools: Economic Entity Study of Manarul Qur'an Lumajang Islamic Boarding School

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**Abstract.** This research aims to realize the economic inclusion of the Manarul Qur'an Islamic boarding school. This study uses an approach s case study (case study) Data collection techniques used are observation, interviews and documentation . The results of the study stated that the Manarul Qur'an Islamic boarding school is one of the many Islamic boarding schools in East Java that concentrates on economic and social development, especially in Lumajang Regency, which is the only Islamic boarding school that operates an inclusive Islamic boarding school economy. As an institution, of course, it requires economic resources to carry out its activities, in addition to being an effort to empower and develop the community's economy. The Manarul Qur'an Islamic boarding school has been established and is running business units managed by the entrepreneurial sector, such as the MUI Tour & Travel business unit, BMT Manarul Qur'an, OPOP (One Islamic Boarding School One Product) Banana Chips Business program, Animal Husbandry and Culinary. Inclusion Implications . The establishment of the entrepreneurial field at the Manarul Qur'an Islamic boarding school , in addition to aiming at empowering the pesantren's economy, the development of the pesantren's economy also aims to help develop the community's economy. the pesantren and community cooperation program in economic empowerment, the community can increase their economic level by selling at the pesantren. There is also community reciprocity with the Manarul Qur'an Islamic Boarding School , the community's income is kept at BMT Manarul Qur'an.

**Keywords:** Case Study, Economic Inclusion, Islamic Boarding Schools.

## 1 Introduction

This research is aimed at revealing economic development that includes Islamic boarding schools, by taking studies on Islamic boarding schools which are only known and reviewed simply as, "religious institutions that provide education and teaching as well as develop and spread Islamic religious knowledge (jar), studies that specifically examine Islamic boarding schools as actors or stakeholders in real economic activities, especially regarding inclusive economic development.

Islamic boarding schools are religious educational institutions that have had a multifunctional role since before independence. The role of Kyai who is very vital in Islamic boarding schools can be figures who not only provide religious doctrine but can also provide motivation for students to be able to master knowledge in other fields, such as the science of entrepreneurship, in the end will manage Islamic boarding schools so that they can compete with those around them. Of course, this is a separate motivation for social economic management institutions, especially Islamic boarding schools, which in this case are used as research objects. In physiocrat theory (a combination of natural and physical) which operates on the assumption that economic behavior is the principal part of natural law. Economic motivation is only one major aspect of universal human nature. Everyone directs his interests and reasons for action towards this goal. So there is regularity in economic action. Economic behavior itself is directed to increase welfare. [4] Islamic boarding schools, in fact, are potential institutions to move towards a people-based economy, according to their strength. If Islamic boarding schools are only spectators in the coming era, then other microeconomic institutions can move forward in the direction of progress. Therefore, it is necessary to carry out a careful analysis to strengthen this institutional economy, so that there are no wrong steps.

The ultimate goal of developing Islamic boarding schools' economic empowerment is optimizing the development of financial institutions and the development of Micro, Small and Medium Enterprises (MSMEs). So far, Islamic boarding schools have always been labeled as agencies distributing grant proposals, both in formal and non-formal institutions. Of course this labeling does not burden Islamic boarding schools, it will be free from this assumption if Islamic boarding schools become strong institutions, especially in the economic sector.

Islamic boarding schools with several activity programs apart from transforming knowledge to students, there are also several developmental skills of students. And the economic development of Islamic boarding schools through the business that is carried out. To improve the economic development of Islamic boarding schools.[4] As educational, social and cultural institutions that are inclusive, Islamic boarding schools have also been recognized as economic actors who are inclusive as well. Islamic boarding schools are also centers of community development in various fields ranging from the people's economy such as cooperatives and small businesses, appropriate technology, public health to environmental conservation. In fact, the researcher often and agrees also refers to the opinion of the American anthropologist Ronald Alan Lukers-Bull that a peaceful jihad for pesantren is to deal with the plague by reconcepting modernity which is based on a pattern of thinking that is suitable for

Muslims and which is suitable in the market for Indonesia so that in various ways aspects of life, including in the economic field. Islamic boarding schools, according to him, are able to apply the principles of *al-muḥāfadhatu ala qadīmi al-ṣālih wa al-akhdu bi al-jadidi al-aṣlah* or maintain old traditions that are still good and adopt new traditions that are better. Economic modernity has been adopted by pesantren circles, but what has been taken is beneficial, without having to lose identity.[4]

Of all the Islamic boarding schools in Indonesia; economic empowerment of the community around the pesantren.

The facts and data above are efforts to renew the Islamic boarding school so that it can continue to exist in the modernization era. Efforts to renew pesantren towards modern traditional pesantren are carried out with a relevant reform system. Efforts to reform the education and teaching system in Islamic boarding schools, especially modern Islamic boarding schools, are usually marked by several things, namely as follows: 1) Changing the curriculum that is oriented according to the needs of the community, 2) Improving the quality of teachers and preparatory teachers, 4) Doing together) Kyai as the owner Islamic boarding schools are open in positive renewal efforts.[4]

This independence is what makes every Islamic boarding school must have experience in managing business charities since starting ( startup ), running healthily, being able to expand, and having a business charity whose turnover has reached trillions of rupiah. [4] It is this inclusiveness that will spur pesantren to prepare themselves for the modernity of the times, not only to carry out the pesantren's mission as a *tafaqquh fī al-dīn* institution, but also to be designed to penetrate the social, economic, and business fields. Openness to accept the changing times has made Islamic boarding schools a religious educational institution that has social transformation but is not uprooted from its traditional roots. What is done by pesantren is part of the strategy of empowering and also the independence of students through various businesses that are carried out.

As explained above, the Manarul Qur'an Lumajang Islamic Boarding School is the ideal type or model Islamic boarding school in East Java Province that implements an inclusive economy by being the only Islamic boarding school in Lumajang that has a Sharia Financial Services Cooperative Institution, namely BMT and maximizes the potential of Natural Resources and Human Resources around the pesantren by relying on the internal strength of the pesantren in the form of kyai figures, pesantren administrators, and pesantren management to create an independent economy, which is beneficial for the internal pesantren and while with the independence of the pesantren the *konya masakai* branded outside the pesantren is formed in an effort realizing an inclusive boarding school economy. Therefore, Islamic boarding schools are required to carry out reforms that can optimize their potential. In particular, in involving local communities through an inclusive economy.

Azyumardi Azra stated that the potential and development of Islamic boarding schools is expected not only to play their traditional functions, [4] namely the transfer of Islamic knowledge, the reproduction of scholars, and the maintenance of Islamic traditions, but can become a vehicle for health education, the development of appropriate technology, and a strategy become a center for empowering the surrounding

community. Researchers consider that economic development, including that carried out by Islamic boarding schools, is an interesting thing to study because it is related to the economic independence of the community in the future. Moreover, an urgent problem which until now has become a phenomenon for this nation, including the nations of the world, is the problem of poverty.

To answer the government's challenge, one of the solution steps is the participation of Islamic boarding schools to become a natural thing to spur inclusive economic growth. As stated by the Minister of Agriculture of the Republic of Indonesia, Andi Amran Sulaiman, who assessed that Islamic boarding schools are no longer just a place to deepen religious knowledge and education, but there is great potential from the economic aspect that can be developed, especially the agricultural sector. This became one of the bases for him to synergize with Islamic boarding schools to improve the agricultural sector in the country. Thus the presence of Islamic boarding schools with the vision of inclusive economic development as a solution to ignite the community's economy and also alleviate poverty.

## 2 Literature Review

The term inclusive in the economy has a universal size. The term including can be analogous to the existence of equality, fairness, and individual rights in the distribution of knowledge sources such as education, social, and economics. Economic growth is also defined as growth that not only generates economic opportunities, but also guarantees equitable access for all members of society to the economic opportunities that are created.[5]

Growth that includes needs to be accompanied by growth that is environmentally friendly and sustainable. Environmentally friendly and sustainable maintenance is defined as a growth strategy that pays attention to the balance of the environment and ecosystem in the long term. This growth strategy not only pursues high growth targets, but also focuses more on efforts to reduce carbon emissions, achieve energy security through the development of renewable energy, manage resources including forests, soil and air carefully to avoid environmental damage, feed resources and protect the environment. for future generations while creating economic opportunities and minimizing negative social impacts.[5]

During the seven decades since the proclamation of Indonesian independence, the direction of national development policies has focused more on policies targeting high economic growth. In addition to increasing the production capacity of the Indonesian economy, this high growth is also capable of increasing people's income. Departing from this, the national development policy strategy is based on the assumption that high growth will automatically create an equal distribution of welfare for the people in accordance with the theory of the trickle down effect. This theory explains that the progress made by a group of people at the top will automatically bring down the group of people at the bottom through job creation and various other economic opportunities,

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which in recovery will foster various conditions that support the creation of output so that the results of economic growth are evenly distributed.

The Rockefeller Foundation defines an inclusive economy as one in which there are expanded opportunities for a wider shared well-being, especially for those who face the greatest obstacles to advancing their well-being. The Rockefeller Foundation stated the word including the stress of the need to overcome losses while the economic choice instead of growth indicates the need to consider all dimensions of economic life [5]

The World Bank refers to Inclusive Growth to indicate the pace and pattern of economic growth, which are interrelated and valued together. In the World Bank approach, rapid pace of economic growth is needed to reduce absolute poverty. However, for this growth to be sustainable in the long term, it must be cross-sectoral, and include a large proportion of a country's working-age population. This definition implies a direct relationship between macro and micro determinants of growth. In this perspective, Extension of Inclusion focuses on productive employment, not on employment per se, or income redistribution. Employment growth generates new jobs and income, while potential growth has the potential to lift workers' wages and bring back self-employment. The World Bank's approach takes a long-term perspective and is not concerned with sustainable growth, wherein inclusivity refers to expanding opportunities in terms of access to markets, resources and an impartial regulatory environment for businesses and individuals [5]

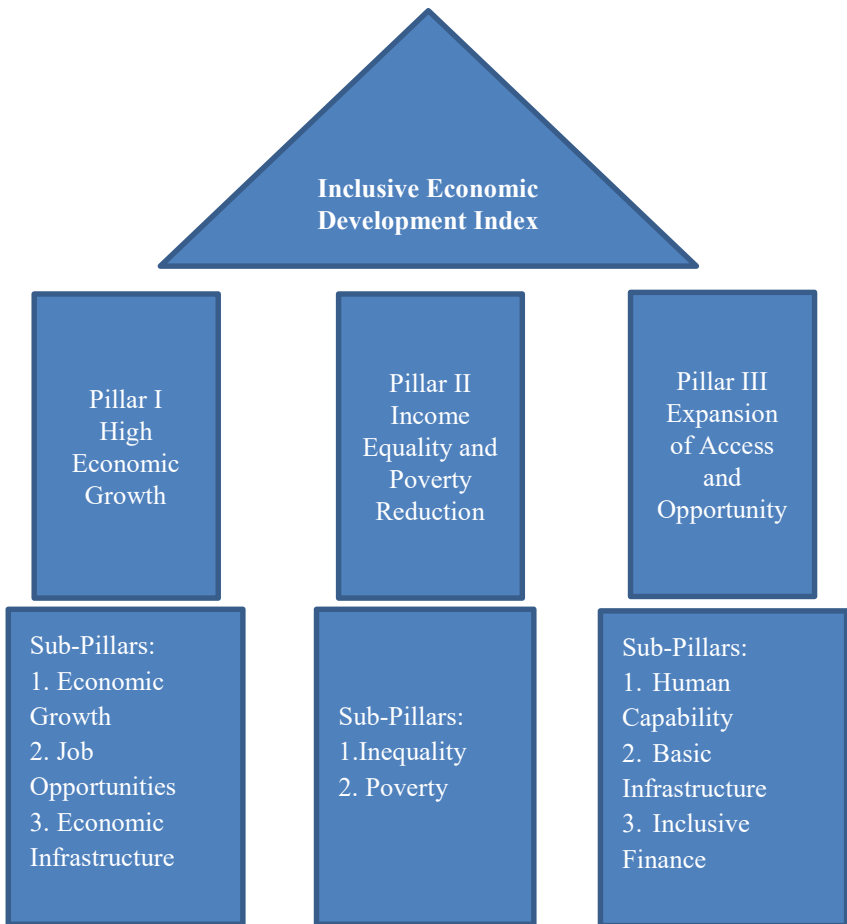
Inclusive Growth is a concept that goes beyond broad-based growth timeframes. Inclusive is growth that not only creates new economic opportunities, but also growth that ensures equal access to the opportunities created for all segments of society, especially for the poor"[5]. Participate in growth (the "non-discriminatory" aspect of growth).

On the other hand, Inclusive Growth is one in which the benefits are shared fairly. Growth includes thus implying participation and sharing of benefits.

Strategy Europe 2020 has the idea of Inclusive Growth at its core. Within this Strategy, Inclusive Expansion is understood as "empowering people through high levels of employment, investing in skills, fighting poverty and modernizing labor markets, training and social protection systems so as to help people anticipate and manage change. It is also important that the benefits of economic growth spread throughout the Union, including its outermost territories, thereby strengthening territorial cohesion. It is about ensuring access and opportunities for the entire lifecycle."

Therefore, the researcher refers to the theoretical framework that has been established by the Government of Indonesia. The Government of Indonesia through the Ministry of National Development Planning/National Development Planning Agency (Bappenas) defines an inclusive economy, namely, "Economic development that creates wide access and opportunities for all levels of society in an equitable manner, increases welfare, and reduces tension between groups and regions. The economic pillars consist of: 1) the burden of high economic growth; 2) reduce economic collapse and inequality; 3) Expanding access and opportunities. The sub-pillars of the first pillar consist of Economic Growth, Job Opportunities and Economic Infrastructure. The sub-pillar of the second pillar consists of inequality and poverty. Meanwhile, the Sub-Pillars

of the third pillar consist of Human Capability, Basic Infrastructure, and Inclusive Finance, as shown in Fig 1. below, namely:



**Fig. 1.** Inclusive Economic Development Index

From the description above, the theoretical framework that researchers use to photograph and design economic development includes Islamic boarding schools that have the ability to be involved in community empowerment efforts. In addition, economic development which includes Islamic boarding schools also has concern for efforts to improve the welfare of the community at large.

### **3 Research Methods**

This research was conducted at the Manarul Qur'an Lumajang Islamic Boarding School . This type of research is a type of approach case studies (case studies) . Because this research is focused on the case of "the economy including Islamic boarding schools" . data processing, namely checking the correctness of the data, compiling data, carrying out coding , classifying data, checking interview answers that are unclear. This study uses source triangulation and technical triangulation to validate the data. This study also uses three data analysis techniques, namely data reduction, data presentation, and verification.

### **4 Results and Discussion**

#### **4.1 Economic inclusion at the Manarul Qur'an Islamic Boarding School in Lumajang**

Manarul Qur'an Islamic Boarding School is located on Jl. Juwet, RT 05/RW 07, Kutorenon, Sukodono, Biting One, Kutorenon, Kec. Lumajang, Lumajang Regency, East Java which was founded by KH. dr. Abdul Wadud Nafis, Lc. MEI in 2014 until now, shows that the Manba'ul Ulum Islamic Boarding School is able to survive in managing its pesantren.

Islamic boarding schools as one of the oldest educational institutions in Indonesia, in addition to educating students to master religious knowledge for the provision of ukrowi, also prohibit general disciplines as worldly provisions with the aim of being happy in the world and in the hereafter, therefore it should have been pond man pesantren I had to produce cadres - National cadres who are ready to face the era of globalization.

boarding school Manarul Qur'an is one of the many Islamic boarding schools in East Java that concentrates on economic and social development, especially in Lumajang Regency, which is the only Islamic boarding school that operates Islamic boarding school economic inclusion. As an institution, of course it requires economic resources to carry out its activities, in addition to being an effort to empower and develop the community's economy.

Manarul Qur'an Islamic boarding school has begun to try to implement this on the basis of Bank Indonesia's policy regarding the independence of Islamic boarding schools [5]. will manage the economic independence of the pesantren. With the establishment of institutions and business units that have been built and operated for a long time, namely money circulation regulatory agencies in Islamic boarding schools through non-bank financial institutions, namely BMT Manarul Qur'an.

Manarul Qur'an Islamic Boarding School which has full authority and policy towards the BMT Manarul Qur'an Financial institution assisted by managers who have been recruited by the pesantren in carrying out its operations, the caretaker's policy is very large in determining what business units will be developed.

Entrepreneurship is the capital of an Islamic boarding school which is managed so that it becomes part of the strategy of the Manarul Qur'an Islamic Boarding School to achieve pesantren independence. At the Manarul Qur'an Islamic Boarding School, everything students are required to be independent as well as at the Manarul Qur'an Islamic Boarding School must be independent, to achieve this there must be a financial settlement, so it is mandatory for the Kiai to think about this. The kiai's strategy in building an independent Islamic boarding school, one of which is entrepreneurship, entrepreneurship must also have the expertise and experience to achieve the desired goals. The Manarul Qur'an Islamic Boarding School is very serious in making Islamic boarding school economic programs, by providing knowledge about entrepreneurship to the managers of the established business unions.

The field of craft is an organ within the Manarul Qur'an Islamic Boarding School which has the function and role of managing economic resources that can be conserved to support operational funding for pesantren activities. This pesantren carries out community development based on the development of economic activities. The economic development carried out at the Manarul Qur'an Islamic Boarding School is different from the types of business carried out by other Islamic boarding schools in Indonesia, for example, the Sidogiri Pasuruan Islamic Boarding School is based on the Islamic boarding school economic cooperative (Kopontren), Baitul Mal Wattamwil, the Sydanaria People's Credit Bank (BPRS) sector real. Arrisalah Ciamis Islamic Boarding School develops a fishery-based economy. The Darussalam Gontor boarding school is based on the real sector, plantations and plantations, and the business-based Al-Amin Sumenep Islamic boarding school.

At present, the Manarul Qur'an Islamic Boarding School has been established and is running business units managed by the entrepreneurial sector, such as the MUI Tour & Travel business unit, BMT Manarul Qur'an, the OPOP Banana Chips Business program.[5] (One Islamic Boarding School One Product), Animal Husbandry and Culinary.

First, the MUI Tour & Travel business unit. This business unit is engaged in the service sector. This business is one of the business units under the auspices of PT. MUI Lumajang Cab. Second, for financial management, there is the Manarul Qur'an Baitul Maal Wat Tamwil (BMT) or the BMT Sharia Financing Savings and Loans Cooperative (KSPPS) Manarul Qur'an. The establishment of BMT Manarul Qur'an is a form of the spirit of building the economic independence of the Manarul Qur'an Islamic boarding school. The hope is that BMT Manarul Qur'an can be used as a means of empowerment for the community, both in the Manarul Qur'an Islamic boarding school environment and the community in general. Third, MQ Mart. This business unit is engaged in retail /shop business. Through this MQ Mart, the Manarul Qur'an boarding school wants to explain to the public that Islamic economics can be applied to real sector businesses such as MQ Mart. MQ Mart tries to highlight SME products, both internally and from the surrounding community. The products sold are prioritized for products needed by santri and are typical of Islamic attributes. Based on the explanation above, it can be seen that the goods sold are affordable for students and ordinary people, and selling MQ Mart goods is not solely for personal gain, but for the benefit of the Islamic boarding school as a means of preaching through the economy. to e m p a t ,

The OPOP (One Islamic Boarding School One Product) Banana Chips Business Program, a processed product that is the flagship of the Manarul Qur'an Kopontren and is now booming is kripang (Kripik Pisang Gajih). This product has been bound to become one of the OPOP Products (One Islamic Boarding School One Product). Kripang made by the Manarul Qur'an Islamic boarding school are currently circulating in several minimarkets and shops in Lumajang district. In addition, Kripang is able to reach outside the city, namely Kediri and Probolinggo. The production process itself is also directly handled by the students. fifth, MQ Culinary And the sixth Chicken and egg-laying business as a distributor to several shops in Lumajang.

Based on the type of business managed and developed by the entrepreneurial field of the Manarul Qur'an Islamic boarding school, it can be seen that the type of business developed is in the business sector, both in the field of goods and services. Based on the type of business that has been carried out, we can see that the development of business activities at the Manarul Qur'an Islamic boarding school is progressing at an extraordinary pace. This is as stated by Ustradz Zamroni, M.A as Chair of the Foundation and HRD at the Manarul Qur'an Islamic boarding school Foundation. "Its development has been extraordinary. Starting from its establishment in 2014, currently it is rare for boarding schools to be as high as the Manarul Qur'an Islamic boarding school in the development of Islamic boarding schools, the allure of KH. Dr. Abdul Nafis, Lc. M.E.I. The way to position him is wise, he as an activist in Islamic economics is very helpful in the process of developing the economy of the Manarul Qur'an Islamic boarding school.

optimizing the role of Islamic boarding schools in the development of the shari'ah economy is absolutely necessary. Both in terms of science and role in the real development of shari'ah economic activity. to optimize the role in order to create a real practice laboratory of sharia economic theory, quality human resources are needed, the growth of an entrepreneurial spirit and improvement of professional Islamic boarding school business charity management as well as optimizing existing networks such as students, guardians of students, the community, and forming new networks both product and marketing networks.

The results of field observations, researchers' observations, we can see that the economic potential in the Manarul Qur'an Islamic boarding school can be properly empowered. First, the Manarul Qur'an Islamic boarding school has a fanatical market (captive market), namely students, ustadz, alumni, guardians of students and the community within the pesantren. This market is very potential for various economic sectors in the Manarul Qur'an boarding school environment. Second, Islamic boarding schools have students who make payments to help internal pesantren operations, such as shahriyah, maunah, and others that have the potential to act as third party funds for the institution. potential savings from mukim students who are sometimes sent every few months and MTS and MA students' savings. Monthly student money is kept at BMT Manarul Qur'an in the form of qard. Third, a network of students, santri, the surrounding community, alumni, and parents and guardians of students who have various businesses, jobs, and various backgrounds that have strong potential as market share and business marketing in the Manarul Qur'an Islamic boarding school. The close

relationship between the pesantren and several elements that help the economy can be directed to economic development at the Manarul Qur'an Islamic boarding school itself.

#### **4.2 Implications of Inclusion in Islamic Boarding School Economics Manarul Qur'an Lumajang**

The economic empowerment program carried out by the Manarul Qur'an Islamic boarding school in terms of improving the economy of the community around the pesantren is categorized into two, namely empowerment of people who are active in activities within the internal of the Manarul Qur'an Islamic boarding school and empowerment of the community's economy outside the scope of the Islamic boarding school Manarul Qur'an.

#### **4.3 Contribution to Internal Islamic Boarding Schools**

The field of entrepreneurship that has been created which has been developed by the Manarul Qur'an Islamic boarding school here has a contribution to the pesantren and the surrounding community. Various kinds of existing business units certainly have no small advantage. The profits obtained are then managed by the foundation according to the needs of their respective fields.

In utilizing the results of business profits from the field of entrepreneurship, it is not specific or specific for development or contributes in certain fields from each division, be it in the field of entrepreneurship and so on. The management flow is the profit obtained from various existing business units such as the MUI Tour & Travel business unit, BMT Manarul Qur'an, Banana Chips Business OPOP (One Islamic Boarding School One Product) program, Animal Husbandry and Culinary. the profits managed by each entrepreneurial field are conveyed to the treasurer of the foundation and then stored at the BMT Manarul Qur'an and become on behalf of the Islamic boarding school. Such as the profits obtained from the MUI Tour & Travel business unit, BMT Manarul Qur'an, Banana Chips Business OPOP (One Islamic Boarding School One Product) program, Animal Husbandry and Culinary as told by Zamroni (Interview with Zamroni (Chairman of the Manarul Islamic Boarding School Foundation) Qur'an) "all profits from each business unit are directly deposited to BMT, then BMT distributes them to each of the designated fields."

From the results of the analysis above, it can be seen that from each economic business unit, it can be concluded that these contributions can be classified into two categories, in the form of physical (building) and non-physical contributions (employee salaries and Islamic boarding school operations, scholarships and entrepreneurship development and so on.

The results of managing business units in the field of entrepreneurship are used more internally for Islamic boarding schools, namely structural members who work at the Manarul Qur'an Islamic boarding school and employees in existing business units. for cottage construction as well as for internal operations. The contribution of the Manarul Qur'an Islamic boarding school in other economic fields is that it is used for operations.

#### 4.4 Contribution to the community outside the pesantren

The entrepreneurial field of the Manarul Qur'an Islamic Boarding School in carrying out its business units greatly contributes to the community's economy, which can be seen based on the continued development of the Manarul Qur'an Islamic boarding school itself. The establishment of the field of entrepreneurship at the Manarul Qur'an Islamic boarding school apart from aiming at empowering the pesantren's economy, the development of the pesantren's economy also aims to help develop the community's economy. As conveyed by the caretaker of the Manarul Qur'an Islamic boarding school, one of the objectives of establishing the field of entrepreneurship is to share with the surrounding community, especially in the community's economy. With the hope that the economy of the community around the pesantren will be helped by the existence of a business unit held by the pesantren.

Among the businesses that are carried out by most of the people around the pesantren are selling various types of goods that are of various needs to the students. Starting from selling food, clothes, household appliances, ATK. As for the canteens in the pesantren area as well as the sellers around the pesantren, they are divided into two, namely businesses within the Manarul Qur'an Islamic boarding school environment, where the person selling has made an agreement with the foundation. The agreement is related to permits for profit sharing to the cottage and procedures for selling in the cottage area. canteen under the foundation and already allowed. sellers who are outside the pesantren environment, namely under the auspices of the PKL association and managed directly by the association group. It is hoped that the pesantren and the surrounding community will have closeness to each other. The people around the Manarul Qur'an Islamic boarding school said that before this pesantren was established, the majority of the people in Biting Village were engaged in farming. However, with the existence of an Islamic boarding school in Biting Village, the community gradually changed their profession to become economic actors offered by the Islamic boarding school, without leaving their agricultural land. What is appreciated by the community is the caregiver policy related to community businesses determined by the pesantren, with the aim of equal distribution of community income. The Manarul Qur'an Islamic Boarding School also provides business capital through Manarul Qur'an BMT for people who do not have initial capital to open their business, as well as Manarul Qur'an BMT provides business training for people who will open businesses around the Manarul Qur'an boarding school an.

It can be concluded that with the existence of a pesantren and community collaboration program in economic empowerment, the community can increase their economic level by selling at the pesantren. There is also community reciprocity with the Manarul Qur'an Islamic Boarding School, the community's income is kept at BMT Manarul Qur'an.

## 5 Conclusion

Manarul Qur'an Lumajang Islamic Boarding School about Economic Inclusion of Islamic Boarding Schools , it can be concluded that Entrepreneurship is an Islamic

boarding school capital that is managed so that it becomes part of the strategy of the Manarul Qur'an Islamic Boarding School to achieve pesantren independence. Kiai's strategy in building an independent Islamic boarding school, one of which is entrepreneurship, entrepreneurship must also have the expertise and experience to achieve the desired goals. The Manarul Qur'an Islamic Boarding School is very serious in making Islamic boarding school economic programs, by providing knowledge about entrepreneurship to the managers of the established business unions. At the Manarul Qur'an Islamic Boarding School, business units managed by the entrepreneurship sector have been established and running, such as the MUI Tour & Travel business unit, BMT Manarul Qur'an, Banana Chips Business OPOP (One Islamic Boarding School One Product) program, Animal Husbandry and Culinary.

The economic empowerment program carried out by the Manarul Qur'an Islamic boarding school in terms of improving the economy of the community around the pesantren is categorized into two, namely empowerment of people who are active in activities within the internal of the Manarul Qur'an Islamic boarding school and empowerment of the community's economy outside the scope of the Islamic boarding school Manarul Qur'an. Contributions from the field of entrepreneurship can be classified into two categories, in the form of physical contributions (buildings) and non-physical (employee salaries and pesantren operations, scholarships and development in the field of entrepreneurship and so on). The results of managing business units in the field of entrepreneurship are used more internally for Islamic boarding schools, namely structural members who work at the Manarul Qur'an Islamic boarding school and employees in existing business units. for cottage construction as well as for internal operations. The contribution of the Manarul Qur'an Islamic boarding school in other economic fields is that it is used for operations. the existence of a pesantren and community collaboration program in economic empowerment, the community can improve their economic level.

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# An Imagination: The Blood Supply Chain for Leader Election

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**Abstract.** This paper aims to solve the political frenzy impasse in choosing a candidate for a leader loaded with political content. A good leadership candidate will pass on the values of kindness to the political system. A good leader needs not only integrity but also his humanism side. Choosing prospective leaders is through religious studies, medicine, IT, management, and politics. The solutions offered with a multidisciplinary scientific approach are expected to be used as a reference in choosing future leaders. Whatever the party is, we can seamlessly move towards a whole society 5.0.

**Keywords:** Blood Supply Chain, Leader Election, Society 5.0.

## 1 Introduction

The issue of leaders is always interesting to discuss. Why? Because the leader becomes the driving force of the direction of an organization and even a nation. Previous studies on the importance of a leader have been widely conducted. Several studies examine how essential character elements are in leadership. Strong leaders also tend to be supported by special personal characters [1]. In addition, his success in maintaining the commitment of subordinates is also inseparable from the importance of the concept of leadership style [2] and the emotional intelligence of the leader [3], [4]. The issue of leadership effectiveness is also a concern for researchers because it contains discussions about leaders' motivation, behavior, and reflective abilities [5]. In fact, not only does it speak positively, but research on leadership also penetrates the dark side of leadership, such as the issue of destructive leadership [6] or even racism [7].

From the many researched leadership issues, the theme around the genetic traits of leaders that can be inherited is fascinating to follow up on. It still relates to one of the classic questions: Are leaders born or formed? In addition, this discourse deals with developing leader building blocks as a psychological concept to know the individual internally that can determine the success of the leadership process [8]. So far, the literature on things that can be inherited in leadership talks a lot about the genetic and personality factors that determine the leaders' profile [9], [10]. Similar studies focus more on intelligence genetics and traits in the Big Five personality as elements that

influence leadership [11]. Another study related to genetics is the investigation of attribution processes about the personality and effectiveness of a leader based on the information in a photo of a leader's face. The face, as something genetic and inherited, influences the concept of leadership [12].

Genetic things that are the object of study by leadership researchers are related to three elements: chemical things such as hormones and blood sugar; things of a physical nature such as height, weight, gender, and race; as well as psychological matters such as perception, attention, and values [9]. In the study, blood sugar was considered to have a significant position even though it was not further elaborated in the theme of leadership. Like blood sugar, blood itself generally seems to have a crucial influence on the formation of the leaders' traits. Blood also flows throughout the human body, even playing a central role in the heart. One of Islam's classic sayings states, 'Know, truly in the body, there is a lump of flesh. Suppose the meat is good, well, the whole body. If it is damaged, damage the whole body. That lump of meat is a heart (heart) (HR. al-Bukhari and Muslims).' The classic saying in Islam implies that the role of a lump of flesh formed from the blood clot is vital and can affect a person's attitude. That is why Islam strongly warns its adherents to consume halal and good food for the body as stated in the Quran surah al-Baqarah verse 168; 172; al-Maidah 88; and an-Nahl 114 [13]. Because the food we eat will become blood that flows into the human body and is distributed by the heart throughout the body. Its' means that it can be said that blood is the knot of goodness in the human body. So, it is not taboo if we want a sound political system, the selection of candidates for leadership is made through the blood flowing in their bodies.

Another study of technology-linked leaders is the issue of Artificial Intelligence (AI) leadership. This issue conveys that leaders participate in the process of leading AI programmers in decision-making resulting from post-programming AI. However, it must still prioritize ethics and morals in its use to be a sociologically accepted society [14]. Research on the relationship between AI and leaders is still limited to using AI as a guideline and recommendation for the duties of a leader [15]. Even the ability to create, facilitate leadership skills, improve thinking strategies and manage uncertainty can be replaced by AI capabilities so that these abilities can be automatically lost to humans [16].

From the description that has been submitted, the issue of future leaders in responding to a smart society becomes interesting. Elected leaders with their ethics and morals are still needed. The technology developed by humans cannot degrade the ability of humans to carry out their leadership because the purpose of technology developed was supposed to improve life. The technology developed by humans cannot degrade the ability of humans to carry out their leadership. Creativity and the ability to choose or pass a potential leader for a contestation that combines the issue of the importance of blood clots (flesh) in the human body through AI technology or even Deep Learning (DP) has not been discovered. It can be a project in the contestation of future leader elections. The hope is that it will undoubtedly be more efficient and can get better leadership candidates in welcoming a more civilized and smart society.

This paper aims to convey the concept of thinking from the contemplation results. As a solution, selecting a leader candidate can be carried out by examining the blood

content in his body as an initial foothold to participate in the test, in addition to other conditions such as a track record of achievement.

## 2 Literature Review

### 2.1 Leadership and Human Blood

The leadership is dead. This leader enjoyed more than served, demanded more than to give, to make more promises than to give evidence [17]. The moral message reflects disappointment and is a scathing critique of existing conditions [17] regarding the leaders' behavior. How to fix it?

The incident when the Prophet Muhammad (PBUH) was cut open in his chest as a child has inspired this paper. The angel Gabriel who descended from the sky and cleansed the heart (heart) of little Muhammad (PBUH) with zam-zam water, has proved and given a message of how important the position of the human heart is. The human heart consisting of these blood clots can influence disposition through behavior that appears in their daily lives. The behavior is a track record and reflects when a human becomes a leader.

Blood becomes vital in the teachings of Islam. Bukhari and Muslims narrate a famous hadith that a good lump of blood will make a person good. That lump of blood, 'qalbu.' Qalbu is discussed as heart/heart and spirit [18]. The hadith narrated by Bukhari and Muslims [19][20] is reinforced by Quran surah al-Baqarah verse 168; 172; al-Maidah 88; and an-Nahl 114 [13]. Not only that, but Sufi stories also reveal that the blood flowing from well-obtained and halal food will make one's prayers come true. So blood becomes essential in the teachings of Islam. The source of blood is food consumed by humans.

Previous research has found a significant association between blood type and personality traits [21], contrary to the results of research conducted by Rogers & Glendon (2003). Thus, it is necessary to see that the initial source of blood is the food consumed. Food that the body digests and becomes blood needs further research. The author suspects that the content of substances in the blood sourced from halal food and the correct way to obtain it will be different from the blood produced from food that is not halal and the correct way to obtain it. Therefore, it is necessary to conduct further experiments to prove this thesis. So, it can be said that the blood supply chain in the human body is not as simple as thought.

### 2.2 Leadership in Islam

Islam makes an offer to choose a leader. In Islam, leadership is considered the most potent instrument for realizing an ideal society [23, p. 163]. The figure of the Prophet Muhammad (PBUH) is often used as a role model for management researchers to be exemplary for managers in the practical realm of business and organizations [24]. Islam has also set an example of selecting imams for prayer through regulated criteria. No concept can be represented other than choosing a leader (priest) in congregational prayer [25]. This argument is strengthened by the recommendation of three work ethics

of political leadership with Islamic principles, namely building an identity that Islam is a way of life, promoting unity as a foundation of harmonious life, and holistic development as a catalyst for progress [26].

Another study examining the relationship between leaders and followers from an Islamic perspective showed that transformational leadership significantly influenced employee behavior [27]. Some study shows that spiritual values in leadership have inspired employees to build an organizational vision and create job satisfaction that ultimately impacts employee performance [28], easy to manage and control the integrity of employees toward high performance and based on sincerity [29].

### **3 Methods**

This paper is written by searching articles with keywords blood and character types, leader selection, leadership and AI, leadership in Islam, and character and leadership. Searches are carried out through articles published in Scopus and Google Scholar journals. There were 1403 articles from selected keywords (Scopus= 402 and Google Scholar= 1001). Screening is carried out through article titles closely related to the topic of writing; the results are only 36 articles selected. From 36 selected articles, it was reduced again to 17 that can be analyzed to support the idea of this paper.

## **4 Result and Discussion**

### **4.1 The Importance of Characters**

Studies conducted to see whether or not there is a relationship and influence between blood types on motivation, behavior, and personality have been reported by several researchers. The results of research between one researcher and another are complementary. Objections of Furukawa (1929) found were raised by Thompson (1936) in the results of his research with the criticism that the measuring instruments made by Furukawa (1929) were reviewed. Thompson's (1936) research shows that blood type does not affect intelligence, emotions, privileges, or personality. This research report counters what has been conveyed by [30]. Other studies have shown a clear and significant relationship between blood type and personality [32]. Blood types do not have a significant relationship with human motivational and behavioral processes [33]. There were no differences in personality traits of different blood types [34] and no significant correlation between blood types and self-reported personalities [35].

The results of the research mentioned above show an interest from scientists to see whether there is a relationship between blood type and traits and personality. These preliminary studies show an interest in seeing blood types in human personality. However, there have been no further studies to look at the content of the blood that humans contain that is associated with consuming food (halal and tayyib) and how to obtain it against personality or morals. The message conveyed through hadith [19][20]

and the Quran [13] about halal food that produces blood and leads to whole good bodies needs to be studied scientifically to prove its truth empirically.

## 4.2 Artificial Intelligent (AI)

In today's technological age, AI has become the commander of life. AI has become a detection and projection for future events. The role of AI will end well if it is in the hands of good programmers and with good AI leadership. The development of AI can undoubtedly be used to select potential leaders in the future. The research development process can be combined with medical, management, and socio-political research. One of them adopted the terminology of hadith, and Quran conveyed above.

Although blood research is still debated whether it affects personality, it needs to be explored by conducting re-research to prove this idea as a pilot study. As Muslims, we strongly believe in the hadith presented by the Prophet Muhammad (PBUH) and also the Quran revealed to him. These behavioral relationships can be used as a foothold in choosing future leaders by testing their blood content. Testing the blood content is essential because when referring to the hadith and quranic commandments, the elected leader is, of course, a leader with blood content derived from halal food and tayyib, which is more dominant than the opposite prospective leader.

AI can facilitate through software developed so that by only checking blood content, such as when someone checks themselves wanting to know their blood type, the personal data of the leader candidate can be known accurately. Models like this certainly shorten the time and make it efficient in terms of cost.

## 4.3 Tolerance

No human being is perfect. This sentence contains both sociological and empirical truths. What if the proposed leader candidate in a leader election contestation does not meet the conditions after being tested for blood content? Thus, it requires tolerance of the range score (percentage) of the blood content for the contestation participants. The compiled range must be careful so that no party is harmed. The range alerts that the proposed candidate is still tolerable because it is still within the tolerance range. How to build tolerance so as not to harm all parties? Of course, it must be based on empirical data. This matter can be discussed further.

## 5 Conclusion

The idea presented as a concept of thinking about finding a better leader in the future is the answer to the disappointment expressed by Kubicek [17] that the leader is dead. The hope is that by examining hadith and revelation empirically and associated with contesting the election of leaders, a leader who serves, gives, and proves his promises will be obtained.

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# HADIRin (Human cApital Development Initiative and Responsibility for Indonesian Medical Team)

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**Abstract.** The progress of a country is not only assessed by the potential of its natural resources but the progress of a country is assessed by the potential of its human resources. One of the resources that can be developed is health resources because it supports the health of the nation. Researchers provide a solution, namely HADIRIN (Human Capital Development Initiative & Responsibility for Indonesian medical team). A learning model that aims to develop human resources in the health sector by utilizing technological developments. This research is a quantitative method research using primary data in the form of a questionnaire at Airlangga University Hospital. In this study, a total of 268 respondents ( $n = 268$ ) were found who gave their opinions regarding statements ranging from strongly agree, agree, indifferent, disagree, and strongly disagree. Then the data were analyzed with SPSS to test the validity, reliability, descriptive, and regression tests on each variable relationship. In the validity test, it was found that all statements were valid statements because they had a correlation of  $>0.05$  and a significance of  $<0.05$  ( $\alpha < 0.05$ ). Then in the reliability test, all statements are reliable data because they have a Cronbach Alpha's value of  $> 0.6$ . Then a descriptive test was carried out to determine the distribution of each data. Finally, a reliability test was carried out to determine the relationship between each variable. The results of this study indicate that in each R test the significance value is  $<0.05$ , and the direction of the regression coefficient is positive in the overall relationship between factors. The conclusion of this study is that the development of technology by considering the factors of technological characteristics, convenience, usefulness, habitual factors, and social factors has a positive relationship with the development of human resources in the health sector at Airlangga University Hospital.

**Keywords:** Human Development – Information Technology and Communication – Airlangga University Hospital.

## 1 Introduction

Technology and globalization are accelerating every day, in line with the increase in the elderly population, as well as changes in social patterns. Various problems in the world such as wars, natural disasters and economic crises have resulted in increasingly complex social problems. This context relates to the crisis that is also being faced in the world of health around the world. Countries with limited and imbalanced distribution

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and ratio of health workers to population are exacerbated by a lack of capacity to identify and assess even more crucial issues related to the national health sector. As a result, it raises several questions that are fundamental to the status of human resources, the level of performance and employment issues in the health sector are still not answered concretely. In addition, the lack of comprehensive capacity, based on real data and the lack of agreement on definitions and tools for analysis, makes it difficult to monitor the capacity of health workers in various places, globally, nationally and regionally. This is still a major challenge in many governments that are still trying to manage it effectively over the long term. In addition, patients' expectations of healthcare professionals have shifted dramatically. This has created new problems in a critical component of the employment sector to then achieve national and global goals. This can be seen from the unequal distribution of the health workforce, which is actually a very important problem to improve performance and access to health services and systems, especially in developing countries [1][2][3]

In line with developments in other fields, the development of human resources in the world of health is very important to note. With highly developed technology, the human factor in the world of health cannot be removed. The development of human resources is important to note because technology cannot replace humans who have special specializations in their fields. Fatal mistakes in human resources in health care settings can be fatal. The hospital as a health facility is a complex organizational platform, because it blends technology-intensive, labor-intensive and capital-intensive, so that hospital management becomes a separate discipline that produces technology and human behavior within the organization. Human resource development is an important part. The human resources (HR) that must be owned by a hospital in principle have been regulated through hospital accreditation by determining the number and specifications of the workforce and service support facilities that must be owned by a hospital. Resource development is the responsibility of Human Resource Development (HRD) management. A bad HR TEAM creates a bad HR selection too [4].

Human Resources (HR) needs to be standardized, such as in the fields of management and technology. If a hospital unit has standardized human resources in the field of management and technology, this is an indispensable component to face competition and create a hospital that has quality services. It is also an indicator to improve the image of the hospital and its profitability. Some of the problems that are often faced by HRD in hospitals, such as selecting the right employees. Hospitals have several special and specific jobs in a field, the presence of the right people in that field supports the continuity of work in the hospital. The selection of the right person is also limited by the number of experts who require long-term training to become experts in their fields. In addition to the right people, the problems often faced by HRD are also related to training [5].

Information, Communication & Technology (ICT) in general has its own enthusiasm due to its potential to expand the achievements of the limited supply of health services. The world of communication is rapidly growing (communication tools, Internet, websites, health applications) exponentially and increasingly innovative in its use. Information and Communication Technology (ICT) has been used as an important provider to support the delivery of integrated and coordinated health services. ICT

provides cross-professional and organizational information delivery and this is a crucial aspect of an integrated service model [6].

Based on the aspects described above, the researcher wants to examine problems related to health human resources, in this case the medical staff of the Airlangga University Hospital, so that problems will be drawn and thoughts will arise to solve these human resource problems with the title of the research. Our design is "HADIRin (Human cApital Decelopment Initiative and Responsibility for Indonesian Medical Team)". In this case, an initial survey will be conducted on health workers, to measure the level of self-development of hospital medical staff towards their services, especially in relation to the use of appropriate technology in the development process.

## **2 Methods**

### **2.1 Types of Research**

This study uses quantitative methods. The data was obtained by using a questionnaire distributed through print and electronic means. Furthermore, the data that already contained the results of the respondents' opinions was changed in the form of numbers with a Likert scale and analyzed through SPSS software.

### **2.2 Research Time and Location**

This research was conducted at the Airlangga University Hospital Campus C, Airlangga University, Jalan, Mulyorejo, Kec. Mulyorejo, Surabaya City, East Java. This research was carried out from January 2021 to December 2021 starting from making a research proposal, searching for respondent data, processing data, to compiling a research report.

### **2.3 Population and Sample**

The population in this study were medical staff who worked at the Airlangga University Hospital. The population criteria set are 1. Medical staff who use/implement ICT learning models in their daily work. 2. The medical staff are permanent workers who work at the Airlangga University Hospital. This is in accordance with the notion of population, which is a collection of all elements or individuals and the researcher wants to make inferences or generalizations.

The sample in this study is limited to the medical staff of the Airlangga University Hospital which is the main center of human resources in the hospital and is representative as the research sample. Sample selection was carried out by following the principles of adequacy and suitability. The principle of adequacy means that data obtained from informants is expected to describe phenomena related to the research topic, while the principle of conformity means that the sample is selected based on the relationship between the sample and the research topic. Sampling using the slovin formula.

$$n = \frac{N}{1 + N (e)^2}$$

known with,

n= Minimum sample size

N= total population

e= margin of error

## 2.4 Data Collection

### Data Collection Technique.

Data was collected by researchers by collecting primary and secondary data. Primary data was obtained based on the results of data collection through questionnaires and interviews, namely information and information obtained orally from informants. Secondary data is obtained from reports related to the problem under study. To assist during the data collection process, the researcher used an interview guide that contained a list of questions related to the topic to be studied

### Research Instrumen.

In accordance with the characteristics of quantitative research, the research instrument is a questionnaire using the Likert method. In the implementation of questionnaires and interviews, researchers used the guidelines for making questionnaires and interviews accompanied by questions related to the material to be delivered.

Research Variable

Table 1. Research Data Variable

Latent Variable	Operational definition	Indicator Variables	Score	Information
Basic characteristics	Someone's data that shows their knowledge of technology	1.1 : I follow the latest technology development 1.2 : I understand the difference between various technologies 1.3 : I understand ethical, legal, cultural and social issues related to the use of technology 1.4 : I can solve the problems that I get on the use of the computer 1.5 : I have sufficient knowledge of how computers work 1.6 : I have the ability to use technology 1.7 : I can use technology to solve various problems that exist 1.8 : I can use specific software or web to do work in the hospital 1.9 : I can use technology for presentation 1.10 : I can use technology to organize and communicate information about health and services in the hospital 1.11 : I can express my ideas, my values and myself on the use of technology 1.12 : I have enough opportunities to work with various technologies 1.13 : I know that I can use technology to understand health and work-related matters in a hospital 1.14 : I can use technology to process data and present it 1.15 : I have the ability to design something with technology 1.16 : I met a lot of people from using technology 1.17 : I imagine using technology can make the world a better place 1.18 : I believe using new technology people can find new ways to contribute 1.19 : it is important for me to teach others how to use technology	Likert	Likert score assessment: 1. →STS : totally disagree 2. →TS : Disagree 3. →N : Neutral 4. →S : Agree 5. →SS : Totally agree

		1.20 : I feel confident that I can learn using a computer		
		1.21 : I can contribute to my community/work with my computer skills		
		1.22 : I feel confident I can figure out how to use new things in computer programs		
		1.23 : I feel proud of myself when using the computer		
Technology usefulness (Perceived usefulness)	Variables that show the respondents' personal opinions on technology that they feel have a positive impact so far	2.1 : using new technology will allow me to complete services faster	Likert	Likert score assessment: 1 →STS : totally disagree 2 →TS : Disagree 3 →N : Neutral 4 →S: Agree 5 →SS: Totally agree
		2.2 : using new technology will increase my work effectiveness		
		2.3: using new technology will facilitate patient care and management		
		2.4 : costs are much lower when using new technology		
		2.5 : new technology related to my work		
		2.6 : my work would be difficult without this technology		
		2.7 : using new technology helps my tasks get done faster		
		2.8 : using new technology will increase my productivity		
		2.9 : new technology cost me more		
		2.10 : using new technology supports important aspects of my job		
		2.11 : my work is more hampered by this technology		
		2.12 : reduce the time I spend on unproductive work		
		2.13 : Using new technology will allow me to be in control of my work		
		2.14 : new technology makes it more difficult for me to estimate the required cost		
		2.15 : in general it helps to improve the quality of my work		
Ease of technology (Perceived ease of use)	A variable that shows the respondent's personal opinion on the level of ease of difficulty in using the technology used so far	3.1 : if I use new technology it will be easy for me to adapt	Likert	Likert score assessment: 1 →STS : totally disagree 2 →TS : Disagree 3 →N : Neutral 4 →S: Agree
		3.2 : I find this new technology inflexible to use		
		3.3 : it is not easy for me to become an expert in using new technology		
		3.4 : the use of new technology is easy to control		
		3.5 : learning to use new technology is easy for me		
		3.6 : I find it easy to use new technology according to my wishes		



			<p>3.7 : my skills will be honed by using this new technology</p> <p>3.8 : new technology is easy to understand</p> <p>3.9 : this new technology is easy to use</p> <p>3.10 : if I have adapted to new technology, I will easily access all data regularly</p> <p>3.11 : this new technology is blocking my skills from developing</p> <p>3.12 : my work is getting more complicated with new technology</p> <p>3.13 : this new tech hint confuses me</p> <p>3.14 : I can use the new technology to its full potential</p> <p>3.15 : new technology pushes me to keep getting better</p> <p>3.16 : I don't need high skill to use this technology</p>	5 →SS : Totally agree
<b>Habit Intention</b>	<b>(Behaviour</b>	Variables that show the impact of using technology that makes respondents use the technology in their daily lives	<p>4.1 : if I use new technology it will be easy for me to adapt</p> <p>4.2 : I plan to use (new technology) as often as needed</p> <p>4.3 : if there is an opportunity to use it, I will use it for various existing jobs</p> <p>4.4 : if I have (new technology), I will try to do various tasks with (new technology)</p> <p>4.5 : I will recommend new technology to my coworkers</p> <p>4.6 : in the next few months, I plan to continue to use meneurs</p> <p>4.7 : I do not plan to use (new technology) in patient care</p> <p>4.8 : I plan not to routinely use technology in my work</p> <p>4.9 : I plan to use (new technology) for ease of service if it is available in my place</p> <p>4.10 : I will recommend new technology to many people I meet</p> <p>4.11 : I think that this technology will get better in the future</p> <p>4.12 : I plan to use according to the task given to me</p> <p>4.13 : I like to see a lot of people using this technology</p> <p>4.14 : if given the opportunity to try (new technology), I am willing</p>	<p>Likert</p> <p>Likert score assessment:                      1 →STS : totally disagree                      2 →TS : Disagree                      3 →N : Neutral                      4 →S : Agree                      5 →SS : Totally agree</p>

		<p>4.15 : I only recommend this technology be used at certain times</p> <p>4.16 : in my opinion, this technology can further lighten the existing work</p> <p>4.17 : although it can help with work, new technology is not needed in my job</p> <p>4.18 : I like having technology in my place</p> <p>4.19 : I plan to use this technology in other places I work</p> <p>4.20 : I will never use this technology again</p> <p>4.21 : in the near future I plan to experiment with new technology</p> <p>4.22 : I'm really waiting for the development of new features</p> <p>4.23 : I do not recommend the use of new technology</p> <p>4.24 : I will try to use this new technology, if I see someone using it before me</p> <p>4.25 : technology cannot help in the future</p> <p>4.26 : technology gives bad aspect to existing job</p>		
<b>Social influence</b>	The influence of yourself on the existence of technology and their willingness to use existing technology	<p>5.1 : using new technology will become a new symbol in my organization</p> <p>5.2 : I am concerned about the impact of new technology on my work environment</p> <p>5.3 : because of using new technology, people will look up to me more than anyone else</p> <p>5.4 : I will try to use this new technology, if someone show me directly how to use it</p> <p>5.5 : I think about how new technology can positively affect the work environment</p> <p>5.6 : people in my organization who use new technologies feel more valuable than those who don't</p> <p>5.7 : my boss encourages me to use new technology</p> <p>5.8 : relations with colleagues are better with this technology</p> <p>5.9 : other people will see that I have an advantage if I use technology</p> <p>5.10 : I learned a lot from my work environment about this technology</p> <p>5.11 : relations with superiors are better with this technology</p> <p>5.12 : this new technology is used by important people in my place</p>	Likert	<p>Likert score assessment:</p> <p>1 → STS : totally disagree</p> <p>2 → TS : Disagree</p> <p>3 → N : Neutral</p> <p>4 → S : Agree</p> <p>5 → SS : Totally agree</p>

		5.13 : my coworkers often discuss good things about this technology		
		5.14 : the work environment is more attractive with this technology		
		5.15 : other people take me for granted when using this new technology		
<b>Human Resource Development</b>	Evaluation of the results of the intervention regarding the existence of new technologies and their benefits for their respective jobs Individual	6.1 : learning with technology is easy for me	Likert	Likert score assessment: 1 →TS : totally disagree 2 →TS : Disagree 3 →N : Neutral 4 →S : Agree 5 →SS : Totally agree
		6.2 : I can learn new technology easily		
		6.3 : I met a lot of people from using technology		
		6.4 : I can create/design projects on the computer to complete my work		
		6.5 : I am part of a virtual community on the internet where I give and receive input		
		6.6 : I have sufficient knowledge of how this technology works		
		6.7 : I can express my ideas, my values and myself on the use of technology		
		6.8 : I can contribute to my community/work to the best of my ability		
		6.9: when working with someone using technology, I make sure the other person also understands what I'm doing		
		6.10 : it is important for me to teach others how to use technology		
		6.11 : I understand about ethics, legality, culture and social issues related to the use of technology		
		6.12 : I can solve the problems I have with the use of new technology		
		6.13 : I have sufficient experience with similar technology		
		6.14 : I can learn a new technology program that helps me express myself in many ways		
		6.15 : I feel confident that I can learn using this technology		
		6.16 : I know that I can use technology to understand health and work-related matters in a hospital		
		6.17: I can use technology to solve various problems that exist		
		6.18 : I have bad experience with similar technology		
		6.19 : I can use technology to organize and communicate information about health and services in the hospital		
		6.20 : I imagine positive things about using new technology for my community		

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6.21 : I can use technology to process data and  
present it

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6.22 : I feel proud of myself when I use this  
technology

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**Validity Measuring Tool.**

The data can be said to be valid if the questions on the questionnaire are able to provide value to something that is measured through the questionnaire. Questions in the questionnaire were tested on related factors. The validity test is calculated using the Pearson's product moment correlation method, which is calculating the correlation and between the score of the question items and the total score, the calculation results are compared with the critical value in the r-value table with a significance of 5% of the total sample. If the result of the calculation of the correlation of the moment product is greater than the critical value, then the instrument is valid, if it is obtained otherwise, the instrument is declared invalid.

**Reliability Measuring Tool.**

Reliability requires repeated studies to produce the same results in every identical environment. To measure the reliability can use the Cronbach Alpha coefficient. Which will be calculated on the existing questionnaire items

**Analysis Techniques.**

Data analysis method is a method used to process research results to obtain a conclusion. In this study used quantitative research analysis techniques with analysis tools in the form of multiple regression.

