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Table of Content

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Research Article

The Relationship between the Facilities and Infrastructure of the Balai Penyuluh Pertanian (BPP) KOSTRATANI and Its Function as a Data and Information Center at BPP Sidomulyo and Candipuro in South Lampung Regency

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ABSTRACT

Agricultural Extension Service (Indonesian: Balai Penyuluh Pertanian; BPP) Strategic Command for Agricultural Development (Indonesian: Komando Strategis Pembangunan Pertanian; KOSTRATANI) serves as a crucial data and information center for agricultural extension activities. Through data collection, the BPP can provide extension workers with the necessary information to make informed decisions, create plans, and evaluate activities. As such, it is essential to support the role of BPP as a data and information center by providing adequate facilities and infrastructure. This study aims to examine the relationship between facilities and infrastructure and the function of BPP as a data and information center at BPP Sidomulyo and Candipuro in the South Lampung district. Data was collected in November 2021, and the study's respondents included 16 agricultural extension workers. The analysis was carried out using the Spearman rank statistic test, and the results revealed a positive relationship between facilities and infrastructure and the function of BPP KOSTRATANI as an information data center. The availability of facilities and infrastructure was found to be in the good to excellent category, with each percentage being 39.06 percent. These findings suggest the importance of supporting the BPP's facilities and infrastructure to maintain its role as a data and information center for agricultural extension activities.

INTRODUCTION

The KOSTRATANI program, also known as *Komando Strategis Pembangunan Pertanian*, is a government initiative implemented by the Ministry of Agriculture in Indonesia. The program aims to drive improvements in the agricultural sector through the use of information technology (Kementerian Pertanian, 2019). The program's establishment is expected to aid in achieving the national food sovereignty objective set forth by the Ministry of Agriculture in 2019. With the ultimate goal of providing food for a population of 270 million people,

KOSTRATANI seeks to boost agricultural exports by enhancing productivity, quality, and sustainability of agricultural commodities, thereby advancing the goals of agricultural development and increasing the welfare of farmers. The implementation of KOSTRATANI activities is currently underway in Lampung Province, which is comprised of 13 regencies and 2 municipalities. However, only 3 regencies in Lampung Province are members of the KOSTRATANI program, namely Central Lampung, East Lampung, and South Lampung. Out of the 17 Balai Penyuluhan Pertanian (BPP) in South Lampung, only 5 BPPs, including the Sidomulyo BPP and Candipuro BPP, are members of KOSTRATANI.

The *Balai Penyuluhan Pertanian* (BPP) plays a crucial role in carrying out extension activities and can significantly contribute to the success and sustainable development of agriculture at the district level. By being included in the *Komando Strategis Pembangunan Pertanian* (KOSTRATANI) program and utilizing information technology, the roles, functions, and duties of BPP can be maximized. Therefore, the importance of BPP is heightened, and it must be supported with adequate facilities and infrastructure. As time progresses, information technology has become increasingly attractive in meeting the needs of various aspects, including the government. BPP KOSTRATANI has five functions, including serving as a learning center for extension workers and farmers, a center for agricultural development movements, an agribusiness consulting center, a center for developing partnership networks, and an information data center.

The role of *Balai Penyuluhan Pertanian* (BPP) as a data and information center positions the institution as a crucial entity for collecting, accommodating, processing, and presenting data related to agriculture. This means that all data and information related to agricultural activities within the jurisdiction of BPP (which may span one or more districts) must be collected by the BPP. Arikunto (2013) defines data as the result of recording facts or figures, while the KBBI (2021) defines data as true and real information that can be used as the basis for study, analysis, or conclusion. Therefore, the BPP's role as a data and information center highlights its importance in the agricultural sector, as it provides valuable information that can guide policy-making and development initiatives.

The *Balai Penyuluhan Pertanian* (BPP) plays a crucial role as a data and information center, which could significantly aid extension activities by providing extension agents with essential data for informed decision-making. Data collected by BPP can be utilized in various aspects, such as planning, decision-making, and activity evaluation. However, several obstacles hinder the role of BPP as a data center, including challenges related to data collection, verification, and validation. These challenges can negatively impact the accuracy and reliability of the data presented. As Coronel et al. (2017) suggests, information is the processed outcome of raw data that provides meaningful results. Therefore, it is imperative to address the challenges faced by BPP to ensure its effective functioning as a reliable data and information center.

The provision of adequate facilities and infrastructure at the *Komando Strategis Pembangunan Pertanian* (KOSTRATANI) Balai Penyuluhan Pertanian (BPP) is a critical requirement to support the availability of data and information. Insufficient facilities and infrastructure pose a significant obstacle to the functioning of BPP KOSTRATANI as a reliable data and information center. According to KBBI (2021), information refers to the collection of data that is processed to provide informative insights. Facilities and infrastructure refer to tools and equipment necessary to achieve a particular activity, including the physical space required for the activity. Procurement of facilities and infrastructure can be achieved by purchasing, self-manufacturing, or receiving assistance from external sources, such as government aid. The use of facilities and infrastructure must consider various factors, such as the desired goals, user characteristics, and the availability of data and information required for agricultural development. Therefore, the provision of adequate facilities and infrastructure is crucial for the efficient functioning of BPP KOSTRATANI as a reliable data and information center for agriculture.

This study focuses on various types of data and information that are reported to the Ministry of Agriculture, including agricultural human resource data, agricultural technical data, agricultural environmental data, and administrative data. These reports are uploaded through applications and information systems, such as *Sistem Informasi Manajemen Penyuluhan Pertanian* (SIMLUHTAN), e-RDKK, and Cyber Extension, which can be accessed online via the Ministry's website: http://laporanutama.pertanian.go.id/. Information technology plays a crucial role in enabling faster and more accurate work processes, thereby enhancing efficiency and reducing time and effort. However, the role of Balai Penyuluhan Pertanian (BPP) as a data and information center for KOSTRATANI requires adequate facilities and infrastructure, which are currently insufficient due to several limitations such as internet access, electricity, IT equipment, and BPP security. This study aims to investigate the relationship between facilities and infrastructure and the function of BPP KOSTRATANI as a data and information center. Furthermore, the study will examine the perceptions of extension workers towards innovation in Cyber Extension.

METHOD

The present study employed a census method with a quantitative descriptive approach and applied the Spearman rank statistical test. The census method is a technique for selecting a sample in which all members of the population are included. This is typically used for small populations of less than 30 or when the research aims to generalize with minimal error (Sugiyono, 2017). This study was conducted in November 2021 and included 16 extension workers who were all *Penyuluh Pertanian Lapang* (PPL) at the *Balai Penyuluhan Pertanian* (BPP) located in Sidomulyo District and Candipuro District, South Lampung Regency. The selection of these locations was purposively and based on the fact that BPP Sidomulyo and Candipuro were pilot BPPs and members of *Komando Strategis Pembangunan Pertanian* (KOSTRATANI). Additionally, their strategic location close to agricultural sites made them easily accessible to farmers. Both primary and secondary data were collected in this study. Data were collected using direct observation, interviews through a questionnaire, and literature review. Direct observation was conducted at both BPPs to assess the use of facilities and infrastructure in providing data and information. Questionnaires were used to collect relevant information for this research, and literature review was conducted to support and strengthen the primary data.

The present study employed a descriptive analysis method to provide a detailed tabulation of respondents' answers and to present them in a clear and concise manner. Specifically, this method was necessary to describe the characteristics of the respondents, namely *Balai Penyuluhan Pertanian* (BPP) Sidomulyo and Candipuro extension workers. Furthermore, the study utilized inferential analysis by testing hypotheses using nonparametric statistics, namely the Spearman Rank correlation test (Siegel, 1997). The research strategy employed was comparative-associative, which involved describing and testing the correlation comparison hypothesis between two or more variables (Sugiyono, 2018). Data were processed using the Statistical Package for the Social Sciences 26 (SPSS 26). A visual representation of the research framework can be found in Figure 1.

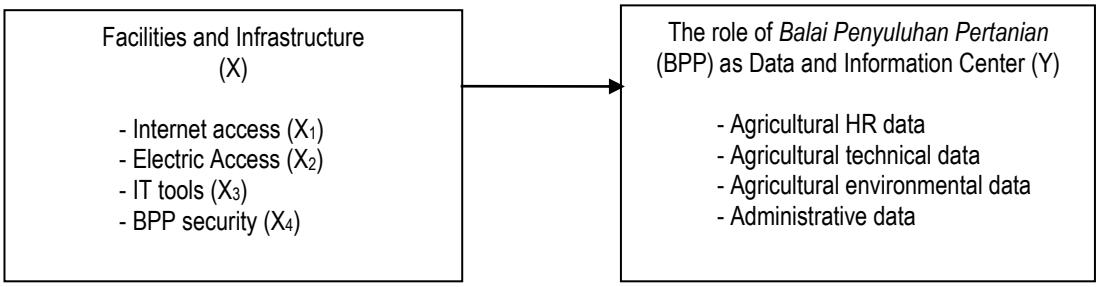

Figure 1. Framework

The objective of the simple correlation parameter test is to establish the relationship between each independent variable (X indicators), comprising internet access, electricity access, IT equipment, and Balai Penyuluhan Pertanian (BPP) security, and the dependent variable indicator (Y variable), namely the availability of agricultural human resource data, agricultural technical data, agricultural environmental data, and administrative data. This test is conducted using the following formula:

$$\mathbf{r_s = 1 - \frac{6 \sum_{t-1}^{n} di^2}{n^3}}$$

Information :
rs = Estimator of the correlation coefficient
di = Difference of each rank pair
n = Number of respondents

The decision-making rules are as follows:
1) If P ≤ α, then the hypothesis is accepted. At (α) = 0.05 or (α) = 0.01 means there is a significant relationship between the two variables tested.
2) If P > α, then the hypothesis is rejected. At (α) = 0.05 or (α) = 0.01 means that there is no significant relationship between the two variables tested.

RESULTS AND DISCUSSION

Respondent Identity

Respondent Age

The study investigated the age profile of agricultural extension workers at Balai Penyuluhan Pertanian (BPP) in Sidomulyo and Candipuro Districts. The sample consisted of 16 respondents aged between 23-57 years old. The age groups were classified into three categories based on economic productivity, where the unproductive age group consists of 0-14 years, the productive age group includes 15-64 years, and the last group includes individuals aged 65 years or more, who are considered unproductive (Mantra, 2004). The results indicated that the average age of the respondents falls within the productive age group. Previous research has established a direct relationship between age and work productivity, with age categorized into productive and unproductive groups, and associated with a person's behavior and habits (Aprilyanti, 2017; Listiana I, 2018). In this regard, the age range of the respondents, which falls within the productive age group, suggests that they possess the physical and mental capabilities required to keep pace with the demands of their job in the face of advancing technology. Age is a crucial factor that influences the success of a business, with older workers experiencing weakened physical strength and productivity levels compared to their younger counterparts (Assafriani, 2020; Selvia, 2017). It is worth noting that different occupations have varying age limits for optimal productivity. For example, physical labor jobs tend to have a productive age limit of up to 55 years, while teachers, extension workers, and office personnel can be considered productive up to 60 years of age (Rusman, 2011). Above 60 years of age, individuals tend to experience a decline in physical and mental capabilities and may be considered part of the pre-retirement group (Septiani, 2017). However, older workers can compensate for physical limitations with experience, which could potentially enhance their productivity. The study highlights the importance of productive age in the agricultural extension sector, where young extension officers possess strong physical strength and good learning abilities, and experienced officers can leverage their knowledge to help farmers run their businesses properly and promote agricultural development in Indonesia.

Respondents Education Level

The present study investigates the education level of agricultural extension workers in Sidomulyo and Candipuro Districts, with the aim of assessing its impact on the provision of data and information to farmers. The data were collected through a survey of extension workers, which revealed that the majority of respondents held a bachelor's degree (S1), followed by a diploma (D3) and a master's degree (S2). The high level of education of the respondents is expected to facilitate the use of facilities and infrastructure to support the completeness of data and information at Balai Penyuluhan Pertanian (BPP). As education is known to be a key factor in influencing individuals, groups, or masses, the education level of extension workers is expected to impact their performance in delivering agricultural extension services. Previous research has indicated that the level of education and work experience have a positive and significant effect on employee performance. Thus, the education level of agricultural extension agents is one of the factors that can enhance their capacity to receive information from various sources, which in turn can provide added value to their work. Specifically, the undergraduate education level is deemed appropriate to provide effective counseling to farmers and to promote their uptake of new agricultural technologies. Consequently, it is recommended that agricultural extension workers pursue higher education and training to enhance their performance and contribute to the development of a sustainable agricultural sector.

Table 1. Level of Education for Agricultural Extension Workers in South Lampung Regency

Level of Agricultural Extension Education	Classification	Respondents (People)	Percentage (%)
S2	Very high	1	6,25
S1	High	10	62,5
D3	Low	3	18,75
High School/Vocational School	Very low	2	12,5
Sum		**16**	**100**

Respondent's Working Time

This study examines the relationship between work experience and performance of agricultural extension workers in Balai Penyuluhan Pertanian (BPP) in Sidomulyo and Candipuro Districts. The duration of extension work varies widely, ranging from 2-36 years, with the average length of work of BPP Sidomulyo and Candipuro extension workers being quite long (Table 2). Workers with longer periods of work tend to have more experience related to collecting data and information until it is presented in the form of a report using the facilities and infrastructure in BPP to help the function of BPP Komando Strategis Pembangunan Pertanian (KOSTRATANI) as a data and information center. The aim of this study is to investigate the impact of work experience on the performance of agricultural extension workers. The study draws on the research of Listiana et al. (2018), who found that the duration of extension work can be used as a lesson to carry out their duties properly because something that has been experienced by a person will shape and influence appreciation of the social environment and work environment. Alwi (2001) suggested that the longer the work experience possessed by employees, the higher the work results that will be achieved. In addition, Septiani (2017) found that the working period is related to the time of starting work, and the longer the working period, the better the proficiency will be. Similarly, Sartika (2015) found that work experience has a significant influence on employee performance, which is in line with Indrawan's research (2017) which suggests that work experience has a partial effect on work performance. Sinaga's research (2020) also supports this finding, stating that work experience partially has a significant effect on employee work productivity. The present study contributes to the literature by highlighting the importance of work experience for improving the performance of agricultural extension workers. The study shows that work experience that matches the job position is needed and has an influence on their performance, which can help complete the work appropriately and well. Work experience can help in improving the performance of agricultural extension workers, either in collecting data and information or teaching farmers to be more proficient in the use of technology. In the conditions of the Covid-19 pandemic, many activities are hampered, for this reason, so that everything continues to run smoothly, other ways are used such as communication via telephone, WhatsApp, Zoom Meeting and so on. However, utilizing this knowledge and experience in various conditions that occur presents a challenge that can be overcome through the honing and addition of extension experience (Yektiningsih, 2018). Overall, the findings of this study suggest that work experience is a crucial factor for improving the performance of agricultural extension workers. The study recommends that BPP should focus on developing and nurturing the work experience of its extension workers to ensure that they are equipped to handle the challenges of their jobs effectively.

Table 2. The duration of extension work of Agricultural Extension Officer in South Lampung Regency

Length of Work on Agricultural Extension (Year)	Classification	Respondents (People)	Percentage (%)
2-10,75	Very long	2	12,5
10,76-19,5	Quite long	11	68,75
19,51-28,25	Short	1	6,25
28,26-37	Very short	2	12,5
Sum		**16**	**100**

Relationship between the facilities and infrastructure of the BPP KOSTRATANI and its function as a data and information center

The *Balai Penyuluhan Pertanian* (BPP) serves as an extension worker's office and is one of the forums that facilitates their work. This work is closely linked to achieving predetermined goals. Office facilities are a vital prerequisite for the success of an agency or institution, enabling employees to execute their duties effectively (Muslimah et al, 2019). Irawan and Suryani (2018) argue that an agency must prioritize employee performance concerns. The quality of an agency's output in facing competition is determined by the performance of its employees. One approach to addressing this challenge is to improve employee performance, which will reflect positively on the performance of the office (Harahap, 2019). Several factors, including office facilities, colleagues, leadership, and office environment (i.e., office layout), have an impact on employee performance (Mustikaningtyas et al., 2017).

The *Balai Penyuluhan Pertanian* (BPP) Sidomulyo and BPP Candipuro serve as pilot of BPPs within the *Komando Strategis Pembangunan Pertanian* (KOSTRATANI) membership, expected to offer optimal support for agricultural activities at the district level. A robust extension institution with adequate support, supervision,

and collaboration among the government, private sector, and community can ensure successful implementation of agricultural development programs. Sustained efforts to develop the function and role of agricultural institutions, specifically BPP, as a forum for government support towards farmers' welfare can generate a pull effect that advances agricultural development (Elizabeth, 2019). Building a strong institutional network that utilizes agricultural resources and technology is a crucial factor for supporting agricultural development (Elizabeth, 2017). Empowering and developing these institutions, in line with development policy programs, can ensure the success of KOSTRATANI programs with the support of suitable facilities and infrastructure for optimal performance.

The success of the *Komando Strategis Pembangunan Pertanian* (KOSTRATANI) program relies on the availability of facilities and infrastructure, which are primarily provided through government assistance. Pakpahan (2021) highlights the form of government aid to *Balai Penyuluhan Pertanian* (BPP) and farmers, which includes information and communication technology such as computers/laptops, WiFi or internet networks, motorized vehicles, and other facilities. These resources facilitate the extension workers' access to agricultural information, including market information, good farm business management, partner networks, and counseling services for farmers. By providing these facilities and infrastructure, extension workers can inform farmers about the KOSTRATANI program, its purpose, and functions.

The provision of adequate facilities and infrastructure is crucial in enhancing the capacity and performance of agricultural extension workers, particularly in providing data and information. Facilities and infrastructure play a crucial role in supporting the success of extension activities, as revealed in Basalamah et al.'s (2019) research, which found that facilities and infrastructure significantly impact employees' performance. The availability of appropriate facilities and infrastructure is one of the factors related to improving the performance of extension workers, as it facilitates their duties. Amaliah (2019) supports this notion, stating that facilities and infrastructure are interrelated with office staff and support office activities. Facilities are the tools utilized by office staff to accomplish work, while infrastructure is a supporting tool and guideline for office staff in using facilities. Consequently, office staff can work optimally if they have adequate support in the form of facilities and infrastructure.

In this study, facilities and infrastructure were examined as potential factors associated with the role of the *Balai Penyuluhan Pertanian* (BPP) *Komando Strategis Pembangunan Pertanian* (KOSTRATANI) as a center for data and information. The indicators used to assess the availability of facilities and infrastructure included internet access, electricity access, IT devices, and BPP security, which were rated on a scale of 1 to 4, ranging from very poor to excellent. Additionally, the study explored the perception of extension workers towards the Cyber Extension innovation.

Internet Access

The *Balai Penyuluhan Pertanian* (BPP) plays a crucial role as a data and information center, necessitating adequate facilities and infrastructure to support the performance of extension workers in providing data and information. Internet access is an essential part of these facilities and infrastructure, as almost all data and information provision requires it. According to Saraswati et al. (2019), the availability of facilities and infrastructure has a significant impact on the effectiveness of employee work. In this study, the assessment of the BPP *Komando Strategis Pembangunan Pertanian* (KOSTRATANI) function as a data and information center was measured using scores classified from excellent to very poor. The assessment of internet access indicators is suspected to be related to the function of BPP. The results of the assessment of BPP Sidomulyo and Candipuro show a percentage of 43.75% for excellent internet access. However, the interview results reveal that both BPPs still use internet access through private cellular networks, and it is necessary to plan for future improvements, such as the implementation of WiFi. To ensure convenience and mutual progress, employees should participate in the selection of goods as they are joint tools (Amaliah, 2019).

Table 3. Access to Internet at BPP Sidomulyo and Candipuro

Internet access	Classification	Respondents (People)	Percentage (%)
14-16	Excellent	7	43,75
11-13	good	7	43,75
8-10	Bad	1	6,25
4-7	Very poor	1	6,25
Sum		**16**	**100**

Electricity Access

The *Balai Penyuluhan Pertanian* (BPP) serves as a data and information center and requires adequate facilities and infrastructure, including access to electricity to operate IT devices. These devices, such as computers, printers, and Liquid Crystal Displays (LCD), are essential in supporting the function of BPP. Therefore, access to electricity is an important aspect of facilities and infrastructure that should be available at BPP. The assessment of facilities and infrastructure, including electricity access indicators, is crucial in evaluating the performance of BPP as a data and information center. This study measured these indicators using scores that provided a classification from excellent to very poor. The results of respondents' assessments related to electricity access at BPP Sidomulyo and Candipuro were excellent, with a percentage of 68.75 percent, as indicated in Table 4.