**3 Result**

In the questionnaire data analysis, several stages of analysis were carried out starting from the data validity test, reliability test, descriptive test, and simple regression test. The total respondents obtained were 268 respondents who filled out the questionnaire through printed or electronic forms. The respondents are scattered in various fields of work at the Airlangga University Hospital such as the board of directors, specialist doctors, general practitioners, midwives, nurses, medical analysts, to the IT team.

**3.1 Distribution of Questionnaire Data**

In distributing the questionnaire data at the Airlangga University Hospital, the respondents were spread in various backgrounds including gender, age, job position at Airlangga University Hospital, and length of work.

**Gender.**

The distribution of respondents' gender data can be seen in the following table

**Table 2.** Gender

Gender	Number of Respondents
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<b>Man</b>	169
<b>Woman</b>	84

**Age.**

The distribution of respondents' age data can be seen in the following table

**Table 3.** Age

<b>Age</b>	<b>Number of Respondents</b>
<b>16 to 20</b>	0
<b>21 to 25</b>	85
<b>26 to 30</b>	90
<b>31 to 35</b>	59
<b>36 to 40</b>	24
<b>41 to 45</b>	8
<b>46 to 50</b>	0
<b>51 to 55</b>	1
<b>56 to 60</b>	0

**Position.**

In distributing the questionnaire at the Airlangga University Hospital, an analysis of the distribution related to the positions held by medical staff was carried out. The distribution of respondents' position data can be seen in the following table:

**Table 4.** Position

<b>Work</b>	<b>Number of Respondents</b>
<b>Directors</b>	3
<b>Medical specialist</b>	7
<b>General practitioners</b>	10
<b>Nurse</b>	115
<b>Midwife</b>	31
<b>laboratory</b>	27
<b>Radiographer</b>	14
<b>IT Team</b>	7
<b>Pharmacist</b>	11
<b>Admin</b>	38
<b>Batra</b>	3

**Education.**

In distributing the questionnaire at the Airlangga University Hospital, an analysis of the distribution related to the last education taken by the medical staff was carried out. The distribution of the latest education data can be seen in the following table:

**Table 5.** Education

<b>Education</b>	<b>Number of Respondents</b>
<b>Junior/Senior High School</b>	11

Diploma	103
Bachelor Degree	134
Master Degree	11
Doctoral	3

**Working Time.**

In distributing the questionnaire at the Airlangga University Hospital, an analysis of the distribution related to the length of work taken by medical staff was carried out. The distribution of long working data can be seen in the following table:

**Table 6.** Working Time

Length of work	Number of Respondents
< 1 year	68
12 years old	37
3 – 4 years	37
>4 years	128

**3.2 Validity Test**

The validity test of the questionnaire is an assessment to find out whether the questions asked in the questionnaire are valid questions to ask. A research question will be said to be valid if the correlation value is > 0.05 and the significance is < 0.05. In the research that has been carried out, the overall significance value is 0. While the correlation value described in the Pearson Correlation in each statement has a different value.

**Table 7.** Validity Test

Variable	Validity Test Results
Basic characteristics	Valid
Use of technology ( <i>Perceived usefulness</i> )	Valid
Ease of technology ( <i>Perceived ease of use</i> )	Valid
Habit ( <i>Behavior intention</i> )	Valid
Social influence	Valid
Human Resource Development	Valid

**3.3 Reliability Test**

The reliability test of the questionnaire is intended so that the statements submitted to the respondents can be used even though they have been used repeatedly and produce valid statements for the answers given. According to Wiratna Sujerwni (2014), the questionnaire is a reliable question if Cronbah's Alpha value is >0.6

**Table 8.** Reliability Test

Variable	Crobach's Alpha	score	Reliability Results
<b>Basic characteristics</b>	0.948		Reliable
<b>Use of technology (Perceived of Usefulness)</b>	0.775		Reliable
<b>Technological convenience (<i>Perceived ease of use</i>)</b>	0.742		Reliable
<b>Habit (<i>Behavior Intention</i>)</b>	0.859		Reliable
<b>Social Influence (Social Influence)</b>	0.834		Reliable
<b>Human Resource Development</b>	0.834		Reliable



### 3.4 Descriptive Test

The descriptive test in this study was intended to determine the distribution of the data filled in by the respondents. In this study, the descriptive test carried out included the number of respondents who filled out their opinion on a statement represented by STS (Strongly Disagree), TS (Disagree), N (Normal), S (Agree), SS (Strongly Agree).

Table 9. Descriptive Test

No.	Statement	Respondent's Opinion									
		STS		TS		N		S		SS	
		n	%	n	%	n	%	n	%	n	%
1.	1.1	1	0.4	3	1.1	24	9	151	58.3	89	33.2
2.	1.2	0	0	10	3.7	63	23.5	150	56	45	16.8
3.	1.3	0	0	9	3.4	68	25.4	159	59.3	32	11.9
4.	1.4	2	0.7	14	5.2	58	21.6	158	59	36	13.4
5.	1.5	1	0.4	9	3.4	59	22	166	61.9	33	12.3
6.	1.6	0	0	6	2.2	47	17.5	170	63.4	45	16.8
7.	1.7	2	0.7	9	3.4	63	23.5	154	57.5	40	14.9
8.	1.8	0	0	14	5.2	57	21.3	163	60.8	34	12.7
9.	1.9	1	0.4	1	0.4	20	7.5	184	68.7	62	23.1
10.	1.10	1	0.4	2	0.7	42	15.7	183	68.3	40	14.9
11.	1.11	1	0.4	6	2.2	75	28	150	56	36	13.4
12.	1.12	0	0	11	4.1	69	25.7	156	58.2	32	11.9
13.	1.13	1	0.4	3	1.1	35	13.1	192	71.6	37	13.8
14.	1.14	0	0	5	1.9	47	17.5	180	67.2	36	13.4
15.	1.15	7	2.6	30	11.2	85	31.7	112	41.8	34	12.7
16.	1.16	1	0.4	12	4.5	46	17.2	153	57.1	56	20.9
17.	1.17	1	0.4	2	0.7	32	11.9	165	61.6	68	25.4

18.	1.18	2	0.7	2	0.7	33	12.3	172	64.2	59	22
19.	1.19	2	0.7	1	0.4	44	16.4	163	60.8	58	21.6
20.	1.20	1	0.4	3	1.1	46	17.2	170	63.4	48	17.9
21.	1.21	0	0	5	1.9	60	22.4	165	61.6	38	14.2
22.	1.22	1	0.4	12	4.5	64	23.9	146	54.5	45	16.8
23.	1.23	1	0.4	10	3.7	74	27.6	147	54.9	36	13.4
24.	2.1	1	0.4	1	0.4	15	5.6	156	58.2	95	35.4
25.	2.2	1	0.4	1	0.4	18	6.7	160	59.7	88	32.8
26.	2.3	0	0	2	0.7	15	5.6	164	61.2	87	32.5
27.	2.4	1	0.4	11	4.1	80	29.9	117	43.7	59	22
28.	2.5	0	0	5	1.9	61	22.8	146	54.5	56	20.9
29.	2.6	3	1.1	17	6.3	60	22.4	136	50.7	52	19.4
30.	2.7	1	0.4	3	1.1	39	14.6	158	59	67	25
31.	2.8	2	0.7	7	2.6	40	14.9	158	59	61	22.8
32.	2.9	2	0.7	44	16.4	109	40.7	82	30.6	31	11.6
33.	2.10	1	0.4	6	2.2	51	19	161	60.1	49	18.3
34.	2.11	18	6.7	96	35.8	86	32.1	49	18.3	19	7.1
35.	2.12	2	0.7	29	10.8	92	34.3	118	44	27	10.1
36.	2.13	0	0	4	1.5	62	23.1	168	62.7	34	12.7
37.	2.14	6	2.2	75	28	100	37.3	69	25.7	18	6.7
38.	2.15	1	0.4	6	2.2	38	14.2	175	65.3	48	17.9
39.	3.1	2	0.7	8	3	55	20.5	166	61.9	37	13.8
40.	3.2	7	2.6	51	19	129	48.1	67	25	14	5.2
41.	3.3	5	1.9	61	22.8	109	40.7	79	29.5	14	5.2
42.	3.4	0	0	11	4.1	97	36.2	126	47	34	12.7
43.	3.5	1	0.4	15	5.6	85	31.7	138	51.5	2	0.7
44.	3.6	1	0.4	8	3	89	33.2	144	53.7	26	9.7
45.	3.7	1	0.4	3	1.1	53	19.8	172	64.2	39	14.6

46.	3.8	1	0.4	10	3.7	85	31.7	141	52.6	31	11.6
47.	3.9	1	0.4	8	3	89	33.2	142	53	28	10.4
48.	3.10	2	0.7	6	2.2	46	17.2	165	61.6	49	18.3
49.	3.11	25	9.3	116	43.3	57	21.3	56	20.9	14	5.2
50.	3.12	17	6.3	113	42.2	80	29.9	47	17.5	11	4.1
51.	3.13	15	5.6	68	25.4	122	45.5	50	18.7	13	4.9
52.	3.14	1	0.4	10	3.7	104	38.8	127	47.4	26	9.7
53.	3.15	1	0.4	7	2.6	74	27.6	155	57.8	31	11.6
54.	3.16	7	2.6	51	19	119	44.4	77	28.7	14	5.2
55.	4.1	2	0.7	8	3	55	20.5	166	61.9	37	13.8
56.	4.2	1	0.4	9	3.4	47	17.5	179	68.8	32	11.9
57.	4.3	0	0	5	1.9	41	15.3	185	69	37	13.8
58.	4.4	1	0.4	2	0.7	40	14.9	181	67.5	44	16.4
59.	4.5	0	0	2	0.7	53	19.8	174	64.9	39	14.6
60.	4.6	0	0	5	1.9	77	28.7	152	56.7	34	12.7
61.	4.7	16	6	94	35.1	82	30.6	63	23.5	13	4.9
62.	4.8	18	6.7	104	38.8	93	34.7	44	16.4	9	3.4
63.	4.9	5	1.9	32	11.9	60	22.4	133	49.6	38	14.2
64.	4.10	1	0.4	6	2.2	73	27.2	158	59	30	11.2
65.	4.11	2	0.7	2	0.7	48	17.9	169	63.1	47	17.5
66.	4.12	3	1.1	0	0	32	11.9	195	72.8	38	14.2
67.	4.13	2	0.7	3	1.1	47	17.5	176	65.7	40	14.9
68.	4.14	1	0.4	3	1.1	42	15.7	162	60.4	60	22.4
69.	4.15	3	1.1	17	6.3	89	33.2	133	49.6	26	9.7
70.	4.16	2	0.7	6	2.2	69	25.7	148	55.2	43	16
71.	4.17	14	5.2	70	26.1	76	28.4	91	34	17	6.3
72.	4.18	2	0.7	20	7.5	56	20.9	149	55.6	41	15.3
73.	4.19	3	1.1	14	5.2	82	30.6	139	51.9	30	11.2

74.	4.20	29	10.8	100	37.3	79	29.5	50	18.7	10	3.7
75.	4.21	6	2.2	37	13.8	118	44	89	33.2	18	6.7
76.	4.22	1	0.4	13	4.9	73	27.2	151	56.3	30	11.2
77.	4.23	26	9.7	88	32.8	77	28.7	63	23.5	14	5.2
78.	4.24	6	2.2	39	14.6	100	37.3	107	39.9	16	6
79.	4.25	34	12.7	99	36.9	70	26.1	57	21.3	8	3
80.	4.26	41	15.3	114	42.5	62	23.1	44	16.4	7	2.6
81.	5.1	2	0.7	7	2.6	92	34.3	138	51.5	29	10.8
82.	5.2	10	3.7	79	29.5	120	44.8	52	19.4	7	2.6
83.	5.3	6	2.2	42	15.7	129	48.1	77	28.7	14	5.2
84.	5.4	1	0M4	9	3.4	79	29.5	153	57.1	26	9.7
85.	5.5	1	0.4	2	0.7	59	22	179	66.8	27	10.1
86.	5.6	4	1.5	18	6.7	125	46.6	102	38.1	19	7.1
87.	5.7	1	0.4	3	1.1	113	42.2	130	48.5	21	7.8
88.	5.8	4	1.5	2	0.7	101	37.7	135	50.4	25	9.3
89.	5.9	2	0.7	14	5.2	109	40.7	116	43.3	27	10.1
90.	5.10	0	0	3	1.1	69	25.7	169	63.1	27	10.1
91.	5.11	1	0.4	6	2.2	105	39.2	133	49.6	23	8.6
92.	5.12	4	1.5	16	6	116	43.3	110	41	22	8.2
93.	5.13	1	0.4	4	1.5	116	43.3	125	46.6	22	8.2
94.	5.14	2	0.7	3	1.1	87	32.5	148	55.2	28	10.4
95.	5.15	0	0	21	7.8	171	63.8	64	23.9	12	4.5
96.	6.1	0	0	8	3	61	22.8	159	59.3	40	14.9
97.	6.2	1	0.4	7	2.6	71	26.5	150	56	39	14.6
98.	6.3	2	0.7	3	1.1	45	16.8	180	67.2	38	14.2
99.	6.4	4	1.5	16	6	97	36.2	123	45.9	28	10.4
100.	6.5	1	0.4	19	7.1	109	40.7	120	44.8	19	7.1
101.	6.6	0	0	10	3.7	101	37.7	135	50.4	22	8.2

<b>102.</b>	6.7	2	0.7	7	2.6	87	32.5	149	55.6	23	8.6
<b>103.</b>	6.8	0	0	5	1.9	78	29.1	158	59	27	10.1
<b>104.</b>	6.9	2	0.7	2	0.7	68	25.4	166	61.9	30	11.2
<b>105.</b>	6.10	0	0	3	1.1	76	28.4	158	59	31	11.6
<b>106.</b>	6.11	0	0	2	0.7	94	35.1	148	55.2	24	9
<b>107.</b>	6.12	1	0.4	7	2.6	78	29.1	156	58.2	26	9.7
<b>108.</b>	6.13	1	0.4	7	2.6	104	38.8	137	51.1	19	7.1
<b>109.</b>	6.14	0	0	4	1.5	69	25.7	173	64.6	22	8.2
<b>110.</b>	6.15	0	0	4	1.5	71	26.5	172	64.2	21	7.8
<b>111.</b>	6.16	2	0.7	1	0.4	55	20.5	187	69.8	23	8.6
<b>112.</b>	6.17	1	0.4	9	3.4	64	23.9	165	61.6	29	10.8
<b>113.</b>	6.18	7	2.6	66	24.6	103	38.4	80	29.9	12	4.5
<b>114.</b>	6.19	0	0	12	4.5	62	23.1	166	61.9	28	10.4
<b>115.</b>	6.20	0	0	3	1.1	63	23.5	163	60.8	39	14.6
<b>116.</b>	6.21	0	0	8	3.0	54	20.1	172	64.2	34	12.7
<b>117.</b>	6.22	3	1.1	4	1.5	84	31.3	151	56.3	26	9.7

### 3.5 Regression Analysis

Based on the simple regression analysis that has been done, the following conclusions are obtained:

**Table 10.** Regression Analysis

No.	Variable 1	Variable 2	Analysis Results
1.	<i>Perceived usefulness</i>	<i>Social influence</i>	There is a direct relationship
2.	<i>Perceived easy of use</i>	<i>Social influence</i>	There is a direct relationship
3.	<i>Behavior intention</i>	<i>Social influence</i>	There is a direct relationship
4.	<i>Perceived usefulness</i>	Human Resources Development for RSUA Medical Staff	There is a direct relationship
5.	<i>Perceived easy of use</i>	Human Resources Development for RSUA Medical Staff	There is a direct relationship
6.	<i>Behavior intention</i>	Human Resources Development for RSUA Medical Staff	There is a direct relationship
7.	Social influence	Human Resources Development for RSUA Medical Staff	There is a direct relationship

In the table above, the results of the analysis show that the overall variable one to variable two has a unidirectional relationship, where increasing the potential for variable one will also provide an increase in variable two. This shows that to increase development in social influence when using technology, it is necessary to increase technology that is useful, easy to use and can be applied in everyday life. Then to improve the quality of human resource development, it is necessary to increase technological knowledge that is useful, easy to use, can be applied in everyday life, and has a positive impact on social life.

Based on the analysis that has been carried out, it was found that there were results that were positively correlated between variables ranging from perceived usefulness to social influence, perceived ease of use on social influence, behavior intention on social influence, perceived usefulness on HR development of RSUA medical staff, perceived ease of use on HR development of RSUA medical staff, behavior intention on HR development of RSUA medical staff, and social influence on HR development RSUA medical staff.

The existence of this positive correlation shows that in developing human resources for RSUA medical staff, aspects ranging from perceived usefulness and perceived ease of use, specificity of technological devices used, daily life (behavioral intention), and the influence of social life. (social influence). So that to achieve the results of effective human resource development, it is necessary to improve these related aspects.

## 4 Discussion

The concept of learning for human resource development by utilizing technological developments is a solution which is now realized that this ICT-based learning concept is an effective, efficient, and applicable learning concept in various conditions such as time, place, and environmental conditions (the COVID-19 pandemic). Human resource development is no longer needed through face-to-face learning because online learning by utilizing technological developments also provides maximum results. However, to achieve maximum results, proper infrastructure is needed such as the technology used must be equal and standardized so that there are no differences in the results of the quality of human resources from one another, such as the quality of the internet network used, and the device used to access. Technology-based learning is able to provide time effectiveness for every medical worker who is on duty because the schedule is different from one another. Ease of access with flexible time will provide comfort for medical personnel because the time used for learning does not collide with the service schedule at the hospital. So based on this research, it can be seen that a good management strategy as well as thorough infrastructure preparation is necessary prepared in organizing learning to improve the quality of human resources at the Airlangga University Hospital.

In the application of ICT-based learning in order to improve the quality of human resource development, a management concept known as the 7Ps is needed describe the cycle of management activities from planning activities and HR to retirement 7. The seven cycles can be described as follows:

1. **Planning:** Planning in the field of HR covers many aspects of the resources required by health services. Planning as an activity to achieve health service goals through the process of determining what is to be achieved, preparing organizational resources that are deemed capable of helping achieve goals.
2. **Acceptance:** Employee recruitment is very important in HR management. The wrong choice of employees will determine the future of the existing organization. The process of recruiting employees requires high costs and high caution. Health services provide services to humans, provide services that are felt, not seen. so that the resulting product is provided directly by existing human resources.
3. **Development:** After the process of accepting and getting potential human resources, not all direct personnel have qualified expertise. Special training and development are needed for personnel to be more effective in carrying out their duties. The competencies needed are not directly owned in full, so there needs to be an effort from the employer to be able to develop existing capabilities. In addition, technological developments and the development of habits in each place require special adaptations and new training.
4. **Culture:** Every company has a culture that has its own foundation as a basis for the organization to continue to grow and develop. The culture of the organization can be in the form of positive values that are instilled as well as existing norms as guidelines for compliance by members of the organization. The diversity of HR in an organization filled with people who have different backgrounds, different abilities and intelligence must be balanced with emotional intelligence and positive habits

according to the company culture so that in the future it will not create problems for existing organizations.

5. Employment: Placing the right people for the right jobs is the best way to optimally develop an organization. The placement of the right people in the right parts is also good for the continuity of the resources working in that place.
6. Maintenance: As a working resource in a place, every staff has the right to be protected and maintained. Organizations cannot exploit existing resources arbitrarily, without fair compensation by granting rights in addition to the obligations provided. Resource maintenance is important not only for the existing employees, but also for the company. because the company's performance also depends on the existing employees. especially organizations in the health sector, which involve a lot of human resources and almost all services depend on the human resources they have, so it is necessary to pay great attention to the maintenance of resources. Maintenance of resources includes, health insurance, appropriate salary provision, future certainty, building a conducive work climate,
7. Retirement: Human resources who work will enter retirement. Companies also need to pay attention to the pension problem of working employees. preparations that can be provided by the organization include pension and old age benefits, training can be provided for employees entering their retirement period, so that there may be other abilities that can be possessed when retired <sup>8</sup>.

Technology-based learning, information, and communication is the right solution in improving the development of human resources in the health sector. Based on the advantages and disadvantages provided, this learning can at least be an alternative.

Widarini, Putra and Marsakawati (2021) in their research show that ICT-based learning is learning that will always last because it is flexible. However, in the development of this learning, various aspects are needed that help to overcome existing problems such as internet connection, specifications of the device used, and responsiveness between the material giver and the material catcher <sup>9</sup>.

Panigrahi R., Srivastava, and Panigrahi PK (2021) in their research show that ICT-based learning is learning that should be implemented since the beginning of education. ICT-based learning provides room for more development for its users. Users are not limited in place because this learning model can be accessed anywhere. Then the user is also not limited in time because this learning model can be accessed at any time. As well as ICT-based learning can apply the concept of Social distancing is currently being promoted to prevent the transmission of infections due to viruses or bacteria. ICT-based learning can provide users with independence <sup>10</sup>.

This shows that ICT-based learning that can be developed is by using standardized devices so that between users have equality in the development of their human resources. In addition, ICT-based learning can be developed to provide flexibility for medical staff both in time and location because each medical staff has different activities. The development of ICT-based human resources in its application model requires technology that is easy to use, as well as technology that provides many benefits in order to create a personal habit and social environment that supports the development of individual resources.



#### **4.1 Perceived Usefulness of *Social influence* and Human Resource Development**

Perceived usefulness defined as usefulness in the use of technology that has an impact on personal life. While social influence is defined as a person's perception of the behavior of others who are important according to him thinking to adopt or reject a new innovation that exists.

In this research, it is shown that there are positive and unidirectional results in the simple regression analysis test. If in ICT learning, participants are given a device that has many benefits and features, this will provide user effectiveness in learning the existing material. Users will also be easy to adopt it in social life if the device used provides many benefits.

Valentina Arkorful and Nelly Abaidoo (2014) in their research on the concept of e-learning at the high school level show that ICT-based learning basically requires adequate tools to access it so that the learning process can run smoothly. So the important point in ICT-based learning is the existence of devices that can provide many features to facilitate the learning process 11.

Ince Ahmad Zarqan (2017) in his research on the implementation of the use of technology in human resource development shows that the development of human resources will be effective if the technology used is sophisticated technology. One form of advanced technology is technology that has many features in one device, so that when users use it, the device can be used for many things 12.

This shows that the more features in a device (the more effective), it will also have a positive influence on social life and the potential of human resources because users can access many things and information while learning is taking place.

#### **4.2 Perceived Ease of Use on Social Influence and Human Resource Development**

Perceived ease of use It is defined as the ease of using technology that affects the personal life of its users. While social influence is defined as a person's perception of the behavior of others who are important according to him thinking to adopt or reject a new innovation that exists.

In this research, it is shown that there are positive and unidirectional results in the simple regression analysis test. If in ICT learning, participants are given tools that are easy to use, then participants will also find it easy to apply them in social life and can accept these innovations. In addition, the ease of technology used will also facilitate the learning process so that it is easier for users to accept the knowledge gained. This will provide convenience in the development of human resources.

Emma Parry (2009) in her research on the benefits of using technology in human resource development, shows that human resource development will be effective if technology components are applied during the learning process. In the development of large-scale and comprehensive human resources, not all components have the same

potential and understanding to accept the learning process. So that the technology that is easy to use will play a very important role so that the understanding between components can be explained properly. If the understanding of all components can be leveled, then human resource development will be easy to implement. This shows that the ease of technology has a role in shaping the understanding and acceptance of innovation, as well as the development of human resources 13.

Peter Alpamahakpamah and Andrea Matkoandim (2021) in their research on case studies of the use of information technology in human resource development show that human resource development which includes technology components provides effective results in improving the quality of human resources. The organization will progress if the organizational structure is given skills training in accordance with the fields it controls. The provision of technology for mastering these abilities, such as online learning, as well as online evaluation, provides quality human resource results. Technology that is easy to use for every component involved in the organization will make it easier to develop their potential and position in the organization<sup>14</sup>.

These studies show that the easier it is to use a device in ICT learning (the more effective it is), then this will trigger rapid developments in the social life of users and the quality of human resources developed. Users are not hindered from learning even through information technology tools, and can even gain more knowledge because of the ease of using technology.

### **4.3 Behavioral Intention to Social Influence and Human Resource Development**

Behavioral intention defined as actions or reactions of an object or organism (Jogiyanto, 2008). While social influence is defined as a person's perception of the behavior of others who are important according to him thinking to adopt or reject a new innovation that exists.

In this research, there is a positive and direct correlation regarding the relationship between behavioral intention to social influence, and also the relationship between behavioral intention and human resource development. This means that the development of human resources can be achieved optimally if the user's response to the technology that has been used so far is a positive response (behavioral intention), and environmental conditions that support technological development (social influence) so that it affects their daily life.

Yi-Horng Lai (2017) in his research on the relationship between behavioral intention and social influence on the use of electronic medical records via smart phones shows that there is an inline relationship between the two variables. If the social conditions of the electronic medical record users support the use and development of electronic medical records (social influence), then this will affect the continuous use of electronic medical records and users will use them continuously (behavior intention) because it is considered to provide convenience and benefit in carry out their daily duties<sup>15</sup>.

Binti Mohd Said et al (2019) in their research on the acceptance of the use of information technology (behavior intention) to be applied in human resource development shows that this acceptance has a positive influence. If the components in the organization accept the technology to be used, then the components develop more

quickly. However, it is important to note that the accepted technology is one that is easy to use and useful so that users are willing to use it even though this is a new thing<sup>16</sup>.

These things show that behavioral intention is an important point in the development of human resources.

#### **4.4 Social Influence on Human Resource Development**

Social influence is defined as a person's perception of the behavior of others who are important according to him thinking to adopt or reject a new innovation that exists. According to the definition of social influence itself, at least the role of the social environment plays an important role in developing human resources.

In this research, there is a positive and unidirectional correlation regarding the relationship between social influence and human resource development. This means that the development of human resources can be achieved optimally if the environment to be developed itself provides a positive and supportive response. An environment that is open to ICT-based learning will provide great opportunities in the development of human resources.

Ferris, et al (2002) in his research on environmental acceptance of the use of technology (social influence) in the human resource development system in an organization shows that a good social environment (social influence) is needed so that human resource development can be developed properly. An environment of social life that is not good will certainly affect the human component involved in an organization. So here it shows the importance of the role of the social environment related to learning that will be applied so that human resources can be developed properly<sup>17</sup>.

Khairi Mohamed Omar (2021) in his research on the factors that influence the development of human resources shows that social factors are the most important factors that play a role in the development of human resources. If the social environment is easier to accept new knowledge to develop its potential, it will be easier for existing human resources to be developed. This will be different if from the start the environmental conditions refuse the learning that will be given, then the development of human resources will be hampered<sup>18</sup>.

This shows that the role of social acceptance (social influence) provides an important point in the development of human resources.

The descriptions related to the points in human resource development above show that to develop human resources, points as above are needed because they have a linear correlation in a simple regression analysis that works.

#### **4.5 HADIRin (E-Leaning Learning Model) as Human Resource Development Effort**

Technological developments should be applied in terms of human resource development. The ease of use, its usefulness in daily activities, and its relationship with habits, show that technology has a good impact on the development of human resources. It can be said that technology can make the key in the development of human resources so that they can be used properly.

Prof. Rajesh Kumar VNS at the Institute of Management, Bhopal (MP) explained that the development of technology that is worldwide and is increasingly being applied in various fields has led to increased competition in the quality of human resources. An organization will not survive in competition if its human resources are not equipped with technological knowledge<sup>19</sup>.

R. Braderick and JW Boudreau said that technology was proven to increase worker productivity. The research also describes the existence of more innovations in technology development. The following table describes the research that has been conducted on the impact of technology application in human resources<sup>20</sup>.

**Table 11.** Impact of Technology

Negative impact	Positive impact
Requires a large initial cost	Save budget in the long run
Reduce the number of workers	Provide a new space for workers who are experts in the use of technology
Leaky data protection	Save processing time
Employees must highlight their superior abilities	Quality can be standardized
Give users time to adapt	Delivers continuously adjustable results

Technology has been proven to improve the quality of human resources if used properly. Bangor University in the UK has implemented technology products in its educational process instudent. Various modern learning products have been developed such as the teaching process which now uses modern boards that can show sound and video related to the topics discussed. In the evaluation, not only the students developed, but the teachers who used the facilities also experienced an increase in knowledge<sup>21</sup>.

Technology has a positive impact on the team internally, but also provides time for adaptation to improve human resource management. The application of technology in the field of human resources can accelerate performance, do work clearly, save future budgets, and help strengthen communication with external parties. Technology development can also improve the quality of performance because users do not have to be stuck in one place. This makes the development of human resources which is also accompanied by the development of technology, it will increase the effectiveness of the work.

Based on studies that have been carried out by other researchers and research that has now been undertaken, human resource development has a relationship with the basic characteristics of the technology itself starting from whether the technology is easy to use, whether the technology is useful, whether the technology affects habits, and whether If the technology is applied it will affect social life.

E-Learning learning is a solution in developing human resources because this learning model is a learning model that is not bound by time, place, or conditions that do not allow direct training. In the preparation of the e-learning learning model, several elements are needed so that the learning model can achieve the goals achieved. The basic elements are

## 1. Open Learning

In the development of e-learning learning models, a learning concept is needed that does not only depend on the pre-existing curriculum, but focuses on the needs of each individual or group with the aim of developing each other's potential. With development that focuses on each individual or group, the progress of an association/organization will be more rapid because with different potentials it can then provide different progress in various fields to achieve the same goal. Based on the research analysis carried out, this open learning can be applied by combining the benefits of the technology itself (the benefits of technology /beneficience). ICT-based learning can provide learning which can be accessed by each individual according to their respective potentials. Before e-learning is implemented, a questionnaire can be given to determine the characteristics of each so that the module that will be implemented can run according to the objectives.

## 2. Distribution of learning

Distribution of learning has the understanding that learning in human resource development can be carried out regardless of conditions in the form of place, time, or circumstances that do not allow for direct meetings to occur. This learning process without being bound by time and place provides flexibility for medical personnel so that they can continue to develop their potential even though they are in hospitalpractice in the hospital. Based on the research analysis carried out, technology provides a platform to develop human resources without having constraints in time, place, or conditions. Users can use the technology anywhere, and anytime because this is a function of the usefulness of the technology itself (beneficience). However, in obtaining optimal human resource development, it is necessary to have equality in the provision of the technology itself, such as connectivity and adequate equipment.

## 3. Learning community

The e-learning learning module also has an element of a learning community where there is an association/community that supports each other. Elements of this learning community can take advantage of the convenience of technology (*perceived ease of use*), which with the presentation of knowledge in the module also provides a special group that accommodates each other to be able to discuss well, and remind each other. The existence of a community that can fight together will improve the quality of human resources that will be tried to be developed. Based on the research analysis that has been done, the learning community can be used as a separate feature in the e-learning learning model to increase the potential of its human resources.

## 4. Practice group

Group practice is an important element that must be owned in the learning model-*learning*. This group is a group of people who informally bond and share experiences and a shared passion to continuously learn and develop together. Based on the research

analysis that has been done, ICT can provide facilities for this group to develop its potential through a module. Users of the module can use the practice group feature which can connect with fellow users of the e-learning learning model to exchange ideas, and discuss topics.

### 5. Growth group

The growth group is one of the important elements in the ICT-based learning model. This group is an association that aims to build transformative learning and communication through information sharing. Participants can share information through projects, discussions, activities that are in accordance with the goals of the group. The goal is to share knowledge deeply and completely. Having a good relationship with each other, and growing together, will provide a positive feedback which in turn will improve the quality of human resources. Based on the research analysis that has been done, growth groups who learn together will build a social relationship that influences each other. If a good and mutually supportive social environment is developed in this ICT learning model, a positive growth group will also be created.

## 5 Conclusion

The development of effective human resources requires development in several aspects of technological development starting from the characteristics of the technology itself, then how much benefit can be obtained from the use of the technology, and how much influence it has in the daily and social life of the technology users themselves because all these aspects have positive relationship value. Human resource development can be realized through a learning model based on technology, information, and communication by utilizing elements of technology in achieving human resource development. The technology, information, and communication-based learning model is a learning module by utilizing technological developments. This ICT-based learning model has the advantage that it can be done anywhere, anytime without being limited, so that users can take advantage of the advantages of this learning model to increase their potential. The technology, information, and communication (ICT) based learning model can be a solution in developing effective human resources with its advantages. By utilizing the nature of technology that is easy to use (perceived ease of use), the usefulness of the technology itself (perceived usefulness), the usefulness of the technology itself (beneficence), to social influence (social influence) on a learning module, the aim is to increase the potential of resources. Humans can be achieved. Human resource development has a positive and interrelated correlation with basic characteristics, perceived ease of use, perceived usefulness of technology, benefit of technology, and social influence. So that the HADIRin (ICT-based learning model) will be able to achieve the goals of human resource development if these variables are linked in its manufacture.

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# Growth Response and Nitrogen Uptake Efficiency of Three Soybean Varieties on the Use of Sonic Bloom

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**Abstract.** Seventy percent of Indonesia's demand for soybeans is still imported, partly due to low crop productivity and decreased planting area. Sonic bloom, a technology that combines exposure of plants to sound waves of a certain frequency followed by application of liquid fertilizer through the leaves, is an alternative way to increase soybean productivity. This study aims to determine the growth response and N uptake efficiency of three soybean varieties on the use of sonic bloom technology. The research was a factorial experiment with a randomized block design (RBD). The first factor was the interval of using sonic bloom, I5: 5-day interval, I10: 10-day interval, and I15: once every 15 days. The second factor was soybean varieties, VA: Anjasmoro, VD: Dega-1, and VM: Mallika (black soybean). The data obtained were analyzed using Analysis of Variance with the  $F = 0.05$  test followed by the 5% Honest Significant Difference (HSD) test. The results showed that different soybean varieties gave different growth responses to plant length, number of leaves and leaf area at sonic bloom intervals. The Dega-1 variety, which has thicker hairs (trichomes), requires more frequent application of fertilizer through the leaves using sonic bloom technology, namely once every 5 days. For the Anjasmoro variety, application of sonic bloom once every 10 days gave the best results, while for the black soybean variety Mallika the application of sonic bloom technology every 5, 10 or 15 days gave the same response. The highest N uptake efficiency was in the Dega-1 variety at intervals of using sonic bloom once every 5 days was 23.7%, while Anjasmoro and Mallika varieties had maximum N uptake of 23.7% and 21.8% at 10-day intervals.

**Keywords:** Interval, Sonic Bloom, Soybean Variety, Nitrogen Uptake Efficiency.

## 1 Introduction

Soybean is an important agricultural commodity after rice and corn. Soybean is the basic ingredient for processed products of several nutritious foods such as tofu, tempeh, soy milk, which are rich in protein, vitamins, minerals, organic compounds, antioxidants, fiber, and several vitamins and minerals [3]. The many nutrients contained

in it make soybean a strategic food source and is widely consumed by Asian people, and is even considered to be able to replace other main protein sources [5].

Based on data from the Ministry of Agriculture, Indonesia's soybean production in 2021 will only be 200 thousand tonnes. Meanwhile, the demand for soybeans to produce tofu and tempeh is around 1 million tonnes per year. Data from the [4] shows the value of soybean imports is still above 2 million tons per year in the last three years, namely 2.67 tons (2019), 2.48 (2020) and 2.49 (2021). The low production of soybeans in Indonesia is partly due to the limited area of soybean cultivation and low productivity.

One of the efforts to increase soybean productivity is to use the sound frequency exposure approach in plants. Sound can increase plant growth, one of which is by stimulating the opening of stomata which can increase the effectiveness of plant absorption of external nutrients (Cai, 2014). This approach can be realized with "sonic bloom" technology. Sonic bloom is a technology to stimulate the opening of stomata wider using sound waves of a certain frequency followed by applying liquid fertilizer through the leaves. The plants are hit by sound with a frequency between 3.5 – 5.0 kHz, then sprayed with foliar fertilizer. By opening the width of the stomata, the absorption of fertilizer through the leaves is maximized [10]. This technology utilizes natural high-frequency sound waves that can stimulate the stomata to remain open so as to increase the rate and efficiency of absorption of foliar fertilizers that are beneficial to plants [14]. Sound with a certain frequency helps plants breathe better and absorb more nutrients [15]. Dan Carlson (United States) found sounds like birds singing in the morning with a frequency of 3.5 kHz to 5.0 kHz would open the stomata wider [1][2]. Meanwhile, the results of the research by [9] showed that an increase in the frequency of sound waves from 4 to 5 kHz causes an increase in stomata opening width, but if the frequency is increased to 6 to 7 kHz, there is a decrease in stomata opening width. It was also reported that the use of sonic bloom technology not only increases yields in quantity, but also improves product quality. Soybeans which generally contain 15% increase to 27% protein content. The content of vitamin C in oranges increased 121% above normal. In apple plants it was reported from laboratory test results that there was an increase in Cu (copper) content of 400%, 1.70% Zn, 300% in Cr and 126% potassium [13][6]. The results of Pujiwati and Djuhari's research (2011) showed that the response to opening of soybean leaf stomata at the age of 20 days after planting (dap) was better (stomata width ranged from 20.0 – 36.0  $\mu\text{m}$ ) than 30 hst (stomata width ranged from 10.0 – 17.7  $\mu\text{m}$ ). Exposure to high-frequency sound waves is able to optimize the opening of the stomata of soybean plants, this is in accordance with [7] where the stomata of soybean plant leaves open wider when exposed to sound. [8] added that fertilizer or plant nutrition plays an important role in supporting plant growth and development. One of the absorption of nutrients in the form of liquid fertilizer through the leaves is intended so that water-soluble nutrients can be effectively absorbed by plants. These nutrients enter the leaves through the cuticle or stomata before entering the plant cells to be used in metabolism. Penetration through stomata takes place briefly after application, therefore efforts to increase the effectiveness and efficiency of nutrient uptake through leaves need to be carried out.

There were 85 soybean varieties released until 2016, both from crosses, introductions and radiation. All varieties of soybean leaves have hairs with different levels of hair density, this affects the size of the efficiency of absorption of nutrients provided through the leaves. [12] suggested that the thickness of the hairs or trichomes on soybean leaves is related to the level of tolerance to pest attacks, including the efficiency of fertilizer absorption given through the leaves. This study compared soybean varieties with leaf morphology of dense hair, sparse hair and black soybean varieties. These different leaf morphological properties are very relevant when combined with the interval of foliar application in sonic bloom technology.

## **2 Methods**

### **2.1 Tools and Materials**

The equipment used is a set of sonic devices that produce sound with a frequency of 4,000 Hertz, a hand sprayer, and writing instruments. Meanwhile, the materials used were: soybean seeds of the Anjasmoro, Dega-1 and Mallika varieties, Growmore compound fertilizer containing NPK 20:20:20, micro B compounds (0.02%), Cu (0.05%), Fe (0.10%), Mn (0.05%), Mo (0.0005%) Zn (0.05%), fungicide Dithane-M45 80WP, insecticide Baycarb 500EC.

### **2.2 Research Site**

The research was conducted from July to October 2022 at the Technopark greenhouse, Faculty of Agriculture, Tribuana Tunggadewi University, Malang.

### **2.3 Experimental Designs**

Research was a factorial experiment using a randomized block design (RBD). The first factor using of sonic bloom interval,  $I_5$ : 5 days interval,  $I_{10}$ : 10 days interval, and  $I_{15}$ : 15 days interval. The second factor was soybean variety,  $V_A$ : Anjasmoro variety,  $V_D$ : Dega-1 variety, and  $V_M$ : Mallika variety. There were 9 treatment combinations repeated three times, with each treatment consisting of 4 sample plants so that the plant population was 108. The observed plant growth variables included plant length, number of leaves and leaf area as well. Nitrogen nutrient uptake was measured using the Kjeldhal method.

### **2.4 Data Analysis**

The data obtained was then subjected to analysis of variance (Anova) with the F test  $\alpha = 0.05$  followed by a 5% Honest Significant Difference (HSD) test and correlation regression analysis between several observed growth parameters.

### 3 Results And Discussion

The results showed that the vegetative growth of several varieties of soybean plants was affected by the use of sonic bloom intervals. In general, the Anjasmore variety gave the best response to plant length at intervals using sonic bloom technology once every 5 days, whereas the Dega-1 variety, the 5-day and 10-day intervals produced the same good plant length and the Mallika black soybean showed the same plant length response did not differ at various intervals, as presented in Table.1 below.

**Table 1.** Average plant length at sonic bloom intervals with different varieties

Treatment	Average Plant Length (cm)						
	28 dap	35 dap	42 dap	49 dap	56 dap	63 dap	70 dap
I <sub>5</sub> V <sub>A</sub>	51.3	54.9	56.8 bc	58.7 c	61.7 c	65.8 bcd	69.5 bcd
I <sub>5</sub> V <sub>D</sub>	53.4	57.0	59.7 c	60.5 c	62.3 c	66.4 cd	70.5 cd
I <sub>5</sub> V <sub>M</sub>	42.7	49.2	47.0 a	49.4 a	51.8 a	56.4 a	70.0 bcd
I <sub>10</sub> V <sub>A</sub>	50.3	53.1	55.1 b	55.4 b	56.2 b	62.8 b	67.6 ab
I <sub>10</sub> V <sub>D</sub>	53.4	54.5	57.0 bc	58.6 c	62.2 c	67.2 d	69.9 bcd
I <sub>10</sub> V <sub>M</sub>	46.8	49.4	48.5 a	50.9 a	53.1 ab	57.8 a	70.9 d
I <sub>15</sub> V <sub>A</sub>	51.8	52.9	55.8 b	57.2 bc	60.1 c	63.8 bc	67.7 abc
I <sub>15</sub> V <sub>D</sub>	53.4	54.3	55.3 b	57.2 bc	60.6 c	64.2 bcd	67.1 a
I <sub>15</sub> V <sub>M</sub>	45.2	47.9	45.7 a	48.1 a	50.9 a	55.5 a	67.8 abc
<b>HSD 5%</b>	NS	NS	3.4	3.8	3.6	3.3	2.8

Note : - Numbers followed by the same letter in the same column are not significantly different on the HSD 5% test; dap = days after planting

- I<sub>5</sub> = every 5 days interval, I<sub>10</sub> = every 10 days interval, I<sub>15</sub> = every 15 days interval

- V<sub>A</sub> = Anjasmore variety, V<sub>D</sub> = Dega-1 variety, V<sub>M</sub> = Mallika variety

The variable number of leaves showed a significant effect at the age of 28, 63 and 70 dap, where the highest number of leaves was produced in Mallika soybean varieties which were treated with sonic bloom at intervals of 5 days and 15 days although not significantly different from Anjasmore and Dega-1 varieties given the sonic bloom treatment at intervals of 10 days (Figure 1.). This shows that the Mallika black soybean variety is more flexible in the application of sonic bloom technology, it is proven that with intervals of 5 days, 10 days and once every 15 days it produces the same number of leaves. Soybean varieties with yellow seeds are more frequently given foliar fertilizers through sonic bloom technology, in fact the number of leaves is getting smaller.

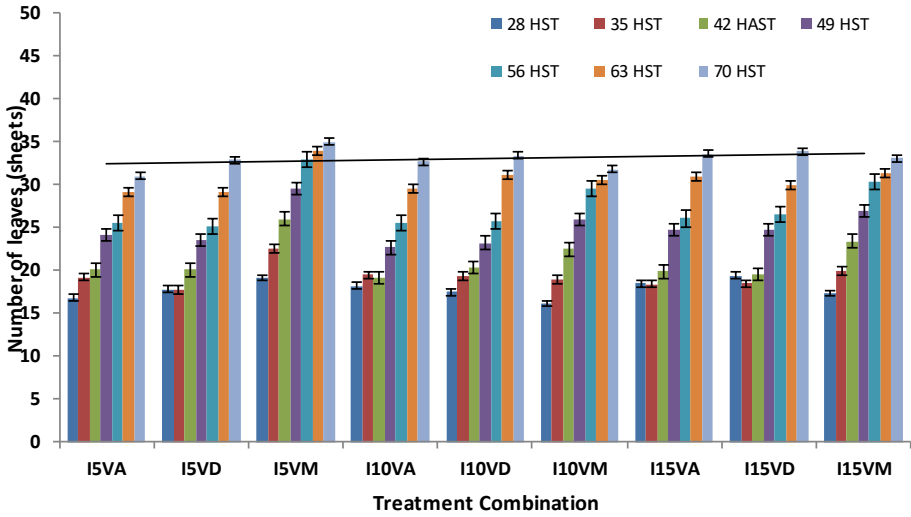
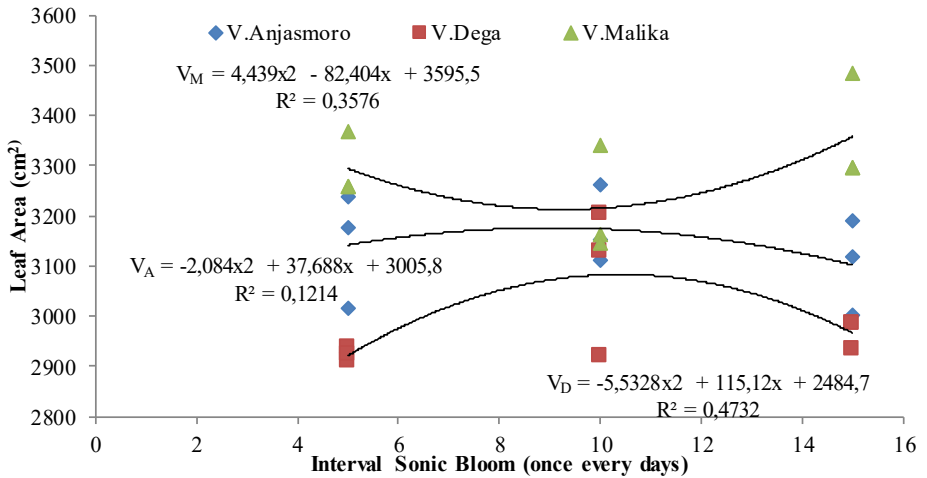


Fig. 1. Diagram of the number of leaves at the interval of use of sonic bloom with different varieties

The average leaf area of soybean plants showed a significant difference at the beginning of growth at the age of 28 HST, where the best leaf area was obtained from the Mallika black soybean variety which was given sound wave stimulation followed by foliar fertilizer application every 15 days.



**Fig. 2.** Graph of leaf area at sonic bloom intervals for different varieties

In general, the growth of the three varieties of soybean plants showed a different response, where the Dega-1 variety which has thicker hairs (trichomes) requires more frequent application of fertilizer through the leaves in a series of using sonic bloom technology, namely at intervals of every 5 days. For the Anjasmoro variety, application of foliar fertilizer once every 10 days gave the best results, while for the black soybean variety Mallika the application of sonic bloom technology every 5, 10 or 15 days gave the same response. [12] suggested that the thickness of the hairs or trichomes on soybean leaves is related to the absorption efficiency of the fertilizer given through the leaves. The level of absorption of nutrients (nutrients) provided through the leaves for varieties with dense hairs requires frequent or short time intervals, while for leaves with less dense hairs such as the Anjasmoro variety, an interval of 10 days is sufficient, even for Mallika black soybeans the application of sonic technology bloom by administering liquid fertilizer through the leaves is done at intervals of 15 days and still gives the same vegetative growth response at intervals of 5 days or 10 days. Sound with a certain frequency helps plants breathe better and absorb more nutrients [15]. This condition is supported by N uptake data on the Dega-1 variety with the highest N uptake efficiency at the 5-day sonic bloom interval of 21.7%, while the Anjasmoro variety with N uptake of 23.7% at 10-day intervals and the Mallika's best N uptake was 21.8% at intervals of using sonic bloom every 10 days (Figure 3). According to [11] that N is the main element needed by plants for their growth. The function of N, among others, as a major component in the formation of proteins, nucleic acids, chlorophyll, and other organic compounds. Protein is a constituent of protoplasm and as a vital ingredient forming various enzymes. Nitrogen also gives leaves a green appearance as a component of chlorophyll, promotes growth, increases plant height and number of leaves, increases leaf and seed size, and increases protein composition in seeds.

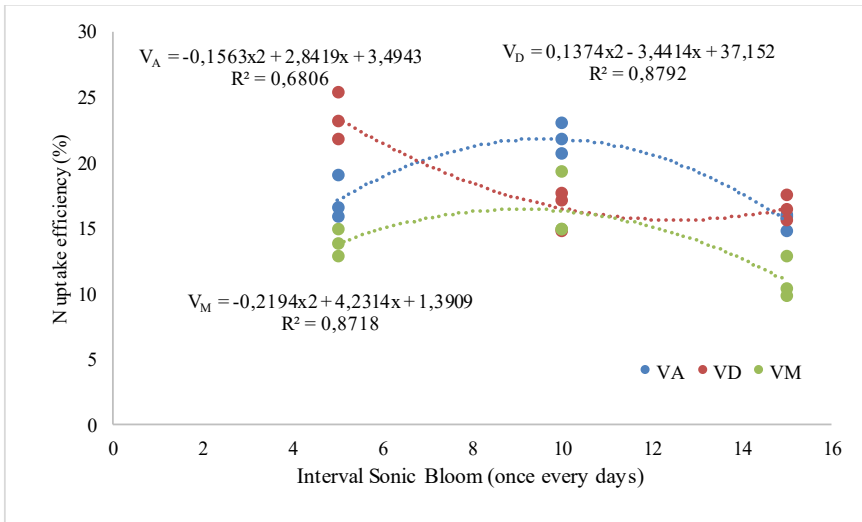


Fig. 3. Efficiency of nitrogen uptake at different varieties of sonic bloom intervals

### 4 Conclusions

Soybean plants that have denser hairs (trichomes) such as the Dega-1 variety require the use of sonic bloom technology with shorter intervals than varieties with sparse hairs such as Anjasmoro and Mallika black soybeans.

The efficiency of nitrogen uptake in soybean varieties with dense hairs can be increased by shortening the interval using sonic bloom technology. The efficiency of N uptake on the Dega-1 variety with a sonic bloom interval of 5 days is the same as the Anjasmoro variety with an interval of 10 days, which is 23.7%.

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# The Influence of Realistic Mathematics Education on Students' Mathematical Creative Thinking Enhancement in Elementary School

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**Abstract.** Creative thinking is one of 4.0. industrial revolution competencies that have to be mastered by an elementary school student to face future challenges. This research aims to find out the influence of Realistic Mathematics Education (RME) that begins with presenting problems that can be imagined by students or are a student's experience to improve creative thinking, especially in mathematics learning. This research is quantitative research with a quasi-experimental method. The design used is the one-group pretest-posttest design. The population of this study was fourth-grade elementary school students taking a sample of 3 schools, where each sample consisted of two classes with a total of 144 students. The statistic test uses the Mann-Whitney test. The Statistic analysis shows that there is a significant difference between control and experiment classes in mathematics creative thinking enhancement and the enhancement of the experiment class (0,38) is higher than the control class (0,27). The results of the study show that realistic mathematical approaches have a significant impact on increasing the mathematics creative thinking of elementary school students. There are some differences in performance between students who have high, medium, and low competency in each indicator of creative thinking.

**Keywords:**RME, Creative Thinking, Quantitative

## 1 Introduction

Thinking is an activity that is literally carried out by humans as creatures who are endowed with reason and intelligence. With the developments in the world, the development of education leads to 21st Century abilities, namely Collaborative, Critical Thinking and problem-solving, Creative Thinking, and communication skills (Communication) that are built through higher order thinking skills or known as Higher Order Thinking Skills (HOTS) [1], which is a new paradigm of Education on the emphasis on thinking skills [2]. Mathematics learning in elementary schools has emphasized the four HOTS abilities, one of which is the ability to think creatively.

The cerebral hemisphere theory states that the function of the human brain is actually divided into two hemispheres, namely: the left and right hemispheres [3]. Mathematics as a science that is seen as timid, systematic, and logical makes the learning that has been carried out so far more mechanistic, a function of the left brain. However, in addition to being timid and systematic, mathematics has flexibility in the process of understanding it as long as it still adheres to the mathematical rules that have been set. Creativity in the right hemisphere tends to think divergently, the thought process spreads by placing an emphasis on conformity [3]. Therefore, it is important for students to practice creative thinking skills so that students are able to think flexibly in solving the mathematical problems they face.

Guilford [3,4,5,6] suggests the characteristics of creativity, among others:

1. Fluency of thinking, namely the ability to generate many ideas that come out of one's mind quickly. In fluency of thought, the emphasis is on quantity, and not quality.
2. Flexibility, namely the ability to produce a number of ideas, answers, or varied questions, can see a problem from different perspectives, look for alternatives or different directions, and be able to use various approaches or ways of thinking. . Creative people are people who are flexible in thinking. They can easily leave the old way of thinking and replace it with a new way of thinking.
3. Elaboration, namely the ability to develop ideas and add or detail the details of an object, idea or situation so that it becomes more interesting.
4. Originality, namely the ability to generate unique ideas or the ability to generate original ideas.

One of the most important concepts in the field of creativity is the relationship between creativity and self-actualization. According to humanistic psychologists such as Maslow and Rogers [7], self-actualization is when a person uses all his talents and talents to become what he is able to actualize or realize his potential. A person who can actualize himself is someone who is mentally healthy, can accept himself, is always growing, fully functioning, democratically minded, and so on. According to Maslow, self-actualization is a fundamental characteristic, a potentiality that exists in all humans at birth, but which is often lost, hampered, or buried in the process of civilizing. Students who have the ability to think creatively are expected to be able to keep up with the fast-changing times and be able to solve the problems they face carefully, correctly, and creatively. In the process of mathematical creative thinking, elementary school students must be taught according to the stage of cognitive development. This is so that students can train to think critically and creatively so that abstraction problems in learning mathematics are no longer an obstacle, but students are able to see the meaning of certain abstract symbols. However, because this change is still in the induction stage in every line of education, today's classrooms are very lacking attention to developing skills related to creativity. Part of the lack of emphasis on creativity may be based on the common misperception that creativity is only of the artistic kind and is something one is born with and cannot be taught [8]. This also makes mathematics in schools narrowly conceptualized by mathematics teachers [9]. In fact, creativity in mathematics has traditionally been seen as one of the most

important characteristics. The low achievement of creative thinking skills of elementary school students in one of district in Riau shows the profile of the creative thinking abilities of fourth-grade students as follows:

**Table 1.** Pretest of Mathematic Creative Thinking Skill

<b>Indicator</b>	<b>Skor (Max 3)</b>	<b>Presentage</b>	<b>SD</b>
<i>Fluency</i>	0,82	27,21	0,74
<i>Elaboration</i>	0,61	20,34	0,76
<i>Flexibility</i>	0,74	11,41	0,61
<i>Originality</i>	0,44	5,76	0,63

NCTM [10] recommends that students solve problems creatively and sensibly. However, NCTM does not clearly define the definition of creativity, both in general and creativity in mathematics in particular. Haylock [11] uses two approaches to identify mathematical creative thinking. First, he observes students' answers to solving problems which are considered as characteristics of creative thinking. Second, it determines the criteria for products that are indicated as the result of creative thinking, also called divergent products. At the basic level of mathematics learning, students are taught to solve problems in one way and one solution or known as a convergent mindset. This mindset is intended to provide students with the initial ability to solve problems and work on procedural questions so that initial concepts can be embedded in students. However, at this time students are not only required to be able to solve problems but also determine other solutions with different ways and perspectives so that if routine procedures do not give results, then the problem can be solved in a different way. Such patterns are called divergent patterns. This mindset is also called higher-order thinking skills or HOTS.

From the results of the researcher's interviews with classroom teachers, it was found that teachers tend to still use expository learning models with strategies that according to teachers are comfortable for students to learn. The lack of intensity of students to explore their own knowledge, especially in solving non-routine problems, makes students tend to only accept lessons without understanding and interpreting what they learn. This is very unfortunate because mathematics is an abstract language whose meaning must be known so that it can be understood and communicated properly. In addition, high-level mathematical thinking skills are something that must be trained, not just learned. The development of creative thinking skills can be implemented through learning oriented to the development of higher-order thinking. In an effort to train students' creative thinking skills, learning conditions are needed that provide freedom in developing creative thinking and creativity so that students can see that solving mathematical problems can be done in various ways as long as they comply with the established mathematical rules.

Learning mathematics, which is abstract and mechanical, makes Freudenthal [12,13,14] state that mathematics is not only mechanical but is a human activity and his view of learning as a new discovery. He adds that "the problem has to arise from a

situation, and the child has to learn to recognize the problem in that situation. So raising a problem is math too.

Mathematization according to the Dictionary of the English Language "mathematize: to treat or regard mathematically" or mathematization is treating or assuming something mathematically. Mathematically can be interpreted as modeling a phenomenon mathematically (in the sense of looking for mathematics that is relevant to a phenomenon) or building a mathematical concept of a phenomenon. De Lange [15] defines mathematization as organizing activities in finding regularities, relationships, and structures. In general, mathematization in RME involves two main processes, namely generalizing and formalizing. Generalization is concerned with finding patterns and relationships, while formalization involves modeling, symbolizing, schematizing, and defining.

Realistic Mathematics Education (RME) is a special learning approach to mathematics. This approach departs from Freudenthal's opinion which says that mathematics must be associated with reality and mathematics is a human activity (16,7,18,19,20). Freudenthal added that providing formal mathematical information before the practical stage was an anti-didactic learning method. Realistic Mathematics Education (RME) is a theory of mathematics education that offers a pedagogic and didactic philosophy of learning and teaching mathematics and designing teaching materials for mathematics education (21).

RME was introduced as a didactic phenomenology method by translating mathematical concepts, structures, and ideas into everyday phenomena so that students reflect on mathematical mental objects, how students learn mathematics, and how mathematics should be taught during the learning process (3,20,22). Realism is one of the philosophies in mathematics learning that can be applied vertically and horizontally. In realistic learning, students are given tasks (problems) from real situations, namely, from within the student's growing world of life, which in the first example

RME has five characteristics, there are (14,24):

1. Using contextual problems (the use of context) In general, in RME, context is useful for concept formation: access and motivation to mathematics, model formation, providing tools for thinking using procedures, notations, images and rules, reality as a source and application domain, and practice specific skills in certain situations. Mathematics learning begins with contextual problems and does not start with a formal system so it allows students to use their previous experience or knowledge. Contextual problems not only serve as a source of mathematization but also as a source for re-applying mathematics. Contextual problems that are raised as the initial topic of learning should be simple problems that are recognized by students.
2. Using models (use models, bridging by vertical instruments) In learning with the RME approach, a model developed by students from the actual situation is used (model of). The model is used as a bridge between one level of understanding to another level of understanding. After class interaction and discussion occurred, this model was further developed and directed to become a formal model.

3. Using student contributions Students are given the widest opportunity to develop various informal strategies that can lead to the construction of various procedures for solving problems. In other words, a major contribution to the learning process is expected to come from students, not from teachers. This means that all thoughts or opinions of students are highly considered and appreciated. Contributions can be in the form of various answers, various ways, or various opinions from students
4. Interactivity The interaction between students and teachers, students and students, and students with learning tools is very important in RME so that students get positive benefits from these interactions. Forms of interaction such as: negotiation, explanation, justification, agreement, questioning, or reflection are used to achieve formal mathematical knowledge forms from informal mathematical knowledge forms found by students themselves.
5. Integrated with other topics (intertwining) The structure and concepts of mathematics are interrelated, therefore the interrelation and integration between topics (subject units) and across disciplines must be explored to support the occurrence of a more meaningful teaching and learning process so that simultaneous understanding emerges. Intertwin can be seen through the given contextual problem.

The word “real” or “real” often creates misconceptions about RME (14,25). The term "realistic" comes from the Dutch term "zich REALISERen" which means "imaginable". Thus, the word "realistic" can mean: (1) real contexts that exist in everyday life; (2) the formal mathematical context in the world of mathematics; or (3) an imaginary context that does not exist in reality but can be imagined. These three meanings are seen as the meaning of the term "realistic" as long as these contexts can be imagined in the minds of students who are studying mathematics (14, 20, 25). emphasizes RME offers students any imaginable problem.

Sitorus [3] also explains that the concept of reality is the context of children's knowledge that is known in their lives, and then becomes a component of thought schemes. The schema component connects various mathematical contexts and concepts. When students work on real problems they can develop mathematical ideas/concepts and their understanding, and they develop strategies that are close to context. Then these aspects of the real situation can become more general, meaning that the model or strategy can be used to solve other problems. Even the model gives students access to formal mathematical knowledge. To bridge the gap between the informal and formal levels, the model/strategy must be upgraded from “model of” to “model for” (7). Related to this situation, creative thinking can involve various dimensions of knowledge in each stage of the creative thinking process. Thus, reality and relatedness as RME principles can be used to encourage one's a creative thinking process.

## 2 Research Method

This research is quantitative research with a quasi-experimental method (27). The design used is the one-group pretest-posttest design The population of this study was

fourth-grade elementary school students taking a sample of 3 schools, where each sample consisted of two classes with a total of 144 students

### 3 Results And Discussion

The results of the average difference in the achievement of mathematical creative thinking skills are as follows:

**Table 2.** Result of Difference Posttest Statistic Analyst of mathematical creative thinking skills

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Nilai Post Test is the same across categories of Grup.	Independent-Samples Mann-Whitney U Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

From the table above, it can be concluded that the average achievement of students' mathematical creative thinking skills who learned with RME is higher than students who learned using conventional methods.

**Table 3.** Result of Average of N Gain in Mathematics Creative Thinking

Group	Experiment	Control
Average of N Gain	0,38	0,27
SD	0,13	0,20

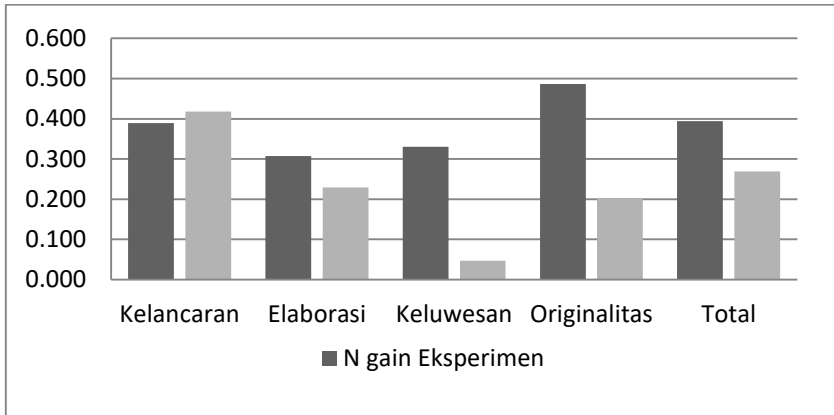
Meanwhile, there is also a significant difference between the students who learned using the RME method and the students who learned using conventional learning.

**Table 4.** Result of Difference Posttest Statistic Analyst of enhancement creative thinking skills

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Skor N Gain is the same across categories of Grup.	Independent-Samples Mann-Whitney U Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

From the table above, it can be concluded that the average increase in students' mathematical creative thinking skills who are taught with RME is higher than students who learn with conventional methods. As for the improvement for each indicator of students' mathematical creative thinking abilities, the comparison of the achievements of each group is presented in the following bar chart:



**Fig. 1.** Picture 1. Bar Diagram Mathematics Creative Thinking Skill Enhancement

From the results above, it can be seen that for the fluency indicator, the increase in the control class is higher than the experimental class. Meanwhile, for the indicators of elaboration, flexibility, and originality, the increase in the experimental class is higher than the control class, so it can be seen that for all indicators, the increase in the mathematical creative thinking ability of the experimental class is higher than that of the control class. The most distinct improvement result is flexibility (flexibility).

Based on the answers given by the students, the researcher found some information. The achievement of indicators of mathematical creative thinking ability can be seen from the answers given by students. The first indicator in mathematical creative thinking ability is fluency. The achievement of this indicator is marked by students being able to take as much information as possible from the problems given. From the results of the work, students are able to show comparisons (less, more, the least or the most) in the information they write. Some students have also been able to add other relevant information that is implied from the context of the given problem. Another thing that was found in this study was that because students were given the freedom to write information, some students wrote information that was not relevant to the problems presented.

The elaboration indicator requires students to be able to develop ideas and add or detail the details of an object, idea or situation so that it becomes more interesting. This indicator also requires students to be able to describe problems and their solutions appropriately and sensibly. For the experimental class, some students start solving problems by writing down the information contained in the questions first. In solving problems, students are less able to explain the usefulness of the information in the problems presented. This is in line with the results of the answers on the fluency indicator where some students are less able to understand and write down the information in the problem. The lack of students' ability to elaborate on problems makes it difficult for them to solve problems.

In the indicator of flexibility, students are asked to show their flexibility of thinking in solving open-ended questions. This indicator requires students to provide solutions that are out of the ordinary by utilizing the knowledge they already have,



then looking at the solutions and compiling solutions from various points of view. Some students who are able to use the information that has been previously owned, students tend to be able to answer correctly. Students with high flexibility ability are able to give more than 1 correct answer. Most of the results given by students show that students are still less motivated or find it difficult to give more than one correct answer. This is because they are used to getting a single solution so they are not ready if they are given open questions. Students still assume that for the correct answer there is only one solution and the other is wrong. This is a paradigm that must be changed during the learning process.

The achievement of the fourth indicator of mathematical creative thinking ability, namely originality, is marked by generating unique ideas or the ability to generate original ideas. The results obtained in the experimental class, even though there are answers that are not perfect, some of the requested parts have been able to make their new work in accordance with the conditions or limitations given by the context of the problem. This shows that students with high authenticity abilities are able to solve problems well and provide new ideas that are relevant to the problems at hand.

## 4 Conclusion

Based on the data analysis and discussion of the research results that have been described previously, it is concluded that the achievement of mathematical creative thinking skills in students who apply learning with a realistic mathematics education (RME) approach is higher than students who apply conventional learning. From the comparison results for each indicator, it can be seen that the average value of the experimental class is higher than the control class. The increase in the mathematical creative thinking ability of students who use realistic mathematics education (RME) learning is higher than students who apply conventional learning. Based on the results of the N-gain data analysis per indicator, it can be seen that the improvement in the experimental class is still lower than the control class on the fluency indicator, but on the indicators of elaboration, flexibility and originality, the increase in students' mathematical creative thinking skills who use RME learning is higher than students who use RME learning. conventional learning.

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# Geogebra to Overcome Learning Loss in Mathematics Education

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**Abstract.** Learning loss is a negative impact that occurs on students when they lose their abilities and knowledge due to prolonged gaps or discontinuities in education. The change in the learning process from offline to online requires teachers to be able to facilitate students so that they do not lose knowledge and skills. This study aims to improve the quality and quality of elementary school teachers in dealing with students who experience learning loss and training in developing geogebra-assisted mathematics learning media. In this service activity, the first activity carried out was that the teachers were invited to understand the material about learning loss and then the teachers were given training in making media using Geogebra. Researchers conducting pretest and posttest activities to determine the teacher's diagnostic assessment ability.

**Keywords:** Learning Loss, Geogebra, Elementary Teacher

## 1 Introduction

The Covid-19 pandemic has had an impact on every aspect of human life including education. It is officially recognized by UNESCO. Nearly 300 million students around the world feel that their learning process is disrupted due to the transition from face-to-face to online class[1]. The transition to the implementation of this learning resulted in a decrease in student learning motivation. In addition, this condition also resulted in the development of students' abilities not being carried out as they should. Learning objectives are difficult to achieve so that students' understanding is far from expectations. The process that should be experienced by students is now difficult to implement so that students experience the phenomenon of learning loss. Learning loss can be interpreted as a condition where all learning material that has been studied is lost due to various factors[2].

There are several ways that can be done to solve the problem of learning loss in learning mathematics. According to Auday and Park (2017) strategies to overcome learning loss are 1) additional learning time and 2) additional instructional programme. The first strategy can be seen from the existence of additional lessons outside school hours. With regard to the second strategy, this method can be carried out using the assistance of various ICT facilities. School math teachers need to use

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ICT like software for effective teaching and learning[4–6]. Actually, there are many software that can be used such as Geometer's Sketchpad, Cabri, Matlab, and Autograph. However, Geogebra is one of the most recommended software for use in school instructional processes[4–8]. The advantages of GeoGebra compared to other software are the types of commercial software that are available for teaching and learning Mathematics, can be used freely by educators in teaching classes, and allows users to download any software that is available and suitable for users. In addition, geogebra makes the process of learning mathematics fun and helps students concretize abstract concepts that are often found in mathematics. (Celeen, 2020). Geogebra is an effective tool to increase achievement, increase curiosity, creativity, to make clear understanding of concepts, as well as to promote overall student learning in mathematics[4]. This is because, Geogebra helps visualize concepts and offers opportunities for conceptual learning[7]. Based on these benefits, it can be concluded that GeoGebra can be used to solve learning loss problems. However, in reality GeoGebra is rarely used in elementary schools. This is because teachers do not really understand how to use GeoGebra in learning and need training[9, 10]. Therefore, the UNP PGSD Lecturer Team carried out PKM activities for elementary teachers in making digital media, especially making Geogebra-assisted media so that they could overcome the Learning Loss problem.

## 2 Methods

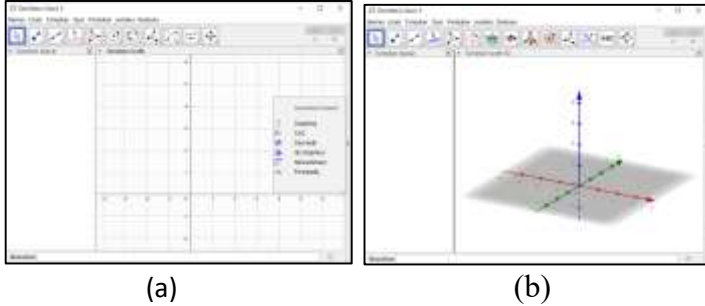
This training activity for elementary school teachers is part of Community Service (P2M) activities. This training activity includes two activities, namely a seminar related to learning loss and training on making Geogebra-assisted learning media. This activity uses mini-research by conducting pre-tests and post-tests on the mathematics learning outcomes of elementary students. The test carried out was the t test to see whether there was an increase in learning outcomes or not using Geogebra assisted learning media made by the teacher after the training.

## 3 Result

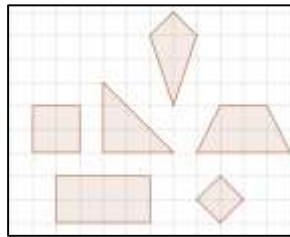
The training activity begins by introducing the Geogebra Classic 5 application to the training participants. Most teachers admit that this is their first time using Geogebra even though they have never heard of this software before. The teacher seemed enthusiastic about paying attention to the explanation regarding the menus and features provided in Geogebra. In the initial part, it is explained regarding the display of two-dimensional and three-dimensional graphics including features for creating points, lines, planes, circles, ellipses, angles, sliders, text creation, and graphic movement. The initial display can be seen in Figure 1.

After understanding the features of Geogebra, the next activity is to train teachers in the use of geogebra for simple geometry in two-dimensional planes. This simple geometry covers how to make squares, triangles, quadrilaterals, trapezoids, kites, and rhombuses. The demonstration is accompanied by a joint discussion regarding how to

invite students to explore each shape so that they can master concepts related to flat shapes. The purpose of this activity is for students to be able to distinguish each geometric shape according to its definition. While paying attention to the demonstration given, the teacher tried using geogebra himself. Some teachers who are still not used to using GeoGebra experience a few problems in making the required geometric shapes. However, after being given guidance,

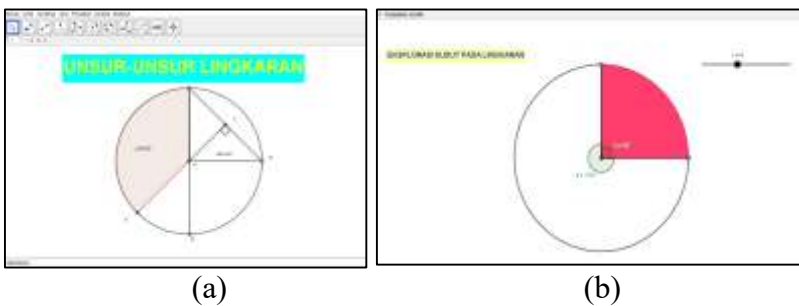


**Fig. 1.** (a) GeoGebra Classic 5 initial page on a two-dimensional graphic display; (b) GeoGebra Classic 5 home page on a three-dimensional graphic display.



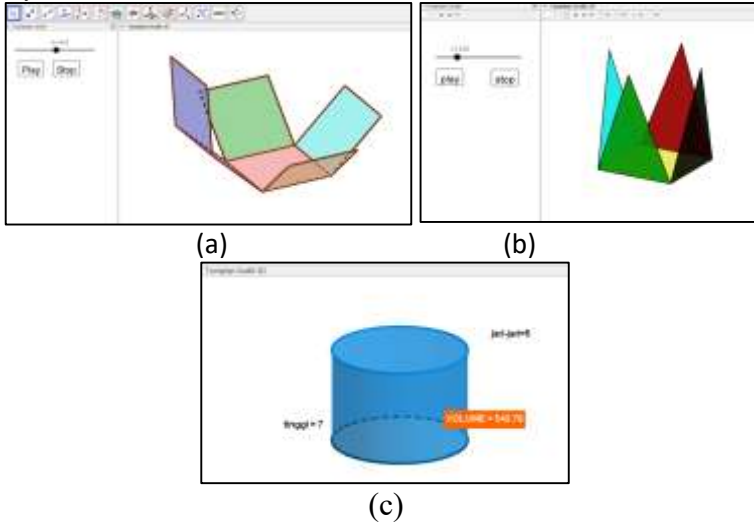
**Fig. 2.** Various flat shapes

The next activity is teaching the teacher how to make media for circle material. The goal is for students to understand the concept of circle elements and angles on circles. The features introduced in this activity are sliders, circular sectors, perpendicular bisectors, angles, and text.



**Fig. 3.** (a) media display for circle elements; (b) the media view for the corners on the circle

After understanding how to draw geometric objects on two-dimensional graphics, the next activity is to create media that will be used in three-dimensional geometrical materials including cubes, blocks, pyramids, tubes. Teachers are taught how to make animations and make proof media with geogebra related to cylinder volume. The purpose of learning with this media is so that students can see how the process of forming three-dimensional nets is formed. Features introduced are cube, net, prism, pyramid, cylinder, and net.



**Fig. 4.** (a) Cube net animation (b) pyramid net animation; (c) cylinder volume animation

After the training was carried out using Geogebra, teachers were asked to make simple media to be used in classroom learning. Then, testing is carried out to determine whether there is an increase in the average student learning outcomes or not. Based on the results of the t test on the pretest and posttest given to students,  $t = -7.56$ ,  $df = 27$ ,  $p\text{-value} = 1.97 \times 10^{-8}$ . In other words, the  $p\text{-value} < 0.05$  so that  $H_0$  is rejected. As a result, with a confidence level of 95% it can be concluded that there was an increase in the average pre-test and post-test scores of students. This shows that the use of Geogebra-assisted media used by teachers helps in improving student learning outcomes.

During the training, the participating teachers looked happy and enthusiastic in discussing various possibilities that could be used to enable students to explore the geometric objects being taught so as to strengthen students' understanding of concepts. Teachers admitted that this training provided great benefits for them in improving the quality of learning, especially geometry so that they could overcome the problem of learning loss. The teachers also hope that this activity can continue to be carried out on an ongoing basis and not only on geometric problems but other problems.

## 4 Discussion

From the results of interviews with elementary school teachers in Padang, it was found that the learning loss experienced by elementary school students mostly occurred in the geometry material. In fact, geometry is already a material that is considered difficult by students. The advent of online learning multiplies this difficulty. Actually, students are able to visually recognize geometric objects but difficulties occur when asked to analyze, understand relationships between geometric materials, and solve geometric problems.[11]. In addition, the teachers participating in the training stated that the learning loss experienced by students in geometry occurred because the teacher was no longer able to provide concrete learning experiences to explain abstract concepts in geometry. As a result, teachers need media that can visualize and clarify abstract concepts in geometry. GeoGebra is a digital media that can help teachers present geometry more concretely(August, 2018).

According to teachers' statements, the learning loss experienced by students in geometry material includes understanding related to the properties of flat shapes, circular elements, and difficulties in remembering various formulas for the area and volume of three-dimensional shapes. The problem with the nature of flat shapes is related to the difficulty for students to recognize shapes when the flat shapes are changed in position. The shape is no longer spawned as usual but changed to a slanted position. This is closely related to the point of view that students have. With the help of Geogebra, students can see first-hand visualizations of how each shape looks when it is tilted. Furthermore, for problems related to circle elements, most students have difficulty distinguishing one element from another. Fortunately, GeoGebra can be designed in a more attractive way and display motion animation and color combinations that can help students remember and distinguish one element from another. Then, for problems related to the difficulty of remembering various area and volume formulas, it is actually closely related to how to understand where the formula is formed. As for the actual surface area formula students can find through the nets of shapes. The display of the shape nets provided by Geogebra clearly helps strengthen students' conceptual understanding of what are the plane shapes that make up these shapes. Motion animation and the availability of features to rotate shapes so that they can be seen from various sides make students see the shape of the room as a whole. Therefore, To overcome the problem of learning loss in geometry material for elementary school students, the PGSD UNP Lecturer Team conducted training in the form of seminars related to learning loss and training for teachers to create Geogebra-assisted learning media. This training is also a form of support in an effort to improve teachers' abilities in digital aspects which indirectly support their pedagogical abilities.



## 5 Conclusion

Covid-19 resulted in a shift in learning from offline to online which had an impact on the imperfection of the learning process being carried out. This causes a decrease in students' motivation and understanding of the concepts being taught. The limited ability of teachers to compile media that will help students understand concepts in online learning causes learning loss in students. Learning loss occurs in almost all subjects including mathematics. For mathematics, most learning loss occurs in geometry material. Learning loss that occurs will cause a break in students' cognitive linkages between one material and another material so that incomprehension becomes more and more accumulated. One of the efforts to solve the problem of learning loss in geometric concepts is to improve the teacher's ability to design learning media that can visualize abstract concepts to become concrete through various kinds of training such as training held by PGSD FIP UNP Lecturers. This study shows that there is an increase in the ability of teachers to master digital media, especially in making media assisted by the Geogebra application as an effort to overcome the learning loss experienced by students.

## Acknowledgements

Thank you to the Padang State University campus for supporting part of the funding for this community service research.

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# The Effect of Land Use on Vegetation Diversity and Naturalness Level at Amprong's Riparian Zone in Tumpang District

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**Abstract.** Land use often causes environmental degradation to decrease. The land conversion carried out is thought to have an impact on the diversity of vegetation in the riparian zone. Thus, this study was conducted to determine the impact of land use on vegetation diversity and the natural level of the riparian zone. The sampling location was determined by purposive sampling based on the land use along the Amprong river, Tumpang sub-district. Furthermore, human activities are determined in the riparian zone of the Amprong river according to land use at five observation points. Vegetation diversity is determined by measuring relative density, relative frequency, and relative dominance. In addition, the Naturalness level is measured from the level of land use based on the three-level classification system of the Corine Land Cover (CLC) Nomenclature. The value of the hemeroby index is determined based on the results of the classification based on the nomenclature. The results show that the majority of agricultural community activities occur along the riparian zone of the Amprong river. The use of the riparian zone as a settlement is of rare intensity. In the riparian zone, there are anthropogenic activities that occur which have an impact on plant diversity. Plant diversity in the riparian zone is dominated by *O. hirtelus*, *G. quadriradiata* and *Syngonium* sp. at each station. The most common agricultural areas are rice fields, and agriculture with annual crops and natural vegetation. Both are included in the category of arable land and heterogeneous agricultural area. The hemeroby level of all stations is at the Euhemerobic level with moderate human impact, and -Euhemerobic with strong human impact.

**Keywords:** Diversity, Hemeroby, Land use, Naturalness.

## 1 Introduction

Ecosystems provide a variety of material and non-material services that contribute to human well-being. Ecosystems supply necessary resources for the organisms. Ecosystems provide a range of direct materials such as food and freshwater production. Then, non-material services such as climate regulating, carbon sequestration, water purification and aesthetic benefits (MEA, 2005). The provision of ecosystem services

is directly related to the type of land use and land cover and management practices in a particular area.

Globally, ecosystem services is declining due to overexploitation, invasive species, pollution, and climate change, which often act synergistically to alter ecosystems (MEA, 2005). Changes in land use and land cover can alter the provision of ecosystem services and affect human and natural well-being. Land use change is currently causing many changes in natural ecosystems (Vitousek et al., 1997; Wrbka et al., 2004; Zhao et al., 2006; Rockström et al., 2009; Costa et al., 2017).

Amprong riparian zone has been reduced in area due to the development of human activities and is under great anthropogenic pressure. Ecosystems contribute to economic development by providing various services (Vargas et al., 2019). Changes in the Amprong riverbanks due to anthropogenic activities such as land-use change, urbanization, agriculture and overexploitation have been reported. Land-use dynamics are the basis for significant impacts on nature and ecosystem services. The consequences of recklessness and exploitation of natural resources are becoming highly hostile and threatening to future generations (Xiao et al., 2019; Western, 2001).

The Amprong riparian has been largely converted to other land uses, mainly for agribusiness activities. Agribusiness is the main driving force behind the transformation of the Amprong Waterfront. The agricultural commodity (e.g. rice field, vegetables, sugar cane field, etc) generates impacts for the natural systems, due to hydro-chemical changes, pesticide input, and the erosion occasioned by marginal vegetation degradation, a situation that directly reduces the provision of water ecosystem services (Mello et al., 2020). Another implication of land-use change is the loss of the landscape's naturalness and, consequently, the biodiversity loss (Fonseca & Venticinque, 2018; Hidasi-Neto et al., 2019). Areas with intensive agricultural use, for example, tend to have a lower degree of landscape naturalness and ecological stability (Rüdisser et al., 2012; Silva et al., 2017).

The situation is even alarming. For example, observations of herpetofauna in West Java show that the presence of species depends on the existing vegetation in the ecosystem. A number of vegetation are economically dominant in several places. Much consists of settlements, shrubs, ricefields, agroforestry, production forests, ricefield, and swidden cultivation (Megantara et al., 2022). Intensive use of chemical pesticides and fertilizers in agriculture makes amphibians exposed and can cause death within a period of one hour to one week (Brühl et al., 2013). The negative effects of pesticides on amphibians are assumed due to their highly permeable skin properties, allowing gas, water, and electrolytes from their bodies with the surrounding environment (Lillywhite 2009; Brühl et al. 2013). Many human activities can potentially disrupt ecosystem services.

Therefore, it is imperative to develop approaches to verify land-use change and assess ecosystem services. Such measures will inform decision-making and enable management of natural ecosystems, especially in the Amprong riparian zone. Furthermore, analyzes that consider watersheds help examine the impact of direct (indirect) drivers on ecosystem service delivery and assessment of natural system function (Periotto & Tundisi, 2018).

We hypothesize that the land use change at Amprong riparian zone is capable of promoting the reduction of ecosystem services provision. Therefore, we evaluated the land use of a watershed characterized by the anthropogenic activities and mapping of land use. Vegetation analysis is used to evaluate the level of diversity of land use change impacts. Structural landscape indicators are employees to verify naturalness and a matrix to verify the main structures that provide ecosystem services.

## 2 Methods

Study Area. The research location was carried out in the Amprong River, Tumpang District, Malang Regency. The Amprong River observed was focused on Tumpang District due to community activities in the more diverse riparian zone. Therefore, the Amprong River which passes through the villages of Pulungdowo, Pandanajeng, and Banjarejo is the focus of observation. Sampling site consist of five sites with three repetitions.

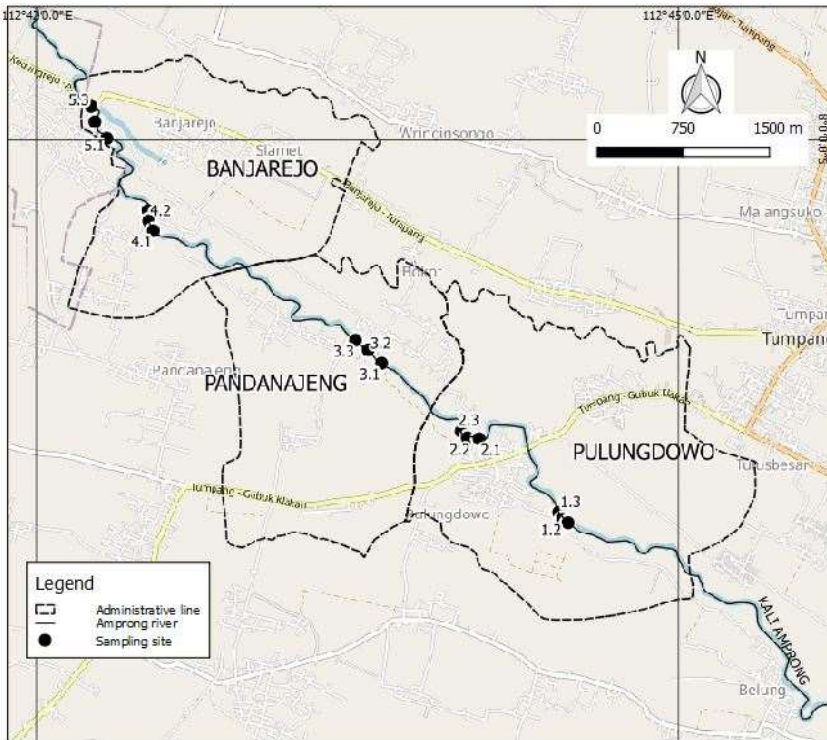


Fig. 1. Sampling site of study area

Our study is located in the Amprong River (8°01'18.7"S 112°44'29.0"E to 7°59'24.1"S 112°42'15.3"E) with 9 sample points. The Amprong River is a lowland water flow with catchments dominated by agricultural activities. The observed amprong riparian zone

is 50 meters from the riverbank based on the riparian management zone for protection of habitat features, functions, and fish conservation processes (Miller et al., 2000).

Coordinate retrieval was carried out at 9 sample locations. The sample locations were marked using a Garmin Oregon 650 gps. The data was transferred from the GPS to the computer. Data was processed using Quantum Geographic Information System Desktop version 2.18.28. To obtain a base map, it is done by opening the Indonesia Geospatial Portal website, then the Malang Regency area is selected and downloaded.

**Diversity Measurement.** Data collection was carried out by making plots, each at station 1 to station 3 (Table 1) in August 2021. Plant communities were surveyed in August when aboveground biomass was at its peak. Nine quadrats (200 cm x 200 cm) were selected to determine species richness, frequency and coverage. Sedges, grasses, and legumes, were found in amprong riparian zones are classified. The coverage was estimated by the visual method (Nau et al., 2019). The collected information was used to measure the basal area, Relative Frequency (RF), Relative Density (RD), and Relative Abundance (RA), which were then used to calculate the IVI of each species. After calculating the IVI, it is followed by measuring the level of diversity for each observation location. The level of diversity measured by Berger Parker Index using Paleontological Statistics (PAST) software version 4.04 (Hammer, et al., 2001).

**Hemeroby Level.** This study was guided by the analysis of naturalness, which was based on hemeroby level. Hemeroby is an index that classifies the landscape according to the naturalness degree, therefore, it is classified from the natural to the cultural. Sukopp (1972) defines hemeroby as an integral measurement of human interventions over the ecosystem, that is, the total result of the impacts on a particular area based on land use.

**Table 1.** Hemeroby Level

<b>Degree of hemeroby</b>	<b>Typical habitats and vegetation types</b>
<b>1</b> Ahemerobic	Almost no human impacts
<b>2</b> Oligohemerobic	Weak human impacts
<b>3</b> Mesohemerobic	Moderate human impacts
<b>4</b> $\beta$ -euhemerobic	Moderate-strong human impacts
<b>5</b> $\alpha$ -euhemerobic	Strong human impacts
<b>6</b> polyhemerobic	Very strong human impacts
<b>7</b> metahemerobic	Excessively strong human impact; Biocoenosis destroyed

In determining the value of the disturbance index or Hemeroby index, direct observations are made in each area. Observations carried out in the field are observing human activities in each area. After making observations, records of disturbances caused by human activities are recorded. The level of disturbance is characterized by human activity in the form of soil mechanical disturbance (including soil compression, plowing, drainage, and waste deposition). In addition, activities in the form of direct mechanical disturbance to vegetation (logging of plants) as well as chemical disturbances (fertilization and use of pesticides) are parameters in determining the Hemeroby disturbance index value (Steinhardt, 1999).

### 3 Result and Discussions

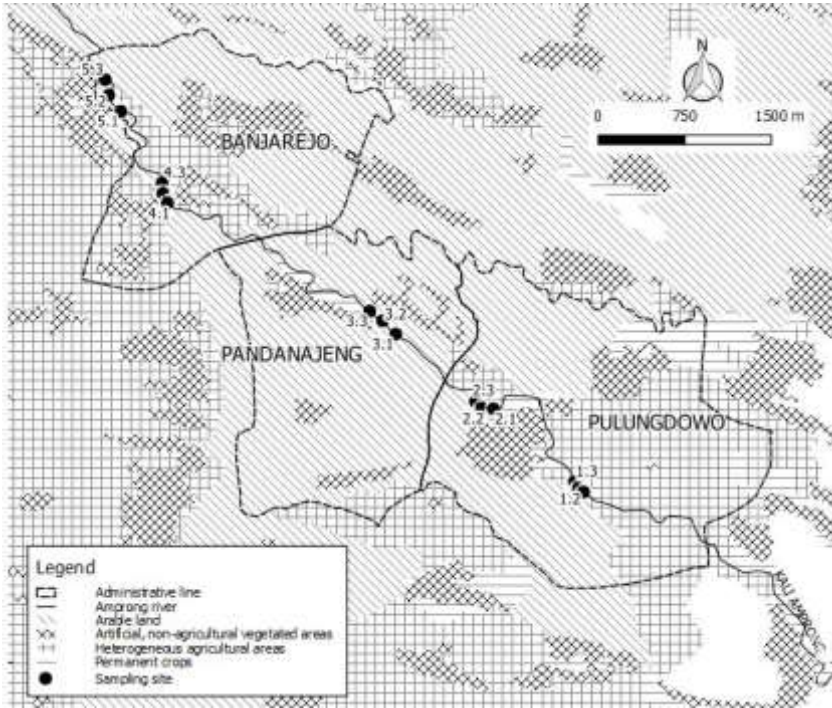


Fig. 2. Map of Land use of Amprong riparian zone

The Amprong River passes through the villages of Pulungdowo, Pandanajeng and Banjarejo. Based on Figure 2, there are several types of land use that can be found, namely arable land, heterogeneous agricultural areas, and permanent crops. Three types of land use around the Amprong river are the result of human modification for economic needs. Arable land in the Amprong riparian zone is planted with rice. Meanwhile, the heterogeneous agricultural area is planted with Multipurposes Tree Species such as jackfruit (*Artocarpus heterophyllus*), banana (*Musa paradisiaca* Linn.), avocado (*Persea americana* Mill.), mango (*Mangifera indica* L.), durian (*Durio zibetinus* Murr.), coffee (*Coffee canephora* Pierre.). The majority of people choose a number of these plants because they are useful from an economic standpoint. Multipurposes Tree Species are very easy to find in the fields and are able to provide for the needs of the community. Understanding of economic concepts also influences community entrepreneurship (Firdaus, 2017). However, MPTS planting also has an impact on biodiversity. According to Wulandari et al. 2018, MPTS planting has a low diversity value. To support conservation activities, it is necessary to increase the number of tree species, product volume, and the educational role of MPTS. This will have a positive impact on the environment and society.

**Table 2.** Land use of Amprong riparian zone based on CORINE Land Cover (CLC) Nomenclature

Site	Land Cover Class	Degree of Hemeroby
1.1	Land principally occupied by agriculture, with significant areas of natural vegetation	$\alpha$ -euhemerobe - $\beta$ -euhemerobe
1.2	Fruit trees and berry plantations, Complex cultivation patterns	$\alpha$ -euhemerobe - $\beta$ -euhemerobe
1.3	Complex cultivation patterns, Road and rail networks and associated land	$\alpha$ -euhemerobe – metahemerobe
2.1	Land principally occupied by agriculture, with significant areas of natural vegetation	$\beta$ -euhemerobe
2.2	Land principally occupied by agriculture, with significant areas of natural vegetation	$\beta$ -euhemerobe
2.3	Land principally occupied by agriculture, with significant areas of natural vegetation	$\beta$ -euhemerobe
3.1	Land principally occupied by agriculture, with significant areas of natural vegetation, Dump sites	$\beta$ -euhemerobe - polyhemerobe
3.2	Complex cultivation patterns, Road and rail networks and associatedland	$\alpha$ -euhemerobe - metehemerobe
3.3	Complex cultivation patterns, Road and rail networks and associatedland, dump sites	$\alpha$ -euhemerobe - polyhemerobe
4.1	Land principally occupied by agriculture, with significant areas of natural vegetation	$\beta$ -euhemerobe
4.2	Complex cultivation patterns, Road and rail networks and associated land	$\alpha$ -euhemerobe - metahemerobe
4.3	Complex cultivation patterns	$\alpha$ -euhemerobe
5.1	Green urban areas	$\beta$ -euhemerobe
5.2	Green urban areas, Road and rail networks and associated land	$\beta$ -euhemerobe - metahemerobe
5.3	Green urban areas	$\beta$ -euhemerobe

Based on table 2, the majority of land cover classes at each observation point are Land principally occupied by agriculture, with significant areas of natural vegetation (site 1.1; 2.1; 2.2; 2.3; 3.1; 4.1). This condition is often found because the community's agricultural areas are close to areas that are still natural. Some wild plants are still found and there has been no land conversion. Land conversion was not carried out because the area is a riparian buffer. The community understands that there is a riparian buffer that needs to be maintained because it can protect the soil from erosion. This is good in maintaining soil consistency in agricultural areas. The presence of a riparian buffer is very important in mitigating river sediments that flow through agricultural areas (Sirabahenda et al., 2020). In addition, the riparian buffer becomes a habitat for wild species thereby supporting the diversity of flora and fauna. Riparian buffers are important sites in providing ecosystem services both for themselves and for the surrounding area (Cole et al., 2020). Even so, there is still a dump site at site 3.1. The dump site was indeed built by the community. The existence of a dump site in this area is enough to disrupt the ecosystem. Unorganized domestic waste causes waste to enter agricultural areas, rivers and settlements. But this is not considered a problem for the community. The lack of knowledge about the impact of waste entering the area of



human activity tends to cause people to ignore the environment. Incoming waste will endanger human health and the environment (Hidayat et al., 2019). Educational efforts on waste management need to be carried out in order to avoid disturbance to the Amprong Riparian Zone area.

Another land cover that is mostly found in the Amprong riparian zone is Complex cultivation patterns. Agriculture in the villages of Pulungdowo, Pandanajeng, and Banjarejo is indeed dominated by paddy fields with rice plants, but at several sites, several complex cultivation patterns were found. Many lands are found planted with various vegetables such as chilies (*Capsicum annum* and *Capsicum frutescens*), tomatoes (*Solanum lycopersicum* syn.), shallots (*Allium cepa* var.), garlic (*Allium sativum* Linn.), kenikir (*Cosmos caudatus* Kunth.) , kale (*Ipomoea aquatica* Forsk.), etc. These plants are cultivated plants that are needed and have a sale value.

Site 5 is a unique place with many settlements found close to a riparian buffer filled with bamboo. Site 5.1 has a fairly wide riparian buffer of almost  $\pm 20$  meters filled with bamboo plants. While site 5.2 is adjacent to a road with little buffered riparian vegetation. But at site 5.3 there is a construction area. In the construction area there is almost no vegetation to be found because soil excavation has been carried out. The excavation process often ignores the presence of species in the environment. This construction process causes biodiversity loss. Destruction of ecosystems leads to the loss of publicly known or unknown species. This is due to the lack of understanding regarding the potential use of ecosystems (Handayani, 2018).

Hemeroby levels at several sites are similar. Based on table 2, it is known that the majority for sites 2 and 5 are in the  $\beta$ -euhermobero category. It can be interpreted that sites 2 and 5 are relatively far from natural. Because sites 2 and 5 are included in that level is the use of fertilizers and pesticides. The excavation activities for urban settlement development are included in the metahemerobe category. While site 1 has similarities with site 4 which is in the category of  $\alpha$ -euhermobero,  $\beta$ -euhermobero, and metahemerobe.  $\alpha$ -euhermobero conditions were found at sites 1.2, 1.3, 4.2, and 4.3 which indicated deep plowing and intensive application of pesticides and fertilizer. In general, the conditions for  $\alpha$ -euhermobero and  $\beta$ -euhermobero tend to be similar, but there is a polyhermobero condition which is indicated by the presence of a dump site. The existence of a dump site causes the closure of the biotope which has an impact on biocenosis destruction (Steinhardt et al., 1999; Jasinaičiūtė & Veteikis, 2022).

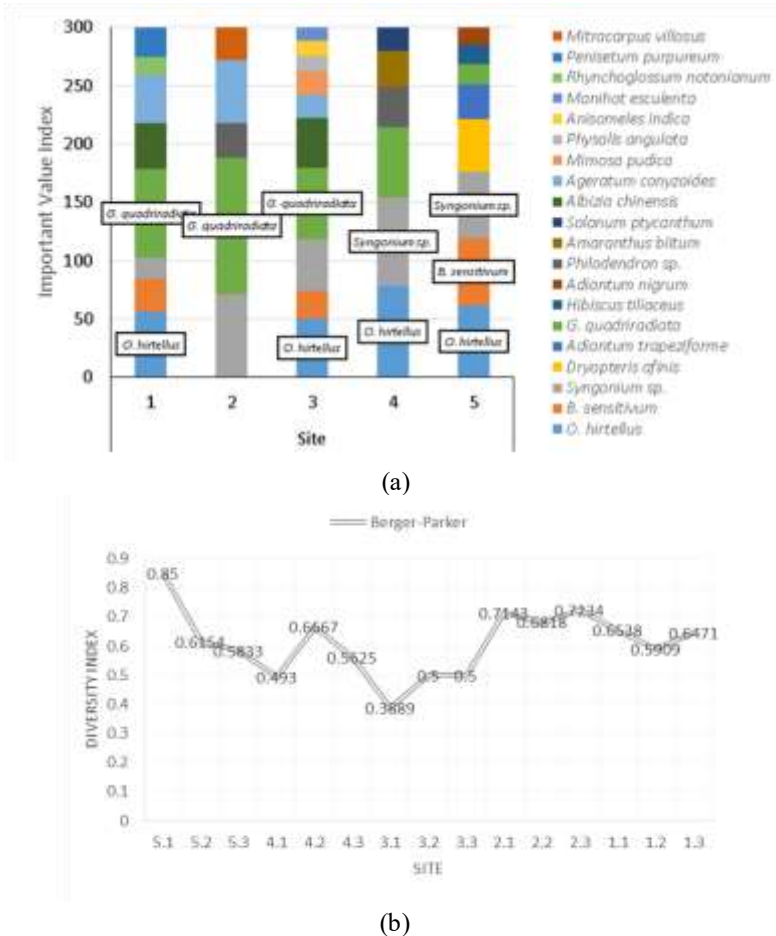


Fig. 3. Importance Value Index (a) and Berger-Parker Diversity Index (b) of Riparian Zone at Amprong’s River

In general, the Amprong riparian zone has a large abundance of pioneer species and is concentrated in the riparian buffer shown in fig 3a. Site 1 found seven species, among others, *Oplismenus hirtellus*, *Hibiscus tiliaceus*, *Syngonium sp.*, *Dryopteris afinis*, *Biophytum sensitivum*, *Adiantum trapeziforme*, *Adiantum nigrum*, and *Galinsoga quadriradiata*. The results of the Importance Value Index (IVI) assessment show that site 1 is dominated by *Galinsoga quadriradiata* and *Oplismenus hirtellus* in the riparian buffer area. The type of land cover at site 1 is land principally occupied by agriculture, with significant areas of natural vegetation, fruit trees and berry plantations, complex cultivation patterns, road and rail networks and associated land.

Site 2 found five species including, *G. quadriradiata*, *Syngonium sp.*, *Ageratum conyzoides*, *Philodendron sp.*, and *Mitracarpus villosus*. The results of the Importance Value Index (IVI) assessment show that site 2 is dominated by *Galinsoga quadriradiata* and *Syngonium sp.* in the riparian area of the buffer. The land cover type at site 2 is

predominantly land occupied by agriculture, with significant areas of natural vegetation. Vegetation at site 2 is less compared to site 1. The presence of species at site 2 is less because the agricultural system is more destructive by cutting most of the vegetation because the community suspects it to be a weed.

Site 3 is similar to site 1 where the vegetation is dominated by *Galinsoga quadriradiata* and *Oplismenus hirtellus*. However, 10 species were found at site 3 including *Manihot esculenta*, *Anisomeles indica*, *Physalis angulata*, *Mimosa pudica*, *Ageratum conyzoides*, *B. sensitivum*, *Albizia chinensis*, *Syngonium* sp., *O. hirtellus*, and *G. quadriradiata*. Site 3 is close to community settlements. The community grows several cultivated plants that are used for daily needs. In contrast to sites 1 and 2, the type of complex cultivation patterns is carried out by the community. Land cover complex cultivation patterns are generally planted with several fruit and vegetable crops.

Site 4 found 6 species including *Solanum ptychanthum*, *Amaranthus blitum*, *Philodendron* sp., *G. quadriradiata*, *Syngonium* sp., and *O. hirtellus*. The dominant land cover type at site 4 is complex cultivation patterns. While site 5 found 8 species including *Adiantum nigrum*, *Hibiscus tiliaceus*, *G. quadriradiata*, *Adiantum trapeziforme*, *Dryopteris afinis*, *Syngonium* sp., *B. sensitivum*, and *O. hirtellus*. Based on previous results, site 5 was excavated, but the species richness at site 5 was greater than site 4. This was due to the narrower riparian buffer site 4. In addition, more human settlements are present in the riparian zone, resulting in less richness of site 4's taxa. In contrast to site 5 which has a riparian buffer in the form of a large number of bamboo trees to provide shade that supports the growth of a number of species.

Based on fig 3b, some sites have high index values. Sites 1, 2, 4 and 5 have an average index value of  $> 0.5$  which indicates the community is dominated by the most common species. Under disturbance, the community was dominated by common species namely *G. quadriradiata*, *Syngonium* sp., and *O. hirtellus*. However, in this study it is also known that site 3 has high  $\beta$ -diversity. The high  $\beta$ -diversity indicates that the dominance of the most common species is not too large. This indicates that disturbance at site 3 does not significantly affect diversity. Meanwhile, disturbances at sites 1, 2, 4 and 5 put pressure on vegetation so that plants that are sensitive to disturbance cannot survive. The survivability of sensitive plants is also inseparable from human activities in eliminating a number of species that are considered weeds (Pigino & Migliorini, 2006).

## 4 Conclusions

Amprong riparian zone has land cover types of arable land, heterogeneous agricultural, and permanent crops. Land cover conditions are affected by anthropogenic activities in the three villages. Land cover changes are intended to gain profits by planting cultivated plants that have high economic value. Thus, the majority of land cover is land principally occupied by agriculture, with significant areas of natural vegetation and complex cultivation patterns. Ecosystem disturbance in the form of dump sites is the cause of the decrease in the degree of hemorrhoids. The impact of this ecosystem

disturbance is the destruction of the biocenosis due to the presence of external material in the form of waste. Other impacts can be seen with the dominance of the most common species such as *G. quadriradiata*, *Syngonium* sp., and *O. hirtellus*. This greatly affects the survivability of species that are vulnerable to disturbance.

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# Structural Equation Model: Analysis of Pre-Service Elementary Teachers on Technological Pedagogical Content Knowledge (TPACK)

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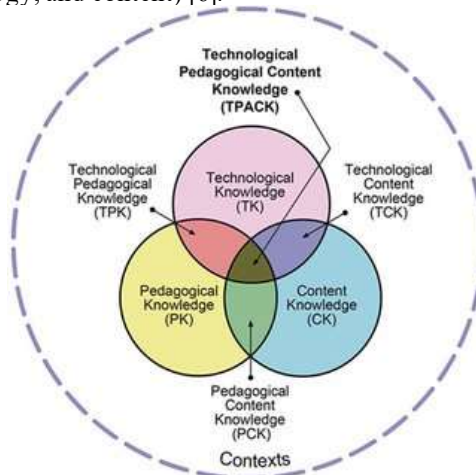
**Abstract.** This study aims to analyze the relationship between the seven components of TPACK, namely: 1) Technological Knowledge (TK), 2) Pedagogical Knowledge (PK), 3) Content Knowledge (CK), 4) Pedagogical Content Knowledge (PCK), 5) Technological Content Knowledge (TCK), 6) Technological Pedagogical Knowledge (TPK), and 7) Technological Pedagogical Content Knowledge (TPCK). The research method used is quantitative with a descriptive, explanatory type of research. The research subjects consist of 80 pre-service elementary teachers. The research sample was obtained using a proportional random sample technique. The pre-service elementary teachers are students of the Madrasah Ibtidaiyah Teacher Education study program at the University of Islam Malang in semester seven who have carried out Field Experience Practice (PPL). The research instrument was a closed questionnaire in which answers to each question were provided with alternative solutions according to the Likert scale criteria. The criteria for the Likert scale consist of: strongly agree (SS) = score 5; agree (S) = score 4; undecided (R) = score 3; disagree (TS) = score 2; strongly disagree (STS) = score 1. Descriptive statistical analysis and Structural Equation Modeling (SEM) were used as data analysis methods. Data analysis was carried out with the help of SPSS 24 and AMOS 24. The results showed that the TPACK competency variable for pre-service elementary teachers was in the high category. Furthermore, based on the results of hypothesis testing, it shows that: there is a positive relationship between TPK and TK, PCK and PK, TCK and TK, TCK and CK, TPCK and TPK, TPCK and TCK, TPCK and PK, and there is no relationship between TPK and PK, PCK and CK, TPCK and PCK, TPCK and TK, TPCK and CK.

**Keywords:** Pre-service elementary teachers, structural equation model, TPACK.

## 1 Introduction

The 21st century is marked by the faster development of digital technology, where Education and technology are also interrelated and intertwined. Using technology as a tool for increased learning among students, cultivating an understanding of more topics well, and encouraging the development ability think the level tall student make integration of technology in Education as something needs [1] Consequently, in this 21st century, the teacher should integrate technology inside class. Studies earlier showed that integration technology in classroom learning could help students in the work profession house more efficiently than just using method traditional [2]. Besides that, the use of technology in learning too increases the preparation and presentation of material in class [3]. Teachers also need to understand the importance utilize technology in practice besides which technology will be combined and how to do it [4]. This makes integrating technology into the teacher's learning becomes necessary.

Madrasah Ibtidaiyah Teacher Education Study Program at the University of Islam Malang is one of the study programs that concentrate print competent and professional pre-service elementary teachers' needs and demands Public as the impact of development science as well as technology. Pre-service elementary teachers 21st century must be capable utilize technology in learning. Prospective teachers take advantage of various technology in planning, implementation, and assessment of their learning do [5]. As prospective professional teachers in the digital era, they are needed to combine various types of knowledge. The framework is theoretical for understanding the required teacher knowledge for integrating successful technology, known as Technological Pedagogical Content Knowledge (TPACK). The TPACK framework explains relationships and complications Among three-part base knowledge (technology, pedagogy, and content) [6].



**Fig. 1.** TPACK Framework [6]

TPACK framework consists of six components, that is Content Knowledge (CK), Pedagogical Knowledge (PK), Technological Knowledge (TK), Pedagogical Content



Knowledge (PCK), Technological Content Knowledge (TCK), and Technological Pedagogical Knowledge (TPK) [6]. TPACK competency is a required competency owned by pre-service elementary teachers to support professional development in today's digital age. TPACK will help the teacher handle the diverse interests, understanding, abilities, and experiences of students with learning in the 21st century [7] [8]. TPACK competence of prospective teachers can influence the performance to teach and base belief that they integrate ICT in learning. Pre-service teacher beliefs in using ICT was formed through the hope that they will improve enhancement performance of teacher [9].

Moment this, research related to TPACK is still conducted playfully, and many new inventions have been generated from studies. However, research on the teacher's TPACK or pre-service elementary teachers still needs to be found. The utilization of technology and how it is used to study teaching must become topics mainly discussed by pre-service teachers [10]. Clear that To do a new study involving some pre-service elementary teachers, they must reveal their TPACK competence and analyze connections from the TPACK dimensions. As for the question, this will be answered in a study: 1) How do pre-service elementary teachers TPACK competency?; 2) How is the connection between the TPACK variable for pre-service elementary teachers?

## 2 Method

Study this use method study quantitative with type study descriptive explanatory. Study descriptive explanatory attempted to understand, describe, and explain the connection between variables [11]. The destination of the study is to reveal the level of pre-service elementary teachers' TPACK competencies and analyze the connection between the seven components of TPACK, namely: 1) Technological Knowledge (TK), 2) Pedagogical Knowledge (PK), 3) Content Knowledge (CK), 4) Pedagogical Content Knowledge (PCK), 5) Technological Content Knowledge (TCK), 6 ) Technological Pedagogical Knowledge (TPK), and 7) Technological Pedagogical Content Knowledge (TPCK).