Table 4. Access to electricity at BPP Sidomulyo and Candipuro

Access to electricity	Classification	Respondents (People)	Percentage (%)
14-16	Excellent	11	68,75
11-13	good	3	18,75
8-10	Bad	2	12,5
4-7	Very Poor	0	0
Sum		**16**	**100**

IT Devices

The *Balai Penyuluhan Pertanian* (BPP) as a data and information center requires adequate facilities and infrastructure to support the smooth functioning of extension workers in providing data and information. The provision of IT tools and the presence of IT personnel or experts are essential in the effective operation and dissemination of data and information. This study evaluates the role of IT devices as part of the facilities and infrastructure at BPP *Komando Strategis Pembangunan Pertanian* (KOSTRATANI), measured by scores ranging from excellent to very poor. The respondents' assessments related to IT devices at BPP Sidomulyo and Candipuro indicate a good score of 43.75 percent, as shown in Table 5. However, it is crucial to balance this with the competence of human resources. Rapid technological advancements require employees to work quickly, necessitating both adequate facilities and skilled human resources. Employees within the office must possess digital skills that enable them to operate increasingly sophisticated office machines. By doing so, the infrastructure and equipment will be maintained. Amaliah's research (2019) supports this view.

Table 5. Povision of IT devices at BPP Sidomulyo and Candipuro

IT Devices	Classification	Respondents (People)	Percentage (%)
16,26-20	Excellent	7	43,75
12,6-16,25	Good	7	43,75
8,76-12,5	Bad	1	6,25
5-8,75	Very Poor	1	6,25
Sum		**16**	**100**

Balai Penyuluhan Pertanian (BPP) Security

Ensuring the security of data and IT devices at the *Balai Penyuluhan Pertanian* (BPP) is essential given the presence of facilities and infrastructure. In addition to equipment and materials, the security of the BPP location itself is crucial to safeguard against loss or theft of goods or data. This study measured the security of BPP facilities and infrastructure, specifically its relation to the function of BPP *Komando Strategis Pembangunan Pertanian* (KOSTRATANI) as a data and information center, using a score-based classification system ranging from excellent to very poor. Results from questionnaires and on-site observations of BPP locations in Sidomulyo and Candipuro showed that BPP security was categorized as not doing well, with 50% of respondents reporting inadequate security measures in both locations, as presented in Table 6. Despite the presence of guards living in the BPP environment, iron doors to secure the room where IT devices are stored have not been installed. According to Susanto (2017), security in a place or room can be compromised if left unattended, thus rendering intensive security measures futile. Therefore, ensuring the security of BPP facilities and infrastructure must remain a priority to safeguard its critical data and IT devices.

Table 6. Provision of Security at BPP Sidomulyo and Candipuro

BPP Security	Classification	Respondents (People)	Percentage (%)
13-15	Excellent	0	0
10-12	Good	8	50
7-9	Bad	8	50
3-6	Very Poor	0	0
Sum		**16**	**100**

The relationship between extension workers' perceptions and the nature of Cyber Extension innovation, with a focus on the role of BPP KOSTRATANI as a data and information center

The concept of Cyber extension refers to the use of information and communication technologies (ICTs) in agricultural extension systems to deliver real-time and relevant agricultural information to farmers and farmer groups. Sharma (2005) argues that this can be an effective tool for agricultural innovation. The study aimed to investigate the perception of extension workers towards Cyber extension. Perception, according to Zulfikar et al. (2018), is the cognitive process that a person goes through when trying to understand information about the environment. The findings of interviews conducted with extension workers at *Balai Penyuluhan Pertanian* (BPP) Sidomulyo and Candipuro revealed that the perception of extension workers towards Cyber extension has not been positive due to several factors, including the lack of mastery of information technology, difficulty in keeping up with technological developments, and lack of training. These findings are consistent with Taragola's (2005) argument that several factors limit the use of ICTs, such as lack of ability to use the technology, lack of awareness of its benefits, difficulty in using the technology, lack of technological infrastructure, high cost of technology, low level of trust in the system, lack of application training, system integration, and low software availability. The limitation of human resources in the field of counseling is also a major obstacle in facing the challenges of current counseling, both in quantity and quality (Sumardjo, 2008). Although extension workers are expected to adapt and improve their performance by keeping up with technological advancements, the reality on the ground indicates that professional personnel are insufficient. Agricultural extension plays a crucial role in agricultural development as it can improve the welfare of farmers by increasing productivity and income (Rangga et al., 2020).

Hypothesis Testing

The present study aims to investigate the potential relationship between the availability of facilities and infrastructure and the perception of extension workers towards Cyber Extension innovation in the role of *Balai Penyuluhan Pertanian* (BPP) *Komando Strategis Pembangunan Pertanian* (KOSTRATANI) as a data and information center. The research hypothesis was evaluated using non-parametric statistical analysis, specifically the Spearman Rank correlation test, conducted with the Statistical Package for the Social Sciences 26 (SPSS 26). The current analysis aims to examine the association between variable X (facilities and infrastructure) and variable Y (the function of BPP KOSTRATANI as a data and information center), as presented in Table 7.

Table 7. *Spearman Rank* correlation analysis between variable X and variable Y

Variable X	Variable Y	Coefficient Correlation (rs)	Sig (2-tailed)	α	Decision
Facilities and Infrastructure	The function of BPP KOSTRATANI as a data and information center	0.516*	0.041	0.05	H1 accepted

The study conducted aimed to examine the relationship between the availability of facilities and infrastructure and the function of *Balai Penyuluhan Pertanian* (BPP) *Komando Strategis Pembangunan Pertanian* (KOSTRATANI) as a data and information center, with a hypothesis tested using the Spearman Rank correlation test and Statistical Package for the Social Sciences 26 (SPSS 26). The analysis revealed a significant positive relationship between variable X (facilities and infrastructure) and variable Y (the function of BPP KOSTRATANI as a data and information center), with a Spearman Rank correlation coefficient (rs) of 0.516 and a significance value of 0.041 less than α (0.05), which supported the acceptance of H1. The findings are consistent with previous studies by Fauziana (2017) and Setiawan (2020), which indicated that facilities and

infrastructure have a positive and significant impact on employee performance, specifically in providing data and information, similar to the role of extension workers in the present study.

The correlation between the availability of facilities and infrastructure for the function of *Balai Penyuluhan Pertanian* (BPP) *Komando Strategis Pembangunan Pertanian* (KOSTRATANI) as a data and information center is strong and positively related. The positive direction of this relationship indicates that the greater the availability of facilities and infrastructure, the more agricultural data and information can be accessed, including data on agricultural human resources, technical information, environmental data, and administrative data. However, optimizing the availability of facilities and infrastructure should be based on their specific functions and needs. It is hoped that the availability of adequate facilities and infrastructure can enhance the ability of extension workers to help the function of BPP KOSTRATANI as a data and information center. Nevertheless, the relationship between facilities, infrastructure, and human resources must support each other. For example, well-maintained facilities and infrastructure require human resources who follow operational standards when using office machines to ensure that they are well-maintained and used for a long time to minimize waste (Amaliah, 2019).

The availability of adequate facilities and infrastructure is considered one of the significant factors that can enhance the performance of agricultural extension workers. This is because good facilities and infrastructure can facilitate extension workers in assisting farmers to resolve existing problems (Ministry of Agriculture, 2009). In line with this, Anggoroseto (2012) conducted a study entitled "Factors Affecting the Performance of Extension Workers in the Use of Cyber Extension in Bogor Regency" which showed that the availability of extension facilities and pre-facilities is a vital variable or factor related to the performance level of agricultural extension workers. Chasanah and Rustiana (2017) also supported this finding by stating that work facilities, including facilities and infrastructure, have a significant influence on employee performance in District Offices throughout Batang Regency.

As a data and information center, *Balai Penyuluhan Pertanian* (BPP) has the important role of identifying and validating data and information required by main and business actors, which is then accurately distributed through information technology to various levels, including the regency/city, province, and central level. Furthermore, BPP must also ensure the provision and distribution of data and information necessary for the main actors and business actors through the use of information technology, reaching the correct destinations at the regency/city, province, and central level.

Agricultural extension workers heavily rely on facilities and infrastructure in the Balai Penyuluhan Pertanian (BPP) for efficient job execution. Inadequate facilities and infrastructure can significantly affect the performance of the workers (Bohari et al., 2019). The quality of work facilities and infrastructure can influence the performance of employees positively or negatively. Based on interviews with agricultural extension workers in Sidomulyo and Candipuro Districts, it was found that the internet access in the two BPPs still relies on private cellular networks, as WiFi has not been installed yet. Additionally, BPP security remains a challenge since it is located far from residential areas in the Sidomulyo BPP, forcing workers to take IT devices, such as laptops, computers, Liquid Crystal Displays (LCD), and cameras, home to protect them from theft. Besides, HR's ability to operate IT equipment is also a significant obstacle in providing data and information.

CONCLUSION

The present study aims to examine the relationship between the availability of facilities and infrastructure at *Balai Penyuluhan Pertanian* (BPP) Sidomulyo and Candipuro, and the functioning of the BPP *Komando Strategis Pembangunan Pertanian* (KOSTRATANI) as a data and information center. The study finds that the availability of facilities and infrastructure is in the good-very good category (39.06 percent each) and positively correlated with the availability of agricultural human resources data, agricultural technical data, agricultural environmental data, and administrative data. However, maintenance of facilities and infrastructure is crucial to prevent damage and ensure optimal performance. The study recommends that agricultural extension workers improve their mastery of technology and keep up with technological developments to enhance reporting and data provision online. The findings are consistent with previous research by Anggoroseto, which highlights the significance of cyber extensions as a medium for extension socialization and communication between extension agents and district administrators.

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Research Article

The Experimental Garden in the E-Commerce System of the Faculty of Agriculture (KPFP) at Udayana University

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ABSTRACT

The marketing of agricultural products has long been a challenge for the Experimental Garden of the Faculty of Agriculture (KPFP), particularly in the business-to-customer (B2C) arena. To address this issue, KPFP, as one of the business units at Udayana University, has recently embarked on the development of an e-commerce system, recognizing its potential as an alternative medium for promotion, communication, and information dissemination. The objective of this study is to identify the characteristics of each KPFP field and to design an e-commerce system that caters to their respective needs. The analytical approach employed in this study was descriptive qualitative method, supported by simple tabulations and the Lean User Experience (Lean UX) approach. Our findings reveal that each KPFP field has performed its assigned tasks and responsibilities satisfactorily. The e-commerce system we have developed offers customers a choice of payment methods, including cash on delivery (COD), and ensures timely delivery, thus enabling customers to enjoy the products in a fresh condition without any loss of quality. Further research is needed to assess the system's effectiveness using the Success Rate as a usability parameter and to evaluate the efficiency of usage time, measured in seconds or minutes, required by customers to complete each task.

INTRODUCTION

The absence of experimental gardens in most of the agricultural faculties in Indonesia is a significant gap in the education and research opportunities available to students and faculty. Gunadi (2018) highlights the crucial role of the Experimental Garden at the Faculty of Agriculture (KPFP) of Udayana University in facilitating education, research, and practical training for students and instructors. This garden offers a platform for hands-on learning experiences that enhance the competence of graduates, aligning with the objectives of the Faculty of Agriculture. Dharmadiatmika et al. (2019) view KPFP as a green open space that supports production activities within the framework of education and research. Semarajaya et al. (2017) underscore that KPFP

serves as a valuable resource for learning various aspects of agriculture. Rahmayanti and Diana (2021) also emphasize the significance of experimental gardens for educational and research purposes, as well as for reforestation initiatives. Therefore, the need for establishing experimental gardens in agricultural faculties is imperative to enhance the quality of education and research in Indonesia.

Experimental gardens in other countries are typically managed by specialized entities called agricultural experiment stations, which play a critical role in advancing agricultural research and technology. Pearson and Atucha (2015) highlight the significant contributions of agricultural experiment stations in supporting research progress and enhancing agricultural technology. Wright (2019) further expounds on the multifaceted purpose of agricultural experiment stations, including addressing contemporary agricultural problems, developing new technologies, generating discoveries, and promoting agricultural research. Lund (1972) underscores that the agricultural experiment station is closely integrated with the Faculty of Agriculture, benefiting from the expertise of agriculture specialists within the faculty. The integration of agricultural experiment stations with agricultural faculties enhances the quality of education and research by promoting synergies between practical research and classroom learning.

Apart from its main function, the Experimental Garden at the Faculty of Agriculture of Udayana University currently operates as a business unit with an economic function. However, its economic interests do not solely target maximum profit but are also expected to align with innovation and technology development produced by KPFP. Nonetheless, the Experimental Garden faces several challenges in product marketing, particularly in business-to-customer (B2C) activities, struggling to reach consumers effectively. Kizito et al. (2018) classify e-commerce activities into two categories, business-to-business (B2B) or B2C. Kumar and Raheja (2012) define the B2C model as any transaction or business that directly delivers products to consumers without intermediaries. Additionally, Matthyssens et al. (2008) posit that managers in B2B marketing face various challenges, necessitating companies to adopt different market strategies from past approaches. These challenges underscore the need for innovative marketing strategies to improve the marketing of products from the Experimental Garden, particularly in B2C activities, while considering the role of e-commerce in facilitating such efforts.

An e-commerce-based marketing system can be a valuable alternative for KPFP in terms of promotion, communication, and information dissemination, as well as reducing the marketing chain distribution of agricultural products. Drigas and Leliopoulos (2014) cite Barkley, Markley, and Lamie to demonstrate the rapid increase of e-commerce business-to-customer (B2C) sales, which reached $189 billion, accounting for around 2.0% of total business-to-business sales to customers in 2005. Furthermore, Akhter et al. (2004) emphasize the benefits of e-commerce to customers, such as convenience, comparison, product research, more choices, and lower prices. Ozlen et al. (2014) also provide evidence of the benefits of e-commerce for companies and customers. Hildebrandt's (2015) research highlights the need for small-store strategies that enhance customer awareness and local competitiveness, accomplished through local e-commerce solutions. These findings underscore the need to adopt e-commerce strategies in marketing agricultural products to facilitate efficient communication and distribution while enhancing local competitiveness.

Recognizing the significant role of e-commerce in contemporary business, there is a promising opportunity for KPFP, a business unit at Udayana University, to develop an e-commerce system. Recent research has focused on developing a prototype of an e-commerce system tailored to the specific needs of KPFP, with attention to user experience (UX) aspects for each sector within KPFP's scope. The objective of this research is to identify the unique characteristics of each sector within KPFP and to design a KPFP e-commerce system that aligns with those characteristics.

METHOD

This study focuses on the Experimental Garden of the Faculty of Agriculture (KPFP) and each sector under its scope. The study was conducted between March and October 2020. Primary data was collected through direct interviews with KPFP management and each sector under its scope using a questionnaire. The primary data includes the ease of use of the e-commerce system, system display, completeness of menus and supporting features, ease of transaction processing, and usefulness of e-commerce in online shopping. Secondary data was gathered from previous research related to system design using the five planes method, as well as from supporting books such as marketing management, e-commerce, and e-marketing-related research.

The present study aimed to investigate the types and methods of data collection for designing an online marketing system for agricultural products using the e-commerce model. The data were collected from both

primary and secondary sources. Primary data sources included interviews, observations, and questionnaires. Interviews involved direct questioning of informants who were knowledgeable about the study's subject matter. Questionnaires were distributed to a sample of respondents to collect data. Secondary data sources consisted of documentation related to the study's subject matter that was collected by reviewing relevant literature.

This study will conduct a detailed data analysis based on its research objectives. The first objective is to analyze the characteristics of each sector under the scope of KPFP. A descriptive qualitative analysis will be utilized, using a simple tabulation to determine the function of each sector, including (1) equipment, practicum, and research, (2) information and demonstration plots, (3) specific skills, and (4) business and marketing.

RESULTS AND DISCUSSION

Gunadi (2018) noted that the Experimental Garden of the Faculty of Agriculture (KPFP) has significant potential for development. This potential is attributed to the availability of fertile land resources with a relatively broad economic scale, which can be easily treated to enable planting of lowland plant species. In addition, the human resources at the Faculty of Agriculture of Udayana University (FP UNUD) are highly competent, as evidenced by the development of several technologies and innovations by the faculty that can support the progress of KPFP. The rapid development of the City of Denpasar has had a positive impact on KPFP as the garden is strategically located close to residential areas, shops, and traditional markets, thus presenting significant market potential for garden products. As a result, the utilization of agricultural and garden areas in urban settings can be optimized for production.

KPFP e-commerce system planning method

The second objective of this study is to plan the e-commerce system for KPFP, for which the Lean User Experience (Lean UX) method is utilized. To achieve these objectives, several stages of analysis are carried out:

1. Observation

   To identify the necessary features for the prototype design of the website, existing websites such as http://www.kusuma-agrowisata.com/, https://mekarsari.com/, and https://www.jtp.id/ were observed. This observation helped in identifying the required features that would be incorporated into the prototype design.

2. Labelling

   The website name, "KPFP," is derived from the Experimental Garden of the Faculty of Agriculture's abbreviation. This name was chosen to represent the website's purpose, which is to serve as a platform for purchasing various products offered by the Experimental Garden of the Faculty of Agriculture and to provide information about the garden's profile.

3. Color selection

   The visual elements of the KPFP website will adopt color schemes from a selected website. The color scheme comprises primary and secondary colors. The primary colors include green and orange, representing freshness, youthfulness, organic, creativity, happiness, freedom, and confidence. The secondary colors are intended to complement the primary colors, particularly in symbols, illustrations, and navigation.

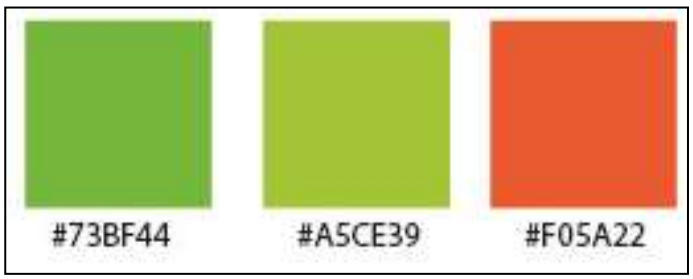

Figure 1: Primary Colors
(Source: own research and processing)

4. Font selection

   The font type used in the prototype design is San Serif, specifically Montserrat and Lato. These fonts are selected based on their high legibility, and they offer a range of thicknesses from thin to black italic. This allows for easy adjustment of the content hierarchy based on its importance, making them suitable for both headings and body text.

Figure 2: Font Montserat and Font Lato
(Source: own research and processing)

5. Logo creation

The KPFP logo serves as the primary logo used for various design media, including promotions on other platforms. The logo features green as the main color, with an icon consisting of multiple leaves. The choice of using a Serif logotype aims to convey a modern and simplistic impression that is easy to read. The logotype uses the Mogena font.

Figure 3: KPFP logo
(Source: own research and processing)

6. Selection of symbols (icon and pictogram)

Symbols aim to reduce user errors and confusion when accessing the website, therefore the pictograms and icons are made as attractive and simple as possible by adopting standard icons made for navigation from Adobe XD.

Figure 4: Example of Icon
(Source: own research and processing)

Figure 5: **Example** of Pictogram
(Source: own research and processing)

7. Wireframe design

During the wireframe development stage, Adobe XD software is utilized to create a prototype design for the interface layout concept that will be implemented in the prototype process. The wireframe creation process involves the following steps:

a. Identifying the design elements to be included in the wireframe, including the layout of the header, body content, footer, icon placement, and logo, and adjusting them to suit the built features.
b. Applying these design elements to a digital artboard using Adobe XD software.