The subject study consists of 72 pre-service elementary teachers. Sample study was obtained with the use technique sample random proportional. The pre-service elementary teachers are students in Madrasah Ibtidaiyah Teachers Education study program semester seven which has doing Practice Experience Field (PPL). Study this use instrument developed by [12]. The instrument form questionnaire closed which answers from every question has provided the alternative answer in accordance criteria scale Likert. As for the criteria from the scale, Likert consists of: strongly agree (SS) = score 5; agree (S) = score 4; undecided (R) = score 3; no agree (TS) = score 2; very not agree (STS) = score 1. Before being used, the instrument was tested for its validity and reliability for getting quality data. The grid instrument is explained as follows.

**Table 1.** Grid TPACK Instrument

Variable	Code	Indicator or component	item number
<i>Technological Pedagogical Content Knowledge</i>	TK	<i>Technological Knowledge</i>	1,2,3,4
	PK	<i>Pedagogical Knowledge</i>	5,6,7,8,9,10,11
	CK	<i>ContentKnowledge</i>	12,13,14,15
	TCK	<i>Technological Content Knowledge</i>	16,17,18,19
	PCK	<i>Pedagogical Content Knowledge</i>	20,21,22,23
	TPK	<i>Technological Pedagogical Knowledge</i>	24,25,26,27
	TPCK	<i>Technological Pedagogical Content Knowledge</i>	28,29,30,31,32

Statistical descriptive and Structural Equation Modeling (SEM) is used as a method of data analysis. Data analysis was performed, assisted by SPSS 24 and AMOS 24.

### 3 Results and Discussion

Current pre-service elementary teachers face the consequences of the 21st century, which requires literate technology and the capability to integrate technology into learning. As prospective professional teachers in the digital era, they must combine various knowledge types. The framework is theoretical for understanding the required teacher knowledge for integrating booming technology, known as Technological Pedagogical Content Knowledge (TPACK). Knowledge pedagogical has the most significant role, and the results highlight an aspect of knowledge possible pedagogy \_ addressed for creating TPACK inside teacher [13]. The TPACK framework explains relationships and complications Among three-part base knowledge (technology, pedagogy, and content [6].

Study this attempted reveal level pre-service elementary teachers' TPACK competencies and analyze the connection between the seven components of TPACK, namely: 1) Technological Knowledge (TK), 2) Pedagogical Knowledge (PK), 3) Content Knowledge (CK), 4) Pedagogical Content Knowledge (PCK), 5) Technological Content Knowledge (TCK), 6 ) Technological Pedagogical Knowledge (TPK), and 7) Technological Pedagogical Content Knowledge (TPCK). As for the answer data, respondents can be served in the following table.

**Table 2.** Analysis Results Distribution TPACK frequency

Question items	Answer Score Respondents										Means
	1		2		3		4		5		
	f	%	f	%	f	%	f	%	f	%	
TK1	0	0	1	1.4	14	19.4	51	70.8	6	8.3	3.86
TK2	0	0	1	1.4	12	16.7	41	56.9	18	25	4.06
TK3	0	0	7	9.7	30	41.7	27	37.5	8	11.1	3.50
TK4	0	0	4	5.6	17	23.6	40	55.6	11	15.3	3.81
PK1	0	0	6	8.3	8	11.1	43	59.7	15	20.8	3.93

PK2	0	0	5	6.9	18	25	42	58.3	7	9.7	3.71
PK3	0	0	6	8.3	13	18.1	36	50	17	23.6	3.89
PK4	0	0	6	8.3	11	15.3	37	51.4	18	25	3.93
PK5	0	0	6	8.3	19	26.4	34	47.2	13	18.1	3.75
PK6	0	0	2	2.8	16	22.2	46	63.9	8	11.1	3.83
PK7	0	0	4	5.6	13	18.1	39	54.2	16	22.2	3.93
CK1	0	0	3	4.2	7	9.7	46	63.9	16	22.2	4.04
CK2	0	0	3	4.2	5	6.9	46	63.9	18	25	4.1
CK3	0	0	2	2.8	16	22.2	44	61.1	10	13.9	3.86
CK4	0	0	4	5.6	11	15.3	47	65.3	10	13.9	3.88
TKC1	0	0	3	4.2	15	20.8	39	54.2	15	20.8	3.92
TKC2	0	0	1	1.4	17	23.6	43	59.7	11	15.3	3.89
TKC3	0	0	1	1.4	9	12.5	39	54.2	23	31.9	4.17
TKC4	0	0	4	5.6	13	18.1	36	50	19	26.4	3.97
PCK1	0	0	3	4.2	13	18.1	37	51.4	19	26.4	4
PCK2	0	0	5	6.9	12	16.7	40	55.6	15	20.8	3.9
PCK3	0	0	1	1.4	18	25	41	56.9	12	16.7	3.89
PCK4	0	0	1	1.4	14	19.4	38	52.8	19	26.4	4.04
TPK1	0	0	2	2.8	4	5.6	52	72.2	14	19.4	4.08
TPK2	0	0	5	6.9	22	30.6	33	45.8	12	16.7	3.72
TPK3	0	0	6	8.3	17	23.6	37	51.4	12	16.7	3.76
TPK4	0	0	5	6.9	15	20.8	41	56.9	11	15.3	3.81
TPCK1	0	0	6	8.3	9	12.5	45	62.5	12	16.7	3.88
TPCK2	0	0	7	9.7	18	25	44	61.1	3	4.2	3.6
TPCK3	0	0	6	8.3	12	16.7	44	61.1	10	13.9	3.81
TPCK4	0	0	7	9.7	23	31.9	40	55.6	2	2.8	3.51
TPCK5	0	0	7	9.7	21	29.2	40	55.6	4	5.6	3.57
<b>Means</b>											
<b>3.86</b>											

Table 2 above showing that the whole indicator in the category is tall, with a mean of 3.86. this describes competent Technological Pedagogical Content Knowledge (TPACK) pre-service elementary teachers in the category of high and already. According to Şen (2022), TPACK helps teachers understand the connection Between technology, pedagogy, and knowledge content. During teaching, of course, competence is also needed by pre-service elementary teachers to support professionalism them. While doing the practice experience field (PPL), pre-service elementary teachers use technology in their learning. Experience the impact on their TPACK competence. Opinion Shinas et al (2015) that increasing the TPACK of pre-service teachers' statistics influenced in a manner significant by experience field.

Next, the research model used an analysis Structural Equation Model (SEM) for analysis and testing. The test results are presented below.

### 3.1 Stage First

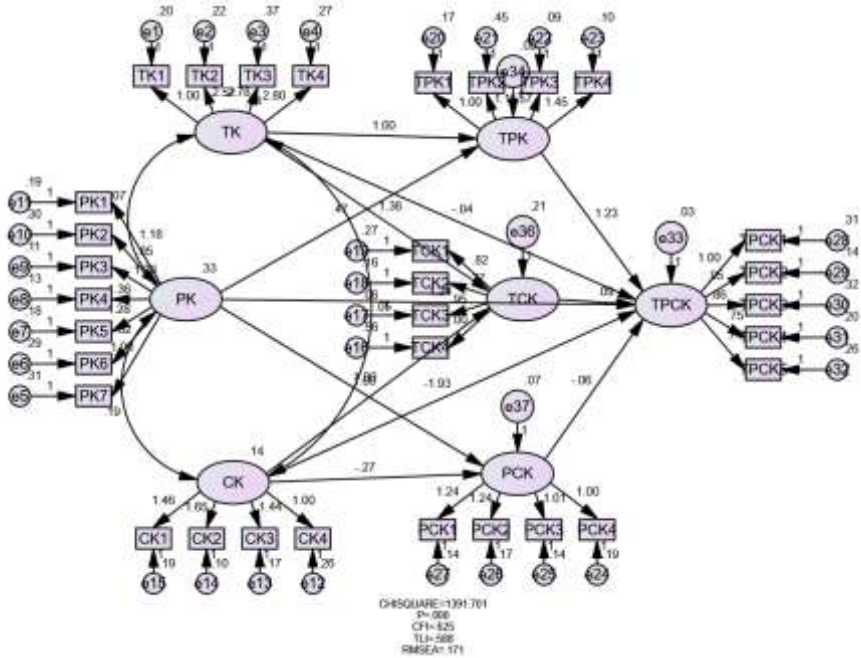


Fig. 2. Analysis Full Model Structural Equation Model (SEM) Stage First

Table 3. Stage SEM Full Model Test Results First

Criteria	Cut of value	Results	Evaluation
X <sup>2</sup> Chi-square	< 403.7077	1391,701	poor
Probability	≥ 0.05	0.000	poor
CMIN/DF	≤ 2.00	3,079	poor
RMSEA	≤ 0.08	0.171	poor
GFI	≥ 0.90	0.519	moderate
AGFI	≥ 0.90	0.438	moderate
TLI	≥ 0.95	0.588	moderate
CFI	≥ 0.95	0.625	moderate

The table above shows that the model developed needs to be more capable Fulfill the requirements of the goodness of fit. Because that is, the comprehensive analysis of the stage model must be conducted based on the analysis Step first.

3.2 Stage Second

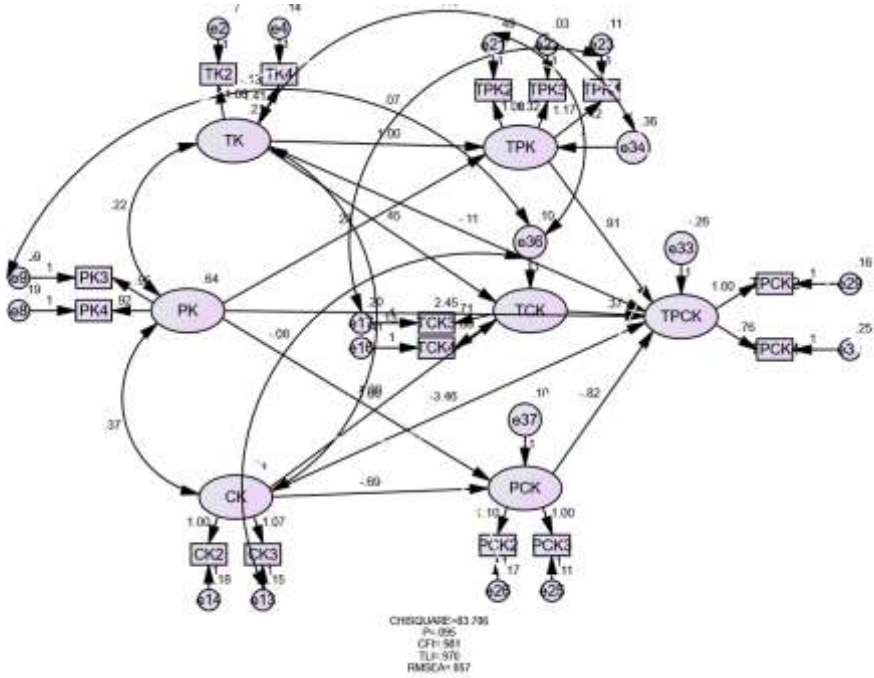


Fig. 3. Analysis Full Model Structural Equation Model (SEM) Stage Second

Table 4. Stage SEM Full Model Test Results Second

Criteria	cut of value	Results	Evaluation
X <sup>2</sup> Chi-square	< 92.13376	83,706	fit
Probability	≥ 0.05	0.095	fit
CMIN/DF	≤ 2.00	1,231	fit
RMSEA	≤ 0.08	0.057	fit
GFI	≥ 0.90	0.882	moderate
AGFI	≥ 0.90	0.792	moderate
TLI	≥ 0.95	0.970	fit
CFI	≥ 0.95	0.981	fit

Statistical data in table 3 shows that the criteria goodness of fit has been fulfilled. The value of the chi-square table is 83.706, CMIN/DF 1.231 with probability 0.095, RMSEA 0.057, TLI 0.970, and CFI 0.981. Model feasibility test included in category “good /fit”. This means analysis model confirmatory exogenous Step second could use for analysis of the whole model SEM with remove indicators TK1, TK4, PK1, PK2, PK5, PK6, PK7, CK1, CK4, TCK1, TCK2, TPK1, PCK1, PCK4, TPCK1, TPCK3, and TPCK5.

For the test hypothesis, the probability value was compared to  $P < 0.05$ . If the results data analysis complied with the requirements, the hypothesis could consider accepted. Following is the results analysis hypothesis.

**Table 5.** Hypothesis Test Results Study

			P	Estimates
TPK	<--	TK	0.021	0.767
TPK	<--	PK	0.122	0.371
PCK	<--	PK	0.013	1,356
PCK	<--	CK	0.188	-0.573
TCK	<--	CK	0.004	0.696
TCK	<--	TK	0.020	0.291
TPCK	<--	TPK	0.005	0.805
TPCK	<--	TCK	0.033	0.383
TPCK	<--	PCK	0.204	-0.712
TPCK	<--	TK	0.737	-0.074
TPCK	<--	CK	0.23	-2,513
TPCK	<--	PK	0.002	2,889

Table 5 shows that from seven TPACK builders, connection positive direct is shown significantly by TK to TPK, PK to PCK, CK to TCK, TK to TCK, TPK to TPCK, and TCK to TPCK. At the same time, no positive or significance is shown by PK to TPCK through PCK. Furthermore, there is a connection between PK to TPK, CK to PCK, PCK to TPCK, TK to TPCK, and CK to TPCK.

Based on the results of data analysis, only TPK and TCK have connection direct in a manner positive and significant against the TPCK. That is, the teacher's mastery in TPK and TCK components will increase along with mastery in TPCK. as results study from [16] shows exists a strong relationship between TPK and TPCK. More TPK describes deep teacher knowledge use of technology on learning in general. In research conducted on prospective teachers, the TPK component, TPK is the highest component owned by prospective teachers [17]. More carry on [13] put forward that TPCK is described prospective teachers as an area of trust or challenge is TPK. Technological Pedagogical Knowledge (TPK) is knowledge about the presence, components, and capabilities of various technology as used in Settings study teach, and conversely, know-how teaching could be changed as a result of the use of technology specific [6].

Next is Technological Content Knowledge (TCK). Knowledge includes knowing the approach to teaching, what fits with content, and how element content could be arranged for more practical teaching [6]. TCK covers understanding the application of the right technology at a time to create source power in learning [18]. TCK is information about method work interacting with technology and content one each other [19]. TCK is positively related to CK and Kindergarten. It means that CK and PK influence the TCK competence of pre-service elementary teachers. If the CK and TK of pre-service elementary teachers increase, they will increase the TCK of pre-service elementary teachers.

Many pre-service elementary teachers use ICT in learning During practice experience field at school. Teacher education must help pre-service teachers create a

design strategy encouraging lesson ideation and iteration for the increased impression they have about TPACK [20]. Besides that, so that prospective teacher succeeds in integrating ICT into learning, the teacher education program should be allowed to make their TPACK alone [21]. TPACK is helpful for teacher ICT [22]. Prospective teachers improve their belief in ICT integration in learning and awareness investigation scientific through practice design [23].

## 4 Conclusion

Competence Technological Pedagogical Content Knowledge (TPACK) pre-service elementary teachers in the category high and already ok. While doing the practice experience field (PPL), pre-service elementary teachers use technology in their learning. Experience the impact on their TPACK competence . from seven TPACK builders, connection positive direct is shown significantly by TK to TPK, PK to PCK, CK to TCK, TK to TCK, TPK to TPCK, TCK to TPCK. At the same time, no positive and significant is shown by PK to TPCK through PCK. Furthermore, there is no connection between PK to TPK, CK to PCK, PCK to TPCK, TK to TPCK, and CK to TPCK.

Study this is still limited to the TPACK competency of pre-service elementary teachers. A study to front can also focus on other factors influencing integration technology of pre-service elementary teachers in learning during PPL. Study next too researching more about performance integration pre-service elementary teachers qualitative.

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# Independent Character Values in 21st-Century Learning: Systematic Literature Review with PRISMA

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**Abstract.** This study aims to describe the indicators of each element of independent character values in 21st century learning in elementary schools. The research was conducted utilizing a systematic literature review approach. The method employed was the Preferred Reporting Item for Systematic Review and Meta-Analytic (PRISMA). The article search was carried out online using the keywords “hard work in learning,” “creative innovative,” “disciplined,” “resilient,” and “lifelong learner.” Article searches were from 2015 to 2022 through National Library and Google Scholar. Based on the literature review, the findings revealed that indicators of hard work include never giving up in learning something, doing assignments seriously and properly at the allotted time, and observing and paying attention during learning. Creative and innovative indicators consist of being able to identify and formulate problems, summarize and describe a subject, and complete projects. Discipline indicators are paying attention to lessons, participating, being present on time, and being on time when submitting assignments. Indicators of resilient encompass enthusiasm for learning, daring to try, and not giving up easily. Finally, indicators of lifelong learning comprise being aware of continuing to learn, willing to observe and then practicing or developing, and willing to accept challenges and have high motivation in learning new things.

**Keywords:** independent character values, 21st century learning

## 1 Introduction

The currently being implemented education curriculum in Indonesia is the independent curriculum. In the independent curriculum, schools have the right to policies for their implementation in learning. On the other side, today's 21st-century learning also has various strategies in its development. One example of developing digital-based teaching materials is making learning videos using the online application Canva [1] and ethnoscience-based teaching materials in accordance with the surrounding environment [2]. In addition, digital-based 21st-century learning has been examined; 21st-century learning is also based on creativity, communication,

collaboration, and critical thinking or higher-order thinking skills [3]–[6]. Learning with these criteria cannot only be applied cognitively but also in cultivating character values.

Peterson and Seligman asserted that strong character is a means for developing human virtues [7]. According to Thomas Lickona, character education includes knowing the good, desiring the good, examining the good, loving the good, and doing the good [8] [9]. Heidari, Nowrozi, & Ahmadpoor also stated that "character" refers to fundamental moral values, such as caring, honesty, fairness, responsibility, and respect for oneself and others. In contrast, character education means a systematic, comprehensive, and planned approach to teaching moral values [10]. The good character components encompass moral knowledge, feelings, and actions [11]. Moreover, character education is not limited to moral knowledge but is also embedded in feelings, comprising conscience, self-confidence, empathy, kindness, self-control, and humility, which then proceed to actions reflecting one's good behavior. From these actions, a person can be assessed for his competence, passion, and habits.

One characteristic most related to the independent curriculum in learning is independent character. Independent character is one of the characters that become the profile of Pancasila students, which means that students can be responsible for the process and results of their learning. Elements of independent character in the profile of Pancasila students are awareness of themselves and the situation they face and self-regulation [12]. Independence is also a form of individual characteristics that can make decisions confidently and responsibly and apply them well to their environment [13]. Further, independent character education is an attitude of self-confidence, self-study ability, ability to analyze and solve problems, and responsible [14]. Independent character from the findings [15] is indicated by preparing for the need to learn, having self-confidence, completing assignments individually, daring to express opinions, working in groups, reading and writing correctly and adequately, and doing assignments calculations independently. Independent character is also crucial to be instilled since, with independence, a person can increase his potential [16].

Children's independent character can be applied in their daily life to get used to completing their work without depending on others [17] [18]. Independent character is also one of the goals of education implemented in formal and non-formal schools [19]. Hence, all parties, both parents and schools, play an important role in instilling independent character values in children [20]. Instilling character values can be through several aspects, i.e., class-based (learning), school-culture-based, and community-based (Kementerian Pendidikan dan Kebudayaan Republik Indonesia, 2017).

For this reason, the primary point of this study's discussion is the value of independent character in learning to review indicators of each element of independent character values stated by the Ministry of Education and Culture of the Republic of Indonesia, mentioning the five independent character values: hard worker, creative and innovative, discipline, resilient, and lifelong learner (Kementerian Pendidikan dan Kebudayaan Republik Indonesia, 2017).

## 2 Methodology

This study used the systematic literature review (SLR) method [22]. Searching for articles from 2017-2022 was through the National Library, both national and international journals, and Google Scholar. The article search was done online. This study employed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (<http://www.prisma-statement.org/>) [23], with inclusion and exclusion criteria, information sources, search strategy, study selection, data extraction, and data items, study risk of bias assessment, effect measures, and synthesis methods.

The inclusion criteria were research journals published in 2015-2022, with the results reviewed being indicators of independent character values, including hard work, creative innovation, discipline, resilience, and lifelong learners. The chosen research design was both qualitative and quantitative research or literature review. Meanwhile, the exclusion criteria included research whose methods were unclear and not listed in the journal, journals that were not full text and not in accordance with the subject matter, articles with unclear or incomplete abstracts, and duplicate articles. Information sources from literature searches were conducted on online databases with large repositories for academic studies, such as National Library, both local and international, Google Scholar with journal publications for the last ten years.

The search strategy and keywords used "hard work indicator\*" AND "innovative creative indicator\*" AND "disciplined indicator" AND "resilient character" OR "learners resilient\*" AND "lifelong learner\*" in National Library, Google Scholar, and Science Direct databases. Study selection was carried out by applying to screen. First, an education-based article was selected since it reviewed behavior in a lesson. Second, full-text or open-access articles with a DOI number were chosen. Third, the method used, qualitative and quantitative research designs, and the literature review should all be transparent in the chosen publications. Third, the chosen papers were published between 2015 and 2022, the most recent seven years. Fourth, accredited and active journals published the articles. After the selection stage, data extraction was conducted from individual studies to obtain relevant data. Then, the risks involved included biased articles.

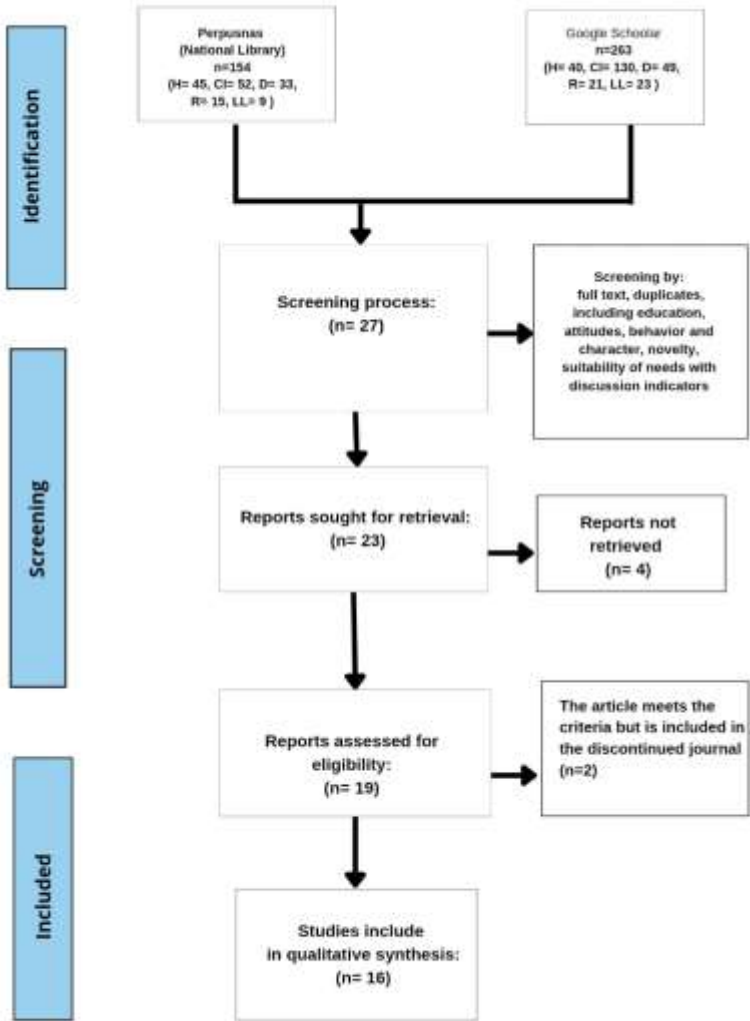


Fig. 1. PRISMA 2020 flow diagram template for systematic reviews

### 3 Results And Discussion

According to the statement (Kementerian Pendidikan dan Kebudayaan Republik Indonesia, 2017), it is known that elements of independent character values comprised hard work, creative innovation, discipline, resilience, and lifelong learners. Based on this, the article reviews were selected by screening, referring to the presentation. The following are the results of several relevant articles that can be applied to elementary school students:

**Table 1.** Hard Work Indicators

<b>Authors</b>	<b>Accredited Journal</b>	<b>Indicators of hard work in learning</b>
[24]	Sinta 5	(a) completing class assignments, homework assignments, and structured assignments; (b) completing the task within the specified time limit; (c) completing project assignments; (d) does not stop solving problems before they are finished; (e) conducting questions and answers related to subject matter and its relation to contextual issues with the value of hard work
<b>The Ministry of National Education [25], [26]</b>	Sinta 2	Indicators for grades 1-3 (lower grade) include being serious about doing all assignments in class, looking for learning resources and information not only through textbooks, completing assignments according to a predetermined time limit, utilizing time to study while in class, and taking essential things from the teacher seriously when explaining. Meanwhile, indicators of the hard work character for grades 4-6 (upper class) are thorough and neat when doing assignments, looking for learning resources not only at school but also outside school, being punctual in doing assignments from the teacher, focusing when getting assignments from the teacher, and observing, paying attention, and taking something read, observed, and heard in class activities seriously.
[27]	Sinta 5	(1) Creating conditions for a work ethic and never giving up on science subjects; (2) Always focusing on science lessons; (3) Carrying out all class assignments appropriately completed at the allotted time; (4) Do not give up in the face of difficulties in learning science lessons; (5) Trying to complete the tasks in science lessons fully; (6) Creating a learning atmosphere that stimulates resilience in science subjects
[28]	Sinta 4	Studying hard or earnestly and completing all assignments to completion

**Table 2.** Innovative Creative Indicator

<b>Authors</b>	<b>Accredited Journal</b>	<b>Innovative, creative indicators in learning</b>
[29]	Sinta 3	Indicators of creative thinking are that students can give many answers in solving problems, look for many different alternative answers, generate new and unusual expressions or answers, make uncommon combinations, and enrich and develop ideas in the surrounding environment related to learning.
[30]	OpenAIRE	Creativity can be seen in how to solve learning problems and produce a product.
[31]	Sinta 3	Innovative creative: Students build their new concepts based on the concepts they already have.
[32]	Sinta 2	Creative: Unusually finding innovative ideas from the existing ones

**Table 3.** Discipline Indicator

<b>Authors</b>	<b>Accredited Journal</b>	<b>Discipline indicators in learning</b>
[33]	Sinta 3	Be on time in studying, completing assignments on time, not lazy to study, obey school rules, not tell other friends to do their assignments, not lie, help smooth teaching and learning activities, not cheat, not make noise, and not disturbing other people studying
[34]	Sinta 4	Good attention while studying, full participation in learning, student presence in learning, and keeping to a set schedule or time
[35]	Sinta 3,	Be punctual when coming to school, studying diligently, obeying school rules, attending flag ceremonies in an orderly manner, collecting assignments on time, and performing picket duties according to the specified schedule

**Table 4.** Resilience Indicator

<b>Authors</b>	<b>Accredited Journal</b>	<b>Indicators of resilience in learning</b>
[36]	Sinta 5	Enthusiasm, daring to try, and not easily giving up on learning
[37]	Proceeding	Strong, pain-resistant, and not easy to cry

**Table 5. Lifelong Learner Indicator**

<b>Authors</b>	<b>Accredited Journal</b>	<b>Lifelong Learner Indicator</b>
[38]	Sinta 5	(1) Observing other people in doing specific jobs; (2) Helping other people making or doing particular work; (3) Participating with other people working on making or doing specific work; (4) Doing work by themselves that produces certain goods or services; (5) Developing ways, models, and production of certain goods or services as a result of the learning process obtained previously
[39]	Q2	Curiosity, openness to learning, access to information and information, literacy, and engagement in self-direction and self-evaluation
[40]	Q1	Developing new skills and competencies

From some descriptions above, it can be synthesized that indicators of hard work include never giving up on learning a lesson, doing assignments seriously, doing assignments well at the allotted time, and observing and paying attention during learning. Innovative, creative indicators are identifying and formulating problems given by the teacher in learning, summarizing and describing a subject, and completing projects. Discipline indicators in learning consist of paying attention during learning, being present and participating in learning, being present on time during learning, and being on time when collecting assignments given by the teacher. Indicators of resilience in learning comprise enthusiasm for learning, daring to try, and not being easily discouraged. Indicators of lifelong learning encompass realizing that one must continue learning, be willing to develop skills and competencies and be willing to self-evaluate.

Following the explanation in Figure 1, several articles fit the criteria, but after being traced, these articles were published in discontinued journals. Therefore, the analysis of some articles above has been selected in detail and according to needs, i.e., those that could be related and applied in 21st-century learning. They were behaviors aligned with each element of independent character values in elementary school students. Further, the indicators of each element of independent character values above can be used as a reference for achieving the inculcation of independent character values in students in learning. It undoubtedly will make it easier for teachers to evaluate learning by instilling students' independent character values in all aspects of the subject matter.

## 4 Conclusion

The indicators for each element of the independent character values of students in learning have been clearly known, making it easier for teachers to apply and innovate in learning. In each indicator, a relationship was also found. In conclusion, the independent character of students can be seen from their readiness, desire, strong mentality, enthusiasm, and hard work in learning.



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# Analysis of Students Difficulties in Solving Math Words Problems

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**Abstract.** In the education of Indonesia, one of the subjects that students learned from elementary school to senior high school was mathematics. One of the assumptions about this subject was that it was scary. This assumption was inseparable from students' difficulty in solving the math problems they encounter. A form of a question considered difficult by students was a word problem. This question was formed from a series of sentences containing instructions and instructions where students were required to solve the problem based on the instructions and instructions in the question. Mathematicians said if students can solve every word problem they encounter, their mathematical ability would increase significantly. This study aimed to reveal students' difficulties in solving math word problems. The research design used in this research was a qualitative research design with the type of case study research. This research was conducted in the even semester at one of the elementary schools in the city of Bandung, i.e. Elementary School 195 of Isola in the 2021/2022 academic year. Students who became respondents to this study were 32 students. Based on the results of the study, the researchers found that students had difficulty changing the language of the questions into mathematical language, understanding mathematical concepts in word problems, and representing story questions in mathematical representations.

**Keywords:** Education, Case Study, Mathematic, Words Problem.

## 1 Introduction

Education is one of the main parts of a country as one of the important sectors of the country. One of the factors for the progress of a country is advanced education. Japan is a country that can be used as an example of the country's progress thanks to its advanced education. When Japan surrendered to the Allies in the second world war, Emperor Hirohito asked about the number of teachers who survived with the assumption that a teacher can create a general but a general cannot create a teacher. Twenty years later, Japan was transformed into a developed country and was nicknamed the tiger of Asia. This is an indication that a country will progress if education is given a high place in the country.

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Education seeks to improve human quality in various ways, one of which is through the learning process. Through the learning process, humans can change their thinking patterns and attitude patterns in a better direction [1–3]. Furthermore, Paul & Quiggin (2020) said that education would make people more mature, so in the end, they will be able to solve the problems they face. The learning process is a structured activity that aims to change behavior patterns [5, 6], and students' mindsets and increase student knowledge and understanding [7, 8]. Through the learning process, students are expected to be able to change their mindset and behavior patterns in a better direction and they are also expected to be able to improve their knowledge and skills.

The learning process carried out in schools must be carried out carefully. This is because the learning process is one of the processes that determine changes in student behavior patterns and patterns of thinking [9, 10]. Mathematics is one of a subject that will always be studied by students from elementary school to high school [11, 12]. Mathematics not only learns about how to count but also learns about logic. In line with this statement, [13, 14] also revealed that logic is one of the important materials studied in mathematics. Furthermore, Mammarella et al. (2018) said that studying mathematics is tantamount to learning and practicing various skills such as problem-solving skills, critical thinking, communicating, and working together. These skills are skills that students need in the era of the industrial revolution 4.0 [16].

Mathematics is a very important subject to be learned and understood by every student. Learning mathematics is the same as studying life sciences [17]. This is because mathematics has a very close relationship with human life, from waking up from sleep to going back to sleep [18, 19]. Furthermore, Li et al. (2020) said that mathematics contains various kinds of material related to numbers and logic. In addition, this subject leads students to understand and hone various skills they need in everyday life [15]. In line with this statement, Brandt et al. (2016) said that the skills honed by students when studying mathematics are skills needed in the era of the industrial revolution 4.0. Thus, it can be said that mathematics will hone various skills for students and is very important for every student to understand.

As a subject that is considered difficult by students, there are various difficulties experienced by students in solving math problems. According to Lehmann (2022) generally, the difficulties that students often encounter to solving problems in mathematics are problems that are also difficult for students at the next level. These difficulties include difficulties in understanding mathematical symbols, cognition, and geometry. Furthermore, Verschaffel et al. (2020) said that students also experienced difficulties in understanding the concept of numbers and solving math word problems. Word problems were considered difficult by students because students had to represent the word problems [22]. Furthermore, word problems are difficult for students because of the language used in word problems [23, 24]. Therefore, it can be said that word problems are one of the serious difficulties faced by students.

Basically, word problems have become one of the studies conducted by experts in various countries around the world [25, 26]. This is an indication that word problems are a very important form of a problem to be studied in Indonesia. Word problems are a form of problem in mathematics that can only be solved with maximum effort. In

line with this statement, L. Fuchs et al. (2020) said that students needed a lot of effort to solve math word problems. Furthermore, Vondrová (2022) said that in order to solve math word problems, a student needs a high level of understanding. Therefore, students need more effort than usual to solve word problems. This study aims to reveal the difficulties of students in solving math word problems.

## 2 Methodology

This study uses a qualitative research design that emphasizes the views of the researchers themselves. This research design is a vital tool that can assist researchers in answering every big question in research [29]. In addition, this research design allows researchers to use research documents realistically and holistically.

The type of research used in this study is a case study. Case study research is carried out to study, know, and understand various phenomena that occur in human life [30]. In this study, researchers seek to learn, know, and understand students' difficulties in solving math word problems for further research to express in the form of a description.

This research was carried out in one of the schools in the city of Bandung, namely SD Negeri 195 Isola. Respondents in this study were 32 students. The sample selection technique in this study was purposive sampling. Researchers use math word problems as a means of gathering information about students' difficulties. The word problems that the researcher uses are word problems that contain the topic of cubes, blocks, and fractions. Word problems number 1, 2, 4, 6, 7, and 8 contain the topic of cubes, and the other questions are questions about blocks. Meanwhile, word problems number 4 and 10 contain the topic of geometric shapes and fractions. Each respondent will be given a question that has a different level of difficulty. Word problems number 1, 2, 6, and 7 are word problems with a low difficulty level. Question number 3, 5, 8, and 9 have a medium difficulty level. Meanwhile, the other two questions are word problems with a high level of difficulty. In addition, researchers will interview respondents to find out how they learn and how teachers teach. Respondents' answers will be analyzed to find out their difficulties in solving math word problems and the causes of these difficulties.

## 3 Result

This research was conducted to find out the difficulties of students in solving math word problems. Students are given math story questions consisting of easy questions and difficult questions. After the students answered the story questions given, the researcher then checked the results of the students' work to find out the difficulties they experienced by the students in solving math word problems. After the researcher finished examining student work, the next researcher conducted interviews with students. Interviews were conducted to find out the factors causing students' difficulties in solving math word problems. The students interviewed were students who got high points and got low points. After the researcher finished conducting the

interviews, the researcher then analyzed the results of the student's work and the results of the interviews. The following are the results of the researcher's analysis regarding the difficulties of students in solving math word problems.

### **3.1 Changing the Language of Story Problems to the Language of Mathematics**

Math word problems consist of a series of sentences that contain certain meanings which in turn must be answered by students based on the instructions contained in the math word problems. The language contained in math word problems is a language that needs to be translated into mathematical language. Translating or converting math word problems is the process of converting a series of sentences into mathematical statements. The difficulty of changing the language of word problems into the language of mathematics is part of an epistemological obstacle. This is because they cannot use the initial abilities of students to translate the language of math story problems.

Based on the test results, the researcher found that there were always students who were wrong in every word problem that the researcher gave. For question with a low level of difficulty, 16 students had difficulty answering them. 31 students had difficulty solving word problems with medium difficulty levels. Meanwhile, 31 students experienced difficulties in solving word problems with a high level of difficulty.

Based on the results of the interviews between the researcher and the students, the researcher found that their difficulty in solving word problems was due, in part, to their lack of ability to translate word problems into mathematical language or mathematical formulas. Most of the students interviewed said that their lack of understanding in translating math word problems into mathematical language was due to a lack of practice solving math word problems. In addition, the researcher found that students were very fluent when reading the story problems given. However, when they were asked about the meaning or purpose of the question, they said that they did not know. This shows that the students have difficulties changing the language in word problems into the language of mathematics.

### **3.2 Understanding Mathematical Concepts**

Math word problems are long series of sentences that contain information and instructions related to mathematics which requires students to understand mathematical concepts well. The concept of mathematics is one of the most important things in mathematics. This is because the concept of mathematics is the basis of mathematics subjects. If students do not understand the basic concepts of mathematics well, it can be said that they will experience difficulties in solving each math problem. Based on the test results, the researcher found that the students did not understand the concept of geometry well, especially in cubic and cuboid shapes. In addition, they also have difficulty understanding the concept of fractions. For example, in word problems number four and number ten. In word problem number four, students are

asked to calculate the volume of a water tank that is not filled with water. The water tank is in the form of a cube with a side length of 4 m. In this story problem, students are given information that  $\frac{1}{2}$  of the water tank is filled with water. While in story number ten, students were asked to calculate the volume of a cupboard in the form of a block. In this word problem, students are given information that the length of the wardrobe is 2 meters, 1 meter wide, and 2.5 meters high.

In word problems with the topic of cubes, 35 students experienced difficulties in solving the story problems. For more details, see the table below.

**Table 1.** Students' Difficulties in Cube

No	Question number	Number of Students with Difficulty
1	One	2
2	Two	6
3	Four	11
4	Six	4
5	Seven	4
6	Eight	8

In word problems with the topic of blocks, 43 students experienced difficulties in solving the story problems. For more details, we can see the table below.

**Table 2.** Students' Difficulties in Block

No	Question number	Number of Students with Difficulty
1	Three	7
2	Five	8
3	Nine	8
4	Ten	20

In word problems containing the topic of cubes and ordinary fractions, 11 students experienced difficulty in solving these word problems. Meanwhile, 20 students experienced difficulties in solving word problems containing the topic of geometrical blocks and decimal fractions.

Based on the results of interviews with students, the researchers found that in carrying out the learning process, the teacher taught the topic of cubes, blocks, and fractions without using adequate media. Based on the confessions of the students interviewed, it can be said that the student's difficulties in understanding mathematical concepts are included in the didactical obstacle. However, students' difficulties in understanding mathematical concepts can also be included in the epistemological obstacle category.

### 3.3 Understanding Mathematical Concepts

Changing the representation of word problems into mathematical representations is changing the math word problems which are still in the form of text into other forms.



Changing math word problems into other forms is intended, so students can easily understand the word problems. In addition, changing the representation of the word problem into another form will help students solve the math word problem. Students experience difficulties in representing math word problems that are still in the form of text in a better form such as pictures, tables, or others. For example, in word problem number four, namely "A cube-shaped tub with a side length of 4 meters. If  $\frac{1}{2}$  the tub is filled with water, then calculate the volume of the tub that is not filled with water!".

If students understand deeply and represent the word problem in another form, then they will be able to solve the math word problem. Students can change the problem into an image form, namely a cube image, and shade half of the cube as a representation of the water in the tub of water. If they change the representation of the math problem into a picture, they will find that the length and width of the water in the bathtub is 4 meters while the height is 2 meters. In the end, students will be able to solve the word problems.

Based on the test results, students who both correctly or incorrectly immediately answered the question without first representing it in another form. This representation will help students who have difficulty solving the problem. From the interview results, the researcher found that the teacher only taught how to solve word problems in the usual way, namely using formulas directly. This makes it difficult for students to solve math word problems.

## 4 Discussion

Mathematics is one of the subjects that every student in elementary school will definitely encounter. This subject is a science that should be understood and mastered by every student in elementary school. This is because mathematics will always be encountered by students in their lives [31, 32]. Furthermore, Deringöl (2022) said that this subject should be taught to every child from an early age. This is because mathematics will help every student in solving various problems in their lives. In line with this statement, Van der Beek et al. (2017) said that mathematics will help students develop their skills in solving problems. In addition, it will be easier for students to learn and develop science and technology by mastering mathematics [35, 36]. Thus, it can be concluded that studying and exploring mathematics is one of the important things that students need to do.

Mathematics is a very important subject for students in their daily lives. However, various obstacles or challenges must be considered by every teacher of this subject. The obstacle or challenge that researchers mean is the difficulty of students in solving math word problems. One of the difficulties experienced by students is that students have difficulty changing the language of the questions into the language of mathematics. According to Purpura et al. (2017), this difficulty is one of the difficulties that students often experience when solving math word problems. The language of mathematics is in the form of symbols that are different from the language in general, so they need to understand the language of mathematics [38, 39]. Furthermore, Layn & Kahar (2017) said that students' linguistic abilities also

influenced their ability to solve math word problems. As a result, students are not able to know the purpose of the word problem.

As a form of problem in mathematics, students need to understand and master various things in mathematics to make it easier for them to solve math word problems. One of the things in question is understanding and mastering the basic concepts of mathematics. The basic concept of mathematics is one of the fundamental requirements for studying mathematics at a higher level. According to Lin & Williams (2017), mastering the basic concepts of mathematics is an absolute requirement for students to study mathematics at the next level. Understanding and mastering the basic concepts of mathematics has a major impact on students' mathematical abilities. In line with this statement, Pasnak et al. (2016) said that a lack of understanding of the basic concepts of mathematics would be a major obstacle for students to understand and master mathematics.

Based on the explanation above, research found that students had difficulty solving math word problems because they had difficulty understanding the basic concepts of cubic shapes, cube shapes, and the basic concepts of fractions. The fractions used in this study are ordinary fractions and decimal fractions as described above. According to, Strohmaier et al. (2019) understanding, the basic concepts of mathematics is a must for students to solve any problems related to mathematics. Furthermore, Zhang et al. (2021) said that students' lack of understanding of the basic concepts of mathematics would make it difficult for them to solve math problems. This is because students often encounter mathematical concepts in their lives [45, 46].

Mastering the basic concepts of mathematics is one of the difficulties of students in solving math word problems. In addition, students also had difficulty representing math word problems in other forms. Representing math word problems in other forms will help students solve a math problem in a non-formal way. In line with this statement, Li et al. (2021) also said that representing math word problems in other forms would help students solve the math word problems they encountered. Therefore, it is very important for students to change a math word problem in another form, so it makes it easier for them to solve the word problem.

## **5 Conclusion**

Based on the results and discussion above, the researcher concluded that there were three difficulties for students in solving math word problems, namely (1) students had difficulty changing the language of the questions into mathematical language; (2) students have difficulty understanding the mathematical concepts contained in math word problems; (3) students experience difficulties in representing math word problems in other forms.

### **5.1 Suggestion**

Based on the research conclusions above, the suggestions from researchers are (1) provide students with a good understanding of mathematical concepts; (2) understand

each participant about spoken language and mathematical language; (3) familiarize students with math word problems; (4) familiarize students with problem-solving steps; (5) using the right model to teach students during the teaching and learning process takes place. The results of this study can be a reference for every teacher in teaching math word problems to students.

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# Multicultural Islamic Religious Education Learning For Muslim Minorities

## (Case Study of Karangturi High School Semarang, Central Java, Indonesia)

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**Abstract.** Most of the students at Karangturi High School Semarang are ethnic Chinese, and the school's mission is to develop global entrepreneurs, as proven by the large number of successful Indonesian businesspeople who have graduated from it. Muslims make up a minority of the student body at this school. In this study, interactions within the learning of Islamic Religious Education at Karangturi High School are analyzed, described, and interpreted. This research methodology employs a case study approach and qualitative ways of gathering data through observation, discussion, and documentation. The findings demonstrated that learning involves multidirectional interaction patterns with democratic qualities through parents-child interaction pattern, friendship interaction pattern, nurturing interaction pattern, and culture interaction pattern. As a process of understanding (insight) for students whose ideas are conceptually sound, the model used in the learning interaction uses the right strategy of Islamic Religious Education teachers, habituation of activities, giving advice, enforcing discipline, and online learning. This is done without repeating what has already been studied.

**Keywords:** Islamic Multicultural Education, Senior High School, Muslim Minority

## 1 Introduction

Since its founding on July 29, 1929, Karangturi High School has served as one of the private educational institutions in Semarang, intending to develop international businesspeople [1]. It has been established that this school's alums have produced many prominent people in business in Indonesia, including Harjanto Halim, CEO of the Marimas Group, Hartono, the brother of the owner of the Djarum cigarette factory and Bank BCA, senior economist Kwik Kian Gie, Jaya Suprana, owner of the Indonesian Record Museum, and many others. Karangturi High School stands out for being a school where 97% of the pupils are of Chinese ancestry and only 3% are of Javanese,

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Sundanese, or European descent. Regarding the reality of ethnic diversity, this institution presents a multicultural image. In the academic year 2020–2021, there will be a total of 697 students, including 251 pupils in class X, 229 in class XI, and 217 in class XII. Of the 697 students, 46% of them are Christians, 40% are Catholics, 7% are Buddhists, 6.5% are Muslims, 0.5% are Confucians, and 0% are Hindus. 97% of the students in this school are Chinese, making them the most prevalent ethnic group there. The remaining 3% are from Javanese, Sundanese, and European breeds [1]

This school is conscious of the diversity of religious backgrounds and must ensure that everyone receives their religious instruction. As a result, Karangturi High School enables students from many religious backgrounds to receive religious instruction from religious teachers who possess a bachelor's degree in their specific field of religious education. The 56 professors there discussed the diversity of their religious backgrounds; there were 27 Muslims, 15 Christians, 11 Catholics, 2 Buddhists, and 1 Confucian [1].

According to previous research by Agus Yuliono on the culture of achievement at Karangturi High School, the institution has a lot of diversity and a history of accomplishments. Agus studied how to instil the school's spirit of excellence and its core values. The findings demonstrated that the cultural forms covered four areas: a balance between academic and non-academic development, character development through teachings, a culture of love for one's alma mater, and the significance of spiritual values [2]

Irham conducted a study on Islamic Religious Education (PAI) instruction at SMA Plus Pembangunan Jaya Bintaro, a multicultural school in South Tangerang, in the area of learning multicultural Islamic religious education. The study's findings demonstrate that PAI can inspire pupils to embrace moral diversity. PAI is used in the classroom to help students develop multiculturally aware attitudes and thought patterns. The curriculum's multicultural approach and the inclusive nature of the teachers are the two factors responsible for this [2]

In a study by Yosef comparing students from public high schools and students from high schools with a focus on religion, there was no discernible difference in student self-confidence in the presence of the range of variables. Some people rank highly on the moderate thought scale for both women and men [2]

The design of PAI teaching materials was viable and useful for learning, according to Khojir's research at a high school in Kalimantan on developing multiculturally themed teaching materials for PAI learning. Both extremely good findings from media specialists and positive criteria from the material validation results were obtained. The evaluations of all parts of the PAI teaching materials' design from the students ranged from satisfactory to very good. The study at Karangturi High School concentrated on how pupils interacted while studying multicultural Islamic religious education, which also instilled values [2]



## 2 Literature Review

### 2.1 Islamic Multicultural Education

UNESCO defines multicultural education in terms of the following recommendations: 1) education should increase the ability to recognize and accept the values that exist in personal, gender, community, and cultural diversity; 2) education should strengthen identity; and, 3) education should increase the ability to resolve conflicts peacefully [2]. Islamic education is physical and spiritual guidance towards forming the main personality according to Islamic standards. In further, the Islamic teaching has a meeting point with main principles of multiculturalism [1]

In the meanwhile, there is a convergence between multiculturalism's fundamental tenets and Islamic doctrine[1]. Tholchah Hasan defines multicultural Islamic education as instruction that prioritizes multiculturalism as one of the visions of education and features inclusive, egalitarian, democratic, and main humanist characters while maintaining a firm commitment to spiritual values and beliefs based on the Qur'an and As-Sunnah[2].

### 2.2 Interaction Patterns

Sanjaya (2005) cited Lindgren (1991) as saying there are different interaction patterns between teachers and students during learning, including one-way, two-way, and multi-way interaction patterns [1] The transfer of instructor knowledge to pupils constitutes the one-way interaction pattern in the context of instruction. In this approach, the teacher's role at school is similar to that of a parent feeding their child. Students are taught how to learn using the two-way interaction pattern of instruction. In this arrangement, the instructor is not only a source of information that students are fed. The interaction between teachers and students exhibits a pattern of multidirectional interaction where the essence of this interaction is not just the existence of action and reaction but also the existence of an interactive relationship between each individual, specifically between the teacher and students as well as between students as students.

If the potential for developing this interaction pattern can be seen from various perspectives, it may cause concern. For instance, M. Mualif (2021) divided the interaction patterns between teachers and students into three types based on their character: democratic interaction patterns, liberalist interaction patterns, and feudalist interaction patterns[1]. The exchanges between the teacher and the pupils, who are highly familiar with one another and engage in communicative interactions, reveal the democratic interaction pattern. Meanwhile, the presence of teachers who allow their students complete freedom demonstrates the liberal interaction pattern. The existence of one teacher who denies pupils the chance to participate in teaching and learning activities (KBM) thus illustrates the pattern of feudal interactions.

### **3 Research methods**

In order to uncover issues or phenomena to be investigated [3], such as community life, history, behavior, organizational functionalization, social, religious, or kinship relationships; research on learning multicultural Islamic religious education Karangturi High School Semarang, a school with a multicultural nuance, is conducted using a type of qualitative research [3]

In this study, the researcher explains the study's backdrop, exhibits many points of view on the issue, and continuously revises the research questions in light of what the Karangturi High School Semarang data sources say, think, and do [3]. This research has an "emic perspective," which means that the information gathered at Karangturi High School is not dependent on what the researcher believes but rather on what the data source experiences, feels, and thinks [4] This qualitative research design uses case studies to preserve the comprehensive and significant aspects of the events that took place at the research sites where numerous sources of evidence were used [4]

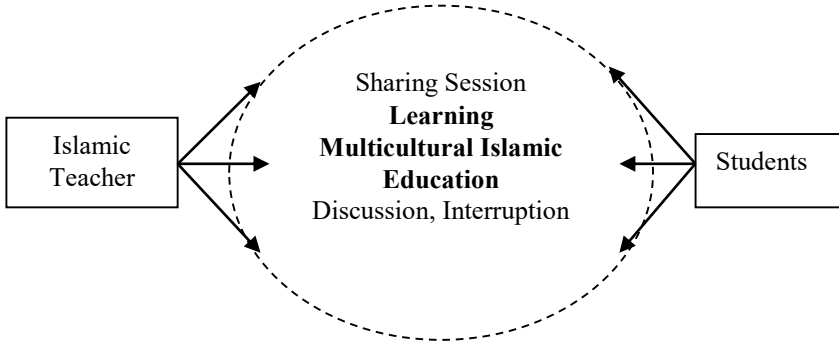
### **4 Results and Discussion**

It can be seen from the data on interaction patterns that there are in Multicultural Islamic Religious Education learning at Karangturi High School that there are multidirectional interaction patterns where students and teachers are not just actions and reactions, but rather there is an interactive relationship between each individual, specifically between the teacher and students as well as between students to students. Every person actively participates and has a part to perform. In this instance, the teacher only establishes circumstances and scenarios so that each student can actively learn. where there will be a teaching environment or active learning [1]. Based on field observations and interviews, it is known that the pattern of multidirectional interaction between teachers and students in Multicultural Islamic Religious Education learning at Karangturi High School has several characteristics, as illustrated by the following information:

#### **4.1 Parent-Child Interaction Patterns**

When learning PAI in class at Karangturi High School, students weren't the major players or objects; therefore, they didn't engage with each other as much as the PAI teacher did. The one-way communication style teachers and students use in PAI learning are comparable to parents who are constantly there for their kids. Another time, the pattern of closeness that characterizes parents and children also appears in other learning interactions, where students interact with the PAI teacher in interesting ways by expressing their thoughts that are replete with questions, as happened in class X Social, where there only two students and they were all female. According to the researcher, learning resembles venting or idea sharing because pupils appear unrestricted in their conversations with the teacher.

Based on data collected during sharing sessions, conversations, and pauses between parents and children participating in PAIM learning at Karangturi High School, as indicated in the chart below:



**Fig. 1.** The pattern of Parent-Child Interaction at Mutlicultural Islamic Education Learning

#### 4.2 Friendship Interaction Patterns

In order to get students' attention when teaching PAI, teachers prefer to discuss a variety of topics in preparation, such as situations that are currently in the news, like the Covid pandemic, and then make connections between those difficulties and end-of-the-world scenarios, acts of worship, and health. Knowing what the students were interested in, the instructors also covered K-Pop, Indonesian concerts, single albums, and Korean trends during the session.

On the other hand, PAI teachers also develop a close relationship with students to learn more about the people who will be educated through activities on social media sites like Instagram so that special moments of students can be known, as well as information about condolences or congratulations on a significant occasion. Religious [2]

Being active on social media significantly affects making friends with multicultural students, not just Muslims, in addition to the fact that multiculturalism is currently a part of the Islamic Religion curriculum.

Non-Muslim students also participate in the pattern of cordial engagement that PAI teachers exhibit with Muslim students. In the multicultural environment that exists at Karangturi High School, this engagement is carried out through social media activities, familiarity, joking, mutual regard, and reciprocal respect, as indicated in the following chart:

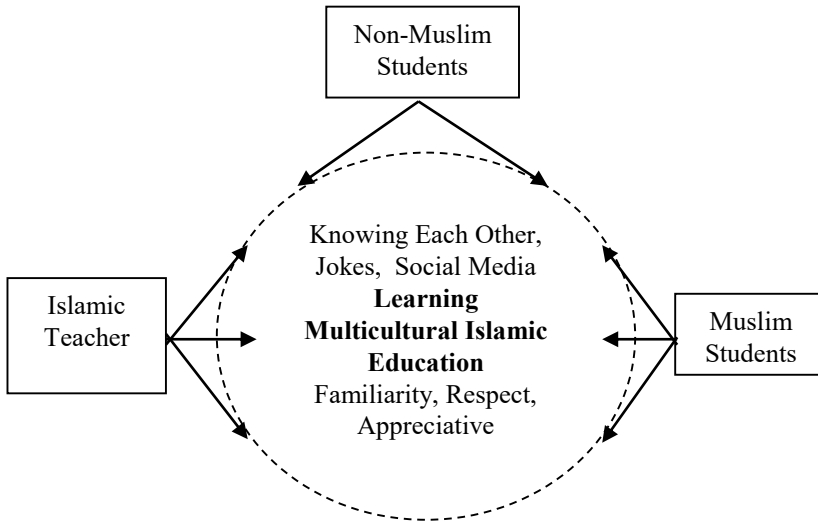


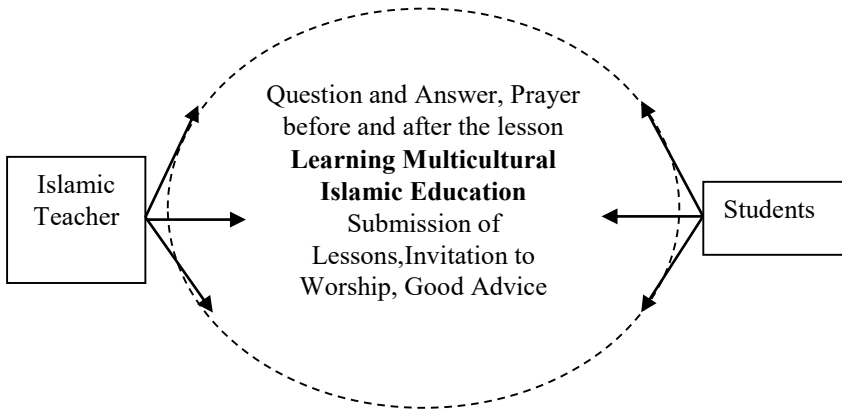
Fig. 2. The pattern of Friendship Interaction at Multicultural Islamic Education Learning

### 4.3 Parenting Interaction Patterns

Parenting interaction patterns are used through discovery learning, like in class XI Social Studies, where the teacher briefly discusses family law, how to support the wife, and what parental rights are before telling a short tale about one of the prophets. The teacher directs students to begin class with an ordered prayer and to explain the benefits of the prayers they read and memorize.

PAI teachers also use the parenting style in class XII Sains, where there is just one student, as part of the problem-based learning process through discussion. It's like taking private lessons because there's just one kid in the class who is so involved in the subject. First, enquire about the news. What's striking about this finding is that although the teacher responded casually to the students' urgent concerns, they still did not receive sufficient replies[1].

If parenting interaction patterns are observed, they include sharing sessions, question-and-answer lessons, prayer before and after learning, subject delivery, preaching invitations to worship, and giving students good advice when they do something that is deemed wrong or to point them in the right direction. For a graphic representation of the pattern, refer to the following chart:



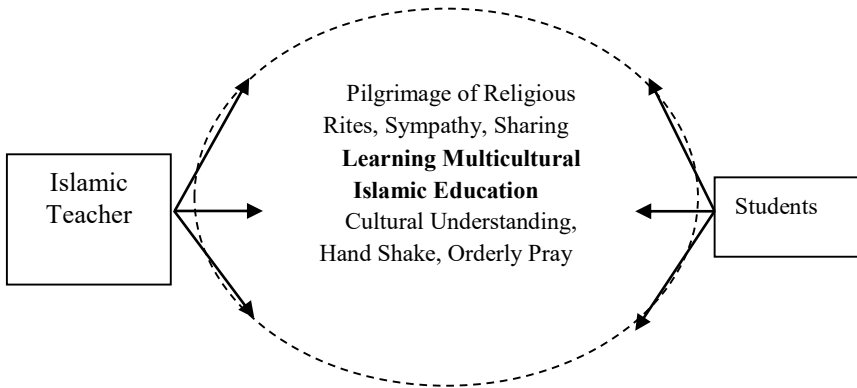
**Fig. 3.** The pattern of Nurturing Interaction at Mutlicultural Islamic Education Learning

#### 4.4 Patterns of Cultural Interaction

Because non-Muslim students are included in the Multicultural Islamic Religious Education course at Karangturi High School, there is an intriguing pattern of cultural interaction. Because of their friendship with the PAI teacher, non-Muslim students in 2020 joined the dawn together at the PAI teacher's home during Ramadan. They also travelled to Syaikh Hasan Munadi's cemetery in the Nyatnyono rite, Semarang Regency (for Muslims), Klentheng (for Confucians), Vihara (for Buddhists), and cave maria (for Catholics) in Ambarawa. In 2020 during Ramadan, the PAI teacher accompanied them at one point. Students gained insight into the city's cultural developments through this religious trip.

When non-Muslim students whose relatives or parents pass away, they might pay respects to the burial home and the pilgrimage of students with professors to Muslim students. To foster understanding, Muslim and non-Muslim students were also invited to enjoy the iftar menu at other times [1].

Other instances include greeting or saying goodbye to teachers according to a culture of politeness, as shown in classrooms where students always address the teacher as "salim." The PAI learning environment is established, beginning with the adab of kissing hands upon entering the classroom, which has become customary for Muslim pupils at Karangturi High School [2]. Muslim pupils returned to shaking hands or giving the PAI teacher a salute not just when they first entered the session but also when it was over, and they were about to depart. The graphic below illustrates the patterns of cultural interaction:



**Fig. 4.** The pattern of Cultural Interaction at Islamic Education Learning

An effort has been made to instil the value of multicultural Islamic education in the Indonesian setting as seen by the interaction patterns present in the study of multicultural Islamic religious education at SMA Karangturi. It may be necessary for the educational system to be able to declare its sacred nature as a Muslim and as an Indonesian who values and upholds his national identity. As a result, Indonesian Islam will have a distinctive Islamic style in which the connections between Islam, wathaniyah, and basyariyah come together to form a single entity known as rahmatan li al-alamin.[1]

## 5 Conclusion

Following the processing, analysis, and interpretation of data obtained from research on interaction patterns in multicultural Islamic religious education learning at SMA Karangturi Semarang, the following conclusions can be drawn:

In the learning interactions, the parent-child contact pattern has been an interaction that targets patterns resembling parents and children. Students as adopted children and teachers as adoptive parents. The interaction attempts to establish a learning atmosphere that will aid students in their studies. Teachers strive to provide pupils with the greatest experience possible, so they create an engaging setting. To establish a positive two-way relationship between the instructor and pupils, the teacher tries to be a good mentor with a wise and wise role. Sharing sessions between teachers and students, conversations, and instructional interruptions are some symbols included in this pattern.

Because the PAI teacher sees the students as friends, there is a pattern of cordial interaction that helps the students learn new things about Islam and feel secure in the version of Islam they follow. Due to the familiarity with PAI lecturers and the interaction of Muslim students with non-Muslim students, this relationship also encompasses non-Muslim students. The pattern in this amicable relationship involves getting to know one another, having fun, using social media, familiarity, respect for one another, and respect for another.

The PAI teacher pays close attention to each student regarding parenting relationships in Islamic religion classes. Teachers at PAI do a good job at democratic parenting, making learning enjoyable, dynamic, and influenced by teachers and students. Sharing sessions, question-and-answer lessons, prayer before and after learning, subject delivery, preaching invitations to worship, and sound advice are all examples of interaction through this parenting style.

Since the pattern of cultural interaction has evolved, consistency must be maintained. All parties involved in teaching PAI, teachers and students, must continually carry out the culture developed from the start. A method of learning infusing the ideals of multicultural Islamic religious education is the pattern of cultural interaction between PAI professors and students. Praying, preaching invitations to worship, participating in pilgrimages of religious rites, sharing, and using social media in an orderly manner are all examples of how Karangturi High School teachers put the pattern of cultural interaction in PAI learning into effect.

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# Personnel Management Of Higher Education In Improving The Quality Of Education At University Of Islam Malang (Unisma)

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**Abstract.** In Indonesia, High education had its higher education national standard. One of its standard was lecturer's standard. Lecturer was one of the personnel of high education who should be managed well through personnel management. Planning, developing and evaluation must be done in a measured and structured manner. The research aimed to analyze personnel management in developing student's quality. The research used qualitative approach with multi cases study. The similarities of different two object was studied by proposed theory. The data was taken through three methods; depth interview, participant observation, and documentation. Analyzed data used Miles and Hubberman's model by; collecting data, condensation data, displaying data and conclusion. To gain data credibility, researcher did triangulations, member checking, research extension, peer discussion, continuous observation, and reference material checking. The result of data analysis showed that the personnel planning in increasing educational quality at Unisma based on the university's vision, analysis, and identification of need, competences, personnel ratio, ideology and dedication. The personnel developing based on the development of functional position, carrier development and development of profession while the personnel evaluation was done centrally and based on the assessment of credit number and lecturer performance load.

**Keywords:** Personnel Management, High Education, Educational Quality..

## 1 Introduction

A higher education must meet the national higher education standards (SNP Dikti). SNP Dikti was a standard unit that included national education standards, research standards and community service standards. The standards consisted of graduate competency standards, learning content standards or curriculum, learning process standards, assessment standards, lecturer's standards, facilities and infrastructure standards, management standards, funding standards, research standards and community service standards.[1] The function of SNP Dikti as a main guide in

planning, implementation, and supervision of education in the context of realizing quality national education.

One of the SNP Dikti was the standard of lecturers and education staff. Lecturer standards are minimum criteria regarding the qualifications and competencies of lecturers to provide education in order to fulfill learning outcomes. According to national law of Indonesia, Number 14 of 2005, a lecturer was defined as a professional educator and scientist with the main task of transforming, developing, and disseminating science, technology and art through education, research and community service. [2] The position of lecturers as professionals serves to increase dignity. Meanwhile, the role of lecturers as agents of learning, developers of science, technology, and art as well as community service to improve the quality of national education. Because of their very dominant role in higher education, the standards of educators or lecturers in higher education must be directed to the fulfillment of the quality of education.

Mathis & Jackson presented the results of the study which stated that the competence of educators had a significant relationship with the quality of higher education. This means that the higher level of competence of the lecturers, the higher the quality of education produced. The competence of the lecturer was identified with three main competency dimensions, namely; knowledge, skills, and abilities. [3] These three competencies played an important role in improving the quality of education in higher education.

In Indonesian map, there was a famous city with its education. The city was Malang. Malang had many universities as the organization of higher education. Many higher education institutions exist in this city, both state universities (PTN) and private universities (PTS). One of the famous private University in Malang was University of Islam Malang (Unisma). Unisma was a modern private campus. Even though it is a private campus, Unisma was ranked 44<sup>th</sup> nationally. Unisma was also ranked 5<sup>th</sup> out of 332 private universities throughout East Java in awarding the superior campus from Kopertis VII East Java in 2016. In 2017 Unisma received the best performing university of the year 2017 award at Indonesia Achievement and Best Performing. This assessment was based on four areas, namely institutions and cooperation, educators and educational personnel, research and community service, and learning and student affairs.

One of the assessment above was the aspect of the educator or lecturer. In the field of management, this was studied in the field of personnel management. Personnel management was an effort made by managers to be able to utilize or develop lecturers, education staff, or students in universities. Personnel will mobilize existing resources within the organization or institution. With personnel management, component development within the institution could be monitored and directed continuously. [4] Therefore, the quality of the institution could be reached throughout personnel management.

In the other hand, the term quality in the context of education was input, process, and educational output that was managed by good management. By implementing good management will gave consequence on efficiency program and improving quality. Quality institutions were institutions that able to provide what customers need, both

internally and externally. This was conveyed by Juran, that quality has a definition of fit between the use of products to meet customer needs and satisfaction. [5] This statement was also supported by Deming who states that quality was conformity with market needs or whatever the needs and desires of consumers.

Indicators of Islamic educational institution was the result that will be provided by an educational institution, both educational institutions in general and Islamic educational institutions in particular to their customers. Sallis said that in education there are two kinds of clients, namely internal and external clients. These internal clients include lecturers and institutional staff, while external clients include students, parents, government, community, and the job market. [6]

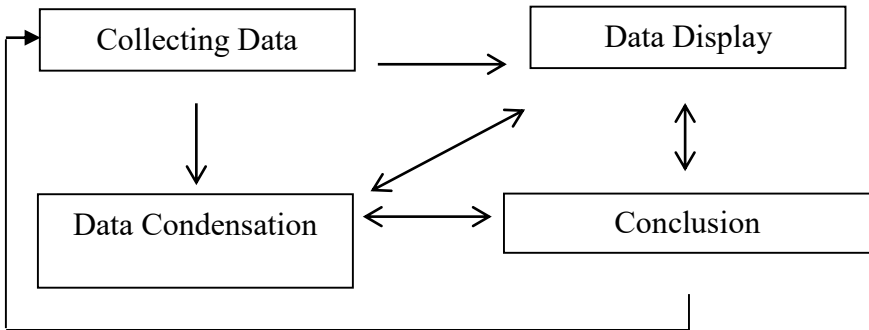
In the context of higher education, the quality of education is determined by the universities themselves. Higher education can choose and set their own higher education quality standards for each study program. The determination of the quality refers to the points of the quality of higher education. These items consist of the study program curriculum, human resources or lecturers and supporting staff, students, learning process, facilities and infrastructure, academic atmosphere, finance, research and publications, community service, governance, institutional management, information systems, and work. [7] But, this research only limited on personnel management.

From the descriptions above, it will be very appropriate if it linked between personnel management and the quality of education, especially higher education. So, it was very interesting if it is used as an educational management study. For this reason, it was necessary to examine in more depth the way personnel management was built in a higher education institution to improve the quality of education. Starting from its planning, developing and evaluating. Therefore, the author was interested in studying it in a study with the title Personnel Management of Higher Education in Improving the Quality of education at University of Islam Malang.

## **2 Research Method**

The research was done by using qualitative approach. Researcher decided what will be studied, arrange specific research question, limiting question, collecting data from the participant, and doing research objectively [8]. Field research with case study was used to identified the research subject. The subject was higher education, university of Islam Malang.

Data was collected by using three methods. They are depth interview, participant observation and documentation. After data collected, data will be analyzed by using Mile's and Hubberman method. The steps of analyzing followed this chart;



For making sure about the data, it was also done checking data's validation. For validating data, the researcher used credibility, dependability, confirmability and transferability.

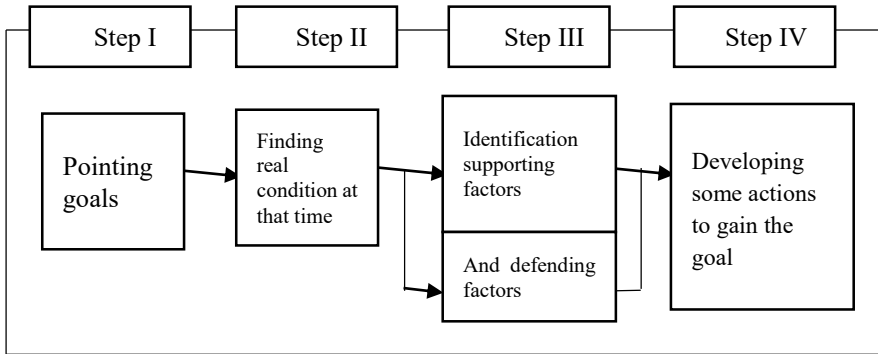
### 3 Result and Discussion

The result of the research was divided into three sub theme, they are:

#### 3.1 The Planning of Personnel Management to Improve The Quality of Education at University of Islam Malang

The personnel planning process is a very important part in organizations, especially in higher education organizations. Planning will determine the demand and supply of employees for the future. By the planning, employee needs can be estimated systematically and accurately.

In the planning process there are stages that must be fulfilled. The planning stages as Jackson and Schuler stated, there are 4 stages. The four stages are; collection and analysis of personnel inventory-related data, developing personnel planning objectives, designing and implementing programs that facilitate the achievement of personnel planning objectives and overseeing ongoing programs [9]. This is in line with that stated by Stoner. He stated that planning is an activity to think about and decide what to do in the future, its goals, parties and how to carry out the plan. In the planning process, Stoner provides the following basic planning steps as mentioned by Lijan [10]:



**Fig. 1.** Main Steps of Planning

The first step in the planning process is goal setting. The purpose of personnel planning refers to the goals of the college. In one of its objectives, it is stated that universities have a goal to develop a learning process and an academic atmosphere that is conducive to the implementation of technology-based education, research, and community service and to produce quality and pious human resources who are able to compete in the global era with a tolerant and moderate attitude. Therefore, the personnel planning process refers to this goal.

The second step is to determine the real conditions that are happening. This is related to job analysis. Job analysis is a process, method and technique to obtain job data. After that, process it into job information. Universities in order to obtain position data refer to the submission by the rectorate. The Rector coordinates with the faculties to determine the number of available lecturers. The amount is based on the ratio between students and lecturers.

If the position data has been accommodated, then the rector will process it into position information which is submitted to the foundation or ministry to follow up in the lecturer recruitment process. Before informing the public, foundations and ministries identify supporting and inhibiting factors.

Identification of supporting and inhibiting factors in the planning process is included in the third step. In this process, universities identify these factors. Among the supporting factors is the large availability of lecturer personnel who have academic qualifications in the fields of education and social humanities. So, the supply is abundant. However, qualifications in the medical field are very limited so that the fulfillment of lecturer personnel sometimes cannot be fulfilled.

Another inhibiting factor is the ideological factor on ideology-based campuses such as Unisma. This is different from other higher education institutions. This ideology is related to the ideology of Ahlissunnah Wal Jama'ah. Lecturer personnel must have at least an aswaja-based understanding. This is because Unisma, as its tag line, has pledged itself to be a university under the Nahdlatul Ulama' (NU) community organization. Therefore, the prospective lecturer personnel must have the same ideology as the campus.

The next step in the planning process is to develop the various actions that have been prepared. The next action taken is the recruitment or selection process. In the selection

process, the foundation determines various models or forms of tests for prospective lecturers. The Foundation determines the stages of the test that must be followed by all test takers. The first stage is a psychological test. The second stage is a private written test and a private interview and about college. The third stage is a test of academic potential in the form of a learning process that is adapted to the competence of the field. The final test is an interview related to his academic qualifications. Thus the various series of tests that must be carried out by each participant in the context of fulfilling the lecturer's personality.

Personnel planning carried out by universities can be simplified by referring to; First, the university's vision which is translated through the university's goals. Second, based on the needs of the faculty by referring to the mapping of needs. Third, based on the foundation with reference to the foundation's budget. Fourth, personnel planning refers to the process of analysis, identification of needs, competencies and ratios between students and lecturers' personnel. Fifth, the planning of lecturer personnel internally is also based on ideology and dedication.

Furthermore, in personnel planning, lecturers have a series of plans based on both external and internal. Externally, the planning of lecturer personnel refers to the regulations set by the Ministry of State Apparatus Empowerment (Kemenpan). Kemenpan organizes the admission of lecturers through the selection of civil servants (PNS) admissions. Internally, the institution carries out personnel planning based on the vision and mission of the University. Personnel are identified based on the needs of lecturers in each faculty. The need is based on the ratio of lecturers to students. Furthermore, the regulations regarding the recruitment of personnel are determined through the rector's regulation.

The planning process carried out when connected with the theory of experts refers to the theory presented by Andrew F. Sikula. He argues that human resource planning or personnel is the process of determining workforce needs by meeting needs and demands so that they are integrated with organizational plans [11].

This opinion is in accordance with the personnel planning organized by the university. Universities in preparing their personnel plans refer to the university's vision and are based on the needs of each faculty. Based on the needs of the faculty, it means the basis of the real needs that exist in each faculty. If it is likened to a company or factory, the faculty is the main engine that produces existing goods, in this case the lecturers as educators.

The planning process in higher education is not preceded by a forecasting process but by the process of analyzing and identifying competency needs and the ratio of educators to students. The analysis is carried out on the fields of work needed or an analysis of the number of workers with the existing load. This is because the workload affects the existing workforce. The more people who work while the workload is small, it will also be ineffective, on the contrary if the workload is large while the workforce is few or the personnel is few then it will not be efficient. This is in accordance with Veithzal Rivai's opinion which states that new personnel planning can be carried out properly and correctly if information about job analysis, organization, and personnel supply situations. The personnel planning system includes the estimation of demand or

demand for and supply of personnel [12]. Thus, analysis is needed in universities, especially related to lecturers who support courses in each study program.

Other experts who argue related to the planning process as mentioned in the theoretical study are George Milkovic and Paul C. Nystrom. Both said that workforce planning is a process of forecasting, developing, implementing and controlling which ensures the company has the right number of employees, the correct placement of employees, the right time which is automatically more useful [13]. In universities, the forecasting process refers to the miles stone of universities or it can also refer to the strategic plans of universities which are explained in their operational plans.

The next step in the planning process is the identification of competency needs. This identification is adjusted to job vacancies that are tailored to their competencies, not to their workload. With the existing competencies, work can easily be completed. In universities, standardization of lecturers has been applied, called the ratio of lecturers to the number of students, for example one lecturer to 40 students. This means that the number of lecturers in each study program is adjusted to the number of students. So, the personnel plan in college is very careful because it is related to the quality or human quality. Therefore, strategic steps must be considered to be in accordance with the existing vision and mission.

There are 4 interrelated activities in the personnel planning system in universities. These 4 activities can be described as follows.

#### 1. Inventory of personnel supplies

Personnel inventory is an activity of recording or collecting data on the number of personnel present in carrying out tasks in the organization. It can also be interpreted that an inventory is the recording or collection of data about activities, results achieved, public opinion regarding current events.

#### 2. Personality forecast

Personnel forecasting is useful for predicting future personnel demand. The method of forecasting the availability of labor from external sources consists of recruitment planning and workforce selection. Future labor demand (demand) is more complicated and subjective than predicting labor supply (supply). This happens because of the many factors that influence it. According to Simamora, these factors are changes in the external environment, changes in organizational conditions, and changes in labor conditions.

#### 3. Preparation of personnel plan

The preparation of personnel planning means a process of determining the needs of the workforce based on forecasting the development, implementation, and control of needs that are integrated with organizational planning. This is in order to create the number of employees, appropriate employee placement and economically useful.

#### 4. Monitoring and evaluation

Monitoring and evaluation is a form of activity from things that have been planned. Everything that has been arranged in the planning process is monitored and evaluated by the highest leadership of the college or the foundation that oversees the college.

Gary added that workforce or personnel planning is a process to decide which opinion in the company to fill and how to fill it. The plan covers all future positions, from maintenance clerk to CEO. The company termed this activity with the term succession planning. Workforce planning uses various tools in the analysis of the company. For example, companies scan the skills of current employees based on employee biographical records and perform skills shortage analysis, succession planning, cross-training, hiring programs, and mentoring [14].

In higher education, personnel planning is not only limited to recording or collecting data on the number of personnel in carrying out tasks in an organization. However, personnel planning is more than that. Personnel planning in universities has its own model, namely internal planning based on competence and dedication. This means that the availability of personnel to fill the field of work has been prepared in advance, these personnel are properly nurtured, honed their skills as well as their dedication to the institution. If only their abilities are honed but their sense of belonging is not, then the workforce with this model only works based on money. In certain universities or organizations, the value of service and a sense of belonging is enough to be a serious consideration in building and developing a credible institution, especially in improving the quality or quality of its output.

From the dialogue between the theoretical study and the data found in the field, it can be concluded that personnel planning in universities is a series of activities carried out to anticipate public demands for university graduates and the environment in organizations in the future to meet the needs of human resources. work. Personnel planning in higher education is also one of the functions in personnel management that is oriented to how to formulate strategic steps in preparing lecturer personnel appropriately in the required quantity and quality. Personnel planning as a management process in determining the movement of higher education personnel from its current position to the desired position in the future by using data as a guide for planning in the future.

In the process of implementing the personnel must be adjusted to a certain strategy. This is intended to minimize the gap between planning and goals. In addition, so that goals with reality can be achieved. At the same time, to facilitate organizational effectiveness, personnel planning must be integrated with the short, medium, and long term planning objectives of an organization or college.

### **3.2 The developing of personnel management to Improve The Quality of Education at University of Islam Malang**

Personnel development is something that must be done by organizations so that personnel can be skilled and highly committed to developing the organization in the future. Personnel development is the most effective way to anticipate obsolescence or



underdevelopment of employee competencies. In addition, as an effort to face personnel competition, both at local and global levels.

Personnel development in universities is carried out to ensure that employees with the right qualifications and experience are available when needed. This is done through promotions and positions, job transfers, and promotions. To support promotions and positions, transfers and promotions, wide opportunities are given to attend education, training and further studies with the aim that lecturers in higher education can increase their professional capacity.

The pattern of lecturers' personnel development in universities seems to be in line with career development in human resource management. The pattern of career development in higher education pays attention to qualifications, competencies, performance appraisals, organizational needs and considers aspects of integrity and morality. In tertiary institutions this development pattern is based on the tridharma of higher education, namely learning, research, and community service. In addition, following the development pattern that has been set and designed by the foundation. Another development distinction is the pattern of ideological development carried out by certain universities. The pattern of career development can also refer to Law Number 5 of 2014 concerning State Civil Apparatus, Government Regulation Number 11 of 2017 concerning Civil Servant Management and UB Rector's Regulation Number 74 of 2016 concerning Personnel. Furthermore, in the context of career development and to meet the needs of personnel with certain skills and competencies, UB's Chancellor issues Rector's Regulation Number 58 of 2017 concerning Study Tasks and Study Permits. The rector's regulation regulates the opportunity for study assignments and study permits as well as funding for PNS lecturers, non-civil servant permanent lecturers, civil servant education staff, and non-civil servant permanent education staff.

From the description of the career development carried out, it seems to be in line with the theory put forward by Henry Simamora. He said that a career is a sequence of activities related to work and the behavior, values, and aspirations of an employee over the range of the job in question. Furthermore, in career development there are four principles that need to be considered. The four principles are as follows.

1. Work has a huge influence on career development.
2. The form of skill development required is determined by the specific job request. The skills needed to become a supervisor will definitely be different from the skills needed to become a manager.
3. Development occurs when a person has not acquired the skills needed to do the job. If these demands are developed further, someone who already has the new skills needed should be given a new job in accordance with his expertise.
4. Time spent on development can be reduced by identifying a rational series of individual job placements.

In addition to using a career development pattern, lecturer development is also carried out with a training pattern. Payaman Simanjuntak emphasized that training is part of human investment to improve job skills and abilities. Training is usually carried out with a curriculum that is tailored to the needs of the position, given in a relatively short time, aiming to equip someone with job skills [15].

From the above definition it can be concluded that training consists of several principles, namely developing understanding, knowledge, and skills, given instructionally, both indoor and outdoor, the object is a group of people or a person, the goal is to provide understanding, knowledge and skills to employees according to their needs, the process of learning and practicing by following procedures so that it becomes a habit, and the results are seen in changes in the form of improvements in the way things work in the workplace.

Simanjuntak's opinion when examined is in line with the pattern of training carried out by universities. In the process of developing university lecturers' personnel, lecturers receive various types of training with different objectives. If traced in the opinion of experts, some of the training in the organization are as follows.

1. Pre-service training (basic training). This training is carried out by universities that have lecturers with civil servant status. Pre-service training is training given to prospective workers or prospective members of the organization on how to carry out the work or tasks that will be carried out in their positions or jobs later. This basic training can last a few hours, a few days, a few months to several years. This training should be given to prospective employees who have never received any training and have no experience in the job.
2. Refresher training is training given to employees who have carried out a job long enough in an organization. This training is considered necessary, usually because the company makes two changes, namely (a) Changes in technology or equipment or machines used so that it becomes something new for old employees. (b) Changes in working methods or operating procedures or production procedures.
3. Remedial training is training aimed at eliminating weaknesses found in employees in carrying out certain tasks. This training is usually given when it can be ascertained that the weakness is due to lack of training and lack of understanding of workers and not due to weak motivation.
4. Leveling training is training carried out for employees who are directed and nominated to occupy a higher position than their current position. This training is more accurately called an education program because the emphasis is more on adding the knowledge component and changing participants' attitudes.

A training policy can be interpreted as a written statement in an organization's plan or program to develop the skills of its employees. Training objectives are usually derived from the current workforce situation in the organization, region or country. In educational organizations there are several types of training that are usually developed by the organization. The types of training are as follows.

1. In-service for teacher
2. Staff seminar
3. Induction course (pelatihan induksi)
4. On the job training
5. Off the job training
6. On and off the job training
7. Vestibule training

8. Refresher course (Kursus Penyegaran)
9. Sensitivity Training (Pelatihan Kepekaan)
10. Supplementary training (pelatihan tambahan) [16].

Wayne Monday also mentioned that the methods in training for development consist of instructor guidance, case studies, behavior modeling, role playing in-basketball training, on-the job training, job rotation, internships, and beginner training [17].

The training models proposed by the experts above serve as guidelines in the implementation of development training in universities. Training in higher education is centered in quality assurance institutions (LPM) or human resource development agencies, personnel divisions or foundations with competency and ideological-based training curricula for private universities under certain organizations.

The model of personnel training in universities is carried out with a multi-level training design, which means that training for existing personnel is multi-level. Starting from level 1, 2, 3 and so on, both internal and external training. The implementation process can also be done indoors (in-house management training) or outdoor adventures (outbound management training). Furthermore, higher education personnel development focuses on the development of studies and career development of personnel with a tiered model of early, middle and late careers.

The results of the research above, when examined, strengthen and develop the opinions of Wukir and Monday. The model of personnel training in universities is carried out with a multi-level training design. This means that training for existing personnel is stratified from level 1, 2, 3 and so on. All of them are based on in-house management training and outbound management training activities. Personnel development in the form of study development and career development with a tiered model, namely from the initial career level, middle career and final career. Development through further study with the term study assignment or study permit is a form of development of lecturer personnel in higher education.

### **3.3 The evaluation of personnel management to Improve The Quality of Education at University of Islam Malang**

Monitoring and evaluation of lecturer track records is carried out in stages and in various ways. Lecturers in addition to employees who must comply with applicable employment regulations, are also staff who have functional duties or positions. In the administrative field, lecturers as employees must come to the office and return from the office in accordance with applicable regulations. This track record is monitored through a tool called a finger print, which at the end of each month is tabulated by the personnel and finance sub-section of each faculty or personnel division. The level of attendance and punctuality of work will be used as the basis for filling out allowances and the amount of incentives and meal allowances.

The implementation of the lecturer's track record in the academic field is carried out through filling in the lecturer's workload (BKD) every semester, both lecturers who already have educator certificates and those who do not. Track record in the academic field includes aspects of education and teaching, research, and community service.

Especially for lecturers who have professorship positions, in addition to these three aspects, they fill the special duties of professors which include writing books and conveying ideas.

For lecturers who already have an educator certificate, this track record will determine whether the person concerned can get a professional allowance or not. For lecturers who do not have an educator certificate, the results of their track record will determine whether they can get incentives or not.

In addition, in the field of education and teaching, each lecturer's activities are monitored at the end of each month by the head of the department, regarding whether his attendance level meets the requirements or not. Likewise, the material provided is monitored according to its performance. At the end of the semester, monitoring and track records are also carried out on the accuracy of submitting student grades. Lecturers are also monitored by students through the EDOM mechanism (student evaluation of lecturers).

In the field of research, it is monitored and evaluated every semester whether the lecturer conducts research or not and the research is carried out in accordance with the scientific field or not. In addition, the research conducted is in accordance with the road map of the department or not. At the university level everything is monitored by LPPM (research institute and community service).

Each research proposal and its results must go through proposal seminars and results seminars and be evaluated by experts (internal or external) who are appointed according to their fields of expertise. Even administratively, to avoid delays, a research control card is made that can monitor the development or progress of research implementation.

In the field of service or community service, monitoring and evaluation are also carried out. Before doing community service, each lecturer submits a proposal. Then, the proposal is presented in a seminar in the departmental forum or LPPM. Aspects seen by the service have been carried out based on research results or not, suitability with the field of expertise and financial administrative feasibility. After completing the service, the results must also be evaluated by a team formed by the respective department or LPPM. In the field of financial administration, in order to avoid delays and in accordance with the work contract, monitoring of the implementation of community service is carried out.

From the findings above, it is shown that the assessment or evaluation is carried out in a structured and systematic manner with certain functions. This is in accordance with what was stated by Roger Below that employee assessment can be used as a tool in various decisions [18]. In more detail, it can be categorized as follows;

1. As a basis for payment of wages
2. As a tool in supervising job assignments
3. As a training tool
4. As a tool in providing advice to employees
5. As a means of giving stimulants.

The benefits of employee appraisal are not only as a decision-making tool, but also useful from an employee perspective. The employee appraisal program adopted by the company can create trust and good morals from the employees concerned with the

company. The existence of trust among employees that they will receive rewards in accordance with their achievements is a stimulus for employees to improve their performance.

Furthermore, the evaluation carried out by universities also develops from what was conveyed by Roger Below. Evaluation is also carried out to ascertain the ideology of the lecturers, especially in private universities. This evaluation is carried out by monitoring activities that are inculcating the aswaja ideology. Such as selawatan activities, istigasah, tawasul, keaswajaan studies, and planting the ideology of aswaja. Its presence on the beach through finger print and has an impact on performance aspects.

## 4 Conclusions

The planning of university lecturers' personnel in improving the quality of education is carried out in the first few stages, the planning is adjusted to the vision, mission and goals of the university. After that, a job analysis was carried out by the faculty and rectorate. Second, the personnel planning process begins with an analysis of the needs and competencies of the personnel required by the university by referring to the ratio of lecturers to students. Third, personnel planning is based on aspects of the qualifications and competencies of the required lecturers' personnel.

The development of university lecturers' personnel in improving the quality of education is based on the tridharma of higher education, namely learning, research, and community service. In addition, lecturer personnel can develop their personal competence through further studies in the form of study assignments or study permits. In academic development, he also follows functional positions in stages starting from the position of expert assistant to professor. Every lecturer's personnel development is manifested in the writing of research journals and community service reports.

The evaluation of university lecturers' personnel in improving the quality of education is carried out by the ministry of education in the form of credit score assessment (PAK) and lecturer performance burden (BKD). Evaluation is also monitored through an integrated system as well as an index system and technology. Periodic evaluation is carried out using instruments that have been determined by the quality assurance agency in each university.

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# Investigating Neuro Factors Of Autistic Children In Phonemic Aspects Of A Second Language

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**Abstract.** The present study was designed to explore the phonemic aspects of the second language of Arabic in autistic children with special needs. A qualitative approach with a case study was employed in this study. Data were gathered from autistic children who are learning a second language (Arabic). Sources of the data were obtained from documentary data to determine the characteristics of the individual conditions of children and speech in the form of language sound symbols (e.g., pronunciation) in children who are learning a second language. The data from the autistic children were collected through observation, interviews, and pronunciation tests. Findings suggest that 1) mastery of the second language (Arabic) in autistic children tended to be slow, 2) the children lacked focus and their condition was not in a good mood in learning, and 3) there were deviations in phonemic aspects due to neurological factors experienced by children. Disorders of children's nerves affect the mastery of a second language, namely Arabic.

**Keywords:** Mastery Of Language, Children With Special Needs Autism, Phonemic.

## 1 Introduction

Humans are cultured beings and as social beings. Humans as social beings need interaction with other humans to survive. In relation to cultured beings, language has a position as a product or result of human culture. The main function of language is as a means of communication in society. These functions are used in a variety of environments, levels, and interests. Language acts as a medium for conveying ideas, interacting, and communicating in the informal realm (family and social environment) and in the formal realm, for example in learning at school [4].

Language skills include receptive language, namely listening and reading, as well as productive language (speaking and writing). One of the productive (expressive) skills is speaking skills, namely the ability to pronounce articulation sounds, or words to express, say, and convey thoughts.

Few children can easily and quickly master the language, both first language, and second language. This is caused by several influencing factors, namely internal and external factors. Internal factors, such as physical, psychological, and cognitive

conditions, including disorders of brain neurodevelopment (autism). External factors as obstacles, for example, the family and social environment.

Language disorders mean obstacles, obstacles, and something that hinders someone from uttering articulation sounds, or words to express, say, and convey thoughts, ideas, and feelings. Children who normally acquire language are naturally capable of mastering and acquiring language learning. However, some other children experience difficulties due to several things in relation to acquiring language and learning a language (Hikmawati, 2018).

Language acquisition (language acquisition) and language learning (language learning) are both processes of ownership of knowledge and individual mastery of a language. These two processes are distinguished according to the way in which various linguistic and non-linguistic aspects of input are entered. If an input of language mastery is owned by an individual in a natural way and is not programmed, it is called acquisition. Meanwhile, language mastery that is carried out in a planned or programmed structure is called learning. However, both are still based on the awareness of acquiring and mastering a language [5].

Acquisition of a second language refers to the process of acquiring a language that occurs after a person acquires a primary language or first language. If a child speaks Indonesian as his mother tongue, and he learns Arabic, then Arabic is his second language. Talking about mastering a second language, there are two important things that need to be studied in this research, including, the characteristics of the individual conditions of children who experience special obstacles in mastering the language and mastery of phonemic aspects as a basis for using good and correct language, both in terms of phoneme and word pronunciation.

Based on this, this study aims to explore the neurological factors of children with special needs that affect mastery of a second language and mastery of pronunciation aspects of sounds and words in learning Arabic as a second language. This research contributes to learning Arabic, both in schools with an inclusive education system and in the families of children with special needs. The inclusion system is assimilation in special learning without discriminating between children in general and those with special needs.

## **2 Method**

This study employed a qualitative approach with a case study design that aims to describe and expand cases of neurological factors in the mastery of the phonemic aspects of the Arabic second language in autistic children at PGRI Kedungwaru Tulungagung Special School. The study was conducted to explore and examine an aspect or special case discussion in depth in the form of descriptive pronunciation of Arabic as a second language spoken by children with special needs with autism. To obtain data on the characteristics of individual conditions and data on phonemic aspects (e.g., pronunciation) of the Arabic second language for children, observation, interviews, and documentation were done. This study was conducted at the PGRI Tulungagung Special School. Apart from that, the data collection technique also



recorded mastery of the second Arabic language in children with special needs with autism. The recording was transcribed. Finally, the data were then analyzed using data reduction, identification, verification, and conclusions.

### 3 Results and Discussion

Findings on the mastery of the second language in children with special needs with autism are detailed in the following sections.

First, it is difficult for children with special needs with autism to focus directly on learning. Children with special needs with autism must be given a stimulus or allowed to calm down first before entering learning. This is illustrated by the behavior of autistic children in class when studying with their teacher. The child is restless and shows a blank stare expression. Children with special needs autism cannot easily focus on learning immediately, the level of focus of children with special needs autism in learning in the classroom is only the first 10 to 15 minutes. in a condition of paying attention to learning. This shows that for children with special needs with autism in SLB PGRI Tulungagung one of its characteristics is a lack of focus when learning in class.

Based on the findings of the characteristics of a lack of focus when studying children with special needs for autism, this is relevant to the theory put forward by [5] that children with special needs for autism are children who experience language (communication), social interaction, and behavior barriers. Likewise, what was stated by Zuraida (2015) children who have a barrier to complex development including barriers to the development of communication, social interaction, behavior, emotions, and sensory. Children with special needs are very different from normal children, they need a relatively long time and must be continuous in mastering the language.

Second, students experienced irritability. Children with special needs with autism are often out of control and irritable caused of environmental conditions, moods, or situations (the circumstances around them). The character of irritability in children with special needs with autism in SLB PGRI Tulungagung is shown through their very sensitive behavior. The child is easily angry if the environment is not conducive. This autistic child in expressing his anger hurts himself (biting fingers, hands, and pulling hair). If the child is angry with peers (people around him), throws things at others, screams, or destroys things around him.

Third, students do not like eye contact. In a state of anger or not, children with special needs with autism do not like eye contact with the other person. Children with special needs with autism at SLB PGRI Tulungagung do not like to make eye contact with the other person (speech partner). The character of children with special needs for autism who do not like eye contact with their interlocutors corresponds to the previous work by [5] that children with special needs for autism are children who experience behavioral development disorders.

Fourth, students do not respond when called. These autistic special needs child needs stimulation to focus on the sound of the call. A child with special needs with autism is not unable to hear, but the child is processing and analyzing the information heard in

his mind about whose voice is calling him. Autistic children will respond well if those who call are their parents or family, or people they are familiar with.

There are several factors why autistic children with disabilities do not respond when called upon. This can be caused by brain nerve disorders, and experiencing hearing loss syndrome. From the description above, the characteristics of children with special needs at SLB PGRI Kedungwaru Tulungagung are not responding when called, it does not mean they don't hear, but children with special needs with autism need time to process the sounds of the calls they hear.

Fifth, students experienced weak communication. These students often experience problems in their pronunciation, information processing, and understanding of words, what is said cannot be understood immediately. Children experience weak communication because these children have language disorders, and they often have difficulty communicating their desires, both verbally and nonverbally. Most autistic children can speak using short sentences with simple vocabulary but limited vocabulary, causing many words they say they don't understand, those who can speak enjoy imitating other people's words, then some of them also often show confusion over pronouns.

### 3.1 Phonemic Studies in Second Language Mastery (Arabic) in Autistic Children

The characteristics of the individual conditions in children with special needs for autism affect second language mastery. In the process of mastering language, children with special needs with autism need a long time to be able to master the language. It is unique in itself. The results showed mastery of the second language and several types of mistakes that were often made by the students.

#### 3.1.1 *Sound distortion type I'lal.*

دَرَجَةٌ the sound produced دَرَجَةٌ

I'lal (vowel modification) uttered by children with special needs for autism at SLB PGRI Kedungwaru Tulungagung illustrates that the modification of the letters *illa* is in three or more root consonant sounds which are also called affixes but in children with special needs autism in the pronunciation of the word دَرَجَةٌ there is one letter missing that is *l* so the denotative meaning is not appropriate. دَرَجَةٌ / pancal bicycle / دَرَجَةٌ / level.

جَوْلَةٌ the sound produced جَوْلَةٌ

I'lal (vowel modification) uttered by autistic ABK illustrates that the modification of the vowel modification of the letter *illah* is with three or more root consonants. that is an affix, but in children with special needs autism in the pronunciation of the word جَوْلَةٌ there is one letter missing that is *l* so the denotative meaning is not appropriate. جَوْلَةٌ / motorcycle / جَوْلَةٌ / exploration.

اربة the sound produced اربة

*I'lal* (vowel modification) uttered by autistic children with special needs uses vowel modifications from the letter *illah* to be with three or more root consonants, which is an affix. however, in children with special needs autism in the pronunciation of words *عراية* there is one letter that changes its sound, namely letters *ع* in pronunciation changed to *ا* so the denotative meaning is not appropriate. *عراية* / *اربة* / internal organ. *I'lal* phonemic studies (modification of vowels) in Arabic in autistic children complement the theory put forward by Busri and Badrih (2018:42). Language is sound, language is systematic, language is creative, language has meaning, language is purely human, language is symbols, language is arbitrary, and language is not instinctive.

### 3.1.2 *Ibdal type (replacement)*

*صَنْحُنْ* the sound produced *صَهْنُنْ*

*Ibdal* (replacement) uttered by children with special needs for autism at SLB PGRI Kedungwaru Tulungagung illustrates that *Ibdal* (replacement) of pronunciation for children with special needs for autism is a substitution of several letters in words, as well as the data obtained for the pronunciation of the word *صَنْحُنْ* Becomes *صَهْنُنْ* thus producing a different denotative meaning. *صَنْحُنْ* / plate / *صَهْنُنْ* / zionist supporters /.

*اربة* the sound produced *عراية*

The *Ibdal* (replacement) uttered by autistic ABK illustrates that the *Ibdal* (replacement) of pronunciation in children with special needs for autism is a substitution of several letters in a word, as is the case with the data obtained for the pronunciation of the word *عراية* Becomes *اربة* thus producing a different denotative meaning. *عراية* / cart / *اربة* / internal organ/.

*Ibdal* (replacement) phonemic study of Arabic according to the theory put forward by Thoyib (2019:70) states that there are ten kinds of morphophonemic events, namely assimilation, dissimilation, insertion, deletion, haplology, metathesis, vocal harmony, vocal reduction, tone rules and morpheme sequence rules. The similarity between the sounds is based on the following two criteria; (1) the two sounds that often replace both vowels (including semi-vowels) or both consonants. There will be no replacement of vowels with consonants or vice versa because they have very different phonetic characteristics. (2) the closeness or similarity of the areas of the articulatory apparatus does not allow replacement of sounds that are not the same in articulation, such as the replacement of /b/ with /s/, because the first is a bilabial sound while the second is alveolar.

Thus, showing that *Ibdal* (replacement) of Arabic in children with special needs autism includes the process of replacing sounds in general, there are two standards that must be considered, namely sounds that replace each other equally vowels or are equally consonant and the proximity or similarity of the articulation area and influenced by character and neurological factors.

### 3.1.3 *Idgham (geminate/ lighten)*

مَرَزٌ Becomes مَرٌّ

*Idgham* (geminate/relieve) uttered by children with special needs with autism at SLB PGRI Kedungwaru Tulungagung illustrates that from the pronunciation of children with special needs autism there is gemination in several letters in words, as well as data obtained from research, the pronunciation of words مَرَزٌ transformed into مَرٌّ. From the words uttered by children with special needs with autism, gemination in Arabic occurs in one word where there are two or more consonants followed by a vowel, the vowel between the two is discarded and consonant 1 is memorized in consonant 2 so that in speaking the word becomes light. The word again مَرَزٌ transformed into مَرٌّ and thus it produces a different denotative meaning. مَرَزٌ / let through مَرٌّ / break through /.

مَدَّدٌ Becomes مَدٌّ

*The idgham* (gemination/relief) uttered by autistic ABK illustrates that *the idgham* (gemination) of pronunciation in children with special needs autism has gemination in several letters in words, as well as data obtained from research, word pronunciation مَدَّدٌ transformed into مَدٌّ. From the words uttered by children with special needs with autism, gemination in Arabic occurs in one word where there are two or more consonants followed by a vowel, the vowel between the two is discarded and consonant 1 is memorized in consonant 2 so that in speaking the word becomes light. The word again مَدَّدٌ transformed into مَدٌّ and thus it produces a different denotative meaning. مَدَّدٌ / that supports / مَدٌّ / lengthen /.

*Idgham* phonemic studies (geminate/ lighten) Arabic are relevant to Thoyib's explanation (2019:79). *damju harf sakin fi harf mutaharrik min jinsihi bi haitsu yashirani harfan wahidan musyaddadan*, that is, to merge a consonant with a consonant of the same type afterward so that the two become one consonant that has gemination, the aim of *idgham* is to make pronunciation easier with the following rules; (1) a word whose k2 and k3 consonants are the same and both are accompanied by a vowel, then the vowel between the two is removed and k2 is *Idgham* in k3. For example, مَرَرٌ /marara/ - مَرٌّ /marra/ 'past'. (2) words whose k2 and k3 are the same and between the two there are no vowels or other separators, then k2 is immediately *Idgham* to k3 without change.

*Idgham (gemination)* of the Arabic language spoken by children with special needs for autism is also influenced by the characteristics of children who lack focus when studying, get angry easily, do not like eye contact, do not respond when called, and have weak communication so that autistic children often lighten their speech in mastering a second language. Arabic. And this is very relevant to Zuraida statement (2015: 20) which also discusses children with special needs with autism, from a physical perspective, some of them do not have problems like normal children, some of them have disabilities. Children with special needs with autism are very different from normal children, they need more time to develop and must be sustainable in educating them.

### 3.1.4 Mukhalafah (Dissimilation / distinction)

تَكْسِيكُ the sound produced تَكْسِيكُ

*Mukhalafah* (dissimilation) uttered by children with special needs for autism in SLB PGRI Kedungwaru Tulungagung illustrates that mukhalafah (dissimilation) of pronunciation in children with special needs for autism contains dissimilation in several letters in words, as well as data obtained from research, word pronunciation تَكْسِيكُ transformed into تَكْسِيكُ thus producing a different denotative meaning. تَكْسِيكُ / taxi / تَكْسِيكُ //.

مَطَّة the sound produced مَطَّة

*The mukhalafah* (dissimilation) uttered by ABK shows that *the mukhalafah* (dissimilation) of pronunciation in children with special needs for autism contains dissimilation in several letters in words, as well as data obtained from research, the pronunciation of the word مَطَّة transformed into مَطَّة of the words spoken by the child with special needs autism, there is a missing word. Namely, the letter ح produces a different denotative meaning. مَطَّة / taxi / مَطَّة //.

مَلْفَعَةٌ the sound produced مَلْفَعَةٌ

*The mukhalafah* (dissimilation) uttered by autistic children illustrates that *the mukhalafah* (dissimilation) of pronunciation in children with special needs autism contains dissimilation of several letters in words, as well as data obtained from research, word pronunciation مَلْفَعَةٌ transformed into مَلْفَعَةٌ from the word spoken by the child with special needs autism there is a desimilated pharyngeal consonant word ع so that when he pronounces the letter it disappears. The word again مَلْفَعَةٌ transformed into مَلْفَعَةٌ and that produces a different denotative meaning. مَلْفَعَةٌ / spoon / مَلْفَعَةٌ / who conveys /.

مِثْسَةٌ the sound produced مِثْسَةٌ

*The mukhalafah* (dissimilation) uttered by children with special needs for autism in SLB PGRI Kedungwaru Tulungagung illustrates that the mukhalafah (dissimilation) of pronunciation in children with special needs for autism contains dissimilation in several letters in words, as well as data obtained from research, word pronunciation مِثْسَةٌ transformed into مِثْسَةٌ of the words uttered by the autistic special needs child there is a dorsoveral consonant word desimilated ك so that in his utterance the letter disappears. The word that was originally مِثْسَةٌ changed to مِثْسَةٌ and thus produced a different denotative meaning. مِثْسَةٌ / broom / مِثْسَةٌ / thick wood/.

The Mukhalafah (dissimilation) Arabic phonemic study in children with special needs with autism at the PGRI Kedungwaru Tulungagung Special School is very relevant to the theory put forward by Thoyib (2019). dissimilation or differentiation is the opposite of assimilation which has been explained previously if the assimilation of two different sounds becomes the same or almost the same. So, mukhalafah is the other way around, that is, to make two sounds that are the same as to be different, the purpose of dissimilation is the same as assimilation, namely to make pronunciation easier. In

Arabic, the pronunciation of two identical sounds (gemination) is heavy, so one of them is replaced with another light sound.

The dissimilation of Arabic spoken by children with special needs for autism is also influenced by the characteristics of children who lack focus when studying, get angry easily, do not like eye contact, do not respond when called, and have weak communication that affects the utterances produced in mastering the second language Arabic. This agrees with [5] that children with special needs with autism are impaired in the development of communication, social interaction, and behavior. Based on this study, mukhalafah or dissimilation can be explained to children when in one word there are two or more consonants that are exactly the same. One of the last consonants is changed to a long vowel. Two or three of the same consonants do not have to be side by side, but can also be separated by vowels. The habit of autistic children in pronouncing Arabic vocabulary elongates the final letters in sentences, and this is a neurological factor experienced by children with special needs for autism, because children lack focus, do not understand pronunciation errors resulting in differences in meaning.

## 4 Conclusion

The study's findings inform that there are neurological barriers that affect the mastery of a second language. The individual conditions of ABK with autism include lack of focus when studying, irritability, dislike of eye contact, not responding when called upon, and weak understanding of communication. The five characteristic findings of autistic children are caused by moods (moods) that have disappeared since leaving home, being treated less well at home, and rarely being invited to communicate. This individual condition causes habits that are often carried out by autistic children, difficulty concentrating, daydreaming, and preferring to be in their own world. Meanwhile, the results of the phonemic study of the second language show that there are deviations in pronunciation in the form of vowel modifications, sound substitutions, gemination, and dissimilation.

Based on the results of this study, it is recommended to related parties in this study. It is recommended that language teachers at the PGRI Kedungwaru Tulungagung SLB Institute understand the individual conditions of students. Parents and families should pay attention to deficiencies and often invite communication. Children are often trained to focus (concentration). For future researchers, the results of this study can be used as a reference by complementing and developing subsequent research, especially research related to neurological factors in second language mastery.

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# Relationship Between Extrover and Introver Personality Factors in The Afficiation Of Image Description Of Junior High School Students

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**Abstract.** The importance of personality factors in every human being in supporting the acquisition of a second language in someone is an interesting thing to do research. There are various supporting and inhibiting factors in language acquisition, namely internal factors and external factors. Internal factors are factors that arise from oneself. Internal factors consist of: gender, motivation, interest, attitude, personality, and style of language. Among these factors, the researcher focuses this research on internal factors, more focused on personality factors. The formulation of the problems in this study are, 1) How are the extroverted and introverted personality factors in junior high school students, 2) How are the image descriptions of junior high school students affixed, 3) What is the relationship between extroverted and introverted factors in the affixation of student image descriptions. This study uses a quantitative approach. The research design is correlation. The research data is in the form of numbers and data analysis is carried out using statistical analysis procedures. The population of this research is junior high school students. The sample of this research is 30 junior high school students. Data collection techniques used in the form of questionnaires and tests. Based on the results of this study it can be seen that there is a relationship between extroverted and introverted personality factors in the affixation of junior high school students' image descriptions with a significance result of 0.001 and the degree of relationship with *Pearson correlation* 0.594, meaning that there is a moderate correlation.

**Keywords:** Relationship, Extroverted Personality, Introverted, Affixation Picture Description.

## 1 Introduction

The process of language acquisition is quite an interesting conversation to discuss, because there are still many things in life around language development that are hampered in a person's personality, especially for children and school children who need a second language. One of the obstacles faced by the child in acquiring the language is that the child will find it difficult and complicated to communicate, which



will lead to a decrease in the interaction and quality of learning outcomes in the process of learning and acquiring the language.

There are several kinds of supporting and inhibiting factors in language acquisition, namely internal factors consisting of cognitive development and IQ. The second factor is external factors that come from the social environment. It can be said that internal factors are factors that arise from within oneself. Internal factors can be in the form of gender, motivation, interests, attitudes, personality, and learning styles. While factors that grow from outside consist of parents' demands, school factors can be from teachers or friends, and one's personal environment [2]

Among these factors, the researcher focuses this research on internal factors, more focused on personality factors. This research is interesting to study because personality in a person is the most important factor in someone's success in learning a second language. Personality factors include open and closed personalities which are one of the factors that greatly influence the success of acquiring and developing one's language [2]. According to Chomsky [7] every human being has what is called faculties of the mind, namely the intellectual parts in the mind or brain of every human being and the rest are for the use and acquisition of language. Mastery of a language by a child begins with the acquisition of the first language which is often called mother tongue (B1). Language acquisition begins with various long processes since the child does not know or is introduced until the child has mastered the language. After the child acquires the mother tongue, at a certain age the child will learn or get another language or a second language (B2) which is called knowledge that is new to the child.

According to [1] childhood to adolescence is a time for refinement of language (linguistic refinement). That is, children learn the grammar rules of language and begin to understand the most complex syntactical structures. Language treasury is increasing. Children have knowledge about composing words. In addition, children also develop the ability to think about language and provide comments with words or designations which are good predictors of reading achievement. Referential communication skills improve as children become more careful about clarifying uninformative messages they send out or receive. The opportunity to communicate with relatives or friends contributes to the development of communication skills in children [1]

Language background is a factor that is considered to be an influence in acquiring a second language. Language background is also called first language or mother tongue has an important role in acquiring a second language [6]. Krashen in [6] adds that there is a difference between second language acquisition and second language learning. He claims that language acquisition is developed unconsciously, i.e. develops in the subconscious, whereas through understanding leads to input when someone communicates. The second thing is that language learning is developed consciously through deliberate learning of a second language.