8. Prototype design

At this stage, the prototype design is created with more attention to detail in terms of visuals and content, as compared to the wireframes. The prototype is colorful and closely resembles the final look of the website. It includes transitions and animations on each page, as well as interactive and clickable features, allowing users to experience the design. Adobe XD software is used to create the prototype. The following are the steps involved in making the prototype design:

a. Reviewing the wireframes to ensure completeness of the layout and placement of each element.
b. Importing the wireframes into the Adobe XD artboard.
c. Clarifying the wireframe appearance by adding necessary design elements such as colors, typography, textures, images, and icons that suit their function.
d. Including transitions or animations between pages and menus if necessary, making the prototype more interactive and clickable.

9. Prototype examination

At this stage, the prototype is subjected to testing by systematically evaluating its features to determine if they align with the intended objectives. The purpose of this testing is to ensure that the prototype meets the desired goals and produces satisfactory results. The evaluation process is conducted independently and involves task-based assessments of the prototype's performance.

The Characteristics of Each Sector Under the Cope of KPFP

The KPFP encompasses four key areas of operation, namely: (1) equipment, practicum, and research; (2) information and demonstration plots; (3) specific skills; and (4) business and marketing.

The equipment, practicum, and research sector at KPFP is a priority for the implementation of *Tridharma*, including practicum courses and agricultural research for students at Udayana University, including those pursuing undergraduate (S-1), postgraduate (S-2), and doctoral (S-3) degrees. The facilities are also open to students from other faculties and institutions as long as the land is available. Agricultural staff utilize available land that has not been planted by cultivating various types of crops throughout the year, taking advantage of the long grace period at the end of the even semester due to student holidays. This efficient use of land allows for maximum management by staff. The following three lecturers are responsible for the equipment, practicum, and research sectors: (1) Ir. I Wayan Dana Atmaja, M.P., (2) Ir. I Nyoman Dibia, M.Si., and (3) Ir. I Wayan Wiraatmaja, M.P.

The information center and demonstration plots sector plays a vital role in planning, coordinating, implementing, and controlling activities related to the sector. The demonstration plots are used as a part of the agricultural extension counseling method to deliver agricultural materials to meet the needs of farmers and workers. This method aims to make the audience understand, accept, and be willing to apply the knowledge. KPFP utilizes appropriate methods to deliver counseling materials effectively to the target audience. The lecturers responsible for this sector are Ir. I Ketut Sumiartha, M.Agr, Ir. I Putu Dharma, M.Si, and I Made Agus Dharmadiatmika, SP., M.T. As reported by Vandercasteelen et al. (2020), the agricultural experiment station serves as a place for researchers to experiment with tiff plants in Ethiopia. The station created a new technology for the row cropping system by establishing demonstration plots at the village level, guided by counseling workers.

The sector of Specific Skill Areas is responsible for providing training programs and guidance to develop individuals' skills. With the combination of basic skills and intensive guidance, individuals can produce valuable outcomes for themselves and others. The lecturers in charge of the Specific Skills field are I Putu Sudiarta, S.P., M.Si., Ph.D. and Ir. I Gusti Alit Gunadi, M.S. Maynard (1994) noted that the Connecticut Agricultural Experiment Station in New Haven, established in 1875, has made significant contributions, including the development of hybrid corn, by its scientists.

The business and marketing sector plays a vital role in analyzing the market and its environment. Its functions encompass predicting and identifying opportunities as well as challenges that need to be addressed. This sector is responsible for devising marketing strategies to attract potential customers, increase market share, and boost revenue. The following are the names of the lecturers who are responsible for the business

and marketing sector: (1) Dr. Gede Mekse Korri Arisena, S.P., M.Agb, (2) Naniek Kohdrata, S.P., MLA, and (3) A.A.A. Wulandira Sawitri Djelantik, S.P., M.M.A.

KPFP E-Commerce System Planning

Based on the design that has been made, here are the results of the implementation that consist of several citations of the following pages.

Figure 6: The main page view
(Source: own research and processing)

In the initial webpage that the customers access by clicking on the link, Figure 6 provides a primary overview of KPFP along with some essential selections in the header. In case the customer is interested in online shopping, they can scroll down to the subsequent webpage.

Figure 7: The second-page view
(Source: own research and processing)

Figure 7 illustrates that customers can proceed to shop for products from KPFP by accessing the "Ordering KPFP Products" menu on the page.

Figure 8: The category menu display
(Source: own research and processing)

Figure 8 presents an overview of the product categories available at KPFP. To access a more comprehensive list of products, customers can select a category from the menu and then choose a sub-category of interest. By doing so, they will be directed to Figure 9, which displays the available products.

Figure 9: The product list display of fruit
(Source: own research and processing)

Figure 9 provides an overview of the available subcategories, as exemplified by the fruit subcategory. It enables customers to browse through the available products and make selections. In case a customer wishes to obtain more detailed information about a specific product, they may click on the corresponding product image.

Figure 10: The product detail information display
(Source: own research and processing)

Figure 10 displays detailed information of a product. Customers can add the desired product to their cart by clicking on the "buy" button located in the menu.

Figure 11. The cart page view
(Source: own research and processing)

In Figure 11, the shopping cart is displayed to list the products that the customer has selected to purchase. Once the products have been added to the cart and the customer proceeds to checkout, they will be directed to the billing page, as shown in Figure 12.

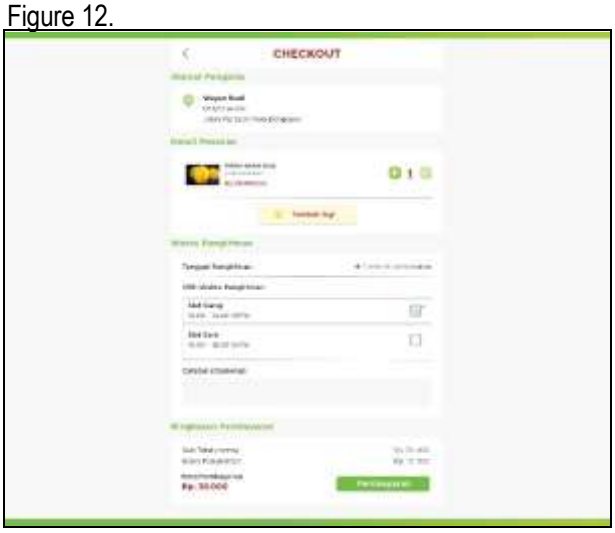

Figure 12: The billing page view
(Source: own research and processing)

Figure 12 presents the billing page of the ordered product where customers can review their purchase, check the shipping address, and select the preferred payment method. Once the information is verified, customers can proceed to the payment menu and access the payment page (Figure 13).

Figure 13: The payment page view
(Source: own research and processing)

Maintaining product quality is an important aspect to consider in marketing agricultural products. A recommended method to ensure that the product stays fresh during transactions is by utilizing the Cash on Delivery (COD) transaction approach. Conducting business transactions via e-commerce can simplify the process, as supported by prior research conducted, which highlights the positive impact of e-commerce on consumer satisfaction. Implementing a COD-based payment system in e-commerce can potentially increase sales turnover. This is due to the certainty that sales transactions will occur when business actors use e-commerce and implement the COD-based payment system. Furthermore, packaging and delivery of goods can be carried out immediately, resulting in efficient and effective services for consumers.

The developed E-commerce system still offers customers the option of choosing cash on delivery (COD) as their payment method. As Wahyudiyono (2017) pointed out, COD payment is commonly used when the buyer and seller are located in the same city or have a short distance between them, allowing the seller to receive payment upon product delivery. According to Harahap and Amanah's (2018) research, individuals classified as Late Bloomers, who are older and less experienced with technology, are more likely to prefer the COD payment method. Once the customer has selected their desired product, they will be redirected to the payment page where the total amount of the purchase is displayed, and payment options are made available for selection. Finally, the customer can complete the transaction by clicking on the “pay” button (Figure 14).

Figure 14: The final page of the shopping process
(Source: own research and processing)

The final step in the transaction process is when the user is redirected to a confirmation page indicating that the order was successful. The E-Commerce system places great emphasis on timely delivery so that the agricultural products marketed by KPFP can be enjoyed by customers in their fresh state without compromising quality. This goal aligns with the findings of Bilgies (2017) who asserted that the quality of a product can be measured by the ability to create customer satisfaction. This is also supported by Muzdalifah's (2012) research, which revealed that freshness is a crucial factor in the consumer's decision-making process when purchasing and consuming local fruits.

CONCLUSION

The present study aimed to develop an e-marketplace system for KPFP that meets the needs of users while considering aspects of user experience (UX) and the different sectors within KPFP. The system design aimed to address the challenges faced by KPFP in marketing their products, especially in business-to-customer (B2C) activities, and reaching customers. The system was found to be functional and effective in meeting the responsibilities of each sector within KPFP. Future research could focus on analyzing the effectiveness of the system using the User Success Rate and usability parameters, as well as assessing the efficiency of task completion time in seconds or minutes.

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Research Article

The Impact of Halal Label Availability on Fried Chicken Purchase Decisions: A Case Study in Jatirogo District, Tuban Regency

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ABSTRACT

Fried chicken is a dish made by coating chicken in flour and then deep-frying it, resulting in a crispy outer layer and tender meat inside. It has become a popular processed food choice that is readily available and offers various prices, making it a promising franchise business. With the government's strict regulations on food safety, including halal food requirements, many fried chicken entrepreneurs display halal certificates in their outlets to attract customers. This study aimed to investigate whether the availability of halal labels influences the purchase decision of fried chicken among consumers. Data was collected using questionnaires. The respondents were collected using Non-Probability Sampling. Then they were analyzed through the Simple Regression Test in SPSS. The results showed that 61.9% of consumers considered halal variables as a factor in their purchasing decision, suggesting that halal labels influence consumers' buying behavior. This finding is in line with the fact that the majority of the people in Jatirogo Subdistrict are Muslim, and halal food is a significant requirement for them. The study highlights the importance of understanding the characteristics and needs of consumers in the culinary business and the significance of halal certification in attracting Muslim consumers. This research serves as a valuable evaluation material for culinary business developers to better understand their target market and cater to their needs to attract more customers.

INTRODUCTION

Indonesia, with a population of 236.53 million people, has a majority of Muslims, constituting 86.88% of the population. The remaining population is made up of Christians (7.49%), Catholics (3.09%), Hindus (1.71%), Buddhists (0.75%), Confucians (0.03%), and those who adhere to other belief systems (0.04%) as per data from BPS (2021).

Chicken meat is a popular food choice in Indonesia, with an average consumption of 0.142 kg per capita/week, and its consumption has been steadily increasing by 0.01 kg annually from 2009 to 2021. This is

mainly due to its affordability, complex nutritional content, and versatility in various dishes. One of the most popular chicken dishes in Indonesia is fried chicken, which is made by coating chicken pieces with seasoned flour or batter and deep-frying them. Furthermore, Fried chicken is believed to have originated in the southern region of the United States in the 18th century and was considered a special food that was only served on certain days.

The Indonesian government prioritizes consumer safety by ensuring that processed animal food products have a halal label or certificate to guarantee that the products purchased are safe, lawful, and compliant with Islamic religious rules. Halal certification is a written fatwa issued by the Indonesian Ulema Council (MUI), which confirms the halalness of a product in accordance with Islamic shari'a. This certificate is mandatory for obtaining permission to use the halal label on product packaging from the authorized government agency. According to MUI, products that can be certified as halal include food products, medicines, cosmetics, consumer goods (such as chemicals, soap, detergents, leather, and water filters), as well as services that handle these products, such as logistics and retail services. Halal food in Islam must meet certain criteria, including being halal in form according to sharia law, not including any forbidden food, being halal in terms of how it is acquired, not being stolen, or purchased with forbidden money, and being halal in terms of how it is processed, such as requiring animals to be slaughtered by saying bismillah first.

The benefits of halal labeling are significant and include providing assurance of product safety, providing unique selling points, promoting peace of mind for the community, and protecting domestic products from global competition, in addition to improving company documentation and administration systems and providing access to global markets. (Warto & Syamsuri, 2020). Indonesia, as a country with the world's largest Muslim population, has at least 87 percent of its 260 million Muslims seeking guarantees of security, comfort, protection, and legal certainty regarding the halalness of the products they consume or use. As a result, Indonesia offers a large market for halal products, which presents significant business opportunities for companies that provide halal-certified products. According to Olson (2014), consumer knowledge of product characteristics, the consequences of using products, and the satisfaction created by products can help in the creation and provision of halal products at a global level. Such knowledge can also influence consumer attitudes and buying behavior.

Aspan (2017) adds that product labeling is crucial in providing important information about the product, including the product name or trademark, raw materials, ingredient composition, nutritional information, expiration date, product content, and legal information. Additionally, the product packaging must include a halal statement or label that indicates the product is halal and certified by LPPOM MUI. A product can only be guaranteed halal if it has a halal label, which requires determining the supply chain materials (Nasution & Rossanty, 2018), and obtaining halal certification.

The Food and Drug Supervisory Agency manages halal labeling, as indicated by the halalmui.org website. Halal labeling existed before official certification, and it is now regulated by the Minister of Health and Minister of Religion through 427/Menkes/SKBMII/1985 and Number 68 of 1985 concerning the Inclusion of Halal Food Labels. For instance, imported frozen food requires a halal certificate for food originating from animals and their derivatives such as mutton and duck meat, sausages and nuggets, as well as milk and its derivative products such as cheese, skimmed milk, whey, and powder.

Fast food, with its convenience and accessibility, has become a popular choice among many, with KFC's crispy fried chicken being a prominent example. Fried chicken, in particular, has gained widespread popularity in Indonesia, with numerous local companies producing this fast food favorite. As a halal-certified product, regulations require producers to display the halal label as part of their responsibility. Despite this, the extent to which halal labeling influences consumer purchasing decisions for fried chicken is still not fully understood (Ani, 2019).

The decision to purchase halal products is largely influenced by individual behaviors and perceptions. Despite varying levels of religiosity among Muslim consumers, most of them tend to have a positive attitude towards purchasing products marketed as halal, making halal certification an important factor in their purchasing decisions. Consumer purchasing decisions involve choosing between several available goods or services (Kotler & Armstrong, 2016). These decisions are crucial as they can have a direct impact on customer satisfaction, which is why buyers tend to make careful considerations before making a purchase (Paludi, 2021). Halal product branding is also significant for consumers when it comes to deciding whether or not to buy a product (Nasrullah, 2015).

The process of making purchasing decisions is a complex one, influenced by various factors. As noted by Amalia (2020), factors such as behavior, subjective norms, and perceived behavioral control all play a significant role in shaping consumer behavior. Other perception factors, such as religiosity, have also been

identified by some researchers. The process of purchasing involves selecting one or more alternatives during the buying process, which can be a problem-solving activity that involves evaluating behavioral alternatives (Firmansyah M., 2018). The decision-making process typically involves several stages, including recognizing the problem, looking for alternative solutions, evaluating alternatives, making a purchase, and re-evaluating the product after use (Mashur, 2016). By understanding the various factors that influence purchasing decisions and the decision-making process, consumers can make more informed choices that align with their values and needs.

Adinugraha, Hermawan, Isthika, and Sartika (2017) argue that despite the growing popularity of halal products, many consumers remain unaware of the indicators used to identify such products. To address this issue, a comprehensive and extensive education program on halal products is necessary for all segments of Indonesian society, including children, youth, and the elderly. Such a program could help to increase public awareness of the underlying principles of halal teachings, promoting a deeper understanding and practical application in daily life activities.

Jatirogo District, located in the western part of Tuban Regency, is a sub-district that borders the Central Java Province. This strategic location has fostered good economic growth in the district, particularly in the culinary field. The area boasts a range of culinary stalls, including fried chicken outlets, from locally owned establishments to well-known brands. This trend reflects the high demand for fried chicken in Jatirogo District, where the majority of the population are Muslims and, therefore, prefer halal food products.

This study was conducted at Rocket Chicken, a fast-food outlet specializing in fried chicken with additional menu options such as steaks, burgers, and fried noodles. Despite the range of menu items, fried chicken has emerged as the outlet's mainstay menu item, reflecting the high level of consumption of fried chicken in Jatirogo District. Rocket Chicken offers a variety of chicken parts for buyers to choose from, including wings, thighs, thighs, and breasts, with affordable prices and a reputation for good taste. In addition, Rocket Chicken has obtained a halal certification for the fried chicken it sells, making it a preferred destination for those who prioritize halal considerations in their purchasing decisions.

Given these factors, it is necessary to examine the influence of consumer behavior on purchasing decisions for Fried chicken, specifically the impact of halal label availability in Jatirogo District, Tuban Regency. Therefore, the purpose of this study is to investigate consumer behavior related to purchasing decisions for Fried chicken in relation to the availability of halal labels in the area.

METHOD

The study conducted in Jatirogo District, Tuban Regency from July to October 2022 was a quantitative research that used two variables: the availability of a halal label as the independent variable and purchasing decisions as the dependent variable. The data collection process involved several methods, including questionnaires, interviews, observations, and documentation. Observations were conducted to gather information about the phenomena related to the research location, while documentation was used to gather information that already exists to support this research. The questionnaire utilized a modified Likert scale with four options: 1 (Strongly Disagree), 2 (Disagree), 3 (Agree), and 4 (Strongly Agree). The modified Likert scale was used to eliminate neutral or undecided choices, which are usually answers to questions or statements that have a choice of numbers in the middle (e.g., 3). The Likert scale for the questionnaire is presented in Table 1 to show the range of options available for participants.

Table 1. Liker Scale

Statement	Score
Strongly Agree	4
Agree	3
Disagree	2
Strongly Disagree	1

The data in this study is in the form of ordinal data on a Likert scale, which was transformed into interval data using the Method of Successive Intervals (MSI). The MSI transformation allowed for the data to be analyzed using the Statistical Product and Service Solution (SPSS) application version 25.0. SPSS is a software with advanced data analysis capabilities and a user-friendly data management system that makes it easy to operate. By analyzing the transformed interval data using SPSS, we were able to draw insights from the data that informed our research objectives.

To select the sample for this study, we used a non-probability sampling technique known as the incidental technique. This technique allowed us to select participants who met the criteria for our research objectives (Sekaran, 2006). In order to ensure the sample is truly representative of the population being studied, a sample size of at least 30-500 is recommended However, according to Sugiyono (2011), a sample size of 100 is considered sufficient for a feasible study. Therefore, we selected a sample size of 106 respondents, which was determined to be representative of the predominantly Muslim population of the area. The sample selection was based on the fact that halal food is an essential requirement for Muslims, and the availability of a halal label provides a sense of security and comfort in consuming food that adheres to Islamic religious law. By selecting a sample of Muslim respondents, we were able to understand their perceptions and attitudes towards the availability of halal labels in relation to their purchasing decisions for fried chicken.

In this study, consumer preference data was processed using the conjoint method based on the results of the respondents' assessment of attribute combinations. The conjoint analysis was used to study the utility value of each attribute, the total utility value, and the level of importance of the attribute. The usefulness value was generated from the consumer assessment, indicating the level of consumer preference with a positive value referring to high preference. Conversely, a negative value indicates a lower level of consumer preference. The results of the conjoint analysis provide valuable insights into the consumer's decision-making process and help businesses understand the relative importance of various attributes in shaping consumer preferences.

The quality of the data was tested by checking its validity and reliability, as these factors greatly influence the accuracy and generalizability of the findings. To determine the relationship between the variables, regression analysis was performed, where the explained variable was examined in relation to one or more explanatory variables. Additionally, the individual parameter significant test, commonly known as the t-test, was conducted to assess how effectively each independent variable individually explained the dependent variable. To achieve this, the partial test utilized the t-test, which assesses the significance of the partial relationship between the independent and dependent variables. During the testing process, a null hypothesis (H0) and an alternative hypothesis (Ha) were formulated, and the test criteria were set such that the H0 would be accepted if the significance value was greater than 0.05, while the Ha would be accepted if the significance value was less than 0.05.

RESULTS AND DISCUSSION

The Overview of Respondents

The acceptability of functional food ingredients and the benefits of consuming halal products are significantly influenced by demographic factors such as gender, age, and education level. In this study, a sample of 106 respondents who purchased fried chicken at the designated research location was surveyed. To ensure the validity and reliability of the results, respondents were encouraged to provide honest and accurate responses to the questions and statements in the questionnaire. A detailed summary of the respondents' characteristics is presented in Table 2.