The existence of different personalities turns out to be able to influence a person's lifestyle and values that develop regularly so that behavior becomes more consistent and easy to notice. The existence of this personality greatly influences the process of interaction and communication between individuals. In the process of acquiring a second language there are factors and strategies in acquiring and mastering it. The acquisition of this second language is also influenced by conscious mental and

conscious processes. However, this mental process is influenced by various individual factors which may speed up, slow down, or even stop the language acquisition process [5]

Eysenck [8] suggests that introvert and extrovert personality types describe the similarity of individuals in behaving towards a stimulus as a manifestation of individual character, temperament, physical and intellectual in adapting to their environment.

#### Extroverted Personality

According to Eysenck [8] suggests that people with extroverted personality types direct themselves more towards their surroundings, and generally like to be friendly, like parties, have lots of friends, need other people to be their interlocutors, do not like to read or study alone, love humor, always ready to answer, enjoy change and relaxed. Individuals who have an extroverted personality also prefer to keep moving and doing something rather than having to stay still.

#### Introverted personality

Eysenck [8] suggests introvert personality traits, that individuals with introverted personalities always direct their views on themselves. All attention is directed into the life of his own soul. His behavior is mainly determined by what is happening in his own person. Individuals with introverted personality types tend to be quiet, they prefer reading to gathering (socializing) in a social environment, and communicating with other people, so having few friends generally avoids crowds.

In this study, the researcher chose the morphological discussion of affixation studies, especially the formation of words with affixes because affixation is an affixation in words. The elements involved are basic forms, affixes, and grammatical meanings [3].

Language as a means of communication or a means to convey one's intentions gives birth to feelings, and can create activities among humans, regulate human activities, plan and direct also use language. Language as a communication tool that God has given to every human being should be grateful for. As a communication tool acquired by humans from birth, it is known as language acquisition.

According to [3] Affixation is a process of adding to a basic form. In this process, 1) basic elements or basic forms, 2) affixes, 3) grammatical meanings are involved. Affix is a form, usually a bound morpheme that is added to a base in the process of word formation. Judging from the position attached to the basic form, there are prefixes, infixes, suffixes, confixes, interfixes, and transfixes (Chaer and Abdul, 2012). What is meant by prefixes are affixes that are added in front of basic forms, including: me(N)-, ber-, diterpe(N)-, per-, se-, and ke-. What is meant by infix is an affix that is added in the middle of the base form, consisting of: -el-, -em-, -er-, -e-, and, -in-. Suffixes are affixes that are added at the end of the base form, including: -kan, -an, -i, -and-nya. Confixes are affixes in the form of divided morphemes, the first part of which is positioned at the beginning of the basic form, and the second part is positioned at the end of the basic form. Because this confix is a divided morpheme, the two parts of the affix are considered as one unit and the addition is done at once, nothing comes first, and nothing comes later, this confix includes: ke-an, per-an, pe(N) )-an, ber-an, me-i, me-kan, and se-nya. Interfix is a kind of infix or connecting element that appears in the process of combining two elements. Transfixes are affixes in the form of vowels added to the whole base [3].

This study linked extrovert-introverted personality factors with image description affixation in junior high school students. This refers to the RPP for Indonesian subjects in the subject matter of morphological processes and word formation errors, KD.3.4 Understanding morphological processes (affixation, compounding, repetition, and absorption) in sentences. And KD.4.4 Using words that undergo morphological processes (affixation, compounding, repetition, and absorption) in sentences. This is associated with image descriptions because there is descriptive text material in grade 7 descriptive text material. In this case the researcher linked the analysis of affixation to the results of the image descriptions of students at Alrisalah Jombang boarding school.

Based on previous research 1) on "The relationship between extroverted-introverted personality types and social acceptance in students" article compiled by [4]. In this study, the results of correlational calculations were obtained with the result that there was no relationship between extroverted-introverted personality and social acceptance and this research was carried out before the covid 19 pandemic. during the covid 19 pandemic. 2) about "The relationship between introverted personality and peer attachment to youth readiness" article compiled by [9], in this study linking introverted personality and peer attachment to adolescent loneliness. In this case the variables in this study discuss introverted personality with the independent variable which is associated with adolescent loneliness as the dependent variable and was carried out before the Covid 19 pandemic. In contrast to the research in this article the authors associate introverted and extroverted personality factors and have a dependent variable associated with affixation of image descriptions in junior high school students.

In this study, the researcher formulated the following problems: 1) what are the extroverted and introverted personality factors of the students of the Al-risalah girls' boarding school in Jombang?, 2) what is the affixation of the image descriptions of the second language of the students of the Al-risalah girls' boarding school in Jombang?, 3) what is the relationship between extroverted and introverted factors in the affixation of image descriptions of students at the Al-risalah female boarding school Jombang?. In this study there are also research objectives, namely 1) Describe the extroverted and introverted personality factors of students at Al-risalah Jombang Islamic Middle School, 2) Describe the affixation of image descriptions of students at Al-risalah Jombang boarding junior high school, 3) Describe the relationship between extroverted and introverted personality factors in the affixation of image descriptions of students at Al-risalah Jombang Islamic Middle School.

The assumptions in this study are as follows. 1) Students at Al-risalah Jombang Islamic Boarding School for the 2020/2021 academic year who have extroverted/introverted personality factors, 2) The Extroverted/Introverted personality of students at Jombang Alrisalah Dormitory Middle School can be observed and determined, 3) Al-risalah Jombang Middle School students can use the language of affixes (affixations) and has got material description text.

The benefits of this research are expected to provide benefits as 1) teachers are expected to be able to provide valuable information and input for Indonesian lessons so that they can further increase affixation affixes which are more varied, 2) for students who have introverted-extroverted personalities are expected to always develop themselves, especially in terms of language so that it is rich in Indonesian vocabulary,

3) for advanced researchers it is hoped that it can be used as a basis and development for subsequent research, especially research that has a relationship with extroverted-introverted personality factors in image description affixation.

## 2 Research Method

This research uses a quantitative approach. Quantitative research that aims to measure the extent to which the level of closeness between personality factors in the affixation of image descriptions of students at SMP Al-risalah Jombang boarding school. The main variable in this research is personality factor and the second variable is image description affixation. The research design used in this study is correlational which is carried out with the aim of comparing similarities with differences or facts based on an existing frame of mind so that the results are clear.

The population of this study were students of the Al-risalah Jombang boarding school, and the sample of this study was the students of the Jombang Al-risalah boarding school with a total of 30 students. The measuring instrument test used in this study is to measure its reliability and validity. The reason is because the instrument must meet these requirements in order to be considered good.

In this study, researchers used instruments in the form of questionnaires and tests. The questionnaire was used to measure Extroverted and Introverted personality factors. This is done by submitting several statements. This questionnaire was compiled based on personality factors from introvert and extrovert characteristics. According to Eyseck [8] about introvert and extrovert personality types describe the similarity of individuals in behaving towards a stimulus as a manifestation of individual character, temperament, physical and intellectual in adjusting yourself with the environment. While the test uses an image to be described according to each student's language, it is used to measure the affixation process in the image description. To determine the validity of the test items, it is necessary to conduct reliability and validity tests.

Validity is a condition if an evaluation instrument is able to measure precisely [10]. To determine the validity of the test used construct validity. Construct validity refers to the suitability between the results of the measuring instrument and the ability being measured [10]. Next is the reliability questionnaire. In this study, measuring reliability using the Flanagan formula. The Flanagan formula is used to find the reliability of the questionnaire using the halves method. The Flanagan formula applies the standard deviation to each half and to the score. After dividing the test results into two halves, then look for  $SD^2$  in the even hemispheres, and  $SD^2$  in the total score.

To analyze the data collected from the results of this study, the use of quantitative analysis with a simple correlation formula aims to measure the strength of the relationship between the two variables and also to determine the form of the relationship between the two. On the basis of a decision if the significance value is  $< 0.05$  then it is correlated, if the significance value  $> 0.05$  then it is not correlated. Regarding the guidelines for the degree of correlation, namely:

Pearson correlation value  $0.00 - 0.20$  = no correlation

Pearson correlation value  $0.21 - 0.40$  = weak correlation

Pearson correlation value 0.41 – 0.60 = moderate correlation

Pearson correlation value 0.61 – 0.80 = strong correlation

Pearson correlation value 0.81 – 1.00 = perfect correlation.

### **3 Research Result**

This section presents 1) Results of the intensity of extroverted and introverted personality factors, 2) Affixation results of image descriptions. 4) The results of the relationship between extroverted and introverted personality factors in image description affixation. This will be discussed as follows.

#### **3.1 Results of the Intensity of Extroverted and Introverted Personality Factors**

Based on the results of the test results for the distribution of questionnaires for students of SMP Al-risalah Jombang boarding school, a total of 30 students with a questionnaire totaling 7 questionnaire points. The results showed that 4 students had introverted personalities and 26 other students had extroverted personalities. with the highest total score of 63 in students with extroverted personalities. And the lowest score is 35, with a total value of 1,435. This personality factor research pays attention to personality factors stated by Eyseck [8] about the characteristics of extroverted personality factors and introverted personality factors.

#### **3.2 Image Description Affixation Results**

Based on the image description test results given by the researcher during the data collection process by paying attention to the affixations in the image descriptions by students by paying attention to the affixation sections, namely prefixes, infixes, suffixes, confixes, interfixes, and transfixes in the results of describing images students of the Al-risalah boarding school in Jombang. The value data contained in the image description affixation test obtained the highest score, namely 40, and the lowest score was 5, with a total value of 645 and an average result value of 21.5.

#### **3.3 Results of the Relationship between Extroverted Personality Factors and Introverted Personality Factors in Picture Description Affixation.**

From the results of the distribution of the questionnaire, the results of students with extroverted personalities were 26, and students with introverted personalities were 4 with the highest score being 63 and the lowest score being 35. The highest score for variable Y was 40 and the lowest score was 5. The following table tests the hypothesis of the relationship between extroverted and introverted personality factors in the affixation of image descriptions of students at SMP Al-risale boarding houses, Jombang.

**Table 1.** Testing the hypothesis of the relationship between the independent variable and the dependent variable.

		<b>correlations</b>	
		Personality	Affixation
<b>Personality</b>	Pearson Correlation	1	.594**
	Sig. (2-tailed)		.001
	N	30	30
<b>Affixation</b>	Pearson Correlation	.594**	1
	Sig. (2-tailed)	.001	
	N	30	30

**\*\*.** Correlation is significant at the 0.01 level (2-tailed).

Based on the table above, correlation calculations using SPSS statistics 20 obtained the results of hypothesis testing. In the second row, the significance (2-tailed) for personality is 0.001 and for affixation the significance is 0.001, meaning that these two variables have a relationship or are said to have a correlation. From the table above we can see that the correlation value for the personality variable is 0.594 and for the affixation variable the correlation value is 0.549. From the results of the correlation value in the test using SPSS 20, the degree of relationship between extroverted and introverted personality factors in the image description affixation is 0.549 which lies between the correlation values of 0.41 to 0.60 at the level of moderate degree of correlation. This means that variable X to variable Y has a correlation with a moderate degree of correlation.

## 4 Discussion

In this section, we discuss the results of research on the relationship between extroverted and introverted personality factors in the affixation of image descriptions of students at the Al-risalah Jombang boarding school which include, 1) the extroverted and introverted personality factors of the Al-risalah Jombang boarding school students, 2) the affixation of the image descriptions of the students of the Al-risalah Jombang boarding school, 3) the relationship between extroverted and introverted personality factors in the affixation of image descriptions of students at the Al-risalah Islamic boarding school, Jombang. These three things are described as follows.

### 4.1 Extroverted and Introverted Personality Factors for Junior High School Students

This section discusses the extroverted and introverted personality factors of students as measured using extroverted and introverted personality aspects. The following describes the assessment scores of extroverted and introverted personality factors from personality factors. There are 4 students who tend to have introverted personalities. The data is generated with a maximum score of 63, and the lowest score is 35, with a total result of 1,435.

From the results of the questionnaire distribution, there were 26 students who tended to have extroverted personalities. This tends to agree with Eyseck's opinion [8] who argues about the extroverted personality factor that people with extroverted personality types direct themselves more towards their surroundings, and generally like to be friendly, like parties, have lots of friends, need other people to be their interlocutor, do not like to read or study alone, love humor, always ready to answer, love change and relaxed. Individuals who have extroverted personalities also prefer to keep moving and do something compared to having to stay silent.

From the results of the questionnaire distribution, there were 4 students who tended to have introverted personalities. This also tends to agree with Eyseck's opinion [8] who argues about the introvert personality factor that individuals with introverted personalities always direct their views on themselves. All attention is directed into the life of his own soul. His behavior is mainly determined by what is happening in his own person. Individuals with introverted personality types tend to be quiet, they prefer to read rather than gather (socialize) in a social environment and communicate with other people so that they have few friends and generally avoid crowds.

## 4.2 Affixation of Image Descriptions for Junior High School Students

From the results of image description data analysis, the authors analyzed the affixation process in image descriptions for students of Alrislah Middle School boarding house, Jombang. From the analysis results, the highest score is 40, and the lowest score is 5, with a total value of 645, and the average value is 21.5. Data is generated by collecting the affixation parts of prefixes, infixes, suffixes, confixes, interfixes, and transfixes in accordance with the relevant theory according to [3] suggests affixation seen from the position attached to the basic form is distinguished by prefixes, infixes, suffixes, confixes, interfix, and transfix.

In the prefix affixation process, a total of 76 forms of prefix affixes were obtained, which included the affix [se-], there were 3 students who used the affix [se-]. In the affix [ber-] there are 38 prefixes. In the affix [pe(N)] there are 5 prefixes. In the affix [me(N)-] there are 30 prefixes. There are no affixes [to-] and [ter] in the image description. This is in accordance with the relevant theory that what is meant by prefixes are affixes that are added before the base form, including: me(N)-, ber-, diterpe(N)-, per-, se-, and ke- [3].

In the image description results are not generated infix affixes. But there is another affixation process, namely suffix affixation. In the affixation of suffixes, a total of 14 forms of suffix affixes were obtained, which included the affix [-an], there were 13 suffixes. And the affix [i] has 1 suffix. In the results of the image description there are no affixes [kan] and [nya]. This is in accordance with the relevant theory that suffixes are affixes that are added to the final position of the base form, including: -kan, -an, -i, and -nya [3].

In the process of affixation of confixes from image descriptions, the results of affixation of confixes are 43 forms of confixes, which include affixes [to-an], there are 3 confixes, affixes pe[(N)-an], there are 3 confixes, affixes [me-i], there are 35, and the affix [me-kan] has 2 confixes. There are no [per-an] and [se-nya] affixes in the image

description. This is in accordance with the relevant theory that confixes are affixes in the form of divided morphemes, the first part of which is positioned at the beginning of the base form, and the second part is positioned at the end of the base form. Because this confix is a divided morpheme, the two parts of the affix are considered as one unit and the addition is done at once, nothing comes first, and nothing comes later, this confix includes: ke-an, per-an, pe(N)-an, ber-an, me-i, me-kan, and se-nya. [3] In the description of the images in this study, no affixation of infixes, interfixes, and transfixes was found.

### **4.3 The Relationship between Extroverted and Introverted Personality Factors in the Affixation of Image Descriptions for Middle School Students**

From the data analysis using SPSS 20 in the table above about the relationship between extroverted and introverted personality factors in the affixation of image descriptions for junior high school students, the results obtained a significance value of 0.001, and for the affixation of image descriptions, the results obtained were significant. 0.001, meaning that the results accept the working hypothesis, that is, if the significance results are less than 0.005, then there is a relationship between variable X and variable Y, then the results of this study are  $0.001 < 0.005$ , which means that there is an influence between extroverted and introverted personality factors in the affixation of image descriptions junior high school students. But when viewed from the degree of relationship Pearson Correlation, the level of relationship between extroverted and introverted personality factors in the affixation of picture descriptions of junior high school students shows 0.594 with a relationship level of "moderate correlation" ranging from 0.41 to 0.60.

This is commensurate with what was conveyed by [10] regarding to analyze the data collected from the results of this study, the use of quantitative analysis with a simple correlation formula aims to measure the strength of the relationship between the two variables and also to determine the form of the relationship between the two. On the basis of a decision, if the significance value is  $< 0.05$  then it is correlated, if the significance value is  $> 0.05$  then it is not correlated. Regarding the guidelines for the degree of correlation, namely: Pearson correlation value 0.00 - 0.20 = no correlation, Pearson correlation value 0.21 - 0.40 = weak correlation, Pearson correlation value 0.41 - 0.60 = moderate correlation, Pearson Correlation value 0.61 - 0.80 = strong correlation, Pearson Correlation value 0.81 - 1.00 = perfect correlation.

From these results, personality factor variables cannot be separated from personality factors which have been stated by Eysenck [8] that people with extroverted personality types are more orientated towards their surroundings, and in general like friendly friends, like parties, has many friends, needs other people to be their conversation partners, does not like to read or study alone, likes humor, always ready to answer, likes change and relaxed. Individuals who have an extroverted personality also prefer to keep moving and doing something rather than having to stay still. Individuals with introverted personalities always set their sights on themselves. All attention is directed into the life of his own soul. His behavior is mainly determined by what is happening



in his own person. Individuals with introverted personality types tend to be quiet, they prefer to read rather than gather (socialize) in a social environment, and communicate with other people so that they have few friends and generally avoid crowds. This supports the success of variable X on variable Y in the results of this study.

In variable Y, namely image description affixation, the results of the analysis of the affixation process are in accordance with the relevant theory according to [3] regarding affixation and its division into prefixes, infixes, suffixes, confixes, interfixes, and transfixes. In the results of this study obtained the affixation of prefixes, suffixes, and confixes. Prefixes consist of affixes me(N)-, ber-, diter-pe(N)-, per-, se-, and ke- [3].

## 5 Conclusion

Based on the results of this study it can be seen that "there is a relationship between extroverted and introverted personality factors in the affixation of junior high school students' image descriptions" with a significance result of 0.001 and the degree of relationship with *Pearson correlation* 0.594, meaning that there is a moderate correlation.

### 5.1 Suggestions

The results of this study deserve to be considered as a reference for junior high school students, especially teachers to overcome obstacles or personality factors in the language acquisition process. For researchers, this research can be a new insight into the relationship of personality factors in image description affixation so that researchers can conduct further research. For other researchers, it is hoped to develop research on extroverted personality factors as an effort to increase the wealth of upper language acquisition with better expectations.

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# Teacher's Resilience Overcome New Normal Learning in Elementary School

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**Abstract.** The change in the 2013 curriculum to the independent curriculum and the New Normal Learning After the Covid-19 Pandemic caused teachers and students to adjust the learning process. Changes in the learning paradigm emphasizing the digitalization of education are not supported by the digital literacy of students and teachers. This has hampered the digitalization of education in Indonesia. Distance learning indirectly forces teachers and students to change from conventional learning to digital-based learning to support distance learning. In line with this change, the implementation of an independent curriculum for selected schools was followed by the implementation of an independent curriculum in various schools in Indonesia. Changes in the learning process require the resilience of teachers and students in adapting to these changes. This literature review explains how teachers can apply resilience to change and how the SAMR framework can be applied in elementary school learning. From this literature review, it can be concluded that the SAMR framework applied in elementary schools can help teachers survive the changes that occur and help teachers change their learning styles from conventional to digital.

**Keywords:** Resilience, Independent Curriculum, Digitalization of Learning, SAMR.

## 1 Introduction

Curriculum changes from the 2013 curriculum to the independent curriculum after previously being punctuated by the emergency curriculum due to the Covid-19 pandemic made every element of education have to adapt to changes in education management, especially in elementary schools. The elementary school curriculum underwent major changes because it moved from thematic to subject matter [1], [2]. The situation is exacerbated by the Covid-19 pandemic where students must study from home or distance learning so that teachers must conduct distance learning [3]. The smooth running of distance learning during the covid pandemic is inseparable from the use of digital technology as a means of connecting. The use of technology during the pandemic played a big role in challenging students to use technology consciously and responsibly [4].

However, changes in learning methods and approaches, not only in Indonesia, but also in the world, make not only teachers but also students experience fatigue and stress. Although the average level of emotional exhaustion is moderate, it should be noted that more than 20% of teachers and 15% of school principals report high levels of emotional exhaustion. In addition, most teachers and principals report increasing emotional exhaustion and perceive the pandemic as something dangerous. This is particularly worrying given the relationship between teacher burnout and health, retention in the profession, the quality of their teaching, and student outcomes[5]. Although the average level of emotional exhaustion is moderate, it should be noted that more than 20% of teachers and 15% of school principals report high levels of emotional exhaustion. In addition, most teachers and principals report increasing emotional exhaustion and perceive the pandemic as something dangerous. This is particularly worrying given the relationship between teacher burnout and health, retention in the profession, the quality of their teaching, and student outcomes [6].

To overcome the negative impacts above, not only do teachers and students have to improve their digital literacy skills and make good use of technology in the new normal learning era, but they also have to have the resilience to deal with the changes that occur.

## 2 New Normal Learning

New normal learning can be interpreted as learning that adapts basic things due to significant changes. The term new normal does not only appear in the education sector, but also in various other sectors.

New normal learning that is developing, especially in Indonesia, tends to be blended learning.[7] [9]. There are several challenges faced by teachers and students while adapting to new normal learning, namely:

1. Basic digital skills can be defined as a set of individual's abilities to effectively and responsibly participate in economic, social, and cultural life via digital technologies. To do so, a variety of basic digital skills is necessary. Based on the ICILS 2013 framework, understanding computer use, gathering information, producing information, and digital communication reflects central digital skills[4]. These basic digital skills are fundamental because blended learning uses online and offline learning modes. Not only basic digital skills that must be mastered by teachers and students, but also innovative use of digital platforms so that blended learning becomes meaningful and not boring.
2. Learning time, even though blended learning promotes flexible learning time [9], [10], the learning load given must be appropriate so that students and teachers do not find it difficult to apply blended learning.
3. Resilience of students and teachers in adapting to new learning models, new normal learning is not only an opportunity for educational renewal but also a challenge [11] because the adaptation process is not easy. Therefore, good readiness is needed between teachers and students so that both of them can adapt well.

### 3 SAMR Framework

The SAMR framework is a model that describes a person's readiness to adapt to applying technology in classroom learning [11], [12]. SAMR mode was first introduced by Ruben Puentedura via an iTunes U course and thereafter via workshops, presentations and his blog. The model is based on observations of practice that have not been peer-reviewed [11]. Despite this lack of a peer-reviewed research basis, SAMR has become popular with both teachers and researchers over the last decade because it uses plain language, is presented diagrammatically and is easily accessible.

SAMR stands for Substitution, Augmentation, Modification and Redefinition. These four terms describe the level of adaptation of one's learning to the use of technology as a learning medium.

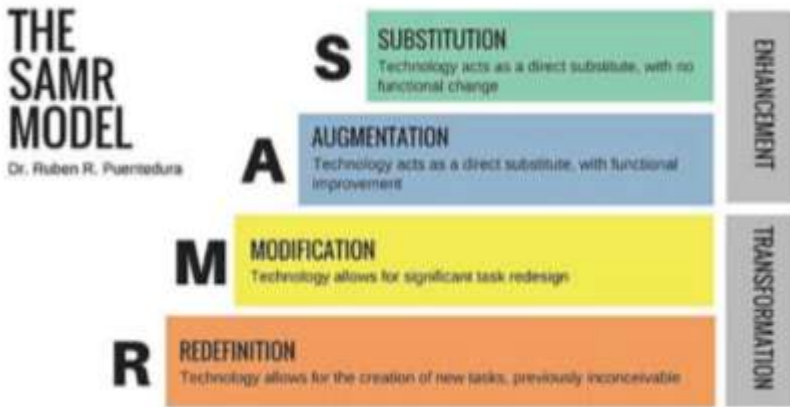


Fig. 1. The SAMR Model

Substitution is defined as a change in teachers using digital media after previously using conventional media as learning media. Even though they have used digital media, functionally there has been no change [13], [14]. in learning practices in the new normal era, many of these activities are carried out by teachers and students such as the use of Whatsapp groups to submit assignments that are photographed for the teacher.

Augmentation is defined as a change in learning activities from the use of conventional media to digital media with a slight increase in function [14], [15]. Such as making learning videos that are sent to students through various vias so that students can make these videos as learning material at home. Another activity that can be done if someone has entered the augmentation stage is that students can discuss online.

The Substitution and Augmentation stages are also called the enhancement stages because even though the media that has been used is already digital media, functionally the use of digital media can be replaced with conventional media because functionally these two media facilitate the same thing.

The next stage is modification. At this stage the use of digital media not only changes functionally but also the tasks assigned require digital media in its application [14], [15]. And the last is the Redefinition Stage. At this stage learning must be carried out in full using digital. Not only changes in tasks and functions, but these tasks do not use digital media, so these activities cannot be carried out. Like a virtual tour.

The Modification and Redefinition stages are also called the transformation stages because these two stages use assignments that must be done digitally. Someone at the modification and redefinition stage consciously and jointly uses technology as the main medium of learning so that functionally it cannot be replaced by conventional media. the stages of transformation cannot be carried out by teachers and students individually. There needs to be a teacher forum and school support [16] so that the use of digital media can be carried out.

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# Imagining the First View as an Artist: lessons in organizing creative workshops

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**Abstract.** Abstract Through the recent improvement of technology access in the Philippine arena, more and more ways for teachers and students to come together in a virtual setting made possible for all. Each learner has the capacity to realize the power of being an artist for self-empowerment and for reaching out to others who do not realize yet their own skills. Especially, the art of photography continues to evolve in the world of digital humanities innovative projects involving the use of photos continue to emerge. The conduct of a virtual workshop in photography served as the platform to reach out to young students-artists, practitioners, enthusiasts, who wish to enhance their skills. It was a venue of artistic engagements, sharing of ideas and experimenting with photography in order to reach a higher level of expression of this art form which was hoped to contribute to the expansion of digital humanities all over the country and the world. This current paper determined the influence of photography in learning and teaching process. Specifically, this would: 1) identify the level of proficiency of the participants; 2) determine how photography influenced the lives of the participants, and 3) assess the composition based on emotion and angle of selected output. Results showed that 33% of the participants had proficient to expert level in photography, 43% had competent skills while 24% belonged to the novice and advanced beginner level. A sizable majority of respondents thought that photography helped their careers, made them happier, or brought them new friends; made possible by maximizing the use of learning platforms and resources that were widely available and easily accessible by stakeholders. It is because of these perceived benefits that the majority of the respondents decided to attend the virtual workshop “for personal growth”. This study presented more information and lessons about the importance of including trainings on art forms such as photography in educational spaces and academic institutions for the benefit of students and their enrichment as artists.

**Keywords:** artistic output, creative workshops, educational trainings



# 1 Introduction

Over the years, with the rapid advancements in technology, the field of digital humanities has expanded, which has also led to the development of the art of photography. When integrated with a structured learning environment, artistic expression can be a useful tool to inspire inquiry and experimentation as well as critical thinking. As photos play an important role in many digital humanities projects, digital photography has come to be further practiced and appreciated as a form of visual art (Puppe et al., 2020). Thus, it is important for any budding, practicing or expert photographer to understand how they should make full use of their technical skills and creativity in a responsible and conscious manner to enrich themselves as artists and contribute to the expansion of digital humanities all over the country and the world. As Walmsley (2016) strongly indicated that responsive digital platforms can democratize critical exchange; foster slower, more reflective critique; and positively shift perceptions of unfamiliar artforms among the learners thereby hasten perhaps the process of co-creating. Through this form of visual art which has the power to express feelings and tell stories in one shot, anyone can be considered an artist. That being said, it is essential for any budding, practicing or expert photographer to understand how to make full use of their skills and creativity in a responsible and conscious manner through the art of digital photography.

Furthermore, this digital workshops emphasized motivating students to approach problems from a novel perspective, imagining novel possibilities, and investigating alternate viewpoints (Bresler, 2010; Holme & Ashley, 2018). Overall, this provided a distinctive and captivating method of teaching and learning that places an emphasis on imagination, creativity, and innovation.

The general aim of the paper was to determine the influence of digital workshops in the lives of participants. Specifically, it would 1) identify the level of knowledge in photography of the participants; 2) determine how photography influenced the lives of the participants; and 3) determine the composition based on emotion and angle to enhance output was applied.

# 2 Method

A virtual workshop in digital photography was conducted, where two resource speakers taught participants about the proper and effective gadgets, settings and techniques to use in capturing and editing great photos, such as the use of color contrast and proper exposure. Afterwards, an online survey was sent to all participants which contained questions about their own personal experiences with photography. The data collected was sorted and analyzed by means of statistical and descriptive analysis. A total of 188 participants responded to the survey (Table 1).

**Table 1.** The sociodemographic profile of the workshop participants.

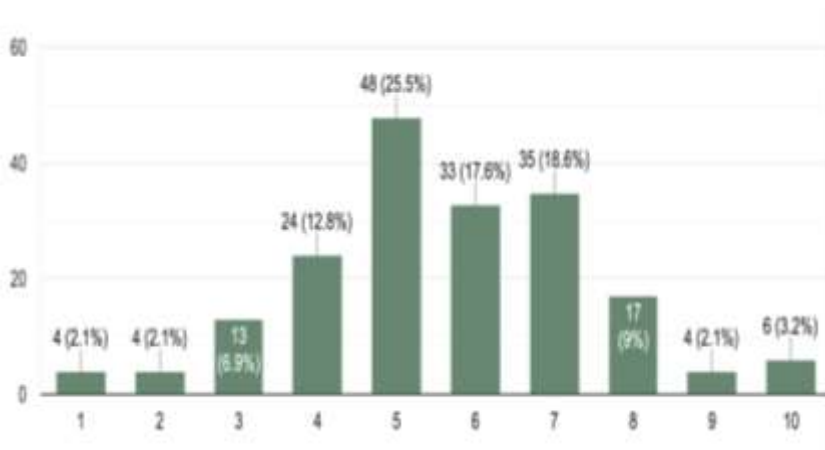
<b>PROFILE OF THE PARTICIPANTS</b>	
<b>SEX</b>	frequency %

<b>Male</b>	68	36%
<b>Female</b>	118	63%
<b>Prefer not to say</b>	2	1%
<b>Total</b>	188	100%
<b>CLASSIFICATION</b>		
<b>Student</b>	70	37.2%
<b>Teacher</b>	46	24.5%
<b>Office support</b>	25	13.3%
<b>Other professionals</b>	47	25%
<b>Total</b>	188	100%

### 3 Results And Discussion

#### 3.1 Photography Knowledge of Participant

The current digital world constantly overwhelms the eyes with images that are so appealing that one can be persuaded to make purchases merely by glancing at them. Eyes need to be trained in order to decipher the projected image vs reality. Figure 1 displays the five classification of the participants as they perceived themselves.



**Fig. 1.** Level of photography skills of the digital workshop participants.(Legend: 1-2 Novice, 3-4 Advanced beginner, 5-6 Competent, 7-8 Proficient, and 9-10 Expert)

On the scale, 1 and 2 refer to the novice category, where 4.2% or 8 people belong, who just started photography due to either the availability of the gadget or it being a newfound hobby. The Advanced beginner, which refers to the scores of 3 and 4, those who belong here illustrate more knowledge in photography but still have limited experiences in the field. With this, 19.7% of the participants have more or less been doing more tasks in photography. It was found that a total of 81 participants rated their own level of expertise or proficiency in the field of photography as 5-6, meaning that 43.1% out of the 188 respondents are “competent” with photography, which means that

they are more well-versed in the field and practice this often. For 7-8, this is the proficient category, which refers to those who have more than enough knowledge in the field and practice this on a daily basis, which makes up 27.6% of the participants. For the last category of 9-10 which is expert, this means that the participants already have advance knowledge and experience in photography, regularly practicing this as a hobby or profession and who are earning income from this; which makes up 5.3% of the participants.

Majority of the participants (43.1%) judged themselves as belonging to the competent category attended the workshop to improve their photography skills and be eventually classified as “proficient” and “expert.”

### 3.2 Photography as Life Influencer

The various forms of thinking are evoked, developed, and refined through the arts (Eisner, 2002; Walsley, 2013). It was found that based on the number of attendees of the workshop alone, photography has a significant influence on the lives of the participants (Fig 2.). This is further supported by the reasons they shared for joining the workshop, where the reason, “for personal growth” was chosen by 82.4% of the respondents. The data clearly showed that photography is indeed in the lives of the respondents.

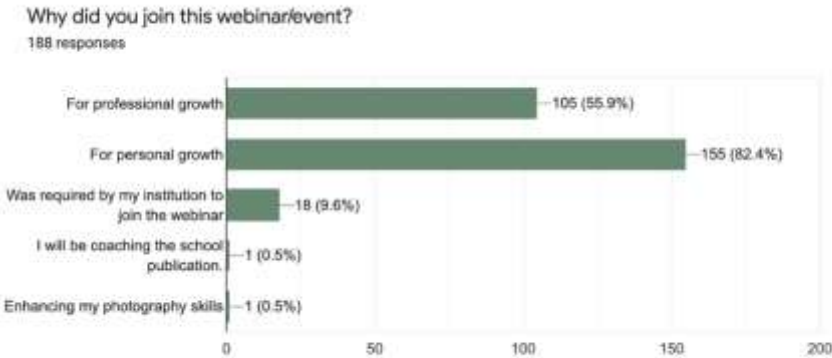


Fig. 2. Reasons of participants in joining the digital workshop.

as it is used to retain memories over time, in turn enhancing one’s own personal connections with others and their self through such material recollections. In addition, because it is used as a tool for expression. Through photography, the respondents are allowed to tell their own stories, form their own identities, and build communities. They are able to control how and what they communicate and share with the rest of the world with each photograph; a result of navigating the language of events (Berger, 2013).

In addition, the majority also believe that photography will benefit them as a person, make them richer, enrich their life and career, give them friends, and make them happy, as shown in figure 3. This is aligned with the conclusion of Kislinger and Kotrschal

(2021) that photography has become a human universal, as people continue to use photography as a social coping strategy and new way of representing experiences and ideas. Aside from the benefits, the participants also shared personal reasons and interests why they continue to engage in photography. Given that the majority at 54.3% of the respondents stated that they practiced photography as a personal hobby, they indeed consider photography as an integral activity of their daily lives. That is perhaps why the majority of the participants at 52.7% were influenced by their own selves to keep on practicing photography. In fact, respondents expressed that they are willing to pursue the art of photography even beyond the COVID-19 pandemic, when the workshop and this research were conducted. This clearly exhibited the desires of online learners to continuously find real purpose of their hobby (Buot & Fama, 2022).

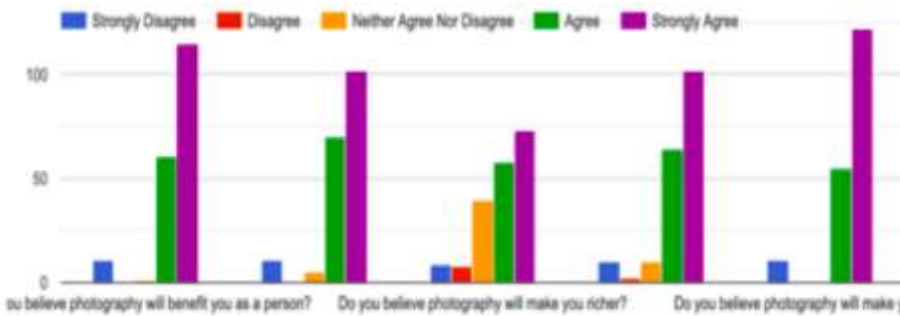


Fig. 3. Benefits of doing photography.

That is perhaps why the majority of the participants at 52.7% were influenced by their own selves to keep on practicing photography (Fig. 4). In fact, respondents even expressed that they are willing to pursue the art of photography even beyond the COVID-19 pandemic.

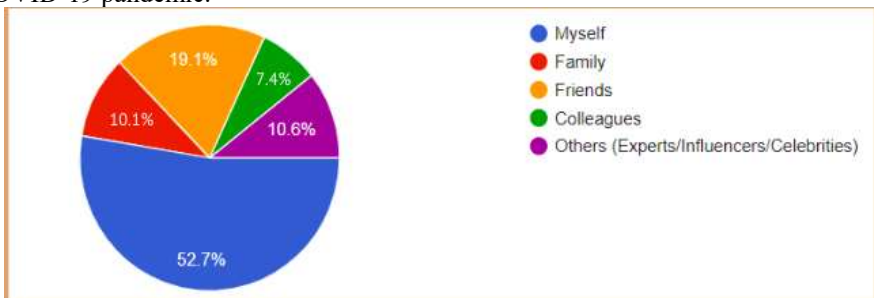


Fig. 4. Significant influencer to pursue photography.

3.3 Composition: Emotion and Angle.

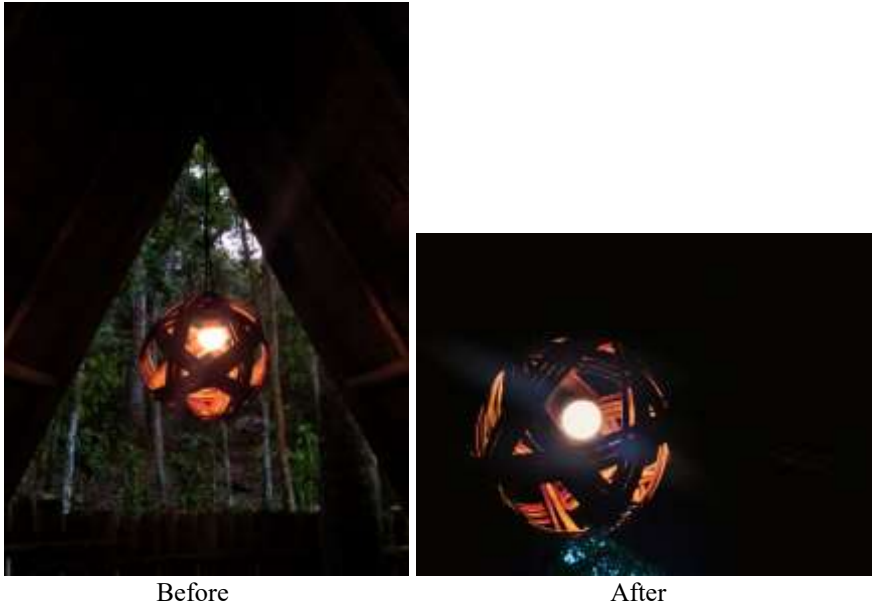
Composition allows the photographer to convey the message and emotion of a certain picture or image. As an artist, the photographer has access to various elements and techniques of design, such as framing and use of symmetrical and asymmetrical balance, among others. In addition, the photographer has the freedom to select the specific elements and techniques to be used for a specific subject, thereby creating a powerful, memorable photo. Photo outputs submitted by the participants before and after the workshop were analyzed by looking at the emotion and angle. By applying what they learned from the resource speakers, the participants were able to create powerful and memorable photos by applying clever techniques in angling their subjects and conveying emotions through the use of color contrast and correct exposure, as seen in the second photos.

Here, the original photo taken before the workshop was improved, as shown in the after photo, by the exploration and application of the contrast of colors in the photo which are pink and green; complementary colors (Figure 5). The image also took advantage of the spatial and temporal editing through the use of correct exposure in terms of ISO, shutter speed, and aperture, resulting in a more vibrant photo of a colorful flower exuding fun and playfulness.



**Fig. 5.** Gumamela flower to show contrast by Ricardo Baldovino.

This is also seen in this second set of photos, where the photo taken after the workshop reveals better color contrasts and detail differences, giving it a touch of elegance and mystery (Figure 6). The light and dark contrasts help to elevate the subject and to draw our attention into the picture. The use of background and texture add more details as well as mystery to the photos making them more interesting and engaging. Overall, the pictures evoke a feeling of peace and oneness with nature.



**Fig. 6.** Framing and cropping as shown in "A Simple Chandelier" and "The Light Inside" by Bianca Ysabel Abrencillo.

"GByEssential" is another example of a simple photo at first glance, but surprisingly, it features several elements and techniques of design when examined by a trained eye (Figure 7). Upon closer inspection, the images reveal the use of framing, cropping, and black-and-white filters, to name a few. The end product is a picture of subtle colors evoking a feeling of peace and serenity. Sometimes, a good photo doesn't need colors to convey its message and meaning.



**Fig. 7.** The use of black and white of "GByEssential" by Sarah Rochelle Aldana.

#### **4 Conclusion**

It was found that a total of 81(43.1%) participants rated their own level of expertise or proficiency in the field of photography as “competent” with photography, which means that they are more well-versed in the field and practice this often. While there were experts in the participants but a novice and beginner (23.4%) was also present. Photography has greatly benefited, impacted, and influenced the lives of majority of the attendees. More accessible trainings and workshops on digital literacy should also be organized and conducted, which will increase awareness on the huge role photography plays in the modern world. Creating more awareness regarding the use of gadgets and the aid of technology will surely help pave way for more openness and collaboration.

#### **Acknowledgement**

Grateful to the 2022 photography workshop participants specifically the contributors (Ricardo Baldovino, Bianca Ysabel Abrencillo, Sarah Rochelle Aldana), the resource persons (Jade Eula Fe Lu, Sarakiel Domingo) and the support team (Enrico M. Feria, Jaime P. Guimbao).

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# Local Uses of Mangrove Species in the Masao Village Satoumi, a Socioecological Production Landscape and Seascape of Butuan, Agusan del Norte, Philippines

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**Abstract.** Mangroves undergo degradation, thus reducing ecosystem services to coastal population. This study explored how local people use and conserve mangroves in Masao village *satoumi*, a socioecological production landscape and seascape (SEPLS) in Butuan, Agusan del Norte, Philippines. Mangrove species were identified, and interviews were conducted to determine mangrove local uses. Results found 21 mangrove species belonging to 12 genera in 10 families. The local uses include the following: 1) source of fuelwood (*A. alba*, *A. rumphiana*, *B. tersa*); 2) source of industrial compounds (*S. alba* and *C. tagal*); 3) source of medicinal or therapeutic compounds (*A. marina* and *X. moluccensis*); 4) shelter (*N. fruticans*), and 5) as ornamental (*L. racemosa*). Locals reported *N. fruticans* as endangered due to pest and diseases. Other mangrove species are vulnerable caused by development. Some locally useful mangroves are in the threatened category of IUCN, particularly, *A. rumphiana* (vulnerable) and *B. tersa* (nearly threatened). Based on interview results, the locals are not aware of any mangrove conservation practices. Hence, the need for the local government to streamline efforts in public awareness to facilitate participation of the community in mangrove conservation in the *satoumi* of Masao village and to regulate utilization of mangrove resources leading to mangrove conservation and resilience to storm surge and coastal flooding.

**Keywords:** Satoumi, Masao Village, Mangrove Diversity, Mangrove Species Conservation, People-Nature Interaction, Mangrove Sustainability

## 1 Introduction

Mangroves are prominent component vegetation of a typical coastal landscape in many parts of the tropics (Donato et al., 2012; Thorhaug et al., 2020). And usually, a village is just nearby, interacting and coevolving with the ecosystem with their benign indigenous and cultural practices harmonious with nature and the overall mangrove seascape. People depend on the mangrove ecosystem resources and the mangroves are

also taken care of by the local community. In other countries, mangroves maybe absent but other vegetation types are abundant with similar dependency between local community and the coastal ecosystem. In other areas, only the seas and the creatures therein are closely interacting with the local people. This unique landscape or perhaps, more appropriately, seascape, has been existing for ages (Buot & Osumi, 2004; Gu & Subramanian 2014). In the recent book on seascape (Pungetti 2022), seascape has been defined in many different ways by different chapter authors. Buot & Buot (2022) defined it to include the water bodies and the surrounding vegetation connecting a land mass to the seas, forming a unique seascape interacting with local communities.

In Japan, this seascape is known as *satoumi*. The interaction in the *satoumi* landscape results to productivity and biodiversity through the cultural practices of the people, hence, the harmonized relationship of environment and people (Yanagi, 2006). An exemplar *satoumi* is characterized by the presence of conservation activities and resource management in coastal areas with immense involvement of estuarine communities. With the biodiversity problems we had experienced due to population pressure and related challenges, there was reduction or loss of biodiversity in *satoyama* and *satoumi*. In 2010, the International Partnership for the Satoyama (including *satoumi*) Initiative (IPSI) has been approved by the Conference of the Parties, Convention on Biological Diversity as a strategic approach to *satoyama* and *satoumi* or socioecological production landscape and seascape (SEPLS) conservation ([www.satoyama-initiative.org](http://www.satoyama-initiative.org)). A *satoumi* approach to coastal management contributes to the achievement of Sustainable Development Goals (SDGs) as well as to the realization in the global visions of the Convention on Biological Diversity (CBD) (Kakuma & Sato, 2022). Coastal communities heavily rely on mangroves as source of food, shelter, and income. The provisioning ecosystem services that mangroves provide, keep the well-being of the local community at good condition (Quevedo et al., 2020). Other than these, mangroves serve as habitat for fish and other intertidal zone species, provide clean water, ecotourism and most importantly, protection from the impacts of climate change. *Satoumi* landscapes in the Philippines practice mangrove management as a means of water quality regulation and as protection from storm surge and flood damage (Primavera, 2006; Menendez et al., 2018).

Mangrove species are also extracted by locals as source of medicine and for therapeutic purposes which have been passed on through traditional practices (Goloran et al., 2020). It is also used as construction materials and source of tannins or industrial compounds. Overall, the benefits that mangrove ecosystem offered to humans are important to the community's well-being, hence, it must be sustainably managed. The relationship between human and mangrove community, needs to be in harmonious to keep both flourishing. However, due to the human overconsumption with undermanagement and lack of conservation, mangroves are declining and currently under threat. Human activities in coastal areas coupled with the local economic development poses risks to the mangrove ecosystem of *satoumi* landscapes in the Philippines.

Mangrove species that thrives in the Philippines is at least half of the 65 species around the world (Kathiresan & Bingham, 2001; Garcia et al., 2014; Cabuga et al., 2022). It was recorded in 2009 by Primavera & Dianala that there are 36 species of

mangroves in the Philippines, considered one of the highest among global records. However, despite many mangrove studies in the Philippines, research on local uses of mangrove species in Masao village, Butuan, Agusan del Norte is wanting (Jumawan, 2012; Almadin et al., 2020).

The Masao village is an ideal location where activities such as fishing and farming are practiced by the local people. Local communities interacted with each other through knowledge sharing of uses of plant-based medicine or basic cooking ingredients, from relatives to neighbouring communities (Omac et al., 2021). This study has the following specific objectives: 1) to identify the local uses of the mangrove species present in the *satoumi* landscape of Masao village, Agusan del Norte, Philippines; 2) to determine the conservation status of the mangroves based on the IUCN red list of threatened species; and 3) to determine the current mangrove conservation practices of the locality. The result of this study will be used as basis for planning and enhancement of sustainable management practices as well as local policies on mangrove biodiversity conservation.

## 2 Methods

### 2.1 Description of the Study

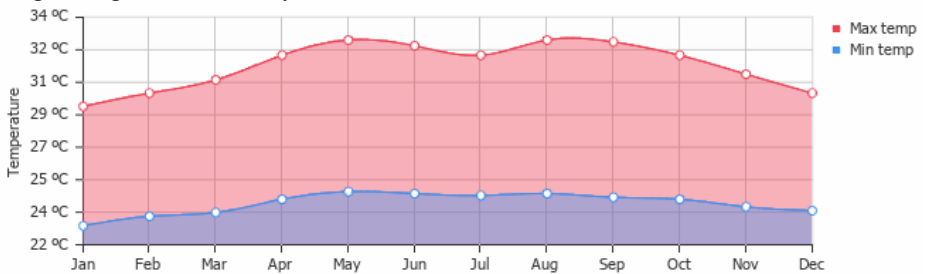
The municipality of Butuan within the province of Agusan del Norte is located at the Northeastern portion of Mindanao island in the Philippines (8°59' N, 125°29' E). Masao village is situated at the lower portion of the Agusan River, in close proximity to the Butuan bay, Figure 1. It is one of the villages where fishing activities is prominent (Almadin et al., 2020).



**Fig. 1.** Location map of the study site. (Masao village is highlighted in red color)

## 2.2 Climate type, rainfall and storm history

The province of Agusan del Norte belongs to Type II Climate. It is characterized as having no dry season with a very pronounced maximum rain period from December to February (PAGASA, 2022). Due to the geographical location of Butuan which is situated in an area below sea level, incidence of sea level rise and storm surge are higher compared to nearby towns (FAO, 2005; NEDA, 2017; Apdohan et al., 2021). The nearest climate station is Surigao which is about 90 kilometers from Butuan, recorded a maximum temperature of 33 degree Celsius and a minimum of 23 degrees Celsius (Figure 2). Annual precipitation is 2,364.5 mm, per year, with an average of 197.0 mm. Given the climate and weather condition of Butuan, presence of mangroves is important as source of protection from climate change impacts such as sea level rise and storm surge along the Butuan Bay.



Source: 2022 weather-and-climate.com

Fig. 2. Average minimum and maximum temperature in Butuan Philippines

## 2.3 Masao Village as *Satoumi*

Masao village has a total area of roughly 1,748.4 hectares, as seen in Table 1. The small village is mostly covered with fishponds, comprising 75.1%, with an area of 1,313.6 hectares. It is managed for both community consumption and commercial purposes. While perennial croplands, totalling to 57.2 hectares are observed to be adjacent to residential or built-up areas. As seen in the map (Figure 3), Masao village situated is along the coast of Butuan Bay and is an example where community depends on the estuarine and coastal resources as well as mangroves to sustain basic livelihood needs. However, it can be seen in the map that there are few covers of mangroves in the village. It is only covered with an estimate of 11.2% or 196.6 hectares.

Table 1. Land Cover Types of Masao Village

Land Cover Type	Area (Ha)	Percentage (%)
Built-up	68.4	3.9%
Fishpond	1,313.6	75.1%
Grassland	7.8	0.4%
Inland Water	92.1	5.3%
Mangrove Forest	196.6	11.2%
Open/Barren	12.8	0.7%
Perennial Crop	57.2	3.3%

<b>Grand Total</b>	<b>1,748.4</b>	<b>100.0%</b>
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Source: National Mapping and Resource Information Authority (NAMRIA), 2015

## 2.4 Survey Assessment of Mangrove Species

Total of 10 key informants were selected from the residents of Masao village. They must be residents in or near the coastal area and must be knowledgeable in plant resources and local uses. Data collection was conducted through field observations and interviews of the selected informants. Majority of the respondents are fisherfolks with age ranging from 42 to 66 years old. The respondents were consulted about the mangroves and other species that were surveyed in the area. They were asked of the local name and their uses. The mangrove species and other coastal vegetation species surveyed in the area were identified by their scientific name and grouped according to families.

## 3 Results and Discussion

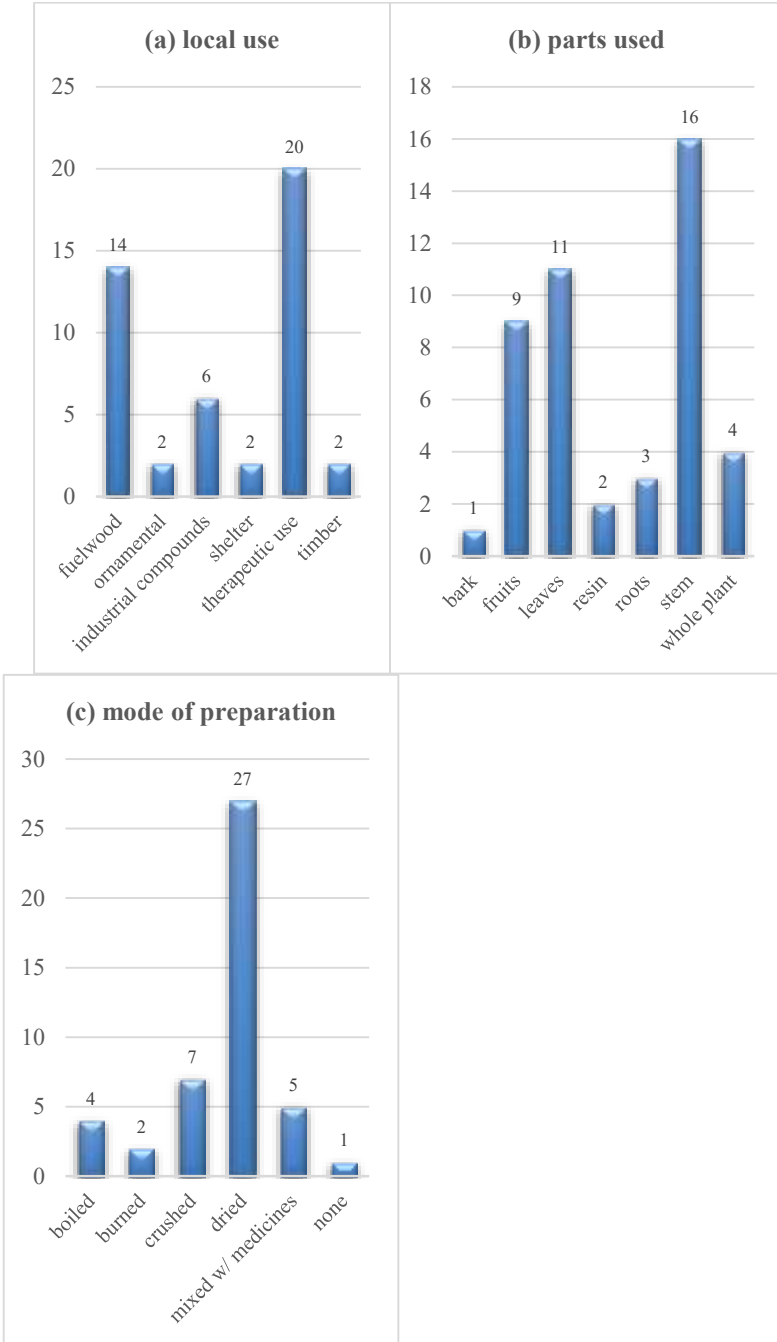
### 3.1 Mangrove species composition and local uses

From among the sampling plots established, 21 species were identified, belonging to 11 families (Table 2). Majority of the species collected were native in the Philippines, while one species, Kulasi (*L. racemosa*), was known to be naturalized. The local uses were generally from the traditional knowledge of the locals, obtained through interviews. Results identified fuelwood or firewood as main uses by local people of Masao village (Figure 4). This is done through small-scale wood harvesting. The next common use among the identified species is for therapeutic purposes. Recent studies show traditional uses of *Rhizophora* species in fighting against diabetes and has been used as well for its anti-inflammatory properties (Biswal et al., 2020; Prabhu & Guruvayoorappan, 2012; Barik et al., 2016). Figure 5 shows some of the actual photos of the mangrove species found in the established plots in the *satoumi* area of Masao village.

**Table 2.** Mangrove Species and Their Local Uses in Masao Village

Scientific Name	Local Name	Family Name	Local uses
<i>Avicennia alba</i> Blume.	Bungalon	Avicenniaceae	Fuelwood, Industrial compound
<i>Avicennia marina</i> (Forssk.) Vierh.	Miapi	Avicenniaceae	Fuelwood
<i>Avicennia officinalis</i> L.	Api-api	Avicenniaceae	Therapeutic use
<i>Avicennia rumphiana</i> Hallier f.	Apiapi	Avicenniaceae	Timber
<i>Nypa fruticans</i> Wurm.	Nipa	Arecaceae	Shelter, Firewood, Industrial compounds
<i>Lumnitzera racemosa</i> Willd.	Kulasi	Combretaceae	Decorative/Ornamental
<i>Excoecaria agallocha</i> L.	Lipata	Euphorbiaceae	Fuelwood

<i>Brownlowia tersa</i> (L.) Kosterm.	Maragomon	Tiliaceae	Fuelwood, Therapeutic use
<i>Heritiera littoralis</i> Dryand.	Dungon	Sterculiaceae	Timber, Ornamental
<i>Xylocarpus granatum</i> J.Koenig	Tabigi	Meliaceae	Fuelwood
<i>Xylocarpus moluccensis</i> (Lam.) M.Roem.	Piag-ao	Meliaceae	Therapeutic use
<i>Aegiceras corniculatum</i> (L.) Blanco.	Saging-saging	Primulaceae	Fuelwood
<i>Bruguiera cylindrica</i> (L.) Blume.	Pototan-lalaki	Rhizophoraceae	Fuelwood, Therapeutic use
<i>Bruguiera parviflora</i> (Roxb.) Wight & Arn. ex Griff.	Langarai	Rhizophoraceae	Therapeutic use
<i>Bruguiera sexangula</i> (Lour.) Poir.	Busain	Rhizophoraceae	Fuelwood, Shelter
<i>Ceriops tagal</i> (Perr.) C.B.Rob.	Tangal	Rhizophoraceae	Fuelwood, industrial compound
<i>Rhizophora apiculata</i> Blume	Bakauan-lalaki	Rhizophoraceae	Fuelwood
<i>Bruguiera gymnorhiza</i> (L.) Lam.	Pototan	Rhizophoraceae	Therapeutic use
<i>Rhizophora mucronata</i> Lamk.	Bakauan-babae	Rhizophoraceae	Therapeutic use
<i>Morinda citrifolia</i> L.	Noni	Rubiaceae	Therapeutic use
<i>Sonneratia alba</i> J. Smith.	Pagatpat	Sonneratiaceae	Industrial compounds



**Fig. 2.** Graphs showing the frequency count of local respondents regarding the local uses (a); parts used (b) and mode of preparation (c) of mangrove species in the satumi of Masao village



Photo credit: JJJ Ruales and UPOU EIDR Project 1

**Fig. 3.** Photos of some mangrove species in the satoumi in Masao, Butuan: (a) *Aegiceras corniculatum* (b) *Avicennia marina* (c) *Avicennia officinalis* (d) *Rhizophora apiculata* (e) *Xylocarpus granatum*.

**Table 3.** Identified Mangrove Plant Parts Utilized and Mode of Preparation by the Masao people

Scientific Name	Parts used	Mode of preparation before using/consumption
<i>Avicennia alba</i> Blume.	stem, resin	Drying
<i>Avicennia marina</i> (Forssk.) Vierh.	stem	Drying
<i>Avicennia officinalis</i> L.	stem, leaves, resin	Burning, drying
<i>Avicennia rumphiana</i> Hallier f.	stem	Drying
<i>Nypa fruticans</i> Wurmb.	whole plant	Drying
<i>Lumnitzera racemosa</i> Willd.	whole plant	none
<i>Excoecaria agallocha</i> L.	stem, leaves	Drying
<i>Brownlowia tersa</i> (L.) Kosterm.	stem	Drying
<i>Heritiera littoralis</i> Dryand.	stem, leaves	Drying
<i>Xylocarpus granatum</i> J.Koenig	stem, fruits	Crushing, drying
<i>Xylocarpus moluccensis</i> (Lam.) M.Roem.	fruits	Crushing, drying



<i>Aegiceras corniculatum</i> (L.) Blanco.	stem	Drying
<i>Bruguiera cylindrica</i> (L.) Blume.	stem, fruits, leaves	Drying, crushing, mixed w/ medicines
<i>Bruguiera parviflora</i> (Roxb.) Wight & Arn. ex Griff.	fruits, leaves	Crushing, mixed w/ medicines
<i>Bruguiera sexangula</i> (Lour.) Poir.	roots, stem	Drying
<i>Ceriops tagal</i> (Perr.) C.B.Rob.	leaves, stem	Drying, burning, mixed w/ medicines
<i>Rhizophora apiculata</i> Blume	leaves, stem, bark, roots	Crushing, mixed w/ medicines, drying, boiling
<i>Bruguiera gymnorrhiza</i> (L.) Lam.	fruits, leaves	Crushing, boiling
<i>Rhizophora mucronata</i> Lamk.	leaves fruits	Crushing, boiling
<i>Morinda citrifolia</i> L.	stem, fruits, leaves	Boiling, mixed w/ medicines
<i>Sonneratia alba</i> J. Smith.	stem, fruits, roots	Drying

### 3.2 Current Mangrove Conservation Practices

#### Conservation Status of Species.

Table 4 shows the conservation status of the species collected in Masao village. The details are according to the International Union for Conservation of Nature or IUCN's red list of threatened species across the globe. Apiapi (*A. rumphiana*) and Maragomon (*B. tersa*) are recorded to be vulnerable (Duke et al., 2010) and nearly threatened (Kathiresan et al., 2010), respectively. And this is triggered by continuous expansion of anthropogenic activities. Figure 6 shows the actual field photos of threatened species in the satoumi of Masao village. IUCN (2022) noted that the population of the species are all in decreasing trends, excluding *N. fruticans*. Hence, this calls for urgent protection and conservation action.

**Table 4.** Conservation Status of Mangrove Species in Masao Satoumi

Scientific Name	Local Name	Conservation status (IUCN)*	Population trend
<i>Avicennia alba</i> Blume.	Bungalon	LC	decreasing
<i>Avicennia marina</i> (Forssk.) Vierh.	Miapi	LC	decreasing
<i>Avicennia officinalis</i> L.	Api-api	LC	decreasing
<i>Avicennia rumphiana</i> Hallier f.	Apiapi	VU	decreasing
<i>Nypa fruticans</i> Wurm.	Nipa	LC	unknown
<i>Lumnitzera racemosa</i> Willd.	Kulasi	LC	decreasing
<i>Excoecaria agallocha</i> L.	Lipata	LC	decreasing
<i>Brownlowia tersa</i> (L.) Kosterm.	Maragomon	NT	decreasing
<i>Heritiera littoralis</i> Dryand.	Dungon	LC	decreasing

<i>Xylocarpus granatum</i> J.Koenig	Tabigi	LC	decreasing
<i>Xylocarpus moluccensis</i> (Lam.) M.Roem.	Piag-ao	LC	decreasing
<i>Aegiceras corniculatum</i> (L.) Blanco.	Saging-saging	LC	decreasing
<i>Bruguiera cylindrica</i> (L.) Blume.	Pototan-lalaki	LC	decreasing
<i>Bruguiera parviflora</i> (Roxb.) Wight & Arn. ex Griff.	Langarai	LC	decreasing
<i>Bruguiera sexangula</i> (Lour.) Poir.	Busain	LC	decreasing
<i>Ceriops tagal</i> (Perr.) C.B.Rob.	Tangal	LC	decreasing
<i>Rhizophora apiculata</i> Blume	Bakauan-lalaki	LC	decreasing
<i>Bruguiera gymnorhiza</i> (L.) Lam.	Pototan	LC	decreasing
<i>Rhizophora mucronata</i> Lamk.	Bakauan-babae	LC	decreasing
<i>Morinda citrifolia</i> L.	Noni	NE	decreasing
<i>Sonneratia alba</i> J. Smith.	Pagatpat	LC	decreasing

Source: International Union for Conservation of Nature (IUCN), 2022

\*LC= Least Concern; VU= Vulnerable; NT= Nearly Threatened; NE= Not yet evaluated



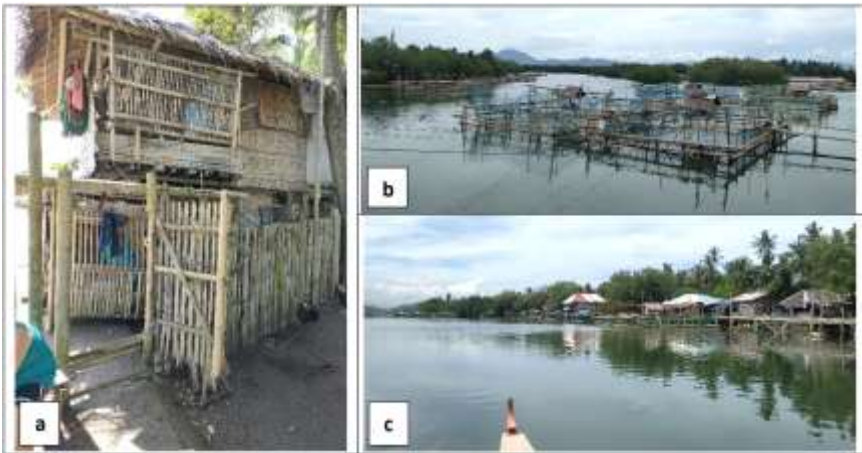
Photo credit: JJJ Ruales and UPOU EIDR Project 1

Fig. 4. Mangroves species included in the IUCN Red list of threatened species, *Avicennia rumphiana* (left) and *Browlesia tersa* (right)

### Threats and Challenges.

Based on the interview of the residents of Masao village, there are some anthropogenic activities in the area such as house construction and fish pen expansion which threaten the mangrove forest and nearby vegetation (Figure 7). The urbanization in the satoumi area is caused by the need to accommodate the shipping and cargo activities at the nearby ports in the village (Cauba & Coniato, 2021). Informants

reported that Nipa (*N. fruticans*), a very important resource, is also exposed to pest and diseases, but there are no community initiatives done to address the problem. Mangrove planting activities were conducted to increase the population of mangroves, but community efforts on monitoring after planting are insufficient. The informants were also asked of locally existing mangrove or coastal vegetation conservation practices. Unfortunately, their responses varied from “not aware of any conservation practices” to “none”. The respondents’ unawareness of any conservation efforts poses threat to the mangrove and coastal vegetation resources. It was also observed that traditional cultural practices such as local use of local resources are declining, presumably due to the urbanization of the Masao village. Indeed, there is a need to enhance the harmony of people and nature interaction in the satoumi of Masao village.



*Photo credit: JJJ Ruales and UPOU EIDR Project 1*

**Fig. 5.** Photos of the Masao Village. (a) houses built from Nipa (*Nypa fruticans*); (b) fish pens along the estuarine; (c) houses along the Butuan Bay

The indigenous knowledge system linked to the natural resources management among satoumi landscapes/seascapes, guarantees the sustainable use and regulation of resource extraction and facilitates adaptation to climate and environmental changes among the local community residents (Cetinkaya, 2009; Dublin 2015). Satoumi approach just like the satoyama approach (Buot & Buhay, 2022) is anchored on the principle of “living in harmony with nature” (IPSI, 2012). This has been evident in age-old indigenous and cultural practices in terms of managing the environment (Gadgil et al., 1993; Bagarinao & Primavera, 2005; Berque & Matsuda, 2013). Some tribes in Agusan del Norte, such as the Higaonon and Manobo tribe, are traditionally coastal dwellers who were forced to settle into forested inland areas (ADB, 2002; Cruz & Adiong, 2020). Indigenous practices of Higanonon were documented in a study by Paredes in 1997. They practiced fishing, shifting cultivation, foraging and marine trade (Cruz & Adiong 2020). These activities are conducted in isolation by few families within certain areas of the mangrove forest. Since Higaonon tribe are nomadic people,

they tend to move from one place to another after each planting and harvesting season (Lynch, 1967) to allow the land to rest and regain fertility and microecosystem balance. Hence, coastal and inland forest resources are not overexploited. Their indigenous norms and practices developed through time have been linked with how they manage the natural resources. Their belief system such as that of punishment from gods' and ancestors' when they do not manage nature well, prohibits such natural resource exploitation (Bankoff, 2004).

## **4 Conclusion**

The faraway Masao Village is not exempted from overexploitation of resources. The so-called development has started and destroy some of the important mangrove forests in the satoumi seascape. Results show 21 mangrove species are growing in the area and two are in the IUCN list of threatened species. Many members of the village are using the mangroves firstly for medicine and secondly for fuelwood source. The overconsumption without proper regulation is a contributing factor to the decreasing population of the mangrove species.

Hence, there is a need for the local government to streamline efforts in public awareness towards mangrove conservation. This will also facilitate participation of the community to strengthen harmony of people-nature interaction. It is recommended to have a mangrove conservation and management plan specifically in the satoumi seascape of Masao Village and to regulate utilization of the mangrove and coastal resources. Since the local community has been observed to be deeply attached and dependent on the mangrove ecosystem resources, such conservation and regulation activities will prevent mangrove forest degradation, hence helping sustain local mangrove seascape practices as well.

## **Acknowledgment**

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# What Saminisms Offer To Reinforce The Profile Of Pancasila Students?

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**Abstract.** The concepts of peaceful resistance were disseminated by Raden Kohar (Samin Surosentiko) to the Dutch colonial authorities from Blora in Central Java to Bojonegoro in East Java (1890). Saminite adherents are combative and avoid conflict. They refused to pay taxes to the Dutch government before the Saminism movement began since the Dutch government's tax rules had been widely implemented in the early 20th century. The most important principles Samin teaches are to be straightforward and honest. After 132 years, Saminism and its adherents are still alive. Why Samin's ideas are still important for creating a just, self-sufficient, and submissive society that pays taxes is an intriguing subject. The fact that Saminism has endured for more than a century is evidence that the teachings followed by the Samin community, also known as *Sedulur Sikep*, have a pattern of preservation that needs to be studied immediately, particularly for the purpose of enhancing the profile of Pancasila's students. Data were gathered through interviews with informants, observations, and the analysis of materials pertaining to the Samin community. The findings revealed that (1) the Samin community demonstrated patriotism in a self-sufficient manner by building their simply homes, becoming skilled, good, and long-lived learners, and paying taxes; and (2) the Samin community valued, revitalized, and transformed Saminism through the application of *Pitutur Luhur*. The Samin's instruction is consistent with the characteristics of a pelajar pancasila, including self-sufficiency, the capacity for critical thought, and creativity. *Pitutur Luhur* survived the ages and proved applicable to the most recent problems facing the Samin community. To determine how *Pitutur Luhur* of Samin applied to support Pancasila's student profile in school, in-depth research is required.

**Keywords:** Pancasila's student profile; pitutur luhur; samin

## 1 Introduction

A group of people who follow Samin's beliefs are known as Samin. Samin Surosentiko, also known as Raden Kohar, established Samin's teachings in 1859 in Ploso Village, Randublatung, Blora, Central Java. [1], [2]. Samin's lessons are straightforward guidelines for speaking, acting, and acting in public. The Samin people's way of life is based on simplicity and respects the principles of honesty and truth [3, 4].



The Samin community's existence has been safeguarded as a national cultural treasure, with its distinctiveness and moral principles upheld in the home and society. The Samin community in Blora was honored by President Jokowi in 2015. The President visited Klopoduwur Village right away and conveyed his admiration for the Samin people's practices of upholding and preserving culture and traditions [5][6]. Samin's teachings encourage ideals that are well-practiced and well-preserved from generation to generation in the spiritual, humanitarian, and environmental fields.

The strife that arose during colonization in the 19th century, when the Dutch government occupied Indonesian territory, gave rise to the indigenous community known as the Samin. A number of people rebelled by not paying taxes in response to the Dutch government's unfair and discriminatory treatment [5], [7]. With the intention of escaping the control and random policies of the Dutch government, a group of people under the leadership of Samin Surosentiko established a community based on the concept of *seduluran*, or brotherhood. They resisted peacefully. The Dutch were forced to exile Samin Surosentiko to Sawahlunto, West Sumatra, because to the Samins' acts of resistance, which included their refusal to pay taxes, sell goods to the Dutch, and send their kids to Dutch-run schools.

The Samin people received training to forge freedom via nonviolent resistance while maintaining a strong and unified attitude against the Dutch. It is possible for Samin Surosentiko to be abducted, banished to Sawahlunto, and separated from his supporters. His successors, Surokidin and Surokarto Kamidin, carried on his teachings in the Dusun Jepang of Margomulyo village in the Margomulyo District of the Bojonegoro Regency until the fourth generation of Harjo Kardi. Outside of Bojonegoro, the Samin community upholds Samin's beliefs in Klopoduwur Village, Blora Regency, Pati Regency, Grobogan Regency, and Kudus Regency [3], [8], [9].

In order to spread the teachings, the Samin community used *ngangsu kawruh*. To spread Samin's ethical values, the Samin community hosts a monthly conference called *Ngangsu Kawruh* [10]. At the forum, Samin's elders gave advice to the younger. Samin seniors allegedly offered more behavioral examples than guidance, according to Bambang Sutrisno, a sixth generation grandson of Samin Bojonegoro senior Hardjo Kardi. "Samin's parents don't really give advice; they merely teach by example what it means to be like a Samin," [11].

The teachings of Samin, the way they are passed down, the local knowledge landscape of the Samin community, and the value of Samin elders within it have all been found in earlier research [6, 7], and [12]. However, insufficient research has yet been done on how to use and adapt essential Samin principles to increase the visibility of Pancasila students in classrooms. It demonstrated that it could overcome the problems of the period. According to the Pancasila student profile required by the Regulation of the Indonesian Ministry of Education, Culture, Research, and Technology number 20 of 2018 concerning the determination of Pancasila student profiles [13], [14][15]. The Samins' values may have responded to the current issues that alienated Indonesian students from a developed attitude that is sovereign, self-sufficient, and personal.

To acquire materials and learning resources that have been demonstrated to have been used by forebears in managing multicultural Indonesian conflicts, excavation,

identification, and mapping of teachings drawn from native Indonesian values and wisdom are deliberately and urgently carried out. Pancasila, the foundation of the Indonesian state, is reflected in the values and wisdom of the local community. Pancasila is taken from the noble principles that have existed and grown throughout all of the Indonesian people's endeavors, drawn from the moral and spiritual treasure of the Indonesian people [16], [17]. It has been demonstrated that incorporating Pancasila values into learning through the fieldwork learning model through direct observation gives students meaningful experiences and makes it easier for them to recognize how the first through fifth precepts are put into practice in Pancasila's village [18]. A possible location to promote character education is Pancasila.

Character education helps people live better lives and develops pupils' noble character [19], [20] [21], [22]. In order to develop a project for raising the profile of Pancasila students in high school, this study intends to discover and map Samin's positive teachings, which are the source and reference of noble characters.

## **2 Methods**

This study employs qualitative techniques along with ethnographic and literary research techniques. Reading and taking notes on papers, books, and articles relevant to earlier studies on teachings, living attitudes, community landscapes, and local knowledge of the Samin community are part of library research. In the meantime, ethnography was used to gather data in a Dusun Jepang called Margomulyo village, Margomulyo District, Bojonegoro Regency, through participant observation techniques, in-depth interviews, and documenting of responses. The elders of Samin community in Dusun Jepang, Samin community of Dusun Jepang residents, village officials, and the Margomulyo sub-district were among the respondents. The research was carried out between November 2021 and September 2022.

Participant observation was used to evaluate how Samin teachings are passed down through the community's elders and to monitor how the community behaves when Samin teachings are being put into practice. To learn more about Samin's lessons for the responses, in-depth interviews were undertaken. A project to raise the visibility of Pancasila students is being worked on, and documentation is being done to observe and understand how Samin's teachings are still being taught and how attempts are being made to keep them alive.

## **3 Result and Discussion**

### **3.1 Patriotism and the Self-Sufficient of the Samin Society**

Samin Surosentiko's worry that the Dutch would eventually have complete authority over the Javanese territory led to the Samin community's resistance to Dutch colonization [23]. "After a while, the Dutch had total control over our area. We could not fight while using weapons." said Hardjo Kardi. As a result, the Samins' movement was based on peaceful resistance, including not paying taxes, refusing to work with the

Dutch, including by refusing to sell them goods, and not sending the Samins' children to the Dutch-run schools.

In 1890, Samin Surosentiko led resistance from the Blora region of Central Java to Kudus, Grobogan, Pati, Tuban, and Bojonegoro [5], [7]. The Samin community believed that the land in Java was a legacy from their ancestors. Samin Surosentiko persuaded his devoted adherents, who were dispersed throughout Central and East Java, to disobey and refuse to pay taxes to the Dutch, including by refusing to assist in the building of roads, on the grounds that these taxes were only for the benefit of the Dutch and not for the welfare of the Javanese [12], [24][25].

According to Hardjo Kardi, Samin elders warned the Samin's community to stock up on supplies of salt and cotton since there will eventually be a period when food and clothing would be prohibited (expensive clothing and foodstuffs). "When pricey food and clothing arrive in the future, be ready with a supply of salt so that the food won't be bland and there will be cotton to spin into apparel. It turned out to have taken place while Japan was in control." [23].

Patriotism is the willingness to give up all for one's country or the sentiment of loving one's nation. The impulse for self-defense gives rise to the spirit willing to make sacrifices for the nation. [26]. Through a disciplined attitude of paying land and building taxes, the patriotism fostered since the Surosentiko era has been successfully changed in the Samin millennial generation. "The Samin's community in the Dusun Jepang was the most faithful and disciplined taxpayer during my tenure as Village Head of Margomulyo. They were never in arrears of taxes and had no bad debts issued by the government. Violence cases are zerpel." [27]. According to the facts and figures provided by Bambang Sutrisno, there is now good reason for them to pay taxes punctually because "Taxes are now used for the welfare of the people, unlike when we used to refuse to pay taxes to the Dutch Government." [11] [28].

In managing daily life, Samin Surosentiko, developed a national mentality that encourages an autonomous mindset. When the Dutch and Japanese colonized them, they endured misery and challenges. The effects of Surosentiko's nonviolent resistance led them to independently meet basic needs including food, clothing, and lodging [3], [5]. Samin society was not weakened by its challenges. It contradicts with the study's findings, which indicate that people who are fiercely independent are more prone to stress [30]. The Samin community demonstrates strong resilience and is capable of handling the challenges they face. "Yes, if you're depressed, realize that life is sad sometimes. accepting loss as a natural part of life, just as if it were joy." [23].

The Samin community refused to send their kids to Dutch schools during the Dutch colonization as a means of protest against Dutch arbitrary rule that deny the Samin people of land and property. However, the Samin community in Dusun Jepang built a school after receiving information that Indonesia has become independent country, under the direction of Mbah Hardjo Kardi. The Samin Bojonegoro village began teaching and learning activities in 1967, using volunteer teachers in the houses of four individuals. The school officially run in 1970. The school hired and paid for the teachers. This data dispels the stereotype that the Samin's community ignored the education "In the past, parents had to fight to keep us out of the school since it belonged to the the Dutch. "After independence, as long as Samin's lessons are upheld, we will

support Samin's children in their academic endeavors and career choices." [23][29]. The Samin's community actively fosters patriotism, which is demonstrated by the understanding of the need for and accessibility to a good education. They collectively refused to collaborate and did not want to make concessions to the Dutch during the occupation.

### 3.2 Pitutur Luhur: The Teachings of Honesty and Simplicity of the Samin Community

Pitutur Luhur, an oral utterance about kindness that has been passed down through generations to the children and grandchildren of the Samin community, is the foundation of Samin's teachings. The speech is recorded in *Sedulur Sikep* Samin's monument or inscription, which can be found in Dusun Jepang, Margomulyo Village, Margomulyo District, and Bojonegoro Regency.



Fig. 1. Monument of Sedulur Sikep Samin

Pitutur Luhur in the Sedulur Sikep Samin inscription has the following: (1) *Laku jujur, trokal, sabar, nrimo*; (2) *Ojo dengki, srei, dahwen (juweh), kemiren, pekpinek barange liyan*; (3) *Ojo mbedak bedakno sapado padaning urip, kabeh iku sedulur*.

The *Pitutur Luhur* of the Samin's community's four main teachings emphasize the following: (1) being honest; (2) not harboring enmity or spite; (3) not interfering in the personal lives of others; and (4) not stealing their property. They also stress the importance of (1) being patient; (2) doing everything with diligence; and, finally, (3) accepting things as they are.

Samin's integrity was initially evident in his refusal to engage in commerce. Trading often involves lying a lot to achieve huge gains. [23]. In the past, farming or farming was the most honorable profession for the Samin people. However, the Samin generation's educated members now have a choice between joining the State Civil Apparatus or becoming teachers (ASN). It's okay to work in any line of work you like; you don't have to be a farmer. The most important thing is to maintain your integrity and modesty. [11].

Everyday existence demonstrates the Samin people's integrity. If there are any migrant goods left behind, the Samin people will find them and store them safely before returning them to their owners. The Samin's people have used the idea of lost and found for many years. It demonstrates how effectively the Samin's community has passed down the value of honesty as one of its main management tools.

Every member of society needs honesty since it is a moral quality that commands respect [31, 32]. Since honesty is the foundational principle for structuring life in Samin's society, there is no need for any further encouragement. It supports the idea that when incentives are offered and complete anonymity is given, people are more likely to be persuaded to act dishonestly [33]. The Samin's people have used the idea of lost and found for many years. It demonstrates how effectively the Samin's community has passed down the value of honesty as one of its main management tools.

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The four tenets of the Samin's *Pitutur Luhur* are (1) to be sincere, to take everything seriously and complete it, to be patient, and to accept things as they are; (2) to refrain from envy or spite, to refrain from meddling in the private affairs of others or stealing their property; (3) to treat all people equally because all people are brothers; (4) to refrain from simply talking and speaking at random; and (5) to be able to feel.

Samín engaged the Dutch in a nonviolent battle, but they continued to retain integrity. "For instance, if you inquire as to the number of children, the response is two, even when the child is five. Since it does count it according to gender. That is an illustration of how to con the Dutch while remaining truthful. There is logic at work, as our predecessors taught us. [11]. When the Samin people were asked how many cows they had, they responded with two even though there were more than two cows in the pen because they claimed that the sex of the cows was only two, namely female and male ([2]. This incident serves as a metaphor for the Samin people's resistance to Dutch oppression.

Samín's integrity was initially evident in his refusal to engage in commerce. "Trading it tends to lie a lot to get high profits." [23]. For the Samin people in the past, the noblest job was farming or farming, but now the Samin generation who have received an education deserve to choose to become teachers or the State Civil Apparatus (ASN). "It's free to do what profession you want, you don't have to be a farmer, the important thing is to stay honest and unpretentious." [11].

The honesty of the Samin's people is seen in everyday life. If there are migrant goods left behind, the goods will certainly be safely stored by the Samin people who find them to give back to their owners. Yes, we will inquire about the color, shape, and style of any objects left behind to ensure that the person taking them is the rightful owner. [23]. The Samin's people have used the idea of lost and found in a straightforward manner for many years. This demonstrates how the Samin's community has successfully absorbed the idea of honesty as one of its main management tools.

Every person in every community needs honesty since it is a moral quality that commands respect [31, 32]. Since honesty is regarded as the primary virtue in organizing life, the Samin's community does not require any encouragement to be honest. This supports the idea that when incentives are offered and complete anonymity is given, people are more likely to be persuaded to act dishonestly [33].

Being dishonest is a detestable attitude that should be avoided in the Samin society. When they come upon someone else's property, they don't require any encouragement because there is no advantage to them in taking it. The advice of Samin is to refrain from taking items that are not his own because doing so will harm the owner of the stolen goods. [23]. The Samin community in the Japanese hamlet region, according to Head of Margomulyo Village, Margomulyo District, Bojonegoro Regency, Nuryanto, is an honest group of people in all spheres, including finances [27]. He served as Margomulyo Village Head for two terms, and throughout that time, the Samin's people was never listed as having tax arrears or being involved in government-provided bad debts.

The Samin's community has a social safety net structure that is generally effective when it comes to financial issues. They hold a gathering every 35 days on Friday (Legi; name of day in Javanese culture) as a regular event. Some people save money in addition to paying dues with a specific minimal amount using social assistance funds. The accumulated savings are lent without charge to anyone who requires it. The shared interest is extremely important to the Samin's people. Priority is given to mutual aid over individual needs [3, [4],[10].

This fact shows that the Samin's community can transmit *Pitutur Luhur's* teachings, which have been there for more than a century, to the following generation. In a monthly forum where Samin elders present lessons to the younger Samin generation, the preservation of the teachings of the Samin people's life attitudes is carried out [11]. By *niteni* (indentify carefully and intensely) newly acquired skills to be put into immediate practice, Samin's values are transformed in the course of daily life as well.

The Samin dwellings in Dusun Jepang, which typically have bamboo or timber walls, reflect their modest way of life. Hardjo Kardi responded that maintaining a brick wall house is more expensive when asked why he didn't wall his home [23]. Despite not having a formal education, Hardjo Kardi manufactured his own furniture, including tables, chairs, cabinets, and even a whole set of Javanese traditional musical instruments (*gamelan*). To assess the sound of the gamelan, Mbah Kung (Hardjo Kardi) built his own gamelan. [34] Hardjo Kardi responded, "If you can make your why to buy," when he asked why he makes his gamelan and furniture by himself[23]. The idea is translated into action in order to train the Samin's community to carefully observe everything and to foster an understanding that they are people who labor really until they succeed or are known as *trokal*.



Fig. 2. Samin's House at Dusun Jepang Bojonegoro

## 4 Conclusion

The primary lessons of simplicity and honesty are found in the Pitutur Luhur of the Samin's culture. The Samin's people adhered to Pitutur Luhur's teachings for more than a century and put them into practice in their daily lives. Delivering the Pitutur Luhur, which contains Samin's good lessons and provides an example of attitude, allows Samin elders to transmit local values to the younger. The fact that the Samin's people have preserved their teachings for more than a century provides insight into how they might meet modern challenges with the aid of the Pitutur Luhur tool, which embodies the principles of primacy in the forms of independence, honesty, and simplicity. The Samin community's best deal for a project to raise the profile of Pancasila students is to employ these three qualities. To develop a formula for the use of Samin values in enhancing the profile of Pancasila pupils in schools, additional research must be conducted.

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# Internalization Of "Topeng Malangan" Local Wisdom's Value Into Character Education

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**Abstract.** Indonesia is an archipelagic country that has a very large area consisting of ethnic groups. Indonesian ethnic groups that have diversity values have their own cultural characteristics, their own noble cultural values, as well as local excellence or what is often called local wisdom. One of the local arts that contains local wisdom is the art of "Topeng Malangan" which has various local wisdom values. The main purpose of this study is to internalize local wisdom, especially the art of "Topeng Malangan" into character education. This research uses a qualitative approach, which aims to understand a social situation, event, role, interaction and group in order to find the value of local wisdom of the art "Topeng Malangan" which will be internalized into character education. The data and information used in this study were obtained from observations, interviews, and related documents. There are six main values found in the art of "Mask of Malangan", namely (1) belief in God, (2) life is work hard, (3) human character is very diverse, (4) be nice (integrity), (5) leadership and (6) Be good on nature. For the internalization stage, the value of local wisdom is carried out through three stages, namely (1) value transformation, (2) value control, and (3) value-internalization. By internalizing, values that are still concepts will stick and become the character of students.

**Keywords:** internalization, values, local wisdom, topeng malangan, character education

## 1 Introduction

Local wisdom is formed as a manifestation of the cultural excellence of local and geographical communities that emphasize more on aspects of place and locality. Local wisdom can also be viewed as a social and communicative system that produces a kind of self-regulation (autopoiesis) in a culture [1]. Local wisdom can be knowledge acquired through a series of activities by a group of people in a particular region or place, and then passed down through generations orally. Local wisdom itself, includes not only knowledge, but also life values [2]. This is in line with the opinion that local wisdom includes cultural values that include knowledge systems, beliefs, customs,

livelihoods, living utensils, art, language, and literature [3]. Thus, the local *kearifan* is the overall formulation of knowledge, beliefs, understandings or views, as well as the traditional practices of ethics, which control the behavior of people in the ecological community [4]. Local wisdom is one of the cultural products of society that is formed due to the need for values, norms and rules as a model for doing something Action [5].

Local wisdom is one of the important factors in the management of the environment, society and in state regulation. According to [1], local wisdom is a phenomenon that shapes the ability of how members of communities that depend on natural resources are able to manage and regulate natural resources within the environment they inhabit. Local wisdom is also understood as noble values that apply in the living system of the community which aims to protect and manage the environment sustainably [6].

Indonesia is an archipelagic country that has a very large area consisting of ethnic groups. Each ethnic group has a variety and richness of culture, art, and customs in which local wisdom is contained. Indonesian ethnic groups that have *bhinneka-an* values have their own cultural characteristics, their own noble cultural values, as well as local excellence or what is often called local wisdom (local knowledge, local wisdom). Culture is a form of self-expression and the creator of communal identity, and individual expression of local wisdom characterizes and plays a central role in the cultural life of a community. In many ways, local wisdom serves as an answer to the challenges of everyday life as well as an actualization of living systems because it is a framework for answering outside elements while maintaining a cultural identity that is coherent to the future [7]. Culture is dynamic, constantly evolving, especially if the potential of cultural actors is developed and that dynamic is activated. So many regions in Indonesia have local wisdom caused by the process of interaction between humans and their environment to meet the needs of life. Experience in meeting the needs of life, has produced various knowledge systems related to the environment and social [5]. With regard to culture, the problems faced by indigenous peoples today include disorganization, namely the process of fading norms and values in society due to changes that occur in the institutions of society [8].

Local wisdom is one aspect that is closely related to culture. Local wisdom reflects the way of life of the people who are synonymous with a certain culture. Each ethnic group has local wisdom that contains a variety of values (social and cultural) that need to be maintained and preserved so that it can be used as a guide or view of life for the community. Every society essentially has a set of social and cultural values that can be positioned as social capital (Social Capital). The attitudes and behaviors of indigenous peoples, because they are based on values that are believed to be true and this is a form of local wisdom [9]. Thus, local wisdom in community groups contains many noble values of national culture which should still be strong as the identity of the character of the Indonesian people.

The local wisdom found in several indigenous groups / communities in Indonesia contains many noble values of the nation's culture which is still strong as the identity of the character of its citizens. But on the other hand, the value of local wisdom is often ignored, because it is considered incompatible with the development of the times. In fact, from this local wisdom, noble values can be promoted which can be used as a model in the development of Indonesian culture [10]. The noble cultural values

possessed by the community in Indonesia are already the property of the nation as an invaluable potential for the development and progress of the Indonesian nation. Indonesian society is a plural society both in terms of culture, religion, and language that has noble values as its local wisdom [11].

Along with the times, the value of local wisdom is increasingly forgotten because it is considered incompatible with the latest developments, even though local wisdom contains noble values that can be used as a model in shaping the character of the nation. Modernity brings many changes to the joints of people's lives that are fraught with conflict. Local wisdom can be used as an approach in dealing with various conflicts that occur in the community because we are well aware that the socio-cultural conditions of diverse communities have the potential to cause conflict [12]. It should be that the local wisdom that has become the handle of people's lives until now should be explored, especially in the world of education so as to produce a generation that is intelligent, wise, and has character [13].

Along the development of the times, the existence of culture and cultural values owned by the Indonesian nation until now has not been optimal in an effort to build the character of citizens, even at any time we witness various kinds of community actions that result in the destruction of a nation, namely a decrease in manners, a decrease in honesty behavior, a decrease in a sense of community, and a decrease in a sense of mutual cooperation among community members [14]. This is also influenced by the development of information technology which has an impact on changing people's mindsets, attitudes, and behaviors, especially lifestyles.

This phenomenon shows that local wisdom is very important to maintain. This local wisdom can be used as a means of strengthening character education to overcome community and individual problems as early as possible. In the context of education, the character developed in students must rest and be responsive to the local wisdom of the archipelago which is so diverse and plural that it is contextual and grounded. [15] states that character education is a system of instillation of character values that includes components of knowledge, awareness or will, and actions to carry out these values, whether towards God Almighty, oneself, others, the environment, or nationality. The development of the character of the nation can be done through the development of a person's individual character. However, because human beings live in a certain social and cultural environment, the development of a person's individual character can only be carried out in the social and cultural environment in question.

One of the media for instilling the value of local wisdom that can be used is traditional art including performing arts. Historically, traditional performing arts originated from traditional religious ceremonies and rituals of a magical nature, delivered in the form of repetitive mantras. One of the traditional arts in the form of performing arts is Mask Art. At first, masks were used as a means of ritual and religious events. At that time, Hinduism was a thriving religion in the Majapahit kingdom. Henceforth, masks also developed as a form of dance as the Islam religion began to enter Indonesia [16]. Mask art is quite widely developed in various regions in Indonesia, one of which is the Malangan Mask. Until now, cultural tourism in Malang is still not in demand because of the lack of information on the performance of

Malangan mask dance and the boredom that plagues the current generation. It is feared that this will lead to future extinctions [17].

Wayang Topeng performances in the Malang area have been spread in many places, especially in villages. The distribution of mask puppets includes Wajak, Dampit, Senggreng, Ngajum, and in other areas [18]. Malangan Mask Art is an entertainment art that uses the medium of masks. The mask used is an exposure to a figure or in other words a depiction of a person's character. When compared to other types of masks have a more striking color. The colors symbolize various human characters, such as courage, pleasure, peace, chastity, and wisdom. Another characteristic is that the character sculpture of a person's face in the mask looks more real. The Mask of Malangan has changed its role from the past as a sacred spiritual medium and now to a property of the performing arts, although its sacred meaning has not completely disappeared [19]. Malangan Mask Art tells the story of Panji. Panji Story is a classic story of Javanese literature that developed in the Majapahit period. The story revolves around Javanese knights set in Java [20]. As a classical Javanese literature that has a wide impact on Javanese literature. In this puppet story, many local wisdom values are found.

Local wisdom that is rich in values is certainly a pity if it is not used, for example in the field of education. Education through learning not only focuses on modern knowledge, but also integrates the values of local wisdom in learning, with the hope that students in addition to having knowledge also have insight into local wisdom itself, as well as having a scientific attitude that can be applied in life [2]. The value of local wisdom is very important to be applied in schools so that students have morals, and good ethics to behave and behave in accordance with the culture in their environment [21].

One way for the values in local wisdom to be owned by students, is to internalize the value of local wisdom into character education. The internalization referred to here is the passion of a doctrine, of a teaching, or value so that it becomes a belief and awareness of the truth of the doctrine or values embodied in everyday attitudes and behaviors. This concept of internalization according to Toomela as cited by [22] is a process in which two different mechanisms of information processing, non-verbal ('sensory') thinking and conventional language, which have been distinguished from 'natural' processes in the course of development into one in a new mental structure. The result of internalization is the development of semiotically mediated 'cultural' mental operations. Thus, internalization is carried out by uniting the values in the student, or adjustment to the values in the student. To paraphrase Reber's pendapat, internalization is the unification of values in oneself, or in the language of cyclology is the adjustment to the beliefs, values, attitudes, practices, and standard rules in a person [23]. From some of the explanations above, what is meant by internalization in this study is the process of instilling local wisdom values, especially the art of "Topeng Malangan", which is being tried to be internalized in character education.

Based on this background, this study aims to internalize local wisdom, especially the art of "Topeng Malangan" into character education. First, researchers are trying to find the values of local wisdom contained in the art of "Topeng Malangan". Second, researchers are trying to design how to internalize local wisdom in character education.

This research is expected to provide benefits both theoretically and practically for strengthening character education by exploring local wisdom.

## 2 Methods

This research uses a qualitative research approach. The qualitative approach is implemented through the steps of observation, interview, and document review. Theories are built on data. The presentation and analysis of data in the study was carried out narratively. The data and information used in this study were obtained from direct observation, interview defects, interview recordings, photos/videos of activities, and related documents.

Informants are the performers of the "Topeng Malangan" art in Malang Regency which includes six figures who pioneered the art of "Topeng Malangan" is still developing today. "Topeng Malangan" Art Base which is still developing today is divided into North Malang, East Malang, a South Malang. This research was taken from two surviving mask art studios, namely the "Asmoro Bangun" Kedungmonggo Pakisaji Mask Art Center and the Jabung "Gunungsari" Mask Art.

Data analysis techniques to obtain data and information in research, researchers carry out the following activities. After the data is collected, data Reduction is carried out. Data Reduction is an analytical process to select, concentrate, simplify, interpret and transform data that arises from processed field records. In this activity, the researcher makes a summary, selects the main things, focuses on important things, looks for patterns and themes and discards things that are not considered important. Thus the data obtained by the researcher is more specific and directed at the research topic. Next is data display. The data display is directed so that the reduced data is organized, arranged in a relationship pattern so that it is easier to understand. Data submission is carried out in narrative descriptions and relation between categories. The next step is data verification (concluding drawing). In this step, conclusions are drawn based on the findings and verify the conclusion data. Henceforth, the conclusions put forward at this early stage are proven back in the field to find the truth until the right data is obtained.

## 3 Result And Discussion

### 3.1 Values of Local Wisdom in the Art of "Topeng Malangan"

"Topeng Malangan" (which is often also referred to as "Wayang Topeng Malangan") is a traditional art in the form of drama and dance narrated by a puppeteer. The art was designated as a national intangible heritage in 2014. Wayang Topeng Malang is a performance art that becomes a transmission in presenting meetings to bring together ideas or ideas, actions, and materials [24].

Wayang Topeng Malang performs a play of world reality whose protagonist-antagonist character and seems to speak black and white. Mulder said that black and white Javanese ethnicity is a style and theme of Javanese cultural thought [24]. This mentality is the core of Javanese morals that puts good/virtue above evil; Suradira Jayaningrat lebur dining pangastuti (evil is always destroyed by good).

Wayang Topeng Malangan tells the story of the pennant. Panji describes a complete human being as a knight who becomes a role model or an example of obedience in everyday life. In the pennant story, there are concepts of good and bad, love, honesty, kindness and social values of the people of Malang. The performance of this pennant mask puppet appeared in the era of the Singasari kingdom, when King Kertanegara was in power (1190-1214 Saka or 1268- 1298 AD). This dance was created by King Airlangga of Kediri Kingdom [17]. The spread of this dance art to the Singosari Kingdom led by Ken Arok. The Singosari king then used tari Topeng Malangan for traditional ceremonies using the setting of a dance drama consisting of the story of the Ramayana, Mahabharata, and Panji.

The mention of wayang topeng performance art that developed well in East Java varies from time to time. The mentions include Matapukan (hatapukan), Matapelan, Raket, Patapukan. Although different terms of mention, all of them refer to and characterize masked dramatari performances [25]. A mask or *tapel* is a face covering that is considered to represent a person's personality.

Pigeaud in [24] mentions that the mask puppet is very famous in Malang. The art of mask puppetry has a wide range of fans, from commoners to bigwigs or government officials. Geographically, Kawedanan Tumpang in the Dutch era covers the area of the current Kawedanan Tumpang, to the Blimbing area, which is now included in the administrative area of Malang City, including Polowijen village. Masks are not just products, but masks were recreated originally to honor the spirits of ancestors or ancestors (culture.kemdikbud. go.id). Malangan masks, in historical records have been known since the era of King Gajayana of the Kanjuruhan kingdom. At that time masks were made of gold, known as *Puspo Sariro*. *Puspo Sariro* means the flower of the deepest heart. In those days, masks were a cultural tradition and a marker of religiosity.

Wayang Topeng Malang is not just a performance art, but also a generator of a hamlet to form the nature of *guyub*. Since the 1970s, the existence of mask-mask puppet communities has begun to erode and fade. Of the groups that still exist to preserve this mask puppet, namely the Dampit, Precet, Wajak, Ngajum, Jatiguwi, Senggreng, Puncangsanga, Jabung, and Kedungmonggo areas, gradually began to disappear and only two communities remained in two places, namely in Jabung and Kedungmonggo. In this regard, this research data for the Local Wisdom of Malangan Masks was taken from two art studios, namely the "Asmoro Bangun" Kedungmonggo Pakisaji Mask Art Center and the Jabung "Gunungsari" Mask Art.

From the results of data collection, it was found that there are six main values found in the puppet art "Topeng Malangan", namely (1) belief in God, (2) life is a struggle (hard work), (3) human disposition is very diverse, (4) being kind to others, (5) leadership, and (6) being kind to nature.

### 3.2 Belief in God (Religious Values)

Topeng Malangan art is one of the arts in the East Java region, especially Malang City which is rich in religious values. According to [26], religious values are life values that reflect the growth and development of religious life which consists of three main elements, namely *aqidah*, worship and morals which become guidelines for behavior in accordance with religious rules in achieving safety and well-being as well as happiness in life in the world and in the hereafter. Religion is expressed by indigenous people in various expressions such as theological expressions, rituals, and consensus, which includes, among others, customs, religious ceremonies, buildings, places of worship, narratives, and beliefs [27].

The religious value in the art of Topeng Malangan (commonly called Topeng Wayang) seems to start from the process of making masks, the time of staging/dancing or becoming a *panjak* or *karawitan* grower, as well as the staged story, all based on strong spiritual beliefs. Strong spiritual beliefs will make the process of making, the preparation of staging, until after staging have a strong impression.

**Table 1.** The Value of Belief in God Topeng Malangan

No.	Value Source	Value Description
1.	Mask Making	<ol style="list-style-type: none"> <li>a. In the manufacture of masks, it is still directed to follow the previous ordinance as a form of respect for the ancestors.</li> <li>b. The mental process of making masks is an effort to get closer to the creator so that everything goes well.</li> <li>c. The choice of day, material, and time of work on the mask demonstrates the belief that everything must be well designed with His permission.</li> </ol>
2.	Malangan Mask Show	<ol style="list-style-type: none"> <li>a. Before the staging, a ceremony is held led by a spiritual figure as a form of appeal for protection to the Almighty.</li> <li>b. The presence of offerings provided during the performance is a tribute to the ancestors.</li> <li>c. Malangan masks told by a mastermind usually contain religious moral messages aimed at the audience.</li> <li>d. There is a movement in the dance that depicts a character in the story asking God for instructions</li> </ol>
3.	The Story of Wayang Topeng Malangan	<ol style="list-style-type: none"> <li>a. The story in Wayang Topeng Malangan gives the message that every human being must have a problem whose final solution is to return to God.</li> <li>b. The story in Wayang Topeng Malangan teaches respect for fellow creatures, that everything is His creation that should not be hurt.</li> <li>c. In an effort to fight on the path of goodness, the character in the shadow puppet story malangan Panji, for example, he goes to the <i>pepunden</i> or the place where the ancestors are buried as a form of pleading with God to be given protection.</li> </ol>



### 3.3 Life is a struggle (Hard Work)

The value of hard work is a form of one's persistence in trying to get what you want to achieve. Instilling the value of hard work in the character of each individual is very important to improve the life of the Indonesian people [28]. Through the Tari Topeng Malangan, humans are taught how to get something in a good way. So human beings should not look for a very easy way to live well. People must pass the path themselves in order for them to someday obtain the eternal to the end of old age. Topeng Malangan art was passed down by ancestors not only as a spectacle, but also as a guide for learning good daily life for the community through performing arts.

The local wisdom that appears in the art of Wayang Topeng Malang spells out in the characters of the Topeng Malangan story. The characters of the Topeng Malangan story are nobles who travel and disguise themselves as commoners to live the lives of the common people (more able to listen to the voices of their people). The character of the Topeng Malangan story uses phases and periods of disguise to encourage themselves to train to become a people first before becoming a leader. The Value of Struggle (Hard Work) directly forms a tough, hard-working and competitive personality [29].

**Table 2.** The Value of Struggle (Hard Work) in Topeng Malangan Art

No.	Value Source	Value Description
1.	Puppet Stories	Integrity Values: a. Through the art of The Mask of Malangan, humans are taught how to get something in a good way or hard work. So human beings should not look for a very easy way to live well. People must go down the path themselves in order for them to one day have a better life in the future. b. That person must be honest, committed, and have good morals. It is shown from the qualified self-quality of Panji characters in the Wayang Topeng story.
2.	Puppet Stories	Self-sufficient: a. The figure of Panji who disguised his identity as the king's son when traveling and being in the midst of his people trained himself to live independently. He does not want to be treated preferentially, even if he is a nobleman. b. Like the King's son, Panji automatically becomes king but Panji travels and disguises himself as the king's son. The father taught that before becoming a leader, Panji must travel to be close to the people and understand the problems facing his people. They are also independent and responsible to themselves when adventuring by not relying on the king's family.
3.	Puppet Stories	Tirakat: a. Laku tirakat, the character of the story in The Topeng Malangan who sleeps on the floor (not on the Mattress) as part of the tirakat to refuse peril b. The characters of the Malangan Mask story are nobles who travel and disguise themselves as commoners to bisa live the life of the common people (more able to listen to the voices of their people)

### 3.4 Man’s Character is Varied

Tari Topeng Malangan contains the meaning of human life and disposition, which is sometimes happy, sad, laughing, shy and others. This meaning can be clearly seen from the many mask characters used in this dance art. Mask dance is a symbol for human nature, since many models of masks depict different situations, crying, laughing, sad shame and so on [25].

The meaning of Malangan Mask Dance from the website of the National Data Center for Indonesian Communal Intellectual Property, the story that is often performed in the Malangan Mask Dance is the Panji story. Characters that are often played include Galuh Candrakirana, Raden Panji Inu Kertapati (Panji Asmarabangun), Dewi Ragil Kuning, Raden Gunungsari, and so on. Malangan Mask Dance contains the meaning of human life and disposition, which is sometimes happy, sad, laughing, shy and others. Malangan masks have their own characteristics. A distinctive feature lies in the meaning of the shape of the nose, eyes, lips, the color of the mask and its carvings. For color, the poor mask has five basic colors, namely red, white, green, yellow and black. Where each color serves as a symbol of the mask character or the character he plays. Carvings or ornamental varieties on Malang masks, usually in the form of urna on the forehead.

**Table 3.** The Value of Diverse Human Dispositions in Malangan Mask Art

No.	Value Source	Value Description
1.	Mask Characters	<ol style="list-style-type: none"> <li>a. Every human being has times of joy and sadness. For there to be a balance in life is not right if life is made excessive. Don't be too happy if you're happy, and don't be too sad if you're stricken with disaster.</li> <li>b. Malangan Mask Dance contains the meaning of human life and disposition, which is sometimes happy, sad, laughing, shy and others. This meaning can be clearly seen from the many mask characters used in this art.</li> </ol>
2.	Mask Color	<ol style="list-style-type: none"> <li>a. Life is a choice, whether we are going to be good people, or people who indulge in lust. Of course, people will choose a good life as depicted by the character Panji in the wayang Topeng Malangan.</li> <li>b. A person's disposition in the Malangan Mask puppet is depicted in the use of the color of his mask. White represents an honest, holy and virtuous nature. Yellow depicts glory. Green describes the disposition of peace. Red depicts the numbers of wrath, cunning or it could be courage. Black describes wisdom.</li> </ol>
3.	Mask Figures	<ol style="list-style-type: none"> <li>a. Humans should have a good heart like the protagonists in Wayang Topeng Malangan.</li> <li>b. The character of the banner mask k arakternya likes to be ascetic, powerful, wise and kind. Gunungsari's mask figure, her character is humble, gentle and somewhat feminine. Sekartaji's mask character, his character is gentle, humble and feminine. Tokoh yellow ragil mask kthe arakter is soft, firm and brave. Bapang's mask character, his character is arrogant and cunning.</li> </ol>

### 3.5 Be kind to Others

The value of local wisdom is present as a form of local identity which is considered to be good for life, by which this value is often used as a principle of life that is strongly attached to every descent of an ethnicity [29]. Values enable individuals to live together within a society [28]. This value is reflected in the interactions between the characters in the staged Puppet Story Story. Doing good to others is represented through the attitude of a good character (protagonist) who shows an attitude of affection, honesty, solidier, holding the value of truth. Human interaction with other human beings puts forward egalitarian principles and is not discriminatory towards others. They hold the principle that human beings are equal.

**Table 4.** The Value of Being Good to Others in Topeng Malang Art

No.	Value Source	Value Description
1.	Puppet Stories	<p>Tolerance and Peace-Loving</p> <ol style="list-style-type: none"> <li>a. In the story of Wayang Topeng, when subduing the opposite person, Panji never hurts or kills his enemy. Physical violence is only a warning symbol (physical contact with the opponent) but not to the point of killing the opponent.</li> <li>b. Panji is humble and does not show its superiority. He does not attack the opponent first, if attacked then Panji retaliates.</li> <li>c. Topeng Malang figures are good at diplomacy, communicate well with the opposite kingdoms, they respect the culture of others but uphold their own culture so that they do not lose their identity and identity</li> </ol>
2.	Puppet Stories	<p>Democracy</p> <ol style="list-style-type: none"> <li>a. The value of local wisdom that is very important also from the Topeng Malang art performance is that every human being in his association must prioritize cleanliness of heart and good intentions. Cleanliness of heart and good intentions in carrying out various social activities will strengthen the relationship between people and always make a habit to always do good</li> <li>b. Doing good to others is mandatory. Because when we do good to someone then the good will turn to us alone. Man's existence is determined by how he can benefit others for his goodness, not the other way around parasitizing his fellow man.</li> <li>c. The story of King Airlangga dividing the two kingdoms for his son and doing justice. The division of power carried out by Prabu Airlangga on his two children was carried out by forming wise joint decisions with some suggestions from other parties. Prabu Airlangga justly divided power among his two children.</li> </ol>

### 3.6 Leadership

In the context of leadership, there are exemplary values such as loyalty, obedience. In the story of the mask puppet teaches that power cannot be obtained instantly, but must

pass a period of orientation or apprenticeship as evidenced by the act of wandering in disguise (hiding one's identity) in order to feel first being a common society. So a leader is born out of a long and resilient process of facing challenges. A leader must be able to mediate the conflicts facing his society. In his stories, when subduing the Sabrang people, Panji never hurt or killed others. Physical violence is only a symbol of warning (physical contact with an opponent) but not to the point of killing him.