Table 2. Respondents' Characteristics

Characteristics	Number of Respondent (Person)	Percentage (%)
Sex		
Female	85	80.2
Boy	21	19.8
Total	106	100
Age		
<25	81	76.4
25- 35	17	16
>35	8	7.6
Total	106	100
Employment Status		
Students	40	37.7
Teachers	10	9.4
Entrepreneur	8	7.5
Housewives	24	22.7
Others	24	22.7
Total	**106**	**100**

Source: Processed Primary Data, 2022

The data presented in Table 2 reveals interesting insights into the demographics of fried chicken consumers. Among the 106 respondents, 85 were female and 21 were male, indicating that the majority of fried chicken consumers are women. This is in line with the findings of (Zafirah, Rahayu, and Bambang, 2021), who found that women dominated the respondents in their research. Moreover, (Diana, 2019) concluded that women tend to make purchasing decisions more easily, which could explain why women are the primary consumers of fried chicken. Regarding age, 81 respondents (76.5%) were under 25 years old, with 17 respondents falling between the ages of 25 and 35. In terms of occupation, the largest group of respondents were students (37.7%), followed by housewives and individuals with other types of work (22.7%). These findings are consistent with the views of (Nur, Purwanto, and Alfianto, 2020) who highlighted the importance of female consumers, especially housewives, in determining what food to consume and advising others on purchasing decisions for halal-labelled fried chicken products.

Table 2 also sheds light on the popularity of fried chicken among young people. As a processed food with a western origin, fried chicken has become a favored food among children and adolescents. As evident from the survey results, the majority of respondents were students and housewives, indicating that fried chicken is a common alternative side dish for their children. In urban areas, traditional food consumption patterns have been replaced by modern food consumption patterns, which teenagers find easily acceptable due to their emotional nature, as they are often influenced by their surroundings. Fried chicken outlets are designed with a clean and attractive interior, which appeals to teenagers, who consider them as a place to eat and socialize with their friends.

Table 3. x Table Validity Testing

Question (Item)	Pearson Correlation	r table	Notes/Information
1	0,614	0.1966	Valid
2	0,608	0.1966	Valid
3	0,735	0.1966	Valid
4	0,642	0.1966	Valid
5	0,452	0.1966	Valid

Source: Processed Primary Data (2022)

In research, it is crucial to ensure that data instruments are accurately measuring what they intend to measure. This is where item validity tests come into play. As explained by Purnomo (2016), item validity tests aim to assess how effectively an item measures its intended construct. An item is considered valid if it displays a significant correlation with the total score, indicating its ability to accurately disclose what needs to be revealed. Upon analyzing the results of the validity test presented in Table X and Y, it is evident that all indicators have a value above 0.1966, indicating their validity in measuring their intended construct. This is an important finding, as it confirms that the questions and indicators used in the research are valid and reliable. Consequently, these instruments can be confidently utilized in further research and data analysis, ensuring that the results obtained are accurate and meaningful.

Table 4. y Table Validity Testing

Question (Item)	Pearson Correlation	r table	Notes/Information
1	0,594	0.1966	Valid
2	0,653	0.1966	Valid
3	0,599	0.1966	Valid
4	0,626	0.1966	Valid
5	0,566	0.1966	Valid
6	0,262	0.1966	Valid
7	0,484	0.1966	Valid
8	0,516	0.1966	Valid

Source: Processed Primary Data (2022)

The reliability of the study's indicators was assessed using the Cronbach's Alpha test, which measures the consistency of responses across the indicators. To determine reliability, the Cronbach's Alpha value was compared to the r table. If the value obtained is higher than the r table value, the statement item is considered reliable, while if the value obtained is lower than the r table value, the statement item is considered unreliable. The results of the data analysis showed that the Cronbach's Alpha value for the X variable was 0.814, while the Y variable was 0.803. These values were higher than the r table value of 0.1966, indicating that the measuring instrument used in this study was reliable and suitable for use.

Table 5. Reliability Testing

Variable	Cronbach's Alpha	Conclusion
X	0,814	Good
Y	0,803	Good

Source: Processed Primary Data (2022)

In general, a reliability value greater than 0.7 is considered acceptable, while a value greater than 0.8 indicates strong reliability. In this study, the reliability values of the X and Y variables were found to be 0.814 and 0.803, respectively. These values indicate that the instrument used in the research is consistent and reliable. The reliability test ensures that the study results are accurate and trustworthy, and it enables researchers to draw valid conclusions from their data. Overall, the reliability of the data instrument used in this study has been established, and the results can be used with confidence to answer the research questions.

Table 6. Classic Assumption Test Result

Asymp. Sig. (2-tailed)	**.745**

Source: Processed Primary Data (2022)

The table presents the results of the normality test conducted using the One Sample Kolmogorov-Smirnov Test method. The obtained Asymp. Sign value of 0.745 indicates that if the value is significant (> 0.05), the data can be assumed to be normally distributed. Based on the test results, it can be concluded that the availability of halal labels affects purchasing decisions, especially for Muslim consumers. As a result, when consumers consider buying food products, they tend to prioritize the availability of halal labels as a deciding factor. In the case of processed animal-based foods, ensuring their halal status is crucial, as it depends on many factors that must be carefully considered to maintain their halal status. Thus, a halal label on food products offers consumers a sense of security, guaranteeing that the food is permissible and safe for consumption.

Table 7. Anova Test Results

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1153.032	1	1523.032	169,316	.000a
Residual	935,503	104	8,995		
Total	2458.535	105			

Source: Processed Secondary Data (2022)

The statistical analysis of the regression model reveals a calculated F value of 169.316, with a significance level of 0.000, which is less than the threshold level of 0.05. Therefore, it can be concluded that the regression model is valid for predicting the relationship between the availability of halal labels (X1) and purchase decision (Y), and there is a significant linear relationship between these variables.

Table 8. t Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	4,018	1,586	.787	2,534	.013
Total_X1	1,156	.089		13,012	.000

Source: Processed Secondary Data (2022)

The results of the simple linear regression test shown in the table above indicate that the availability of halal labels significantly influences the decision to purchase fried chicken, as evidenced by the X1 value of 13.012 (t-test). This suggests that the presence of a halal label and halal certification are important factors for consumers when purchasing food products, especially for Muslim consumers who consider them crucial for ensuring the products' compliance with Islamic dietary laws. As noted by Rizka et al., the halal label is often considered the most important consideration for consumers when making food purchases. Since the t-count is greater than the t-table (t-count > t-table), the hypothesis that the availability of halal labels influences the decision to buy fried chicken in Jatirogo District, Tuban Regency is accepted. Overall, the results of the study confirm that the availability of halal labels plays a significant role in consumers' purchasing decisions for fried chicken.

Table 9. Coefficient of Determination (R^2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.787	.619	.616	2,999

Source: Processed Secondary Data (2022)

Table 9 presents the results of the test for the coefficient of determination, which yielded a correlation value (R) of 0.787 and a determination value (R square) of 0.619. This suggests that the availability of the halal label has a significant influence on the decision to purchase fried chicken, accounting for 61.9% of the variance. However, it is important to note that other variables, which were not studied, may influence the purchase decision by 39.1%. These findings indicate that the state of the independent variable is a determinant factor in the dependent variable, i.e., the purchase decision. These results align with the study conducted by Nur, Purwanto, & Alfianto (2020), which found that the level of consumer knowledge about halal food influences their purchasing decisions. Thus, the availability of halal labels may not be the only decisive factor in determining consumers' buying behavior.

In addition to the availability of halal labels, other factors can affect the purchase decision, such as trust in the seller. According to Suci (2020), word-of-mouth marketing can have a positive and significant impact on purchasing decisions, particularly in building trust between the seller and the buyer. Furthermore, trust in traders can partially influence the purchase decision. However, research conducted by Azizah, Yusmini, & Maharani (2018) found that the marketing mix of product, price, location, promotion, and service can also influence consumers' decision to purchase O'Chicken. Thus, while the availability of halal labels is an important factor, other factors such as trust, word-of-mouth marketing, and the marketing mix should also be considered by businesses when targeting consumers.

Analysis of The Availability of Halal Labels Affecting Purchasing Decisions

Consumer behavior is a complex process that involves various activities such as search, selection, purchase, use, and evaluation of products and services to fulfill their desired needs. As pointed out by Irwansyah (2021) and Setiadi (2013), consumer behavior is (1) a dynamic concept that constantly evolves and changes over time; (2) influenced by various factors such as emotions, cognition, behavior, and external stimuli; (3) involving an exchange, which refers to the exchange of goods or services between the consumer and the marketer This implies that the behavior of an individual consumer, consumer group, or the broader community is continuously shifting, and it is crucial to study consumer behavior to understand these changes.
Kotler, as cited in Irwansyah (2021), identified different types of purchasing behaviors that consumers exhibit. These behaviors reflect the complexity and variability of consumer decision-making processes. These types are:

a. Complex buying behavior: This type of behavior involves a three-step process, where consumers first form beliefs about the product, then develop attitudes, and finally make careful choices.
b. Discomfort-reducing buying behavior: Consumers may be highly involved in the purchase, but only perceive slight differences between brands. In such situations, they may experience post-purchase discomfort, which may arise due to unpleasant features of the product or positive news about other brands. Consumers may then seek out information that supports their decision.
c. Habitual buying behavior: In this type of behavior, consumer involvement is low, and there are no significant differences between brands. Consumers choose brands out of habit rather than due to strong brand loyalty.
d. Variety-seeking buying behavior: In some situations, consumers exhibit low involvement with the product, but significant differences exist between brands. Consumers often switch brands in such situations to seek variety, rather than because of dissatisfaction.

Influential factors on consumer behavior that affect purchasing behavior, according to (Setiadi, 2013), include:

a. Cultural factors, which are the fundamental determinants of a person's desires and behavior.
b. Reference factors, which consist of reference groups that have direct and indirect influence on individuals. Primary reference groups include family, friends, and neighbors, while secondary reference groups tend to be more formal with less continuous interactions. Reference groups influence purchasing behavior in three ways: by showing new lifestyles, influencing a person's attitude and concept of identity, and creating pressure to conform, which can impact product and brand choices.
c. Personal factors, which include age and life cycle stages, occupation, economic situation, lifestyle, and personality or self-concept.

d. Psychological factors, which consist of motivation, perception, learning processes, beliefs, and attitudes, influence purchasing behavior by affecting a person's decision-making process and the way they perceive and respond to marketing messages.

Consumers consider several product elements as important when making purchasing decisions. These elements include product attributes such as brands, packaging, labeling, and guarantees.

a. A brand refers to a name, term, sign, symbol, design, color, or any combination of these that is expected to differentiate a product from its competitors and create a unique identity.
b. Packaging refers to the design and manufacturing process of the container or wrapper that holds the product.
c. Labeling is an essential component of a product that provides information about the product and the seller. Labels can be part of the packaging or an identifying mark on the product itself. They convey critical information such as ingredients, instructions, safety warnings, and other necessary details.
d. Guarantees are promises made by the manufacturer to consumers that the product will perform as expected or promised. They offer assurance to consumers that if the product fails to function correctly, they will be compensated or provided with a replacement.

In (Indrasari, 2019), Peter and Olson propose that the purchasing decision process comprises several stages. The first stage is problem recognition, which is a complex process where the buyer realizes a need triggered by internal and external stimuli and perceives a discrepancy between the ideal and actual relationship status. The second stage involves searching for relevant information from the external environment to solve problems or activate knowledge and memories. In the third stage, consumers evaluate alternatives by assessing existing options in the context of their main beliefs about relevant consequences. They then combine this knowledge to make a decision. In the fourth stage, consumers make a purchase decision by buying the chosen alternative. It is essential to make a decision in purchasing, so after the stages are carried out, consumers must make a decision whether to buy or not. In the fifth and final stage, post-purchase behavior, consumers take further action after the purchase based on their satisfaction or dissatisfaction. The purchasing decision process is crucial for consumers and understanding it helps businesses in developing and improving their products and services to meet customer needs and preferences.

Halal is an Arabic word that means permissible or allowed. In Islam, there are clear guidelines distinguishing between halal and haram, including in the realm of food. Most foods are considered halal, except for those that are specifically mentioned as haram in the Qur'an. These include carrion, blood, pork, and meat from animals that were not slaughtered in the name of Allah, as well as animals that were strangled, beaten, fallen, gored, or attacked by wild animals, unless they have been properly slaughtered. It is also forbidden to eat meat that has been slaughtered for idols (as mentioned in Surah Al-Maidah verse 3).

According to (Nurlaela, 2021), for food to be considered halal, it must meet three criteria: the use of halal ingredients, the use of halal methods of obtaining, and halal processing. Therefore, clear regulations regarding halal food are necessary to ensure the safety of Muslim consumers. Halal labeling is used as proof that a product has met all halal requirements, which involves adding halal writings or statements to product packaging to indicate that the product is halal. Halal labeling and certification can be obtained from LPPOM MUI, which conducts systematic testing activities to determine whether a product meets halal requirements. The benefits of halal labeling are to protect consumers from fraudulent actions by producers and to aid consumers in making halal purchasing decisions.

The importance of halal certification or labeling for fried chicken products cannot be understated. While chicken itself is considered a halal food, the various processing stages involved in making fried chicken require strict regulations and supervision to ensure compliance with Islamic law. A study by (Suhada, 2019) revealed that some broiler farms in East Lampung Regency correctly followed the chicken slaughter process according to Islamic law, ensuring that the meat produced is halal for consumption. However, some chicken farms still do not follow the correct slaughter process, resulting in some chickens not dying immediately and requiring multiple cuts or being put into hot water and chicken lathe machines.

In addition, the availability of halal labels on food products has a positive impact on purchasing decisions, indicating that people consider the halal label when making their choices. Consumer attitudes play a significant role in influencing purchasing intentions for halal-certified chicken products. This finding supports the theory that consumer attitudes are essential factors in shaping behavioral intentions, indicating that consumers consider the halal label when making purchasing decisions. As Tendai and Crispen (2009) observed, fried chicken providers leverage the power of impulse buying to influence potential purchases by creating a

comfortable and attractive in-store layout and display. By adopting this strategy, the providers aim to increase sales and other benefits, while also raising consumer awareness of religious values.

The availability of halal labels on fried chicken products is a significant factor in purchasing decisions. Data analysis has revealed that halal labeling affects decisions by 61.9%, indicating that consumers consider the halal label a crucial factor in choosing fried chicken. As fried chicken is a fast-food menu made from chicken meat, Muslims need to be careful in assessing processed food originating from animals at every stage, from slaughtering to the processing process. Outlets that display the halal label are deemed to have complied with applicable regulations and procedures, which provides assurance to Muslim consumers. Moreover, halal labeling can help form a unique market for Muslims and enhance the value of the products sold.

In addition to halal labeling, several other factors influence the purchasing decisions of fried chicken, including price, taste, promotion, lifestyle, and interior design. According to (Subagja, 2018), interior design is the most dominant factor that influences purchasing decisions, and changes in teenagers' lifestyles, such as their preference for fast food, including fried chicken. A study (Maulidia, 2021) highlights that consumer behavior cannot be separated from their lifestyle, which influences their product preferences, including fast food in Surabaya. Modern food, including fried chicken, has become a trend among teenagers, who often visit outlets during school hours or on weekends with their peers. The interior design of the outlets, which is often modern, provides an exciting hangout place, along with supporting facilities such as WiFi, which can be attractive to teenagers. The study by (Miswanto, Salsabila, & Kusmawanti, 2022) confirmed that the availability of halal labels has a positive effect on purchasing decisions, particularly among younger consumers. This study's findings align with the fact that teenagers (under 25 years old) dominate the age group that frequents fried chicken outlets.

CONCLUSION

The study reveals that fried chicken is more popular among women, as 80.2% of the total respondents were women. Furthermore, teenagers aged below 25 years make up the majority of fried chicken consumers, as 76.4% of the total respondents belonged to this age group. Students and housewives are the main occupational groups among fried chicken consumers. This data provides valuable insight into the target market for fried chicken and can help businesses tailor their marketing strategies accordingly.

The availability of halal labeling has a significant influence on the purchasing decisions of fried chicken consumers in Jatirogo District, with a large majority of respondents indicating that the presence of a halal label is a major factor in their decision-making process. The F-test results show that the calculated F value is greater than zero, and the R-test value with an R2 value of 0.619 indicates that 61.9% of consumers are satisfied with their purchase decisions when influenced by the halal label. While halal labeling is an important factor, other factors such as price, taste, promotion, lifestyle, and interior design also play a significant role in consumer decision-making, and further exploration of halal food branding as an alternative to halal labeling may be worthwhile for long-term consumer interest in halal products.

The researcher also recommends exploring alternative strategies to promote halal food branding to attract more consumers in the long run. In addition, future research should analyze the availability of halal label food on a broader scale to gain a better understanding of consumer purchasing behavior for halal products.

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Research Article

Examining the Economic Impact of Cayenne Pepper in Traditional Markets of Makassar City: A Price Analysis Study

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ABSTRACT

The price fluctuation of cayenne pepper has significant impacts on traders' cost performance and income. Therefore, determining the economic price for selling cayenne pepper is crucial. Economic price refers to the fair price for the sale of a commodity or product. This research aims to determine the economic price of cayenne pepper at Kalimbu Market in Makassar City, using 20 traders as respondents and primary data analysis. Cost analysis and break-even point techniques were employed to determine the basic price of cayenne pepper, followed by a switching value analysis to assess the percentage change in costs that could be tolerated. The study findings reveal that the economic price for kiosk cayenne pepper traders is Rp. 57,664/Kg, while the other economic price for kiosk cayenne pepper traders is Rp. 58,068/Kg. These results imply that the selling price set by the cayenne pepper trader is IDR 60,000, resulting in a small profit that is insufficient to meet the personal and family needs of traders.

INTRODUCTION

The agricultural sector plays a significant role in the national economy, as it provides employment opportunities and generates non-oil and gas foreign exchange earnings. In 2018, the agricultural sector, including forestry and fisheries, contributed 12.81% to Indonesia's Gross Domestic Product (GDP) at base year prices in 2010. Additionally, the horticultural crop agriculture subsector contributed 1.47% to the overall GDP at base prices in 2010 (Ministry of Agriculture, 2019).

Horticulture is a significant agricultural crop commodity that plays a vital role in meeting national food needs and increasing national income. Horticultural commodities are widely developed by the Indonesian people, and Cayenne pepper is one of the commodities with potential for further development. This type of vegetable is in high demand among consumers and has become a necessary raw material for both household and industrial purposes, given the growth of the national food industry. As a result, numerous producers cultivate Cayenne pepper at various farming scales to meet the increasing demand for chili in Indonesia. The demand for chili in the country has grown every year, in line with population growth and the expansion of the chili processing industry (Septiadi et al., 2020).

Cayenne pepper is a rich source of various compounds such as capsaicin, capsantin, carotenoids, alkaloids, essential oils, resins, and volatile oils, as well as vitamins A and C. Capsaicin, which provides chilies with their characteristic spicy taste and heat, is known for its potential benefits on blood flow and as a skin numbing agent. Additionally, the seeds of cayenne pepper contain Solanine, Solamidine, Solamargine, Solasodine, Solasomine, and Steroid Saponins (Capsisidin), which can serve as an antibiotic. Moreover, cayenne pepper has various health benefits, including reducing the occurrence of blood clots (thrombocytes) and lowering cholesterol. Its high antioxidant content, such as Vitamin C and Beta-carotene, makes it useful in treating infertility and as an aphrodisiac (Lestari, 2021; Nainggolan et al., 2020).

Cayenne pepper is a highly demanded and strategic commodity in Indonesia, playing an essential role in household consumption (Putra et al., 2021). Despite its steady market demand, the production of Cayenne pepper is subject to fluctuations in price due to its susceptibility to damage and sensitivity to seasonal changes, as reported by Junarsih (2018). As a staple food to complement main courses, the volatility in the price of Cayenne pepper raises concerns for consumers. Moreover, various factors contribute to the fluctuation in prices of Cayenne pepper (Viana et al., 2018).

The price formation of a commodity is influenced by various factors, including supply conditions resulting from the amount of cayenne pepper produced by farmers in certain seasons. In addition, distribution channels also play a role in the fluctuation of cayenne pepper prices due to differences in marketing agency costs, transportation costs, supply chain disruptions, and profit margins at each level of the supply chain. These factors ultimately affect the price that end consumers pay. Consequently, determining the economic price for selling cayenne pepper is crucial (Hanani et al., 2020; Junarsih, 2018).