The figure of Panji Asmarabangun in Wayang Topeng Malang is the son of King Panji Lembu Amiluhur. The King Amiluhur was a wise and virtuous king. As a figure who has the legitimacy of replacing his father as King, Asmarabangun requires experience that allows him to understand royal issues and be close to the people. The wandering of Panji Asmarabangun in Wayang Topeng Malang became a commoner, including the search for his wife who disappeared from the palace has a socio-political aspect [24]. The figure of the King in Javanese culture is no longer the embodiment of a god, but also the embodiment of a folk figure. The leader is always close to the people, this is a superior character who appears in the depiction of the figure of the King in Wayang Topeng Malang. The context of the leader close, nurturing, and serving the people puts the story of Panji in Wayang Topeng Malang as a literary work that is more familiar with as folk literature, than elitist literature (Palace / Nobles). The constructed story pattern is more people-oriented [24]. This shows that the Panji stories staged in Wayang Topeng Malang are centered on the people's narrative and the reality that occurs in society.

**Table 5.** The Value of Leadership in Topeng Malangan Art

No.	Value Source	Value Description
1.	Puppet Stories	<p>Authority</p> <p>a. In the story of the mask puppet teaches that power cannot be obtained instantly, but must pass a period of orientation or apprenticeship as evidenced by the act of wandering in disguise (hiding one's identity) in order to feel first being a common society.</p> <p>b. A leader is born from a long and resilient process of facing challenges. A leader must be able to mediate the conflicts facing his society. In his stories, when subduing the Sabrang people, Panji never hurt or killed anyone else.</p>
2.	Puppet Stories	<p>Wise</p> <p>a. The figure of Panji Asmarabangun in Wayang Topeng Malang is the son of King Panji Lembu Amiluhur. The Ox King Amiluhur was a wise and virtuous king. As a figure who has the legitimacy of succeeding his father as King, Asmarabangun needs experience that allows him to understand royal issues and be close to the people.</p> <p>b. The king nurtured his subjects by making a habit of descending on the people in disguise. The people also showed respect for the King as the King appeared in the dance scene, the people sat down and ducked</p>

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3.	Close to the People	Close to the People
		a. The figure of the King in the Wayang Topeng story is no longer the embodiment of a god, but also the embodiment of a folk figure. The leader is always close to the people, this is a superior character who appears in the depiction of the figure of the King in Wayang Topeng Malang.
		b. In the story of Topeng Malangan, the leader also nurtures and at the same time serves the people.

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### 3.7 Be Good to Nature

In the mask puppet story that tells the story of the pennant, humans are taught to be kind to nature and not to damage nature, especially springs in order to provide life for society and do good for others. The earth created by the creator is very beautiful and holds a variety of abundant wealth. Humans interact with nature to meet the needs of life while maintaining the sustainability and balance of nature. It is therefore man who is supposed to create and maintain a mutually beneficial relationship with nature, so that nature can give its wealth to man for a long time.

Humans are expected to be able to give good treatment to the universe, especially since humans in the Islamic perspective have the main position as caliphs. This treatment has several main objectives, namely improving the standard of human life in the world and is directed at efforts to build various good efforts as a provision for life in the world. The afterlife will be achieved successfully if human life is truly functional to nature and charity.

However, if man carelessly hurts nature, sometimes nature will never know mercy and apologies for man's actions. Nature, which is supposed to be a blessing for human life, will turn into a tragedy for human life because of carelessness, greed, and immeasurable and controlled exploitation activities. From these environmental values a lesson can be drawn, that this environment was created by God for the benefit of man, but if humans do not treat the environment well by caring for and maintaining it, then the environment can turn to threaten our own lives. Therefore, people must do good to nature/the environment.

[30] stated, from the history of mankind it can be seen that human activities, consciously or unconsciously will not affect the conditions of nature. Since the primitive to modern era, there have been nuances of differences in the relationship between humans and nature. Further [30] explains that humans need to build relationships with nature. The concept of humans having relations with nature and its environment, accompanied by the struggle for the protection of nature. This effort goes on, even if it goes a bit shuffled, because the economic interests of the industrial side are often at odds with ecological concepts. Man is constantly trying to find the harmony of life with his nature. These alignment efforts include efforts to minimize the impact of industrial activities that damage the environment a lot.

From nature ecological perspective, the relationship of man and nature is a necessity [31]. Between man and nature there can be equal and unsustainable relationships, kinks, and mutual engagements. Relationships are dynamic, meaning ter)alin secam conscious, internalized, and educated as the basis of the human personality itself.

Sahidah (2017) stated that in Indonesia, religious ceremonies and rituals became the forerunners of traditional theatrical performance arts with a combination of elements of movement and music. The performance is believed to be a form of inner belief in nature and creators, as well as a form of artistic existence.

**Table 6.** The Value of Doing Good to Nature in Topeng Malangan Art

No.	Value Source	Value Description
1.	Puppet Stories	<p>Does Not Destroy Nature</p> <ol style="list-style-type: none"> <li>a. In the mask puppet story that tells the story of the pennant, humans are taught to be kind to nature and not to damage nature, especially springs in order to provide life for society and do good for others.</li> <li>b. If man carelessly injures nature, sometimes nature will never know mercy and apologies for man's actions. Nature, which is supposed to be a blessing for human life, will turn into a tragedy for human life because of carelessness, greed, and immeasurable and controlled exploitation activities.</li> </ol>
2.	Ceremonies	<p>Caring for Nature</p> <ol style="list-style-type: none"> <li>a. Doing good to nature is also evident in the execution of the hamlet's birthday ceremony. For example, the elders in Dusun Kedungmonggo entrusted Sunday Kliwon (name of the day in Javanese culture) night Monday Legi as a sacred day because it coincided with the birthday of the hamlet in the Javanese calendar. This ritual opens with an opening ritual that becomes a sign in which the alms of the earth and the clean of the village are carried out.</li> <li>b. The purpose of carrying out rituals carried out before the Topeng Malangan event includes many things that are essentially that the purpose of the ritual is to show gratitude for the richness of nature and as a responsibility for the preservation of ancestral culture.</li> </ol>

### 3.8 Design Model for Internalization of Local Wisdom Values "Topeng Malangan" in Character Education

The existence of local wisdom in the society becomes a reference and guideline in the daily behavior of the entire community that teaches from generation to generation [32]. Transformation of values of local wisdom through learning in schools is seen as an alternative to solving student delinquency problems [33]. Internalization designates the core process by which culture becomes mind, and it begins to explain how the mind can create culture [22]. The stages of nternalization of local wisdom values "Topeng Malangan" in character educationn are carried out through three stages, namely the stages of value transformation, value transactions, and value transinternalization.

#### Value Transformation Stage.

Values are not innate; however, they are learnt and transmitted through observation and interaction, which puts forward the responsibility of schools for values education [28]. The teacher realizes that the values of local wisdom are very instrumental in the formation of students' character because it contains much useful advice in daily life [36]. At this stage the values of local wisdom "Topeng Malangan" are formulated in the form of information conveyed to students. Teachers can explain good and bad grades to students. At this stage there is only verbal communication between the teacher and the student. Thus, pthere is this stage of internalization of values can be done by means of the delivery of physical material through learning in the classroom, short lectures so that the students know good values or that may be contrary to norms or religions or noble cultural values. This stage is called the process of understanding or growing the student's affective level regarding the values of local wisdom. This step is in line with the opinion of Thomas Lickona [34] who teaches values starting from the first component, namely moral knowing (knowledge of morals).

At this stage, learners need to be guided to broaden their horizons of knowledge of values, so that they can give proper moral reasons before they are required to do so in action. The thinking approach that needs to be developed in the value learning process is the constructivism approach, which is to actively open up experience, knowledge, and understanding by involving students' moral reasons. In this way, the learning process at this stage is to know (learning to know) the value of truth, goodness, and beauty can be done voluntarily.

### **Value Transaction Stage.**

At this stage, the internalization of local wisdom values "Topeng Malangan" has been carried out in two directions, namely the interaction between students and teachers which is reciprocal. In this value transaction teachers and students are equally active. In this stage the teacher not only presents information about good and bad grades, but is engaged to implement and provide examples of real attitudes and students are asked to respond equally to that, accept and practice the value. This is a phase of passion that boils down to increasing students' knowledge of the values of local wisdom "Topeng Malangan". This step is in line with the opinion of Thomas Lickona [34] who teaches values in building a second karakater education, namely moral feeling.

At this stage, the learner needs to be guided to skillfully perform an action of what he believes to be the value of truth, goodness, and beauty. Actions or deeds are two things inherent in real life, so in essence learning to act and doing is learning to experience real life. This means that guiding and training learners to learn to act and do must be done contextually according to the life experiences that are being experienced and the prediction of future behaviors. The word practice refers to behavior and actions carried out based on their knowledge. This practice is needed because without practice their knowledge and actions will have certain impacts or consequences toward the real life and the problems faced [35].

### **Value Transinternalization Stage.**

At this stage the internalization of value is much more profound, and not just a transaction. In this stage, the figure of the teacher and student is no longer his physical figure but his mental attitude (personality) which already reflects the values of local wisdom "Topeng Malangan". Students respond to the teacher not by their physical movements/ appearance, but rather their mental attitudes and personalities, each of which is actively involved. Thus, at this stage it is not only done with verbal communication but also a reflection of mental attitudes and personality. So it's personality communication that plays an active role. This step is in line with the opinion of Thomas Lickona [34] who teaches values in building character education in the third component, namely moral action.

At this stage, learners need to be guided towards the inherent possession of good traits. The value that is decided as truth through moral communication and actions taken with the teacher cannot be a guarantee of long-standing continuity in students. For this reason, the value education process requires consistency, intensity, and frequency in getting used to commendable things in learners, so learning to be itself really involves a deep process of internalization

The three stages of value internalization can also be drawn into four models of moral education, namely (1) value expression, (2) a value analysis, (3) moral cognitive development, and (4) social identity. First, The value disclosure model is a technique that views moral education in the sense of promoting self-awareness and self-caring and not addressing moral problems that help reveal the morals that learners have about certain things. The approach is done by helping learners find and assess or test the value they have to achieve self-feeling. Secondly, value analysis is a model that helps learners learn decision making through a step-by-step process in a very systematic way. Third, moral cognitive development model is a model that helps learners think through opposition in a clearer and more thorough way through the general stages of moral considerations. Fourth, social action is a model aimed at improving the effectiveness of learners uncovering, researching, and solving social problems.

## **4 Conclusion**

There are six values of local wisdom in the Wayang Topeng Malangan Art. First trust in God. Whatever man does, all must be with His permission. Every activity does not forget to always pray to God Almighty to get strength and guidance so that what is done can go well. Both lives are struggles (hard work). People must pass the path themselves in order for them to someday obtain the eternal to the end of old age. Third, human dispositions are very diverse. Mask dance is a symbol for human nature, because many models of masks depict different situations, crying, laughing, sad shame and so on. Fourth, be kind to others. Doing good to others is mandatory because when doing good it will turn to him. All five leadership. In the story of the mask puppet teaches that power cannot be obtained instantly, but must pass a period of orientation or apprenticeship as evidenced by the act of wandering. Sixth, be kind to nature. The



environment was created by God for the benefit of man, therefore man must treat the environment well by caring for and maintaining it, and otherwise the environment may turn around threatening our own lives.

For the stages of internalization of local wisdom values, it is carried out through three stages, namely (1) value transformation, (2) value transactions, and (3) value transinternalization. At the transformation stage, teacher can explain good and poor grades to students in the same direction. At the value transaction stage, communication has been carried out in two directions, namely the interaction between students and teachers which is reciprocal regarding good grades. At the stage of transinternalization, learners need to be guided towards the inherent possession of good traits and already character.

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# The Gap Between Parenting and Self-Concept Towards Learners' Bullying Behavior

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**Abstract.** Bullying often occurs in the school environment. Students become perpetrators as well as victims of bullying. The situation occurs when there is a superior and inferior position between the perpetrator and the victim. The perpetrator feels power over the victim because it has made his victim feel terrified. This behavior, if left unchecked, will affect the psychological condition of the victim. This research will address the gap between parental parenting and learners' self-concept of bullying behavior. This research uses a quantitative approach with a survey method of parents and students. Parents have an important role in applying parenting to students. Meanwhile, the self-concept of students must be awakened by teaching how students must be positive people. Parents are obliged to teach, guide, and direct learners to act by applicable values and norms. Parents are the creators of the character of students to have good morals and ethics, as well as morals. The role of parents is very important in building the character of learners. Students can continue to learn about mastering emotions, soul, environmental conditions, and others that can trigger bullying.

**Keywords:** bullying, parenting, self-concept.

## 1 Introduction

The development of technology in modern times today is developing very rapidly. Technology has been used in all sectors and accessed by all walks of life, from early childhood to adulthood. Dependence on gadgets has begun to infect some people, especially children. The currents of globalization support and encourage them to keep updating the developments that occur. No doubt children inevitably have to keep up with the flow of development at this time. The lack of assistance from parents makes children freely access social media which is very vulnerable to being seen. This is a challenge for parents to control what sites children access and read.

In line with this phenomenon, parental parenting plays an important role in shaping the behavior and character of a child. Parenting can be interpreted as a process for parents to educate children in the form of assessment, education, knowledge, discipline, guidance, and protection related to their life needs. A child who is raised with a lack of affection in the family will shape the child to be more emotionally friendly and like to make trouble with others. Unlike the child who is educated by his family affectionately, the child will have a positive attitude and easily get along with his environment. The

relationships established in parenting will shape the nature and personality of the child according to the applied parenting pattern. The intensity of a good relationship will affect the formation of self-concept for the child.

Family guidance is the main influential factor in a child's personality. Parenting is also important, as it can be a way of attitude or behavior of parents when interacting with children, including how they apply rules, teach values and norms, give attention and affection, and show good behavior as an example [1]. There are three parenting styles: authoritarian, permissive, and democratic/tolerant. Each of them has its influence on the development of the child's personality. Authoritarian parents will negatively affect the development of the child's personality, while permissive parents will not have any impact at all. A democratic parent will follow the individual interests of the child, encouraging a healthy balance between individual and social development [2].

Self-concept is a trait that will distinguish human beings from one another according to their personality they get. Self-concept is also the implementation of human beings to develop that causes the human being to be aware of his existence. The development that occurs in a human being will help the formation of the self-concept of the individual in question. These developments will affect the pattern of interaction with themselves and their environment. A person with a positive self-concept will be able to be himself without needing to rely on other arguments. On the contrary, a person who has a negative self-concept, will look at his surroundings low and be less able to accept himself. People with negative self-concepts also tend to develop negative behaviors in response to situations, and it is difficult for them to practice self-control [3].

Children who fail to know about their self-understanding, lead to not have a positive self-image. This will be in line with the emergence of various problems, one of which is bullying. Bullying is closely related to the management and control of emotions within oneself. Bullying is the act of hurting the victim, ranging from a form of verbal, physical, and psychological bullying that can trigger a sense of trauma in the victim. The impacts caused by bullying are many, one of the most is that the victim is unable to socialize with their environment, often stays silent, has no friends, feels useless, is often excluded, and much more [4].

Judging from the number of bullying cases that still occur in schools and the dangers posed, the problem of bullying should get more attention from the government. Given the psyche of children who can be influenced from anywhere, it is very dangerous if the cases of bullying are left unattended or the behaviorists do not receive the appropriate punishment because they are underage. This is still a conflict in the community, seeing a lot of research on bullying cases in the world of education.

## 2 Method

The method used to collect data is surveys that aim to collect data and information from the population or samples taken randomly by providing questionnaires. After determining the purpose of the study, namely wanting to find out the gap between parental parenting and self-concept towards bullying behaviors of students, then

determining the population and samples. The population or group that was the subject of the study was the parents of students, while the sample was parents who were in the Malang City environment. The sample used was 65 respondents.

Once the population and sample are determined, then create a questionnaire or list of questions that will be to collect data from respondents. This type of survey data collection is carried out by distributing google forms to all respondents online through the WhatsApp application. After the data is obtained, it is then processed and analyzed, then presents the survey data.

### **3 Discussion**

Parenting is the way parents raise and educate their children. Each parenting style can have different consequences for a child's development. Authoritative parenting, for example, tends to give rise to children who have independence and confidence, while authoritarian parenting can give rise to children who tend to be timid and passive. Therefore, parents need to choose a parenting style that suits the needs and characteristics of their child [5].

There are several parenting styles including: (1) Authoritative parenting: This parenting involves a combination of affection and clear boundaries. Authoritative parents tend to give explanations and reasons for the rules made, and give the child the opportunity to participate in decision-making; (2) Permissive Parenting: This parenting style is characterized by a lack of clear rules and boundaries. Permissive parents tend to let children do what they want without obvious consequences; (3) Authoritarian Parenting: This parenting style is characterized by the presence of very strict and strict rules, but a lack of affection. Authoritarian parents tend to make decisions without involving the child and underconsider the child's feelings and needs, and (4) Tolerant/permissive Parenting: This parenting involves acceptance and appreciation of the child without involving excessive control. Tolerant parents tend to allow their child to explore and try new things without fear of failure [2].

Good parenting includes (1) Affection and care. Children need affection, attention, and warmth from their parents. Parents should spend quality time with their children, listen to their needs, and provide emotional support, (2) Provide consistent discipline. Parents should set clear boundaries and provide consistent discipline when the child breaks the rules. The discipline should aim to teach the child about the consequences of their actions and help them develop responsibility, (3) Provide encouragement and support. Parents should provide positive encouragement and support to their children to help them achieve their goals. This includes providing praise, encouragement to excel, and supporting positive activities, (4) Providing freedom and opportunities for learning. Parents should give their children the opportunity to learn and try new things. This includes providing opportunities to play, experiment, and take healthy risks, (5) Be a good example. Parents should be good role models by practicing the positive values and behaviors expected of their children. This includes appreciating differences, speaking politely, constructively solving problems, and showing empathy to others, (6)

Teaching positive values. Parents should teach positive values to their children, such as honesty, hard work, kindness, and responsibility. This can be done by discussing these values in everyday life and providing concrete examples of how these values can be applied, (7) Establishing open communication. Parents should establish open communication and respect the opinions of their children. This includes listening and responding positively, providing opportunities to speak, and building trusting relationships, and (8) Maintaining safety and health. Parents should take care of the safety and health of their children. This includes providing healthy food, ensuring children get enough sleep, and teaching children about dangers and how to avoid them [6].

Self-concept is an individual's view of himself, which includes the beliefs, values, attitudes, and judgments he has of his physical, social, and psychological characteristics. Self-concept is formed through experience and social interaction, as well as by influencing the behavior and decisions that a person makes. Self-concept includes several aspects, such as (1) Physical aspects. includes an assessment of a person's physical characteristics, such as height, weight, hair, and face, (2) Social aspects. includes assessments about a person's relationships and interactions with others, such as social status, family, friends, and social environment, (3) Psychological aspects. includes assessments about a person's mental and emotional state, such as confidence levels, self-esteem, happiness, and anxiety, and (4) Spiritual aspects. includes an assessment of one's views on beliefs, moral values, life goals, and views of oneself in the context of existence in the world [7].

Bullying or bullying is behavior that is intentional and degrading, threatening, or physically or emotionally injurious to another person. Bullying can occur in a variety of environments, including at school, at work, among peers, and in cyberspace. Bullying can have long-term effects on victims, including depression, anxiety, and decreased self-confidence. Therefore, it is very important to take measures to prevent and overcome bullying. This can be done by: (1) Educate children about the importance of respecting others and treating others well, (2) Teaching children to report bullying they experience to trustworthy people, (3) Encouraging adults to get involved and take action when they become aware of bullying, (4) Raising awareness about bullying and getting the public involved in bullying prevention, and (5) Creating an anti-bullying policy in the workplace, in schools, and in other places prone to bullying [8].

The behavior of bullying cases is broken down into four kinds; (1) Physical actions, these physical actions such as pushing, hitting, cornering, and grabbing the victim, (2) Verbal behavior, these verbal actions such as threatening the victim with various remarks that can harm, humiliate, victims in public, physical abuse, and so on that are direct to the victim of bullying, (3) Exclusion bullying, actions committed by bullies usually such as secretly slandering the victim for certain purposes, deliberately cornering or ignoring, and (4) Cyberbullying, this behavior is classified as behavior carried out in social media or other internet media, such as sending terror messages, threatening the victim, spreading personal photos or videos of the victim on social media [4].

## 4 Result

The results of the survey of the parents of students showed that parents have implemented a non-restrictive parenting pattern, aware of the child's condition so that the child does not feel constrained. As shown in the image below.



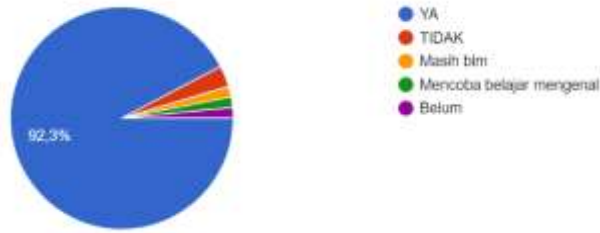
Fig. 1. Parenting

The pattern may vary depending on culture, religion, socio-economic conditions, and so on. Parents should consider their child's needs, development, and uniqueness when providing parenting. Proper or proper parenting is parenting that provides a healthy balance between affection and control.

A few things that can help parents to practice proper parenting: (1) Give affection and care to the child consistently. Showing affection and listening to the child can help build confidence and a positive emotional connection between parent and child, (2) Set clear and consistent boundaries. Children need clear and consistent boundaries to help them understand the consequences of their actions and establish regularity and routines in their lives, (3) Involve the child in decision-making. Giving children the opportunity to participate in decision-making can help them learn to solve problems and feel they have control over their lives, (4) Give clear and reasonable explanations. Providing a reasonable explanation of the decisions and boundaries made can help the child understand the reasoning behind the rules and build respect and trust in the parents, (5) Pay attention to the needs and interests of the child. Being aware of a child's interests and needs can help parents strengthen emotional connections with the child and provide appropriate support for their growth and development, (6) Be exemplary. Parents should be good role models in their behavior and attitudes, as children are more likely to emulate their parents, and (7) Applying proper and appropriate parenting requires patience and consistency. Parents should constantly observe and adjust their approach according to the needs and characteristics of their children to ensure that their children grow and develop optimally.

The survey results related to self-concept obtained from the parents of students as shown in the following figure.





**Fig. 2.** The child can recognize himself

Self-concept is very important in everyday life, as it can influence a person's perception, behavior, and social relationships. Individuals who have a positive and healthy self-concept tend to be more confident, happy, and successful in various aspects of life, while individuals who have a negative and unhealthy self-concept tend to feel insecure, anxious, and difficult to achieve success.

Self-concept refers to the understanding and judgment that a person has of himself. This includes a person's perceptions, judgments, and beliefs about his physical, social, emotional, and intellectual characteristics. Self-concept is an important part of a person's personality and psychological development and can influence the way they interact with the world around them.

For children, self-concept is initially formed through the experiences they experience in interaction with the surrounding environment. Some of the factors that can affect a child's self-concept include (1) Positive experiences: Positive experiences, such as praise, appreciation, and success can help the child build self-confidence and confidence in himself, (2) Negative experiences: Negative experiences, such as failure, loss, or rejection, can negatively affect the child's self-concept and can lower their self-confidence, (3) The role of parents and caregivers: Parents and caregivers play an important role in helping to shape the child's self-concept. The way they provide support, praise, and criticism can affect the way the child views himself, (4) Social interaction: Positive social relationships with peers and family members can help strengthen the child's self-concept and provide social support, (5) Ability and success: Ability and success in certain areas, such as sports or the arts, can help build self-confidence and improve the child's self-concept, and (6) Physical characteristics: Physical appearance can also affect a child's self-concept. Children who feel uncomfortable or dissatisfied with their physical appearance may have a low self-concept.

In developing a child's self-concept, parents and caregivers need to provide positive support, praise, and emotional support to the child. This can help the child feel valued and accepted and strengthen confidence and a positive self-concept.

Bullying or in other forms of physical violence can occur to anyone, as in the following survey results.

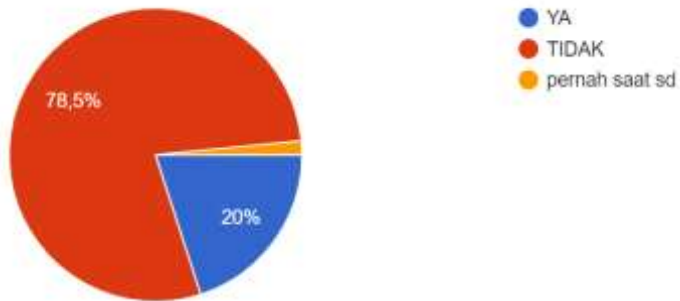


Fig. 3. Physical violence experienced by children

Physical violence is an activity involving physical force aimed at harming or injuring a person or group of people. Acts of physical violence can occur in a variety of situations, including at home, at work, at school, and in other social situations. Physical violence can take the form of punches, kicks, bites, punches, or the use of weapons and can have serious consequences, including injury, serious injury, or even death.

Physical violence can be caused by a variety of factors, including mental health problems, illicit substance use, or the inability to cope with emotions and stress. Some of the risk factors for physical violence include low socioeconomic background, a history of violence in the family, lack of social support, and interpersonal conflicts.

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# Ratio Legis of Land Procurement Arrangement for Toll Roads Construction Toward Society 5.0

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**Abstract.** The massive development of communication and information technology has influenced human life; therefore, humans need to adapt to these changes. Through a system that connects the virtual and physical worlds, Society 5.0 offers a human-centered economy that strikes a balance between social issues and economic advancement. The building of toll roads, which stand for "tax on location," is another aspect of crucial infrastructure and a current priority for national growth. This paper elaborates on the Ratio Legis for land procurement arrangement of toll road construction toward Society 5.0. This research method uses normative juridical with a conceptual approach. The result is legal availability of land during the land acquisition process for development is ensured by Law Number 2 of 2012, which regulates land acquisition for development in the public interest. It assures owners of land rights that their property will be fairly compensated if it is seized for public use. The use of the Land Acquisition Information System (SIPT) application, which has the capability as a media for controlling and storing documents and archives of land acquisition implementation activities, is expected to be a solution in the context of accelerating and solving land acquisition document archiving problems, especially in supporting the era of industrial development 4.0 towards society 5.0.

**Keywords:** Land Acquisition, Toll Road, Society 5.0.

## 1 Introduction

Development and management of toll road infrastructure determine regional economic development, improving the community's quality of life and the environment. To minimize the gap between needs and existing services, the government should always strive to improve services to the community. Toll road construction is intended to achieve an even distribution of development and its results, as well as regional balance development with due regard for justice. This can be achieved by fostering a road network with funds from road users. Toll road implementation aims to increase service delivery and distribution efficiency. This policy is necessary to promote economic growth, especially in areas of high development.

The existence of land acquisition regulations for the construction of toll roads must be based on. The principles of benefit, welfare and justice. It means that the construction of toll roads will provide direct or indirect benefits and broad benefits for people's lives. In addition, it can facilitate transportation facilities to access haul routes as accommodation and make it easier to meet community needs, which in the end, is for the community's welfare.

According to Maria Sumardjono, land acquisition activities involve the interests of two parties: government agencies needing land and communities requiring land for development activities. Land, as a basic human need, embodies economic, social and cultural rights. The land acquisition must be carried out through a process that ensures no "forced will" of one party against another. Considering that the community must give up their lands for development activities, it must be guaranteed that their socioeconomic welfare will not deteriorate; at least, it must be the same as before others used the land <sup>1</sup>.

Over the past five years, the government has prioritized infrastructure development evenly in various parts of Indonesia. The multiple infrastructures that have been built range from roads, bridges, dams, housing, drinking water supply, sanitation, irrigation, and infrastructure facilities, including the construction of toll roads. In 2020 the PUPR Ministry received a budget allocation of IDR 100.59 trillion or only 57% of the proposed budget of IDR 176 trillion. In 2021, the absolute ceiling for the Ministry of PUPR was Rp. 152.1 trillion, and the realization is Rp. 143.5 trillion. With that much budget, it is hoped that infrastructure development, especially the construction of toll roads, will impact the Indonesian economy in the future. The construction of toll roads has now reached 2,042 km<sup>2</sup> <sup>2</sup>.

The development of toll road infrastructure remains a priority for the government to realize a process of equalizing prosperity throughout Indonesia. This infrastructure development requires land and can be implemented through a land acquisition to develop public interests. This has been regulated through Law Number 2 of 2012 concerning Land Acquisition for Development in the Public Interest. These laws and implementing regulations aim to facilitate the land acquisition process for developing various kinds of infrastructure in Indonesia, including the construction of toll roads.

In its implementation, even though it has been regulated through Law Number 2 of 2012 along with five Presidential Regulations (Perpres) as derivative regulations, many loopholes still hinder the implementation of land acquisition. Obstacles in the implementation of land acquisition, including a) the location determination issued by the Governor not following the local, regional spatial plan is not supported by preliminary data, as well as the approval of the rightful party, which results in rejection in the implementation of land acquisition. b) implementation in the regions for the National Strategic Project (PSN) needs to be improved because it needs to include the type of public interest. Therefore land acquisition cannot be carried out by Law Number 2 of 2012, c) if a consignment is made at the District Court (PN), some are rejected because there needs to be more time <sup>3</sup>.

Based on these facts, it is necessary to explain and analyze how the ratio legis of land acquisition arrangements for toll road construction towards society 5.0 is in overcoming the problem of land acquisition for public purposes

## **2 Result and Discussion**

### **2.1 Land Procurement for Toll Road Construction**

Development has various forms and types to develop public good or public interest. Growth for the public interest is one of the bases for the government to legitimize it in the context of carrying out the land acquisition. This is because the government needs land to realize development in all fields, while the availability of land is increasingly limited.

The Indonesian people understand that land has the highest position in Indonesian society. The land is the capital of life and livelihood as well as the basis of life, so if the land is needed for development, it will cause a quick reaction from the community in the form of rejection, resistance, and even lawless actions and cases arising in court. This condition often occurs when the government requires land for public purposes. The government is very aware of this, but on the other hand, the government always needs land to develop for the welfare and prosperity of all Indonesian people.

The term "land acquisition" was legally recognized for the first time since the issuance of Presidential Decree No. 55 of 1993 concerning Land Acquisition for Implementation of Development in the Public Interest. According to Budi Harsono, "Land acquisition is a legal action in the form of releasing the legal relationship that originally existed between the right holder and the necessary land, by providing compensation in the form of money, facilities or otherwise, through deliberations to reach an agreement between the land owner and the party who needs it."<sup>4</sup>

As a juridical basis for implementing land acquisition in Indonesia, in 2012, the government enacted Law Number 2 of 2012 concerning Land Acquisition for Development in the Public Interest. The provisions of Article 1 number 2 define land acquisition as follows "Land acquisition is the activity of providing land by providing proper and fair compensation to the entitled party." The entitled party is the party that controls or owns the land acquisition object. Objects of Land Procurement are land, above-ground and underground space, buildings and plants, objects related to land, or other things that can be appraised. Based on this understanding, land acquisition consists of the following elements: a) Legal actions in the form of relinquishing land rights to become state land; b) Relinquishment of land rights for public purposes; c) Legal actions are based on deliberation and voluntarism; d) Accompanied by fair and proper compensation.

Land procurement for the development of public interest contains several principles that must be considered and adhered to so that its implementation achieves the goal of maximizing the prosperity of the people, including:

#### **1. Principles of Deliberation.**

Even though the land acquisition is held in the public interest, its implementation must be based on deliberations between the government agency building it and the land owner or authority. Thus, there is no land acquisition without consideration. Therefore, land acquisition is based on an agreement. Without an agreement, in principle, there

will be no land acquisition. The agreement referred to is an agreement regarding the location of the land pawnshop and the form and amount of compensation.

## **2. Principle of Public Interest.**

Land acquisition is only carried out for the public interest. Suppose the development activity is not in the public interest. In that case, the person concerned must take care of his interests by contacting the land owner directly, without the help of a committee. Therefore, the notion of public interest is essential to be emphasized in the law.

## **3. Principle of Releasing or Surrendering Land Rights.**

Land acquisition cannot be forced, so its implementation must be based on releasing land rights from the right holders. Land acquisition can only be carried out if the right holder is willing to give up his rights to break the legal relationship between him and his land and then hand it over to the state for development. This willingness is usually stated after the person concerned has received proper compensation according to the agreement. If there are rights holders who voluntarily provide land for development without payment, such land acquisition is carried out through the transfer of rights. So there is no land acquisition like that done through the transfer of ownership.

## **4. Principle of respect for land rights.**

Every land acquisition must respect the existence of ownership of the land that will be used as a place of development. Every land right, whether certified or not or is customary land, must be respected. No matter how small, people's rights to the land must be respected.

## **5. Principle of Compensation.**

Land acquisition is obligatory based on providing appropriate compensation to the right holders based on an agreement in the principle of deliberation. This means that determining the form and amount of payment is also an essential aspect of land acquisition; compensation must be able to improve people's welfare

## **6. Principles of Spatial Planning.**

Development for the public interest is intended for the greatest possible prosperity of the people, so its implementation must comply with the spatial layout plan of the local area

Implementation of land acquisition for the construction of toll roads, the Governor, together with agencies that require land, announce the determination of the construction location for the public interest. The announcement will notify the public that construction will be carried out in the said location for the public interest. Determining the construction site for the appropriate party's public interest can only transfer their land rights to the agency that needs the land through the land agency. So based on the determination of the location of the development for the public interest, the agency that requires land submits the implementation of Land Procurement to the Land Agency.

In principle, land acquisition for toll road construction is carried out by the Land Agency, which can involve or coordinate with the provincial or district/city government in its implementation. Implementation of Land Procurement as referred to includes:

### **1. Inventory and Identification of Control, Ownership, Use, and Utilization of Land**

The aim is to find out the Entitled Parties and Land Acquisition Objects. Inventory and identification results contain a list of nominated Entitled Parties and Land Acquisition Objects. The entitled party includes the name, address and occupation of the party who controls/owns the land. Land Procurement Objects have a location, area, status, and land use and utilization type.

### **2. Compensation Assessment.**

Article 31 Law no. 2 of 2012 states that the Land Agency determines an Appraiser following statutory provisions. Then the land agency announces the appraiser assigned to carry out the appraisal of the land acquisition object. The appointed appraiser must be responsible for the assessment that has been carried out. Violation of the appraiser's obligations regarding the assessment that has been carried out may be subject to administrative and/or criminal sanctions.

The appraisal of the amount of compensation by the appraiser is carried out in plot per plot of land, including a) land; b) above-ground and underground space; c) buildings; d). plant; e) objects related to land; and/or f) other losses that can be assessed. The value of compensation assessed by the appraiser is the value at the time of the announcement of the determination of the construction location for the public interest. The amount of the compensation value based on the results of the appraiser's assessment is submitted to the land agency with an official report. The value of compensation based on the results of the appraiser's assessment becomes the basis for deliberations on determining compensation.

In Article 35 of Law Number 2 of 2012, it is stated that if, in the case of specific land parcels affected by land acquisition, there are remnants which can no longer be functioned following their designation and use, the entitled party may request a complete replacement of the land parcel. What is meant by "no longer able to function" is a plot of land that can no longer be used by its original designation and use, for example, a residential house divided so that part of it cannot be used as a residential house. In this regard, the party who controls/owns the land may request compensation for the entire amount.

### **3. Deliberation on the Determination of Compensation.**

The land agency conducts deliberations with the entitled party within a maximum period of 30 (thirty) working days from the appraisal results from the appraiser submitted to the Land Agency to determine the form and/or amount of compensation based on the results of the compensation assessment. The results of the agreement in the deliberations become the basis for granting compensation to the entitled party, which is contained in the minutes of the agreement. In the event that there is no



agreement regarding the form and/or amount of compensation, the parties are entitled to submit an objection to the local district court no later than 14 (fourteen) working days after deliberation on the determination of compensation.

The District Court decides on the form of compensation amount within a maximum period of 30 (thirty) working days from the receipt of the objection. As a consideration in deciding on the amount of compensation. Parties who object to the district court's decision regarding the amount of compensation within a maximum period of 14 (fourteen) working days may submit an appeal to the Supreme Court of the Republic of Indonesia. In this case, the Supreme Court must render a decision within 30 (thirty) working days from when the cassation request is received. District court/Supreme Court decisions that have obtained legal force remain the basis for paying compensation to the party filing the objection.

Suppose the Entitled Party rejects the form and/or amount of compensation, but does not submit an objection within 14 (fourteen) days after deliberation on the determination of compensation due to law. In that case, the Entitled Party is deemed to have accepted the form and amount of the compensation.

#### **4. Compensation can be in form of a) money, b) replacement land, c). resettlement; d). shareholding; or e). other forms agreed by both parties.**

. Land procurement for the construction of toll roads, including development activities for the public interest, must be continuously pursued in line with the increase in population and prosperity. In general, the development of toll roads is a vital requirement as the primary support for economic dynamics and activities, both at the central and regional levels, and regional development, as well as being the central supporting infrastructure for the national economy. Toll roads also have strategic benefits, namely creating large-scale jobs, increasing the use of domestic resources, and increasing the real sector by creating a multiplier effect for the national economy. Based on the paper submitted by the Directorate General of Highways at the Group Discussion Forum (FGD), road infrastructure in Indonesia has an essential role in the national transportation system by serving around 92% of passenger transport and 90% of freight transport on the existing network.

The characteristics of land acquisition for toll road construction include:

1. The existence of toll roads and their concessions are regulated by law. Based on the regulations in force, ownership and rights to operate toll roads rest with the government. In addition to bearing the cost of land acquisition, the government can also give authority to a state enterprise to manage toll roads, including building, maintaining and operating activities. With the government's approval, state business entities that are given the power to use toll roads can cooperate with investors in whole or in part in the operation of toll roads.
2. Toll roads have reliable quality, are free of obstacles and toll road users must pay tolls. In general, toll roads have high technical reliability. If toll roads are adequately maintained and repaired, then toll roads will function and have a very long technical life. Periodic maintenance and repairs are required for toll road

bodies, for example, resurfacing pavement or replacing some components in toll bridges experiencing wear and tear.

3. The procurement of toll roads is closely related to the national road network development program, which encourages the development of areas around toll roads. In the construction and operation of toll roads, there is the possibility of environmental demands on toll road operators to develop non-toll road networks, road auxiliary buildings and road equipment. These environmental demands significantly affect the operation of toll roads as alternative roads."<sup>5</sup>

## 2.2 Land Procurement for Toll Road Construction

The Unitary State of the Republic of Indonesia is a legal state (*rechtsstaat*), not based on mere power (*machtsstaat*). The conception of a rule of law desired by the founding fathers since the beginning of the struggle for independence can be seen in the basic ideas in the Preamble of the Constitution 1945, namely "independence, justice, humanity and the statement that the state government is obliged to protect the entire nation and all of Indonesia's bloodshed and to promote general welfare". This provides direction and hopes that the law will protect all people, all individuals, from unfair treatment and arbitrary actions. The law will protect every citizen of the nation so that their rights as citizens and human rights are guaranteed.

Based on the form of law can be divided into two, namely:

1. The state of written rule is law in the form of written text which is usually in the form of legislation
2. The state of unwritten rule is law in the form of habits in society that are accepted and obeyed as applicable law.

As a rule-of-law country, Indonesia has legal rules in the form of legislation. This form of legislation serves to regulate society in a better direction. As a country that has chosen the principles of democracy and integrated them with the principles of the rule of law, Indonesia will organize life and life in society, as a nation and as a state using the democratic rule of law. The Indonesian government will build an order for living together within the framework of an Indonesian state that is democratic and based on the rule of law. It means that the Indonesian nation will put democratic principles and legal principles as a mutually symbiotic-mutualistic synergy in realizing the existence of a democratic national legal order in the country <sup>6</sup>.

It is necessary to enact a law on land acquisition for development in the public interest, including toll roads. Law is the legal basis that forms the basis for the implementation of all policies relating to the taking of land by the government for the public interest. In addition, everything that takes citizens' privacy rights must be regulated by law because they need to get approval from the DPR as the people's representative.

The formation of legislation, according to Bagir Manan must be based on a philosophical (*philosophical gelding*), based on sociological (*sociologische gelding*) and based on juridical (*yuridische gelding*). The philosophical foundation means that the law has power if the law is in accordance with the ideals (*rechtsidee*) as the highest positive value. The philosophical elements of the laws and regulations in Indonesia are

formed by taking into account the outlook on life, awareness and ideals of law include mysticism, as well as the philosophy of the Indonesian nation; which originates from Pancasila and the Preamble of Constitution of the Republic of Indonesia 1945.

Juridically, the purpose of establishing Law Number 2 of 2012 are

1. To realize a just, prosperous and prosperous society based on Pancasila and the 1945 Constitution of the Republic of Indonesia, the government needs to carry out development.
2. To guarantee implementation of development for the public interest, it is necessary to acquire land whose procurement is carried out by prioritizing the principles of humanity, democracy and justice
3. Because the statutory arrangements in the field of land acquisition for development for the public interest have yet to be able to guarantee the purchase of land for development implementation, the government needs to make laws that can accommodate all of this.
4. Indonesia's increasingly high economic growth has had the impact of increasing infrastructure development by both the central and regional governments and can accelerate toll road infrastructure development projects in Indonesia.

The formation of Law Number 2 of 2012 concerning land acquisition for the development of public interests by the purpose of the law itself is to achieve legal certainty. It means providing legal certainty regarding the availability of land in the process of land acquisition for development and providing guarantees to the holders of land rights whose land is taken for public purposes in terms of receiving proper compensation.

In line with the opinion of the Head of the National Legal Development Agency Benny Riyanto, Article 1 paragraph (3) of the 1945 Constitution of the Republic of Indonesia explicitly states that the State of Indonesia is a country of laws. The rule of law referred to in the provisions of Article 1 paragraph (3) of the 1945 Constitution of the Republic of Indonesia is a state that upholds the rule of law to realize truth and justice. In it, no power cannot be accounted for. Legal development as one of the catalysts for nation-building needs to be supported by a solid national legal system based on Pancasila and the 1945 Constitution of the Republic of Indonesia <sup>7</sup>.

According to Rouscu Pound's concept of " law as a tool of social engineering," law is the basis for legal reform. It means that legal content material should be able to capture the aspirations of the people who are growing and developing not only in the present but as a basis for anticipating social, economic, political and cultural developments in the future. . Thus the sociological basis illustrates that regulations are formed to meet the needs of society from various aspects. Because legal aspects and other aspects (political, economic, socio-cultural, defence and security) also function as engineering tools for people's lives. The law outlined in statutory regulations can also direct the development of social life by structuring community members' social life.

Likewise, in regulating land acquisition for the construction of toll roads, it is hoped that it will become a revival point for developing national law in the land sector. Not only accommodating ideological and philosophical interests originating from the

original culture of the Indonesian people, namely Pancasila, but also being able to accommodate advances in information technology in industrial development 4.0 so that we will more easily adapt to the era of society 5.0.

In 2016, the Ministry of Agrarian Affairs and Spatial Planning (ATR)/National Land Agency (BPN) issued a tool to support the accelerated process of implementing land acquisition in the form of an online-based application, namely the Land Acquisition Information System (SIPT) as the latest innovation in the field of land acquisition in Indonesia. SIPT has the capabilities as 1) Media for controlling and storing documents and archives of land acquisition implementation activities, both from the point of view of the head office, regional offices, as well as digital storage of documents and archives of land acquisition activities; 2) functions as internal monitoring media that integrate the implementation of the duties of each office.

Supporting the realization of an intelligent society in welcoming the era of society 5.0 and realizing the SIPT application, there are various arrangements related to land acquisition for public interest with the issuance of Government Regulation Number 19 of 2021 concerning the Implementation of Land Acquisition for Public Interest. In Article 3 (1) of Government Regulation Number 19 of 2021 regulates the stages of land acquisition for public purposes, including the Inventory and Identification stages by Task Unit A, in charge of collecting physical data on land acquisition objects and Task Unit B in charge of collecting juridical data on procurement objects land and procurement preparation stages through digitization. Digitalization will be easier, faster, transparent and accountable, and the realization of legal certainty in preparing land acquisition for development is in the public interest. It is emphasized again in Article 132 (1) of Government Regulation Number 19 of 2021 states that land acquisition activities for development in the public interest are carried out electronically.

So that the infrastructure that the Ministry of PUPR has built becomes an important momentum to continue the welfare of the Indonesian people, the use of the SIPT application is expected to be a solution in the context of accelerating and solving land acquisition document archive management problems, particularly as a means of supporting the industrial development 4.0 towards society 5.

It is necessary to consider the regulation of land acquisition for the construction of toll roads in the future as part of the regulation of land in Indonesia. There are essential strategic elements, namely:

1. Land acquisition for the public interest is closely related to the progress or improvement of culture, and political development, in this case, the construction of infrastructure facilities and projects that aim to provide significant benefits to the public and are of high financial value.
2. The land acquisition process for the public interest is related to relinquishing and terminating land rights and objects on land from the owner. It will also relate to the life of the owner of land rights and the objects on it, which are fundamental human rights. The element of releasing land for the sake of development for the public interest by the right owner, of course, will be different from the relinquishment of

land rights, which is the will of the right owner if he intends to relinquish his rights in a free transaction.

3. Regarding land acquisition for public interest in Indonesia, there are currently no opportunities for the private sector to be involved, despite the concept and arrangement. As a form of legitimacy for private sector participation in the land acquisition process in the name of public interest.
4. From an economic and political perspective, the background of land acquisition for the public interest, especially the construction of toll roads, can be traced back to the influence and pressure from international parties in formulating and determining policies.

The recommendation that can be given regarding this problem are harmonizing legal regulations by the government relating to land acquisition for toll road construction in order to improve the legal concept of land acquisition for toll road construction so that there are no norm conflicts. Also, preparing government policies that support land acquisition for toll road construction that the government must utilize, community and stakeholders in the era of society 5.0, including Internet of things (IoT), Virtual/Augmented reality and the use of Artificial Intelligence (AI) to find out and identify needs in the implementation of land acquisition for the public interest

### 3 Conclusion

Procurement of land for the construction of toll roads is included in development activities for the public interest; its implementation must continue to be pursued in line with the increasing population, accompanied by increasing prosperity. The establishment of Law Number 2 of 2012 concerning land acquisition for the development of public interests as a juridical basis for the construction of toll roads by the objective of the law itself is to achieve legal certainty. It means providing legal certainty for the availability of land in the process of land acquisition for development and providing guarantees to the holders of land rights whose land is taken for public purposes in terms of receiving appropriate compensation.

The use of the Land Acquisition Information System (SIPT) application which has the capability as a medium for controlling and storing documents and archives of land acquisition implementation activities both from the point of view of the head office, regional offices, as well as digital storage of documents and archives of land acquisition activities. It is expected to be a solution in the context of accelerating and solving the problem of archiving land acquisition documents, especially supporting industrial development 4.0 and society 5.0.

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# Dynamics Of The Parliamentary System In The Indonesian State System

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**Abstract.** The parliamentary system of a country is regulated in the constitution of each country. Indonesia is one of them, along with the development of the era, the parliamentary system in Indonesia has also changed. This resulted in several changes in the constitution. One of them is the change in the constitution. So the issue raised in this study is how is the concept of the parliamentary system in Indonesia? in answering these problems using a type of normative research with primary data, namely the text of laws, judge decisions, etc. Secondary data, namely written works, books. The discussion of this research, namely the parliamentary system after the amendments to the 1945 Constitution departed from criticism of the Indonesian constitutional system, especially the relationship between high state institutions. Regarding the concept of a parliamentary system in Indonesia, it must adapt to the characteristics of the nation and cannot be equated with other countries. The conclusion from this study is that the representation system implemented in Indonesia is not clear so that the check and balance mechanism cannot be implemented optimally. The legislative function is only carried out by the DPR. The MPR, group delegates, regional delegates only have limited work every five years.

**Keywords:** Parliamentary System, Normative Research, High State Institutions.

## 1 Introduction

Indonesia is a country that firmly declares itself as a democratic country, the consequence of this statement is that indonesia is a country that is organized based on the will and will of the people. The concept of democracy has actually been practiced since ancient greece, namely around the 600s bc to 400s bc. The implementation of this concept of democracy is often referred to as direct democracy, meaning that all decisions or the will of the people are conveyed directly. This practice was considered very effective because it was carried out in an ancient greek city-state which only had an area of one city and a population of only 300,000 people in one country [1].

The implementation of democracy is divided into 2, namely direct democracy and indirect democracy. Direct democracy, namely the people directly express their aspirations, whereas indirect democracy has representatives. Representative democracy

or "indirect democracy" or "representative democracy" where the people no longer play a direct role in government affairs but through representatives as a representation of the will or interests of the people. In a country, the people's representative institution which has the power to form laws (legislative) is also commonly called the parliament. Parliament in a modern democratic system is the people's representative, who is generally tasked with making laws and overseeing the running of government, and other functions that vary in each country. Therefore, political representation and the type of parliament are two things that are interrelated [5]

The building of a country's parliamentary system is regulated in its constitution [4]. There are those who apply a one-chamber parliamentary system (unicameral), there are those who implement a two-chamber parliamentary system (bicameral). The parliamentary system applied in indonesia has changed along with changes in the enactment of the constitution. Indonesia has implemented a bicameral parliamentary system as well as a unicameral parliamentary system. Indonesia uses a presidential system, so representative institutions in indonesia are given to legislative power. To exercise legislative power in indonesia, this power is given to two state institutions, namely the people's representative council (DPR) and the regional representative council (DPD). The dpd is a representative institution that was born after the third amendment to the indonesian constitution, previously in the indonesian parliamentary system only the people's consultative assembly (mpr) and the dpr were known. The mpr and dpr are then referred to as legislative institutions, but the problem lies in the position of these two institutions in the indonesian parliamentary system. Harun al-rasyid stated that the state bodies that were born through the constitution were actually a form of transformation of the state apparatus that existed during the dutch east indies era [6]

DPR is a representative institution that represents the community through political parties and is directly elected by the general election mechanism. However, political parties cannot represent the whole society in indonesia, because not all people belong to political parties. Then a representative body was formed.

The bigger one is the mpr with the highest position in indonesia's constitutional structure, where the mpr consists of all members of the dpr and representatives of non-political parties such as regional representatives and class representatives. After the amendment to the 1945 constitution, the position of the mpr was no longer the highest state institution and then placed the mpr as a high institution that had an equal position with other high institutions. What is the concept of the parliamentary system in Indonesia?

## 2 Result and Discussion

In a representative democracy system, the people elect representatives who have political similarities as representatives of their interests to make political policies, formulate laws and regulations as well as formulate and implement work programs in the public interest. On this basis, Montesquieu divided the concept of government power into three functions, namely the legislative function, the executive function, and the judicial function. In a country that uses democratic principles, the three functions



of power must submit to the will of the people which is channeled through the institutions that represent them [8].

A unicameral parliamentary system is a parliamentary system consisting of only one chamber or body. The unicameral parliamentary system is usually adopted by countries with a small population and homogeneous society and the country's territory is not too large. Following are some of the advantages of a unicameral parliamentary system [7].

1. Possibility to quickly pass the law (since only one body is needed to adopt a draft law, there is no need to adjust to different proposals).
2. Greater responsibility (because parliamentarians cannot blame other assemblies if a law is not passed, or if citizens' interests are neglected).
3. Fewer elected members making it easier for the community to monitor them.
4. Low cost to government and taxpayers.

Furthermore, the bicameral parliamentary system. The bicameral parliamentary system is a parliamentary system consisting of two chambers. The application of a bicameral parliamentary system in practice is heavily influenced by the traditions, customs, history and constitutional developments of the country concerned. For example in the United States, the Legislative Body is called Congress which then consists of two chambers (bicameral system), namely the Senate (Senate) and the House of Representatives (House of Representatives). As explained in the United States constitution which has been amended 26 times, regarding parliament is regulated in Article I, Section 1 states, "All legislative Powers herein granted shall be vested in Congress of the United State, which shall consist of a Senate and House Representatives ."

The bicameral parliamentary system requires that there be two chambers in the parliamentary body. The first chamber (first chamber) is an institution whose members are elected on the basis of population as representatives of the people and is referred to as the lower house or house representative/house of common, or what we often refer to as the DPR institution. The second chamber (second chamber) chosen to represent on the basis of not considering the number of population (representation of region, gender, class, etc.) is referred to as the Upper House or the house of lords, which we often refer to as the DPD [1]. In principle, parliament is an institution that is elected by the people to represent it in government power, the two chambers above are representative institutions that come from different representatives. after the third amendment to the constitution, the paragraph was replaced with a new one, reading "sovereignty is in the hands of the people and carried out according to the constitution" [2]

In the past, the MPR's position as the highest institution was not only institutionally, but functionally, the MPR's duties and authorities were also considered to have the greatest power compared to other state institutions. In fact, because of its position, the MPR can elect and dismiss the President and/or vice president. This shows that before the third amendment to the 1945 Constitution, the executive power did not have strong power when faced with legislative power [2]. The MPR is the result of the "marriage" of two representative institutions which include elements of the Indonesian parliamentary system, this is as emphasized in article 2 of the 1945 Constitution "The People's Consultative Assembly consists of members of the People's Representative

Council and members of the Regional Representatives Council who are elected through general elections and are regulated more proceed with the law" [3]

This amendment to Article 2 then abolished group delegates and regional delegates from the membership of the MPR. This change in the composition of the MPR actually led to the formation of the construction of an Indonesian parliament with the principle of a two-chamber parliament. However, when members of the DPR and DPD are said to be members of the MPR, this does not describe a bicameral parliamentary system. The MPR still has the authority to dismiss the president and vice president, as emphasized in article 7A of the 1945 Constitution as follows "The president and vice president can be dismissed during their term of office by the People's Consultative Assembly on the recommendation of the People's Representative Council, whether they have been proven to have violated the law in the form of betrayal of state, corruption, bribery, other serious crimes, or disgraceful acts or if it is proven that they no longer meet the requirements as president and/or vice president [2]. The process of impeachment of the president and vice president as referred to in Article 7A of the 1945 Constitution was carried out by the MPR on the recommendation of the DPR. These recommendations must be based on examinations, courts and decisions of the Constitutional Court that the president and vice president have committed acts of violation of the law as stipulated in Article 7A of the 1945 Constitution above. Even though the constitution has undergone changes, the MPR still has strategic authority and can be said to be an institution that has supra power. Not only that, the MPR also still has authority.

which is very vital for the country, this is as stated in article 3 paragraph (1) of the 1945 Constitution, as follows "The People's Consultative Assembly has the authority to amend and stipulate the Constitution"[2]. The MPR as an institution authorized to amend and stipulate it, automatically places this institution as an institution that has a major role in establishing the Indonesian constitution.

### 3 Conclusion

1. In Indonesia, changes to the parliamentary system following the amendments to the 1945 Constitution depart from criticism of the Indonesian constitutional system, especially the relationship between high state institutions.
2. The representative system implemented in Indonesia is not clear so that the check and balance mechanism cannot be implemented optimally. The legislative function is only carried out by the DPR. The MPR, group delegates, regional delegates only have limited work every five years.
3. Structural membership of the MPR consists of members of the DPR (political representation) and DPD (regional representation).

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