The economic price, which is regarded as a justifiable price for a commodity or product, is determined based on the same criteria as that of the cost price. As such, the cost of goods is an essential component of the production costs that serves as a criterion for ascertaining the cost of goods produced and sold, thereby guiding the determination of the selling price and facilitating profit planning (Mahyuddin, 2018).

In traditional markets, traders face a fundamental challenge due to their lack of accounting processes and calculations in managing their businesses. Consequently, Cayenne pepper traders still rely on approximations or arbitrary pricing based on the costs incurred. They sell the commodity, deduct the proceeds from the capital invested in purchasing the Cayenne pepper, and then the remaining amount is considered as profit (Mauliyah, 2018).

To create a profitable marketing system, it is crucial to establish conditions that can satisfy all parties involved, including producers, marketing institutions, and consumers. The satisfaction of these parties encompasses factors such as fair pricing for producers, adequate compensation and services for marketing agencies, and satisfactory goods and services for consumers. The flow of goods between producers and consumers typically involves intermediaries, whose services enable consumers to purchase goods according to their preferences. Agricultural commodities like cayenne pepper have dispersed characteristics, necessitating processes such as collection, balancing, and distribution to be part of the marketing process.

Astuti (2018) stated that traditional markets serve as a place for transactions between wholesalers, retailers, and end consumers, including household actors and industries. Kalimbu Market in Makassar City is one of the traditional markets where cayenne pepper traders operate and are involved in large profit margins between the consumer and producer levels. These traders are also affected by price fluctuations that impact their cost and revenue performance. The perishable nature of cayenne pepper affects the capital turnover duration for traders, and the marketing process must be done quickly to ensure that capital is returned in a relatively short time. Retailers' limited capital means that an increase in cayenne pepper prices will affect the amount purchased from collectors and ultimately affect the traders' income.

The research presented in this paper offers a novel contribution through the use of cost analysis, revenue analysis, break-even point analysis, and switching value analysis. These analytical approaches are aligned with the research objectives of this study, which are to identify the cost structure and economic price of cayenne pepper, as well as to determine the maximum level of variable costs that can be tolerated within the cayenne pepper trading business.

METHOD

The study was conducted in Kalimbu Market, located in Makassar City, South Sulawesi Province, Indonesia. The selection of this research location was purposeful, as Kalimbu Market is a central distribution point for Cayenne pepper in Makassar City and is a hub for marketing activities. The research methodology employed in this study is a case study approach, with Kalimbu Market serving as the case under investigation.

As Respati (2020) explains, a case study is a detailed and intensive research method that provides in-depth analysis of an organization, institution, or phenomenon, whether at the individual or societal level.

The present study utilized primary data obtained from questionnaires and interviews conducted with traders. Respondents were determined through the application of the random sampling method, which is a technique that affords all individuals in the population equal opportunities to be selected as sample members. A total of 20 traders participated in the study, including 10 stall traders and 10 overlay traders.

Quantitative descriptive analysis was used to process primary data obtained from 20 randomly selected traders at the Kalimbu Market in Makassar City. In this study, various analyses such as cost analysis, revenue analysis, break-even point (BEP) analysis, and switching value analysis were conducted to obtain accurate calculations that describe the cost of goods, profits earned, and the extent to which variable costs can be changed in the cayenne pepper trading business.

The initial analytical approach employed in this study is cost analysis, which involves identifying and distinguishing between fixed and variable costs. Fixed costs (FC) are expenses that remain constant, regardless of the number of products sold, such as rent for trading premises, fees, electricity, and depreciation, expressed in rupiah. Conversely, variable costs fluctuate according to the quantity of products sold and include the cost of purchasing vegetables, plastic, transport, labor, and information retrieval. Subsequently, revenue analysis was conducted for the cayenne pepper trading business using the formula:

$$TR = P \times Q$$

Information:
TR = Total Revenue (Rp/Day)
P = Price of cayenne pepper
Q = Number of cayenne pepper sold

The second analytical tool employed in this research is the break-even point (BEP) analysis, which is the point at which total revenue is equal to total cost, resulting in zero profit. BEP is achieved when a company's sales volume covers both fixed and variable costs. However, if sales only cover variable costs and some fixed costs, the company will suffer losses. Conversely, profits can be obtained when sales exceed the variable and fixed costs that must be paid out (Kusumawardani & Alamsyah, 2020).

The Break Even Point (BEP) analysis is a decision-making tool that is valuable when certain basic assumptions are met. In practice, not all assumptions can be fully satisfied, but this does not diminish the validity and utility of the BEP analysis. Rather, some modifications may be necessary in its application. The BEP analysis has many benefits, such as identifying the primary break-even point of a business. By understanding this point, management can determine the quantity of units that need to be produced or sold to avoid losses. However, the BEP analysis is limited to a single type of product that is either produced or sold. The value of the Cost of Goods can be determined using the formula:

$$\text{Price BEP (Rp/Kg)} = TC/Y$$

Information:
TC = Total Cost
Y = Number of Cayenne peppers sold
Thus TC = Y. Price BEP or HP

The third analysis employed in this study is sensitivity analysis, which is conducted to determine the extent to which changes in costs can be tolerated without affecting the basic price. The analysis was performed using the Switching Value approach, which calculates the maximum allowable change in an inflow or outflow component while still maintaining the basic price. Mahyuddin (2018) explains that the Switching Value can be determined using a formula:

$$SV = \frac{\pi^+}{\pi^+ - \pi^-} \quad (\Delta P^+ - \Delta P^-) + \Delta P^+$$

Information:
SV = Switching Value
π^+ = Net income is close to 0
π^- = Revenue minus close to 0

ΔP^{+} = Cost change that generates positive income close to 0
ΔP^{-} = Change in Cost that results in negative revenue close to 0

RESULTS AND DISCUSSION

Production Cost Structure of Cayenne Pepper Traders

The present study aims to determine the total production costs of Cayenne pepper traders, which comprises of both fixed and variable costs. Fixed costs are expenses that remain constant regardless of the level of production, whereas variable costs fluctuate in proportion to the volume of activity. The revenue earned by traders selling Cayenne pepper is determined by multiplying the amount of the product sold with its selling price.

The present study involves a comprehensive analysis of the production costs incurred by cayenne pepper traders in the Kalimbu market. To this end, the researchers have examined the various activities involved in the procurement process, as well as those related to marketing. These activities include the purchase of cayenne peppers, sorting, and marketing.

Laili et al. (2021) asserted that various factors could impact the supply of a commodity, including the price of the commodity itself, the price of related goods, production factors, and the number of traders or sellers. In the case of cayenne pepper traders, their costs can be categorized into variable and fixed costs. Variable costs are those incurred for the purchase of cayenne pepper, plastic, and transportation. Conversely, fixed costs are those that are incurred regularly, such as booth rental, equipment depreciation, warehouse rent, electricity, and dues. These expenses are incurred on a periodic basis, such as the cost of buying vegetables that is incurred daily, electricity costs that are incurred monthly, and the cost of renting a place that is paid yearly.

Table 1. Average Variable Cost Per Day of Cayenne Pepper Trading Business at Kalimbu Market, Makassar City

Fee Type	Average Cost Per Day (Rp)	
	Stall Trader	**Expanse Trader**
Purchase cayenne pepper	1.650.000	825.000
Plastic cost	20.000	10.000
Freight cost	10.000	5.000
Total	**1.680.000**	**840.000**

Source: Primary Data in the Field

The variable costs incurred by Cayenne pepper traders include the costs of purchasing plastic, purchasing Cayenne pepper, and transportation. These costs vary depending on the level of sales. The highest cost incurred by traders is the cost of purchasing Cayenne pepper, which is the primary cost of conducting this trading business. The amount spent on purchasing Cayenne pepper depends on the existing sales level and the price level at the collecting traders. When the price of Cayenne pepper increases, the kiosk traders usually purchase 2 bags of Cayenne pepper per day, costing Rp. 1,650,000.00 per bag with a weight of 15 kg. In contrast, when the price of Cayenne pepper drops, they usually purchase up to 3 bags of Cayenne pepper per day. Spread traders, on the other hand, purchase 1 bag of Cayenne pepper per day if the price of Cayenne pepper rises and 2 bags of Cayenne pepper per day if the price of Cayenne pepper falls.

The cost of plastic, which is used as packaging for cayenne pepper to facilitate ease of handling, constitutes a variable cost for traders. The quantity of plastic used daily by kiosk traders does not exceed 2 packs, while overlay traders use only 1 pack per day. The price per pack of plastic employed by traders is subject to variation based on quality, ranging between Rp. 10,000.00 – Rp. 8,000.00 per pack.

The costs associated with transporting cayenne pepper to the point of sale are known as freight costs. These costs vary depending on the quantity of cayenne pepper being transported. On average, kiosk traders incur a transportation fee of Rp. 20,000.00 while overlay traders incur a fee of Rp. 5,000.00. Trishaws are used to transport the cayenne pepper to the point of sale, and the estimated cost for transportation is Rp. 5,000.00 per bag. This is consistent with the findings of Puspitasari's (2020) study, which indicated that retailers typically purchase cayenne pepper directly from wholesalers at the main market. As a result, transportation costs are typically the responsibility of the retailer.

Table 2. Average Fixed Cost Per Day of Cayenne Pepper Trading Business at Kalimbu Market, Makassar City

Fee Type	Average Cost Per Day (Rp)	
	Stall Trader	**Expanse Trader**
Rent a stall	41.096	13.699
Electricity	1.833	0
Werehouse rent	0	12.329
Dues	7.000	6.000
Total	**49.929**	**31.027**

Source: Primary Data in the Field

Table 2 reveals that kiosk traders incur a daily cost of Rp. 13,698. The rental rates for stalls at the Kalimbu Market vary based on their size. The kiosk traders occupy stalls with an area of approximately 6 x 5 square meters, equipped with storage facilities and electricity. On the other hand, the overlay traders rent shanties with an area of about 3 x 2 square meters, which lack storage facilities and electricity, requiring them to rent a warehouse at a cost of approximately IDR 4,500,000.00 per year, equivalent to an average daily cost of IDR 12,329. Puspitasari (2020) also found that the storage function is necessary, as the production of agricultural commodities is seasonal, while consumption patterns remain relatively constant. The storage function results in additional time and costs, as red cayenne pepper needs to be stored until it can be sold, either at the kiosks or at rented warehouses.

The contribution fee is a mandatory payment made by traders to market officials for security and cleaning purposes. The fee varies between stall and overlay traders and is paid on a daily basis. Specifically, stall traders pay a fee of IDR 7,000.00 per day while overlay traders pay IDR 6,000.00 per day. In addition to this, stall traders also incur an electricity cost of Rp. 55,000.00 per month, while overlay traders do not bear any electricity costs as the stalls they rent do not have electricity.

The total production costs of the cayenne pepper trader business at Kalimbu Market in Makassar City can be calculated by adding the total variable costs and fixed costs. The corresponding figures are presented in the table below:

Table 3. Total Production Cost of Cayenne Pepper Trading Business in Kalimbu Market, Makassar City

Fee Type	Stall Traders	Expanse Traders
Variable Cost	1.680.000	840.000
Fixed Cost	49.929	31.027
Total Cost	**1.729.929**	**871.027**

Source: Primary Data in the Field

Table 3 displays the total costs incurred by kiosk traders and overlay traders, which are IDR 1,729,929 and IDR 871,027 per day, respectively. Revenue is the product of total chili sold and the selling price, representing the total sales generated by traders without considering the incurred costs. The profitability of a business can be evaluated using multiple factors, including the amount of profit earned. Jaya et al. (2021) state that income should be sufficient to support the trader's own livelihood and that of their family. Table 4 shows the earnings of cayenne pepper traders at Kalimbu Market in Makassar City.

Table 4. Total Receipts and Amount of Production of Cayenne Pepper Trading Business at Kalimbu Market, Makassar City

Komponent	Stall Traders	Expanse Traders
Number of Cayenne Pepper (Kg)	30	15
Selling Price (Rp)	60.000	60.000
Reseption (Rp)	**1.800.000**	**900.000**

Source: Primary Data in the Field

The income of the trading business can be determined by multiplying the production quantity with the selling price (Afrizal et al., 2023). The table presents the average daily revenue of kiosk traders from the sale of cayenne pepper, which is IDR 1,800,000, with a volume of 30 kg sold at a price of IDR 60,000 per kilogram. On the other hand, the average daily revenue of overlay traders from the sale of cayenne pepper is IDR 900,000, with a volume of 15 kg sold at IDR 60,000 per kilogram.

Through an analysis of the average quantity of cayenne pepper sold, the average selling price at Kalimbu Market, as well as the average variable and fixed costs incurred by cayenne pepper traders, this study was able to determine the utilization of fees and revenues for both kiosk and overlay traders.

Table 5. Production Costs, Total Production and Acceptance of Cayenne Pepper Traders at Kalimbu Market, Makassar City

No	Component	Mark	
		Expanse Traders	**Stall Traders**
1	Purchase of Cayenne Pepper	825.000	1.650.000
2	Plastic Cost	10.000	20.000
3	Freight Cost	5.000	10.000
	Total Variable Cost	**840.000**	**1.680.000**
4	Rent a stall	13.699	41.096
5	Electricity	0	1.833
6	Werehouse rent	12.329	0
7	Dues	5.000	7.000
	Total Fixed Cost	**31.027**	**49.929**
8	**Total Cost**	**871.027**	**1.729.929**
9	**Production**	**15**	**30**
10	**Selling Price**	**60.000**	**60.000**
11	**Reception**	**900.000**	**1.800.000**
12	**Profit**	**28.973**	**70.071**

Based on the table, it can be observed that kiosk traders sell 30 kg of cayenne pepper at IDR 60,000 per kilogram, resulting in a daily income of IDR 1,800,000. The difference between income and total costs represents the net profit or income generated by cayenne pepper traders. The profit earned by kiosk traders from the sale of cayenne pepper is IDR 70,071 per day.

According to the table, overlay traders have 15 kg of cayenne pepper ready to be sold at a price of Rp. 60,000 per kilogram, resulting in an income of Rp. 900,000 per day. The difference between receipts and total costs represents the net profit or income earned by cayenne pepper traders. Overlay traders earn a profit of IDR 28,973 per day from selling cayenne pepper. This income is deemed insufficient to meet the traders' living expenses and those of their families. In certain situations, if the cayenne pepper is unsold, traders will sort it. Sorting is the process of selecting what is needed and removing what is not required, or it refers to the process of selecting/sorting cayenne pepper. Spoiled cayenne pepper will be sold for half the price of fresh cayenne pepper.

According to the findings, kiosk traders tend to earn more profits than overlay traders, potentially due to the fact that they have access to electricity and storage facilities, allowing them to sell their products later into the evening. This observation is consistent with Nadia's (2021) assertion that working hours are a significant factor in determining traders' income. Traders are free to determine their own working hours, and sometimes buyers have established subscriptions, leading to the possibility that traders who work longer hours may not earn more than those who work shorter hours.

The Economic Price of Cayenne Pepper

The determination of a fair price for a product or commodity can be referred to as the economic price. The cost of cayenne pepper is an essential indicator in measuring its economic price. The cost analysis of cayenne pepper can be determined by calculating the break-even point analysis. The cost price reflects the minimum limit where cayenne pepper traders commence to earn profits. Based on the calculations, it was observed that the kiosk traders' break-even point for the price of cayenne pepper was IDR 57,664 per kilogram, 28.83 kilograms for production, and IDR 1,729,929 for receipts. A selling price of IDR 60,000 would cover the total costs incurred by traders, specifically IDR 1,729,929. With revenues amounting to IDR 1,590,396, the trader attains a break-even point, signifying a situation where the trader neither experiences losses nor profit but can cover the total production costs.

The economic analysis of cayenne pepper trading shows that overlay traders have a break-even point at IDR 58,068 per kilogram, with a production break-even point of 14.52 kilograms and revenue break-even point of IDR 871,027. When a trader sells 14.52 kilograms of cayenne pepper at a price of IDR 60,000, the total cost of production, amounting to IDR 871,027, is covered by revenue. As such, the trader achieves a break-even point where neither profit nor loss is incurred. These findings suggest that the high market price of cayenne pepper is largely determined by the costs borne by the traders. In setting their prices, traders consider the need to generate profits from their trading activities.

Table 6. Basic Prices and Profits Per Day of Cayenne Pepper Trading Business at Kalimbu Market, Makassar City

Description	Basic Price and Profit Per Day	
	Stall Traders	Expanse Traders
BEP Reseption (Rp)	1.729.929	871.027
BEP Production (Kg)	28,83	14,52
BEP Price (Rp)	57.664	58.068
Selling Price (Rp/Kg)	60.000	60.000
Revenue (Rp/Kg)	2.336	1.931,51

The sale of cayenne pepper provides benefits to traders due to the higher selling price of cayenne pepper than its basic price. In the case of kiosk traders, their profit is derived from the difference between the selling price and basic price, which is IDR 2,336 per kilogram. On the other hand, overlay traders obtain a profit of IDR 1,951.51 per kilogram of cayenne pepper sold. These findings align research, which suggests that the profit generated from cayenne pepper sales is relatively small but still sufficient to cover the costs incurred.

Sensitivity Analysis and Switching Value of Cayenne Pepper

A sensitivity analysis and switching value were performed to assess the susceptibility of the cayenne pepper trading enterprise at Kalimbu Market in Makassar City to price fluctuations. Uncertainty is a significant factor when predicting future cash flow, as it can cause discrepancies between projected and actual outcomes. This unpredictability poses a challenge to a business's profitability and ability to operate successfully.

In this study, sensitivity analysis using switching value was conducted to assess the impact of price changes and variable costs on the cayenne pepper trading business at Kalimbu Market, Makassar City, particularly with respect to inflation. The switching value analysis aimed to identify the maximum level of change in variable costs that the business could tolerate. One of the most critical factors in operating a cayenne pepper trading business is the increase in variable costs, which includes the cost of purchasing cayenne peppers from collectors. It is essential to consider the impact of variable costs on the business's profitability and sustainability, especially in an environment where price changes and inflation are prevalent.

Table 7. Analysis of Switching Value Increase in Variable Costs of Cayenne Pepper Trading Business at Kalimbu Market, Makassar City

Description	Stall Traders		Expanse Traders	
	4%	5%	3%	4%
Reception	**1.800.000**	**1.800.000**	**900.000**	**900.000**
Production Cost				
Rent a stall				
Electricity	41.096	41.096	13.699	13.699
Werehouse rent	7.000	7.000	5.000	5.000
Dues	1.833	1.833		
Rent a stall			12.329	12.329
Total Fixed Cost	**49.929**	**49.929**	**31.028**	**31.028**
Purchase of Cayenne Pepper				
Plastic Cost	1.716.000	1.732.500	849.750	858.000
Freight Cost	20.800	21.000	10300	10.400
Purchase of Cayenne Pepper	10.400	5.250	5150	5.200
Total Variable Cost	**1.747.200**	**1.758.750**	**865.200**	**873.600**
Total Cost	**1.797.129**	**1.808.679**	**896.228**	**904.628**
Revenue	**2.871**	**-8.679**	**3.772**	**-4.628**
Switching Value	**4,25%**		**3,45%**	

Switching value analysis was conducted based on the assumption that a 4% increase in variable costs for kiosk traders resulted in an income of IDR 2,871. It was concluded that a 4% increase in variable costs can be tolerated as it still yields profits. However, an increase of 5% cannot be tolerated as it will result in losses. The switching value analysis yielded a figure of 4.25% for cayenne pepper traders. This indicates that when all variable cost prices increase by 4.25%, the sales of cayenne pepper will neither gain nor lose. These findings highlight the importance of considering the impact of variable costs on the profitability of the cayenne pepper trading business.

The switching value analysis was conducted to assess the sensitivity of bird's eye cayenne pepper traders in the face of an increase in variable costs. Assuming a 3% increase in variable costs, the analysis showed that traders could still generate profits, indicating that this level of cost increase could be tolerated. However, if variable costs increase by 4%, traders will experience losses. The switching value analysis indicated a

threshold of 3.45%, meaning that if all variable costs increase by this amount, traders will break even. These findings underscore the impact of even a slight increase in food costs on traders' income. To maintain profitability, traders will increase their selling price, as confirmed, who noted that higher cost levels lead to decreased business sensitivity. Thus, daily costs significantly affect traders' income, with a 1% increase in costs leading to reduced business income at the same price.

CONCLUSION

The profitability of the cayenne pepper trading business has been analyzed based on its cost structure. Despite generating profit for traders, the amount remains relatively low, especially for overlay traders. The economic price of cayenne pepper trading is calculated to be IDR 57,664/kg and IDR 58,068/kg for kiosk and overlay traders, respectively. This price represents the minimum amount that traders need to set in order to make a profit. However, it is found that a 4% increase in costs would result in a loss for kiosk traders, while a 3% increase in costs would lead to a loss for overlay traders.

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Research Article

Unpacking the Implication of the COVID-19 Pandemic for Small Businesses in Lebak Regency, Banten Province

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ABSTRACT

In recent times, small businesses have been recognized as a significant component of national economies, as evidenced by their resilience during the monetary crisis faced by Indonesia in 1999. However, the COVID-19 pandemic has presented a unique challenge due to the invisible nature of the virus, its social transmission, and the resultant threats to human safety. Small businesses have undergone several changes, including altered consumer behavior, production patterns, and product marketing, primarily due to their reliance on crowds and direct interactions between sellers and buyers. Consequently, many small businesses have either shut down or faced difficulties in maintaining their sustainability. To gain insights into the implications of the COVID-19 pandemic for small business actors, we conducted a qualitative phenomenological study in Lebak Regency, Banten Province. Our findings suggest that the informants viewed the pandemic as a crisis that tested their adaptive capacity. This capacity encompassed not only the ability to adjust to changing economic conditions but also a sense of gratitude for the outcomes of their business activities. The quality of these attributes together determined the sustainability of their business.

INTRODUCTION

Compared to other causes of economic crises, the COVID-19 pandemic presents a unique challenge due to the invisible nature of the virus and the potential threat it poses to human safety. Consequently, effective containment requires the implementation of stringent health protocols. In response, the government has instituted a range of policies to reduce the spread of the pandemic, including Large-Scale Social Restrictions (PSBB) and changes to long-standing societal norms.

The government has implemented various policies in the economic sector to sustain Micro, Small, and Medium Enterprises (MSMEs) during the COVID-19 pandemic. These policies encompass direct assistance to MSMEs, credit restructuring, tax incentives, working capital loans, procurement of MSME products, implementation of health protocols in the business sphere, and digitization of MSMEs (Damayanti, 2021). The last two policies are aimed at reducing direct interactions among community members as these interactions pose a high risk of COVID-19 transmission and spread.

The circumstances and policies associated with the COVID-19 pandemic have resulted in the avoidance and restriction of activities requiring direct interaction and a reduction in community mobility. Among the sectors most severely impacted by these changes are Micro, Small, and Medium Enterprises (MSMEs), which are the engines of the economy. Many MSMEs have been forced to temporarily cease their operations due to reduced foot traffic in crowded locations such as traditional markets, schools, places of worship, modern markets, entertainment venues, restaurants, and public transportation terminals, which are the primary marketplaces for small businesses (Periyadi et al., 2022).

Small businesses, including roadside businesses, are widely acknowledged worldwide for their crucial role in reducing poverty levels (Aun and Salami, 2022). Thus, the Indonesian government must implement various policies (Susilawati et al., 2020) and provide different stimuli (Bahtiar and Saragih, 2020) to bolster the community's economy and ensure the survival of small businesses amidst the stringent health protocols. Failure to do so may lead to a decline in income, customers, or business partners for small businesses, thus complicating the distribution process and potentially triggering a national economic crisis. Consequently, the success of the government's policies is dependent on the support of the business community, and a joint effort between the government and community is necessary to safeguard the economy from the impact of COVID-19 (Hanoatubun, 2020).

The objective of this research is to analyze the implication of the COVID-19 pandemic for small business owners in Lebak Regency, Banten Province. The pandemic has led to a significant decrease in their income and necessitated various changes in small business operations, including alterations in production patterns, product marketing, and shifts in consumer behavior, all of which have adversely affected the sustainability of their businesses. Furthermore, the increasing number of COVID-19 cases in this district has resulted in the implementation of Large-Scale Social Restrictions (PSBB) and its geographical location, which shares borders with COVID-19 red-zones such as the Tangerang, Bogor, and DKI Jakarta areas. Previous research conducted by Aryansah et al. (2020) indicates that MSME players have used various strategies to survive the COVID-19 pandemic, such as marketing through social media platforms (Instagram, Facebook, and WhatsApp), collaborating with online transportation service providers (Gofood and Grabfood), innovating culinary products, and building customer trust. However, the characteristics of small businesses may impede the implementation of these strategies by their owners.

This study employs a qualitative approach to examine the experiences of small business actors in Lebak Regency amidst the COVID-19 pandemic. While many studies have focused on analyzing the implication of the pandemic for small businesses using a quantitative approach, the current study seeks to provide an in-depth understanding of the situation through a qualitative lens. The results of this analysis offer insights into the practical application of small business empowerment strategies that can be utilized by local government and other related parties to support small businesses during and after the COVID-19 pandemic.

METHOD

Phenomenological analysis is a qualitative research approach that seeks to understand reality from the perspective of social actors who experience events in their lives. This approach aims to construct an understanding of subjective reality, which is a personal interpretation of experiences. Phenomenology is based on the assumption that humans actively interpret their experiences and ascribe meaning to them. Therefore, interpretation is an active process that creates meaning from human experiences. In essence, understanding is a creative act that gives meaning to human experiences (Littlejohn & Foss, 2008).

In this qualitative research, the phenomenological approach was utilized to explore the experiences of small business owners amidst the COVID-19 pandemic. The data collection process involved various techniques such as in-depth interviews, observation, documentation studies, and audio-visual items (Creswell, 1998). The primary data was gathered through informal and interactive in-depth interviews, utilizing open-ended statements and questions (Moustakas, 1994), until saturation was reached. Secondary data was collected from various reliable sources. The study participants consisted of three small business owners who met specific criteria set according to the essential standards for phenomenological research informants by Moustakas (1994), which included being a small business owner for five years, having a capital of under 10 million, genuinely experiencing the COVID-19 pandemic, being able to articulate their experiences/views related to the pandemic, and willing to be interviewed, recorded, and published. The validity of the data was ensured through source triangulation, which involved examining the evidence derived from various sources and using it to construct coherent themes (Creswell, 2013).

The present study employs a rigorous process of data analysis using a transcendental phenomenological approach following Husserl's systematic procedure (Moerer-Urdahl & Creswell, 2004) and the interactive model of data analysis (Miles & Huberman, 2007). The analysis process involves several steps, including data processing and preparation, reading and reviewing the data, data coding, grouping the meaningful statements into meaning units and themes, synthesizing themes into a description of individual experiences (textural and structural descriptions), and constructing a composite narrative of the meanings and essence of the informants' experiences. To minimize the influence of the researchers' preconceptions, the first step of the analysis involves *epoche*, where the researchers strive to set aside their biases and preconceptions regarding the COVID-19 pandemic and focus on the opinions reported by the informants. This process allows the researchers to approach the phenomenon with an open mind and a fresh perspective, leading to a more comprehensive understanding of the participants' experiences. Additionally, the analysis process adheres to the phenomenological principles of *horizonalization* and synthesis, which ensure that the analysis captures the richness and complexity of the participants' experiences while maintaining the integrity of the data.

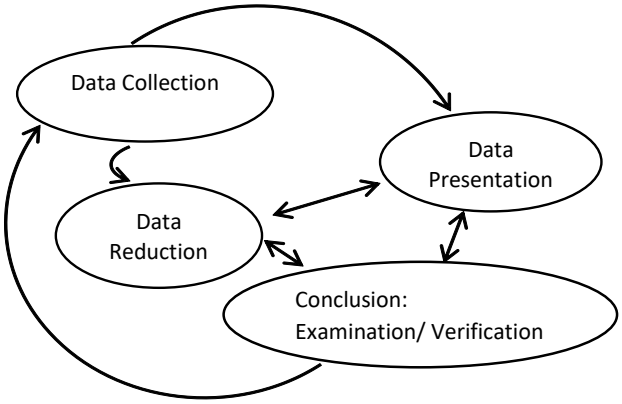

Figure 1. Components of data analysis with an interactive model

RESULTS AND DISCUSSION

Description of Research Site

Geographical Layout of Lebak Regency

Lebak Regency is geographically situated between 0007'18" and 07000'00" South latitude and 105000'25" and 106000'30" East longitude. It shares borders with Serang Regency and Tangerang Regency to the north, and the Indonesian Ocean to the south. The Regency is also bordered by Pandeglang Regency to the west and Bogor Regency and Sukabumi Regency to the east.

Demographic Characteristics of Lebak Regency

As of 2020, the total population of Lebak Regency was 1,386,993, with 714,052 male residents (51.48%) and 672,741 female residents (48.50%). The majority of the population resided in the sub-districts of Rangkasbitung, Cibadak, Kalanganyar, Warunggunung, and Maja, which are in close proximity to Rangkasbitung, the capital of Kabupaten, Lebak. Rangkasbitung serves as the center of government, trade, and services, as well as the settlement of numerous immigrant communities (BPS Kabupaten Lebak, 2021).
The agricultural sector is the primary source of employment for the majority of the working population in Lebak Regency, with most being self-employed in agriculture, plantations, forestry, hunting, and fisheries.

Profile of the Informant

This study involved three small business owners who were selected as research informants based on specific criteria. The informants were chosen because they met the predetermined qualifications.

1. Sutiah

The informant, Sutiah, is a 45-year-old business owner with two grown-up children who have graduated from college and are still studying at a boarding school. She hails from a family of entrepreneurs and began her entrepreneurship journey 19 years ago by selling cassava chips at a nearby coffee shop. With time, her

business has expanded, and she has diversified her products to include banana and onion chips, among others.

Sutiah and her husband jointly manage the chips business by dividing the tasks. Her husband sources fresh cassava materials from farmers in Maja, Sajira, and Cipanas districts around Rangkasbitung at a lower cost, and he delivers the products to their regular customers. On the other hand, Sutiah produces various chips with the help of two employees and markets the products to shops in Rangkasbitung and other locations like Cilegon, Tangerang, and Jakarta, through WhatsApp and referrals from friends and customers.

Sutiah expanded her business by renting a 4 x 6 m shop on the roadside near her house, initially intended to display her chips. Later on, she started selling household items and children's toys to cater to the increasing demand from customers. During the COVID-19 pandemic, her business was sustained through the sales of household items, children's toys, and a variety of chips, as the pandemic caused a sharp decline in food product sales. Sutiah's business strategy aligned with Ezizwita and Sukma's (2021) research that emphasizes product and service diversification for culinary businesses to remain operational during the pandemic.

Sutiah manages the shop daily, even during the COVID-19 pandemic, adhering to health protocols and implementing safety measures for herself and her customers. While Sutiah continues to provide essential services, she surrenders to God Almighty, and if customers appear unwell, she maintains her distance to safeguard her health and that of others.

2. Puput

Puput relocated from Jakarta to Rangkasbitung with the intention of starting her own business. Being born to a mother of native Pontang descent, Serang Regency, who has expertise in making milkfish skewers, Puput worked towards perfecting the recipe to make milkfish skewers more appealing to consumers. Although milkfish skewers are popular in Serang, Puput saw the opportunity to develop and sell the product in other areas such as Rangkasbitung, where the demand for milkfish skewers was low.

Since 2010, Puput has been producing milkfish skewers and began selling them in Rangkasbitung's market, specific events, and exhibitions. She then expanded her marketing strategy by partnering with resellers in Jakarta, Bekasi, and Pandeglang. As milkfish skewers are a perishable product, Puput innovated by producing frozen milkfish skewers that can be frozen for up to three months after being tested. The innovation extended the shelf life, expanded marketing, and made product delivery outside of Rangkasbitung more convenient. However, Puput prefers not to use delivery service companies and instead delivers her product directly to consumers to ensure that the milkfish skewers arrive in good condition.

Furthermore, Puput invented crackers made from milkfish bones, which received a positive response from consumers, as it was a creative way of utilizing the bone waste generated from making milkfish skewers. She also produces lunchboxes and markets them through exhibitions in collaboration with various government offices such as the Lebak Regency Cooperative, MSMEs Office, Fisheries Office, and Industry and Trade Office. She promotes her products online through social media platforms like Facebook and has registered the production location of milkfish skewers on Google Maps to make it easier for consumers to purchase directly from the production site. Such digital marketing strategies align with the views of Mangku et al. (2022), Arianto (2020), and Avriyanti (2021) who emphasize the importance of digital technology in empowering MSMEs to reach out to more consumers and improve the quality of their products and services. By implementing these strategies, Puput hopes to increase the sales of her MSME products.

3. Rumsinah

In 2006, Rumsinah and her eldest son, Asep, established a nata decoco business that was inherited from her husband. Despite having a career as a teacher at a public elementary school in Lebak Regency, Rumsinah decided to continue the business due to the number of workers who would be laid off. However, the business faced various limitations at the beginning, as Rumsinah reduced four out of 12 workers and decreased production due to a lack of business capital.

The products produced by Rumsinah are semi-finished goods sold to packaged nata de coco producers or factories. The availability of the primary raw material, coconut water, was severely affected by the COVID-19 pandemic, as young coconut water was believed to boost immunity, leading to a shortage of raw materials. Consequently, Rumsinah had to dismiss her workers and reduce three more, even though demand for nata de coco remained unaffected by the pandemic. This is in line with Masruroh et al.'s (2021) assertion that MSMEs were significantly impacted by the pandemic, affecting income, labor, credit repayment, and capital availability. Rohman and Andadari (2021) suggest strategies for home-based businesses producing processed food to sell online, expand their marketing areas, and improve product quality to cope with the COVID-19 crisis.

Implications of the COVID-19 Pandemic for Small Businesses

1. Significant Statements

This study aimed to gather information on the experiences of small business owners during the COVID-19 pandemic. The study identified specific statements made by informants related to the pandemic from transcripts of informant interviews. A total of 79 individual verbatim statements were identified, representing significant, non-repetitive, non-overlapping statements that reflect whole sentences and are subjective extrapolations from the interview transcripts. The statements provide a description of how informants perceive and experience the COVID-19 pandemic.

2. Themes (Units of Implications) of the COVID-19 Pandemic

To identify the implications of the COVID-19 pandemic for small businesses, irrelevant, repetitive, and overlapping statements related to the pandemic were eliminated from the transcripts of small business informants. The remaining statements were analyzed to identify the textural meaning of the pandemic from the perspective of the small business informants. The selected statements were then categorized into specific themes by the researcher. The analysis resulted in the identification of four themes or units of implications related to the pandemic and its impact on small businesses: (i) business downturn, including decreased production and income; (ii) adaptation to the pandemic, including reducing labor and switching businesses; and (iii) occupational risks, including staying enthusiastic and being grateful.

Tabel 1. The evidence of significant statements regarding the themes (units of implications) of the COVID-19 pandemic, as reported by small business informants

Themes (units of implications)	Evidence in small business informants' statements
"In a slump" businesses	*"Muhun seantosnya pandemi alhamdulilah sih aya bae cuman aya oge ngorder 200 ribueun, 100 ribueun, paling besar cuman 250. Pokokna mah pas pandemi menurun." (Following the pandemic, income from sales has experienced a decline, albeit some customers continue to place orders ranging from Rp 100,000 to Rp 250,000, which represents a significant reduction compared to pre-pandemic levels.)* *"Atuh menurun penjualan neng, kaya keripik kan lamun biasanya si teteh biasanya sok ngambil kan aya langganan orang Cilegon, orang Sajrap jadi biasanya tiap hari sekali bawa 200 rebu 300 rebu, sekarang mah seminggu sekali ngambilnya." (Sales for certain products, such as chips, have been impacted negatively by the pandemic, with orders from customers in Cilegon or Sarjrap being reduced to once a week from daily orders of up to Rp. 200,000 or more Rp. 300,000.)* *"Pokokna mah lamun istilahna mah ngajegrek. Tapi sih Alhamdulillah berjalan yaa ari ieu mah berjalan-berjalan lamun ieu asalna berapa persen mah kayaknyana setengah." (Although the income generated has decreased, it has not ceased entirely, with a slight reduction of a few percent compared to pre-pandemic levels, and roughly half of what it used to be.)* *"Sekarang mah paling juga 10 hari 4-5 ton, gak banyak sekarang mah." (The quantity of production has decreased, with an average of 4-5 tons in a period of at least ten days, representing a reduction from previous levels.)* *"he'eh sanggupnya segitu, karena sekarang air kelapa kurang. Terus produksi saya dikurangi karena saya modalnya mentok begitu ya mentok modalnya. Terus segala cuka segala Za, segala gulanya sekarang mahal, koran mahal." (The production of coconut sugar has faced several challenges due to the reduced availability of coconut water, a shortage of capital, and the increased cost of other ingredients, such as vinegar, ZA, sugar, and newspaper.)* *"omset, waktu pertama-pertama mah sampe 70% tuh sampe kita kadang gak dapet uang bu" (During the initial stages of the pandemic, the turnover from sales reduced to 70%, with some days producing no revenue at all.)* *"hehe. Bukan nutupin lagi bu, orang jarang dapet duit dari sate bandeng, dari satu gitu. Jadi kalo kita gak muterin otak, yaa udah" (Satay bandeng sales have seen a significant decline, resulting in minimal profits if not approached strategically.)* *"Ada halal, udah pada mati bu. Semenjak corona ga bisa perpanjang ini itu." (The expiration of halal licenses due to the pandemic has resulted in an inability to renew them, posing challenges to businesses that rely on them.)* *"Cuman kita pas kena corona boro-boro buat kemasan, buat makan aja susah" (Packaging has become difficult to manage during the pandemic, resulting in challenges with revenue generation.)* *"….. duitnya kitanya boro-boro bayar perizinan bu" (The cost of licensing has increased during the pandemic, resulting in financial strain on businesses.)*
Adapting to the COVID-19 pandemic	*"sampe kita istirahat kan yaa kerja juga kasian cuman ya gimana lagi kita produksi ga bisa. Kita bangkit lagi pas puasa karena emang pas puasa kan konsumsi ini kan" ("Due to the pandemic, production had to be temporarily suspended as it was not feasible. Production resumed during the month of fasting, as the product could be sold during this period.")*

Themes (units of implications)	Evidence in small business informants' statements
	"Lemon biasa, buah lemon. Es nya juga sama kita kan jualan tuh di depan tuh ada warungnya tuh di depan. Kita kan untuk sate bandeng pas PPKM pertama ngedrop beralih kita ke lebih ke jualan imun-imun buat imun kaya jeruk lemon. Lemonnya juga kiloannya, lumayan dijualnya banyak yang nyari" ("The sale of milk fish skewers decreased during the PPKM, prompting a shift towards selling lemons and citrus fruits. Immunity-boosting drinks made from lemons were sold in whole kilos in front of the house.") *"Engga sih kita ga pernah sampe putus, tiap hari tuh ada produksi, fase bangkitnya itu pas mulai rame lagi." ("Production continued despite the pandemic, albeit at a reduced capacity. A surge in production occurred when customers began returning.")* *"he'eh, intinya gimana caranya dapet duit. Kita mah cari ruang yang ini aja bu, ada ruang yang ini ya hayuk" ("The primary concern is generating revenue, and opportunities are pursued with diligence.")* *"Atuh semua ini bu bukan kita doang yang ngalamin. Yang terdampak yang kerja, yang engga? Tapi kan sebenarnya gini, namanya pengusaha ga da pandemi juga naik turun, yaa kadang ada naik ada turunnya. Kan gak selalu naik terus, kadang ada masa-masanya." ("Entrepreneurs are not immune to the pandemic's impact, and fluctuating income is a common experience. Sales figures are not always positive.")* *"Atuh neng ieu mah euh mah perjuanganna perih." ("The struggle to survive during the pandemic has been challenging.")* *"iya semenjak corona aja, paling pas corona mah cuma 2 orang doang" ("Since the pandemic outbreak, the number of customers/buyers has dwindled to a mere two.")*
Occupational Risks	*"Lumayan nya penghasilan segitu Alhamdulillah." (It can be deemed satisfactory to have achieved such an income, for which we express our gratitude.)* *"yaa Allah neng pas pandemi mobil lunas si teteh ntos ya Allah, lamun kitu" (The prospect of paying off the car loan post-pandemic is a matter of great relief and gratitude.)* *"Atuh karena serba mahal harus lapang dada, cuka naik segala naik dan dari sananya harus murah." (The necessity for affordable prices results from the rising cost of goods such as vinegar and other raw materials.)* *"Kalo hikmahnya itu jadi lebih banyak bersyukur, bersyukurnya gimana? Oh banyak waktu lebaran itu kan kita sama mang sani ke Jakarta ya Allah itu tuh KFC tuh rumah makan terbesar termewah gitu kan kok sampe tumbang, kita yang bukan siapa-siapa kita masih bertahan masih bisa bayar hutang masih bisa makan masih bisa beraktifitas berarti kita manusia yang bersyukur udah jadi kita intinya banyak bersyukur bu." (Gratitude could be regarded as a valuable virtue in these circumstances. Despite the observation that even major corporations such as KFC can suffer bankruptcy, our small business venture continues to survive, enabling us to manage our debts, maintain sustenance and continue operations.)*

In this research article, we aim to elucidate the units of implications of the COVID-19 pandemic as described by small business informants. To achieve this, we present the terminology employed by the informants in each theme or unit of implication, substantiated by quotations from the pertinent literature review.

COVID-19 pandemic: "In a slump" businesses

The impact of the COVID-19 pandemic on small businesses has been detrimental, resulting in decreased sales due to restrictions on community interactions. For instance, Puput reported that the Rangkas Bitung market was affected by the odd-even number of traders, and sales dropped during the PPKM when the market was closed. Meanwhile, some small businesses are trying to keep producing during the pandemic to maintain business continuity. However, these businesses have encountered obstacles such as scarcity and rising prices of raw materials. Rum explained that the instability in her production process is caused by the scarcity of raw materials. She cited situations where she has coconut water and vinegar, but no ZA, or plenty of coconut water but no vinegar. Even if these materials are available, they can be expensive to acquire, which creates a barrier to production. Tiah, on the other hand, has been affected by the rising prices of raw materials. She explained that the cost of oil has increased from 25-26 to 30, causing her to lose money on her sales.

These challenges are consistent with Soetjipto's (2020) findings that MSMEs have been negatively affected by the pandemic due to the scarcity of raw materials and social restriction regulations, resulting in a decline in sales turnover and various marketing and sales constraints. In response, MSMEs have sought alternatives such as securing capital, diversifying temporarily, and adopting effective technology for promotion and sales. According to Rakhma and Setiawan (2020), 37,000 MSMEs have reported difficulties in obtaining raw materials as one of the impacts of COVID-19.

COVID-19 pandemic: Adapting to the COVID-19 pandemic

The COVID-19 pandemic has become a test for the adaptive capability of small businesses after they have contributed to the recovery of the national economy from the international monetary crisis in the late 90s. The

decline in sales of small business products caused by the pandemic has been the most significant impact, leading to a decrease in the business level's income. The informants have experienced a decline in sales for at least one to two years, with the implementation of social restrictions from mid-2020 to 2021 being the peak. Puput demonstrated the struggle for the continuity of her business during the implementation of Community Activities Restrictions Enforcement (PPKM), stating that they had to switch to selling lemons as the market closed early in the morning and afternoon. She further explained that all markets, including the Rangkas Bitung market, were affected by the odd-even number of traders, and the sales dropped significantly, especially during the PPKM, when the Rangkas market was closed.

During the COVID-19 pandemic, the informants' small businesses experienced a significant decline in income, which is referred to as 'ngajegrek,' compared to 'reseup,' which represents the pre-pandemic income level. Maleha et al. (2021) reported that the majority of small traders, particularly mobile cake traders, food stalls, coffee shops, and other types of stalls, experienced decreased sales during the pandemic. This situation was caused by the declining purchasing power of the community, leading to losses in some traders' businesses, and even the closure of some businesses. To cope with the pandemic, Nur et al. (2020) suggested that MSMEs should adapt by integrating online marketing systems while following health protocols, even in the new normal era.

During the pandemic, small business owners had to adapt to the changing economic conditions. Tiah and Rum, two informants, shared their experiences of downsizing their employees to maintain the sustainability of their businesses. Rum temporarily laid off some of his employees and planned to call them back once production stabilizes. On the other hand, Tiah downsized the number of her employees. These statements demonstrate the adaptive capacity of small business actors during the pandemic. The impact of COVID-19 on the MSMEs sector has been discussed by Bahtiar (2021), who noted that businesses had to reduce production, employee working hours, and sales/marketing channels to adapt to the pandemic's effects.

COVID-19 pandemic: Occupational Risks

Rum and Tiah have expressed that they have been able to keep their production going despite the COVID-19 pandemic. According to them, " ... I keep my production going, ma'am, from the first time there was a covid; Alhamdulillah, it is still going on, just the time is reduced ..." and "this is a painful struggle." This indicates their awareness of the risks involved in trading and the need for an entrepreneurial spirit. Puput has also emphasized that the entrepreneurial spirit is vital, and "Actually, even though there are no pandemics, there are also ups and downs. Sometimes there are downs in business, it doesn't always go up." The informants' ability to remain resilient and continue their businesses is a testament to their entrepreneurial spirit and gratitude for their business's results. This has helped them to face the crisis caused by the pandemic, with their small businesses still being sustainable and their families spared from COVID-19 exposure. As one of the informants said, "... Alhamdulillah, at least, I got a thousand rupiah a day. That's what I got that day, but sometimes someone orders chips for aIDR 100.000 or IDR 200.000. So, the profit from those transactions. But sometimes, if it's not there, it's not there at all. That's how it is if you have a business." The traders' willingness to continue their struggle to meet their daily needs is what has kept them going during the pandemic, as noted by Sinaga and Purba (2020).

The statement regarding the link between the entrepreneurial spirit and gratitude for business outcomes reveals the overall resilience of small business actors amid the COVID-19 pandemic. According to Torrido's (2021) research, the pandemic has had a negative impact on Indonesia's economy, resulting in an increase in poverty rates. However, some positive effects have also emerged, including an increase in social solidarity within communities and the provision of considerable profits to some businesses. As Tiah stated, "I am grateful for my income; it has its ups and downs...". Other informants also expressed gratitude for their business results during the pandemic, noting that compared to larger and more luxurious establishments like KFC, their MSMEs were still able to survive and sustain their basic needs. This sentiment highlights the gratitude of small business actors during difficult times, aligning with Hadiwardoyo's (2020) observation that the pandemic's restrictions on community activities have resulted in significant economic losses at a national level.

The COVID-19 pandemic has posed significant challenges to small businesses, and policymakers must take steps to support and maintain their entrepreneurial spirit to ensure their sustainability. This is in line with the recommendations of Dwiastanti and Mustapha (2020), who highlight the need to strengthen the interest and belief of entrepreneurs in facing challenges and opportunities with perseverance and hard work. Sugiri (2020) emphasizes that short-term and long-term strategies are necessary to support policies aimed at saving MSMEs from the pandemic's impact and maintaining their sustainability as key actors in the Indonesian economy.

Pakpahan (2020) suggests that short-term policies should focus on providing financial assistance through soft loans or direct cash assistance involving both government and private sectors. Long-term strategies should introduce and use digital technology for MSMEs, preparing them for the Industry 4.0 era. Training and guidance provided by Raharja & Natari (2021) have positively impacted business actors by increasing their knowledge of digital media and advanced skills in managing digital media for branding.

The importance of government assistance schemes for the continuity of MSMEs during the pandemic is confirmed by Harjowiryono & Siallagan's research (2021), which emphasizes the need for integrated financial literacy and MSME innovation programs in assistance programs. Suardika & Kurniawan's (2022) research shows that government assistance has a positive impact on sales turnover, production of goods, and profits of small business actors. Training for small business actors, such as the Pandemic Incubation Program, has a positive and significant relationship with the continuation of micro, small, and medium enterprises, as revealed by Rusadi et al. (2022), emphasizing the need for counseling, training, and mentoring to improve small business actors' ability to create social media and market products online through Facebook social media, as highlighted by Astiti et al. (2021).

However, Mujianto et al. (2021) reveal that many traditional retail stalls have not received government or private sector assistance during the pandemic. These stalls survive and grow by adopting cost-efficient strategies and complementary marketing tactics, such as selling products in small packages/sachets and placing orders online. Hadi & Zakiah's (2021) research suggests that some MSMEs still require an understanding of digital marketing, while those that have used digital marketing can survive and even increase sales without relying on conventional stores.

3. Textural and Structural Description

The current study employed a thematic analysis approach to gather descriptions of the experiences of small business informants regarding the COVID-19 pandemic. The textural description, which includes the literal expression of the informants' statements, was compiled to provide a comprehensive overview of their experiences. The collected descriptions were further analyzed to identify the contextual and structural factors that influenced the informants' experiences of the pandemic. These structural descriptions provide valuable insights into the settings and environments in which small businesses operate and how these contexts shape their experiences of the COVID-19 pandemic.

Textural Description

The small business informants used various terms to describe their experiences during the COVID-19 pandemic, including *'ngedrop'*, *'ngajegrek'*, *'lieur'*, *'perih'*, *'lapang dada'*, *'muterin otak'*, *'ga pernah sampe putus'*, 'mencari *ruang'*, *'syukur'*, *'ribut-ribut teu boga duit'*, *'semangat'*, and *'tumbang'*. According to one informant, they continued to keep their shop open regardless of whether people were buying or not. Another informant mentioned that sometimes people would order chips for IDR 100,000 or 200,000 at their kiosk. Another informant revealed that the pandemic meant they spent a lot of time at home, taking care of the business, saying "But thank God since COVID I just work at home," and "so don't worry about the problem of not having money. I enjoyed it, and I'm grateful. *Insya Allah*, it's a blessing, ma'am, because when we see our friends whose businesses in the mall are failing, we can still survive, so we're even more grateful." These accounts demonstrate the ability of small businesses to adapt and coexist with the COVID-19 pandemic.

Structural Description

In the context of the COVID-19 pandemic, the experiences of small business informants are primarily shaped by economic factors. The decline in business income and scarcity and increased prices of raw materials were commonly mentioned by each informant. Puput reported a 70% decrease in turnover during the early stages of the pandemic, resulting in financial difficulties. Another informant recently had to pay over a million rupiahs for raw materials, which adversely impacted both production quality and the financial well-being of the informant's family. As one informant stated, "Just when we were hit by corona, it was difficult to make packaging, just to eat." Nevertheless, when describing the impact of the pandemic on their income, the informant expressed a religious perspective that one must always be grateful for the results of their efforts. Therefore, there is no need to fret over financial difficulties. The informant stated, "I enjoy it, am grateful, and am blessed, Insha'Allah." The effects of the pandemic have impacted everyone, including both those who work and those who do not. As Tiah put it, "Alhamdulillah, it's okay. I am the kind of person who doesn't complain easily, so I am grateful."

Government policies, including the implementation of Large-Scale Social Restrictions (PSBB), Community Activity Restrictions (PPKM), and others, significantly shape the experiences of small business informants amidst the COVID-19 pandemic. Despite their challenges, informants continue to adapt and remain hopeful that the pandemic will end soon and that economic conditions will recover. Informants highlight the impact of the pandemic on their businesses, particularly the closure of crowded centers and exhibition activities, which has reduced the space for promoting and marketing their products. As Tiah explained, "All markets, the Rangkas Bitung market, was affected by the odd-even number of traders. When the sales plummeted again, the sales were terrible during PPKM yesterday because the Rangkas market was closed." This has limited their ability to develop new products based on business development training, as their capital has decreased due to reduced income. Before the pandemic, informants had participated in training or comparative studies organized by the local government, such as to Lampung for the development of chocolate bananas or to factories to learn about the production process. However, these opportunities have become scarce due to the pandemic-induced economic challenges.

The informants' experience of the COVID-19 pandemic is also shaped by the time context. One informant reported that the pandemic had been ongoing for the past two years. Another informant discussed the number of weeks and even months during which their business had suffered, as well as the unpredictable duration of the pandemic. This temporal context shapes the informants' experience of the pandemic in terms of their ability to adapt and endure as small business owners, as the longer the pandemic persists, the more resources the informants must expend. Puput referenced the time context of the pandemic by recalling how conditions had differed in the past, when everything felt good: "Back then, making cassava took two or three days. It's not like that now, so it's not as profitable as it used to be. It used to take three days for a car to produce it. Oh God, I remember how good things used to be."

Texturally and structurally, the arrangement of units of implications in this study elucidates the process of intentionality in small business actors and its relationship with the conditions presented by the COVID-19 pandemic. The consciousness of small business informants reflects the influence of the hope of ending the pandemic and stabilizing economic conditions for small business management on their intentionality. The onset of the pandemic triggered a process of intuition, wherein small business actors perceived, remembered, assessed, felt, and thought about the COVID-19 pandemic. As a result, small business owners realized the changes in their income and interpreted them rationally. These units of implications underscore the textural and structural aspects of the study's findings, revealing how small business actors respond to the challenges posed by the COVID-19 pandemic.

From a theoretical perspective, phenomenology posits that the meaning of something is contingent upon its potential in a person's life, with the implications of an object determined by an individual's relationship to it. In the case of the COVID-19 pandemic, the informants perceive it as a significant threat to their work. The pandemic has resulted in changing economic conditions, as restrictions on human interaction have been imposed to prevent the spread of the virus and limit the number of exposures. These measures have been implemented to safeguard both life safety and economic stability. Thus, the COVID-19 pandemic serves as a reminder to be grateful for the resources and opportunities one has, particularly with regards to life safety and income. This phenomenological perspective highlights the significance of personal experience in shaping an individual's understanding of and response to the COVID-19 pandemic.

The Essence of the COVID-19 Pandemic Experience

The combined textural and structural descriptions of the COVID-19 pandemic experiences of small business informants are synthesized to develop a comprehensive understanding of their experiences. This approach allows for the exploration of the meaning and essence of the COVID-19 pandemic experience for each informant in a single unit. By analyzing the themes and patterns that emerge from the individual experiences, a holistic understanding of the pandemic's impact on small businesses can be obtained. The synthesis of textural and structural descriptions provides a powerful tool for gaining insights into the complexities of small business experiences during the COVID-19 pandemic.

The COVID-19 pandemic has resulted in a widespread transmission of the COVID-19 virus, leading to a significant impact on small businesses. The primary challenge faced by small businesses is the limitation of human interaction, which is crucial for overcoming the spread of the virus. The pandemic is caused by the direct and indirect interaction of infected individuals with healthy individuals, without the implementation of proper health protocols. The resilience of small businesses during the economic crisis of the late 1990s suggests that they can adapt and coexist with the COVID-19 pandemic, which is essentially a protracted economic crisis. The pandemic has become an occupational risk that small businesses must face. Hence, the

experiences of small business actors during the COVID-19 pandemic highlight the cyclical nature of business, and they must be grateful for every acquisition as every business has its own time.

The COVID-19 pandemic experience of informants highlights their interpretation of the crisis within a socio-economic context. The pandemic has emerged as an economic crisis that has revealed the adaptive capacity of small business actors. This capacity goes beyond their ability to adjust their business to changing economic conditions, but also encompasses their ability to be grateful for every outcome of their business, which is informed by their religious beliefs. The combination of these qualities is crucial for ensuring the sustainability of their business amidst the COVID-19 pandemic.

CONCLUSION

The analysis and discussion of the results suggest that small business informants in Lebak Regency, Banten Province interpret the COVID-19 pandemic as a cyclical phenomenon in small businesses. They emphasize the importance of being grateful for every acquisition as every business has its own time of profitability and loss. This interpretation underscores the resilience and adaptability of small business actors amidst the COVID-19 pandemic, as they continue to navigate and sustain their businesses amidst challenging economic conditions.

To ensure the sustainability of small businesses in Lebak Regency, Banten Province during and after the COVID-19 pandemic, the local government can enhance the adaptive capacity of small business actors by implementing the following measures:

1. Conducting training and mentoring programs for small businesses during and after the pandemic to equip them with the necessary skills and knowledge to navigate the challenging economic conditions caused by the COVID-19 pandemic.
2. Establishing a small business development information center during and after the pandemic that provides information services, consultations, and disseminates small business development information media to enhance the access of small business actors to sources of business development information. This measure will provide small business actors with relevant information and support to sustain and grow their businesses during and after the COVID-19 pandemic.

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Research Article

Unlocking the Secret to Customer Happiness: A Deep Dive Into the Satisfaction and Loyalty Levels of Pia Cap Mangkok Purchasers in Malang

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ABSTRACT

In today's highly competitive business landscape, analyzing customer satisfaction and loyalty is a critical strategy for companies to stay ahead. This study investigated the level of customer satisfaction and analyzed consumer loyalty towards Pia Cap Mangkok, a popular food brand in Malang, Indonesia. A total of 91 respondents were selected using purposive sampling, and data was collected through observation, interviews, and documentation methods. The study used both primary and secondary data to evaluate the level of customer satisfaction and analyze consumer loyalty. Customer satisfaction was measured through product and service attributes using the Customer Satisfaction Index (CSI) and Importance Performance Analysis (IPA), and the study found that Pia Cap Mangkok scored 74.44% in the satisfied criteria. The IPA technique identified attributes that must be maintained and improved, including taste, pia flavor, atmosphere, cleanliness, swift and friendly waiter service, efficient order process, room decoration, and waiter appearance. Moreover, the Loyalty Pyramid was used to analyze consumer loyalty, and the study found that 85% of the buyers are satisfied, 85% like the brand, 58% are committed buyers, 28% are switchers, and 16% are habitual buyers. The study provides valuable insights for Pia Cap Mangkok to develop effective marketing strategies to maintain its customer base and attract new customers.

INTRODUCTION

Pia Cap Mangkok is a well-established brand in Malang that caters to middle to upper-class consumers. It was founded in 1959 by Zabur Oetomo (Oei To Lam) and Tri Pinarti (The Pin Nio), who inherited traditional recipes from their ancestors. Oei To Lam's signature pia is renowned for its crispy skin, soft filling, and distinct flavor that sets it apart from other brands. Pia Cap Mangkok products are available in a variety of flavors, including mung bean, chocolate, cheese, tangkwee (dried candied pumpkin), durian, coffee, pineapple, apple, and green tea. The products are sold in different packaging sizes, with options ranging from five, twelve, to twenty-five pieces per pack. The brand has gained popularity due to its high-quality products and unique flavor

combinations, which have helped it establish a loyal customer base.

Intense competition can lead to a reduction in the number of customers for a business. Pia Cap Mangkok, being aware of the potential threat of losing customers, needs to enhance its marketing efforts to attract and retain customers by increasing their satisfaction levels. Customer satisfaction refers to the degree of pleasure or disappointment a consumer experiences after comparing the actual outcomes of a product or service with their expectations (Kotler & Armstrong, 2008). If the product or service fails to meet their expectations, customers may feel dissatisfied. Conversely, if it exceeds their expectations, customers are likely to feel happy or satisfied. Therefore, businesses must ensure that they meet or exceed customer expectations to maintain their customer base and stay ahead in the market.

Customer satisfaction is a significant predictor of brand loyalty. Loyalty can be measured by the level of attachment a customer has to a brand, which determines their likelihood to switch to another brand if the brand changes its price or essential elements. Loyalty also represents the degree to which a consumer is committed to a product or service and intends to repurchase it in the future. Pia Cap Mangkok faces stiff competition from other souvenir shops in Malang, with many of them selling similar products. Therefore, the company needs to find ways to retain customers and thrive amidst the competition. This can be achieved by providing high-quality products and exceptional services that satisfy and foster loyalty among customers. Moreover, innovation and creating customer loyalty are essential strategies for attracting new customers and maintaining their loyalty to the brand.

METHOD

This research was performed at the Pia Cap Mangkok souvenir shop in Malang from February to May 2022. The choice of location was deliberate and based on its reputation as a well-known brand. The shop is situated at Jl. Semeru No. 25, Ruko Semeru, Kauman, Klojen District, Malang City, East Java. The study employed purposive sampling as its sampling technique, which entails a selective approach to choosing participants based on specific criteria (Sugiyono, 2016). The inclusion criteria for the study were:

1. Pia Cap Mangkok consumers;
2. those who have tasted any flavor variant of Pia Cap Mangkok;
3. those who have purchased Pia Cap Mangkok at least three times; and
4. those who are willing to respond to questionnaires and participate in interviews.

The sample size for this study was determined using the formula proposed by Hair (2006). According to Hair, the minimum number of samples should be five to ten times the total number of variables used in the research. For this study, a total of 19 variable items were included, resulting in a minimum sample size of 19 x 5 = 95 respondents.

This research utilized a survey method with the aim of obtaining accurate and efficient data while adhering to the required data criteria. The survey method employed a questionnaire that consisted of a series of questions to collect information from respondents. The research questionnaire included inquiries pertaining to respondent identity, customer satisfaction, and customer loyalty.

In this study, customer satisfaction was analyzed by measuring product and service attributes based on their level of importance and performance. The Customer Satisfaction Index (CSI) and Importance Performance Analysis (IPA) were employed to measure the level of satisfaction (Purbobinuko & Wurianing, 2020). The calculation of CSI involves several steps, including the determination of Mean Importance Score (MIS), Mean Satisfaction Score (MSS), Weight Factors (WF), Weight Score (WS), and ultimately, the Customer Satisfaction Index (CSI).

The amount of CSI can be found with the following steps:

1. *Mean Importance Score* (MIS)

The value of MIS is calculated by finding the average importance of each customer using the following formula:

$$MIS = \frac{\sum_{i=1}^{n} y_i}{n}$$

Where:

n = Number of customers

yi = Importance value of the y-th attribute

2. Calculating *Weight Factors* (WF)

The weight is determined as the percentage of the MIS value for each attribute relative to the total MIS of all attributes, calculated using the following formula:

$$WF = \frac{MIS_i}{\sum_{i=1}^{p} MIS_i} x100\%$$

Where:
i = The i-th importance attribute

3. *Mean Satisfaction Score* (MSS)

$$MSS = \frac{\sum_{i=1}^{n} X_i}{n}$$

4. *Creating Weight Score* (WS)

The weight is obtained by multiplying the WF and MSS using the following formula:

$$WSi = WFi \times MSS$$

5. Calculating *Customer Satisfaction Index*

To determine the overall level of respondent satisfaction, the Weight Total (WT) is divided by the maximum scale used and then multiplied by 100%. The satisfaction level criteria can be used to assess the overall satisfaction of the respondents.

$$CSI = \frac{\sum_{i=1}^{p} WS_i}{HS} \; x \; 100\%$$

Where:
CSI = Customer satisfaction Index (%)
WSi = Weight Score
i = The i-th importance attribute
HS = Maximum scale used

The criteria for the satisfaction index range from 0.00 to 1.00, representing the level of dissatisfaction to very satisfied, as illustrated in Table 1.

Table 1. Criteria for Customer Satisfaction Index Value

CSI Value	Criteria for CSI
0,81 – 1,00	Very Satisfied
0,66 – 0,80	Satisfied
0,51 – 0,65	Fairly Satisfied
0,35 – 0,50	Less Satisfied
0,00 – 0,34	Dissatisfied

Source: Simanjuntak (2010)

The analysis results obtained from the Customer Satisfaction Index alone may not be adequate to identify the top priority improvements required. Thus, a complementary technique called Importance Performance Analysis (IPA) is needed. This technique is used to measure the level of importance and consumer satisfaction with respect to variable performance. The analysis results are further divided into four quadrants in the Importance Performance Analysis matrix, as proposed by Martilla and James (1997). Each quadrant of the Cartesian diagram is explained as follows:

1. Quadrant I (Concentrate here): This area is crucial to customers compared to other factors, but the level of satisfaction is low. Therefore, management should focus on improving attributes in this quadrant to increase customer satisfaction.
2. Quadrant II (Keep Up the Good Work): This area is essential to customers, and the level of satisfaction is high. Attributes in this quadrant must be maintained by management.

3. Quadrant III (Low Priority): This area is less critical, and the performance obtained by consumers is poor. Improving attributes in this quadrant may have minimal effect on customers.
4. Quadrant IV (Possible Overkill): This area is less critical to customers and is perceived as excessive. Management should prioritize other quadrants that require handling.

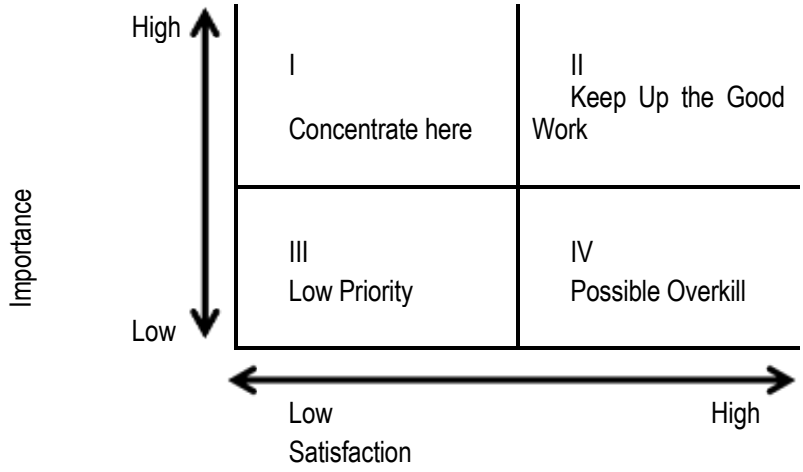

Figure 1. Importance-Performance Matrix (Cartesians Diagram)
Source: Martilla, Jogn A and C. James (1997)

Customer loyalty refers to the extent of a customer's emotional attachment to a brand. The loyalty pyramid is a tool used to assess consumer loyalty, depicting the proportion of committed buyers, brand advocates, satisfied buyers, habitual buyers, and switchers. Ideally, a well-shaped loyalty pyramid should resemble an inverted triangle, as suggested by prior studies (Aryadi et al., 2022; Doloksaribu et al., 2016; Durianto, 2004).

RESULTS AND DISCUSSION

Characteristics of Consumers

Understanding the characteristics of consumers is crucial for developing business plans and achieving a competitive edge. In this study, the characteristics of Pia Cap Mangkok consumers were analyzed based on their gender, age, highest education level attained, occupation, and monthly income.

Characteristics of Consumers by Gender

In relation to the purchase of Pia Cap Mangkok, the gender distribution of consumers is as follows:

Table 2. Characteristics of Consumers by Gender

Gender	Total (Person)	Percentages (%)
Female	56	58,9 %
Male	39	41,1%
Total	**95**	**100%**

Source: Primary Data Processed (2022)

The findings, as presented in Table 2, indicate that the majority of consumers purchasing Pia Cap Mangkok are female, accounting for 58.9% of the total, whereas male consumers constitute 41.1%. These results align with previous research conducted by Wahid Muhammad Shodiq et al. (2020), which suggests that women tend to be more consumptive than men.

Characteristics of Consumers by Age

The age distribution of Pia Cap Mangkok consumers in this study is presented below.

Table 3. Characteristics of Consumers by Age

Age	Total (person)	Percentage (%)
<20 years old	4	4,3 %
21-30 years old	44	46,3 %
31-40 years old	33	34,7 %
>40 years old	14	14,7 %
Total	**95**	**100%**

Source: Primary Data Processed (2022)

Table 3 displays the distribution of consumers based on their age. The highest proportion of customers falls in the age bracket of 21-30 years, accounting for 46.3% of the total. On the other hand, the lowest number of consumers are those below 20 years of age, comprising only 4.3% of the sample. It can be inferred that the majority of customers who patronize Pia Cap Mangkok belong to the productive age group, although a small percentage of non-productive age group customers were also observed. This finding is consistent with the results reported in previous research (Anggraini et al., 2013) which suggests that individuals in their productive years tend to be more consumeristic in their daily lives, displaying a willingness to spend on necessities such as food, clothing, and other goods.

Characteristics of Consumers by Highest Education Level Attained

Table 4 presents the education level of respondents, ranging from elementary school to postgraduate studies, including junior and senior high school, diploma, undergraduate (S1), and postgraduate (S2 and S3) degrees. The table further highlights the characteristics of Pia Cap Mangkok consumers categorized by their education level.

Table 4. Characteristics of Consumers by Highest Education Level Attained

Latest Education	Total (orang)	Percentage (%)
Senior High School	19	20,0%
Diploma	12	12,6 %
Undergraduate	54	56,8%
Postgraduate	10	10,5%
Total	**95**	**100%**

Source: Primary Data Processed (2022)

The findings of the study, presented in Table 4, demonstrate that Pia Cap Mangkok products are primarily consumed by individuals with an undergraduate education, accounting for 56.8% of the sample. The second highest proportion of consumers holds a high school degree, with a percentage of 20%. It is noteworthy that no consumers with elementary or junior high school education were observed, suggesting that individuals with higher educational levels are more likely to purchase Pia Cap Mangkok products. This trend can be attributed to the social strata and other social factors that influence consumer behavior, wherein a person's level of education can significantly impact their purchasing decisions. These results are consistent with previous research conducted by Shodiq et al. (2020) and Yasmin et al. (2017), which suggests that individuals with higher levels of education possess more information and exhibit greater selectivity in their consumption choices.

Characteristics of Consumers by Occupation

Occupation plays a crucial role in shaping an individual's decision-making behavior, including their purchasing decisions. Accordingly, the occupation of consumers who patronize Pia Cap Mangkok is presented below:

Table 5. Characteristics of Consumers by Occupation

Occupation	Total (orang)	Percentage (%)
Students	19	20,0%
SOE/Civil Servant	20	21,1 %
Self-employed/Businessman	29	29,5 %
Housewife	7	7,4 %
Private Employee	15	15,8%
Others	5	6,3%
Total	**95**	**100%**

Source: Primary Data Processed (2022)

The results of the study, depicted in Table 5, reveal that consumers who purchase Pia Cap Mangkok in Malang represent diverse occupational backgrounds. Specifically, the majority of consumers are self-employed or entrepreneurs, comprising 29.5% of the sample. The second most common occupation is working as an SOE employee or Civil Servant, accounting for a total of 21.1%, whereas factory workers and other laborers constitute only 6.3%.

Characteristics of Consumers by Monthly Income

The level of consumer income is a crucial factor in determining their expenditure on both food and non-food items. Table 6 presents the income levels of consumers who purchase Pia Cap Mangkok products as follows: Characteristics of Consumers by Monthly Income

Table 6. Characteristics of Consumers Based on Income

Income (IDR/Month)	Total (orang)	Percentage (%)
<1.000.000	7	7,4 %
1.000.000-2.000.000	10	10,5 %
2.000.000-3.000.000	9	9,5 %
3.000.000-5.000.000	26	27,4 %
>5.000.000	43	45,3%
Total	95	100%

Source: Primary Data Processed (2022)

Table 6 outlines the characteristics of Pia Cap Mangkok consumers based on their income levels. The majority of consumers (45.3%) have a monthly income of more than IDR 5,000,000. The second-highest proportion of consumers (27.4%) has an income range of IDR 3,000,000 to IDR 5,000,000 per month. In contrast, only a small proportion of consumers (7.4%) have an income of less than IDR 1,000,000 per month.

Consumer Satisfaction

Consumer satisfaction refers to the perception of customers regarding whether their expectations have been met or exceeded and whether they feel content with the purchased product. Satisfied consumers believe that they have received value from the product or service. The Customer Satisfaction Index (CSI) method is used to analyze and measure customer satisfaction. This method serves as a reference for determining future goals and decision-making (Indrajaya, 2018).

The study conducted an analysis of customer satisfaction for Pia Cap Mangkok using the Customer Satisfaction Index (CSI) method, which measures the extent to which consumers feel that their expectations have been met and they are content with their purchase. The results of the analysis are presented in Table 7, where the CSI score for Pia Cap Mangkok is calculated to be 74.44%. This score falls within the "Satisfied" criteria with a range of 0.66-0.80, as noted in previous studies (Aritonang, 2005; Martilla & James, 1977). However, it is important to note that 25.56% of consumers are still unsatisfied, indicating a need for Pia Cap Mangkok to continue improving its performance and tracking the attributes that are most important to consumers. Moreover, the level of satisfaction may vary depending on the individual importance of each attribute.

Table 7. The Calculation Results of Customer Satisfaction Index (CSI) for Pia Cap Mangkok

Indicator	*Mean Importance Score* (MIS)	*Mean Satisfaction Score* (MSS)	*Weight Factors* (WF)	*Weight Score* (WS)
1	4,02	3,97	5,17	20,52
2	3,97	3,87	5,10	19,76
3	3,63	3,61	4,67	16,86
4	3,75	3,69	4,82	17,80
5	3,76	3,66	4,83	17,70
6	3,49	3,55	4,49	15,94
7	3,38	3,49	4,34	15,18
8	3,39	3,51	4,36	15,28
9	3,57	3,58	4,59	16,42
10	3,80	3,80	4,89	18,57
11	3,76	3,78	4,83	18,26
12	3,65	3,57	4,70	16,76
13	3,44	3,44	4,43	15,23
14	3,49	3,65	4,49	16,41

Indicator	*Mean Importance Score* (MIS)	*Mean Satisfaction Score* (MSS)	*Weight Factors* (WF)	*Weight Score* (WS)
15	3,76	3,73	4,83	18,00
16	3,77	3,74	4,84	18,10
17	3,82	3,88	4,91	19,08
18	3,78	3,83	4,86	18,62
19	3,86	3,87	4,97	19,24
20	3,82	3,84	4,91	18,87
21	3,86	3,95	4,97	19,61
Total	77,78	78,02	100%	
Weight Total (WT)				372,20
***Customer Satisfaction Index* (CSI)**				**74,44**

Source: Primary Data Processed (2022)

Although the Pia Cap Mangkok consumers have shown satisfaction based on the given criteria, the company should still aim to enhance its performance, as 25.56% of consumers are still dissatisfied. Durianto (2004) suggests that the CSI value can be increased by improving the performance of its attributes through the results of Importance Performance Analysis (IPA) analysis. The improvements identified through the IPA analysis are expected to increase the CSI value to 100%, thereby achieving maximum customer satisfaction.
To measure customer satisfaction related to the services provided or received, various techniques can be used, such as Importance Performance Analysis (IPA) and Cartesian diagram quadrant analysis. The fundamental concept of IPA is to evaluate the importance of understanding customer desires for the services provided and how well producers perform them (Riyanto, 2012). The technique uses a Cartesian diagram divided into four quadrants to prioritize improvements. Table 8 shows the results of the importance and performance value analysis of Pia Cap Mangkok's attributes. The position of the attributes is determined by the average value of importance and performance levels. The IPA analysis results can guide companies in improving their strategies to enhance effectiveness (Mohebifar, 2016).

Table 8. Average Value of Importance and Performance Value of Pia Cap Mangkok

No	Indicator	Level of Performance	Level of Importance	GAP
1	Variety of Flavors Available	3.97	4.02	-0,05
2	Flavor Profile of Pia	3.87	3.97	-0,09
3	Aroma of Pia	3.61	3.63	-0,02
4	Quality of Pia	3.69	3.75	-0,05
5	Packaging of Pia	3.66	3.76	-0,09
6	Expiry Date of Pia	3.55	3.49	0,05
7	Price of Pia	3.49	3.38	0,12
8	Discounted Prices	3.51	3.39	0,12
9	Convenient Location	3.58	3.57	0,01
10	Comfortable Atmosphere	3.80	3.80	0,00
11	Hygiene And Cleanliness	3.78	3.76	0,02
12	Promotions on Special Occasions	3.57	3.65	-0,08
13	Advertisements on Banners	3.44	3.44	0,00
14	Social Media Marketing	3.65	3.49	0,16
15	Prompt Service by Servers	3.73	3.76	-0,03
16	Servers Providing Information about the Product	3.74	3.77	-0,03
17	Friendly Demeanor of Servers	3.88	3.82	0,06
18	Efficient Customer Service	3.83	3.78	0,05
19	Ordering Process	3.87	3.86	0,01
20	Interior Decoration of The Room	3.84	3.82	0,02
21	Well-Dressed Servers	3.95	3.86	0,08
Average		**3,72**	**3,70**	**0,01**

Source: Primary Data Processed (2022)

Gap analysis is a technique used to identify the difference between the level of performance and customer expectations (Karimah et al., 2021). As presented in Table 8, the results of the gap analysis indicate a positive difference of 0.01 between the performance level and the level of customer interest. This suggests that the perceived level of performance by customers is higher than their level of interest (performance > importance), as indicated by a score of 3.72 > 3.70. This finding is consistent with the study conducted by Pratiwi and Yuliawati (2019), which also revealed a similar pattern of performance > importance. This implies that the services provided are highly attuned to customer interests and are able to deliver high levels of

satisfaction. Overall, the small positive gap score of 0.01 indicates that customers are satisfied with the performance, and there is little room for improvement.

To increase the customer satisfaction index to approach 100%, it is important to focus on improving attributes that are more important to customers but have a low level of performance. The Importance Performance Analysis (IPA) method can be used to prioritize the improvements needed for these attributes. This technique uses a Cartesian Diagram with four quadrants to show improvement priorities, based on the average values of the importance level and performance level of each attribute. As shown in Table 8, the average level of importance is rated at 3.70, while the average level of performance is 3.72. These values serve as the center line for the IPA Cartesian line, which is then divided into four quadrants.

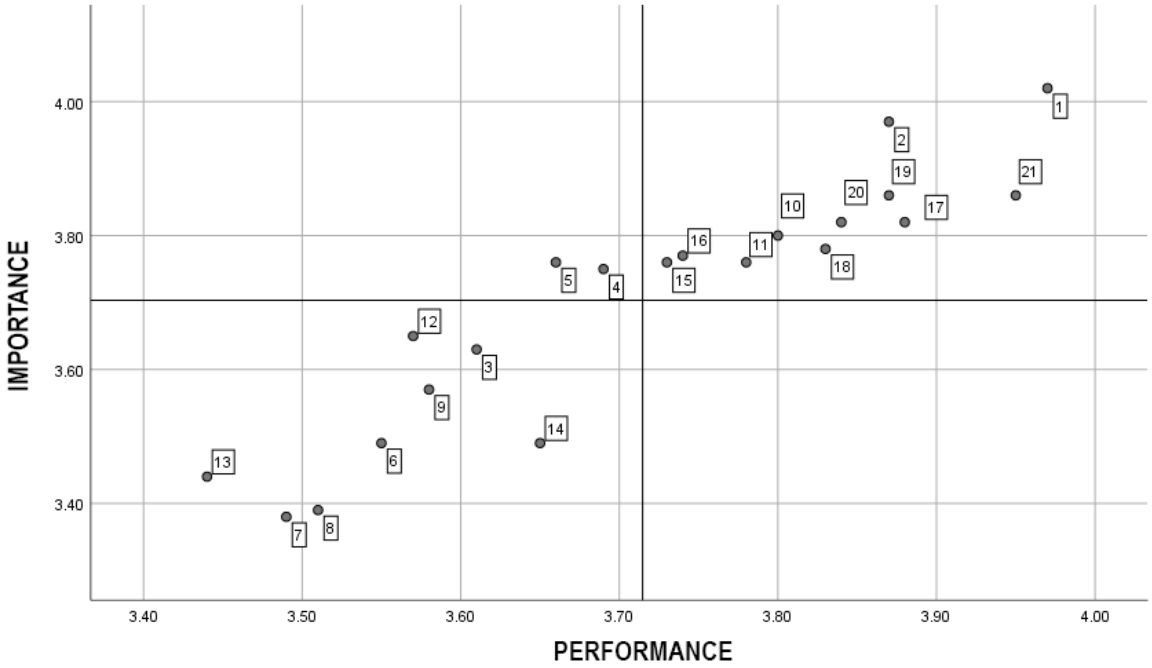

Figure 2. Cartesians Diagram (IPA) of Pia Cap Mangkok
Source: Primary Data Processed, 2022

Where:

1	Variety of Flavors Available	12	Promotions on Special Occasions
2	Flavor Profile of Pia	13	Advertisements on Banners
3	Aroma of Pia	14	Social Media Marketing
4	Quality of Pia	15	Prompt Service by Servers
5	Packaging of Pia	16	Servers Providing Information about the Product
6	Expiry Date of Pia	17	Friendly Demeanor of Servers
7	Price of Pia	18	Efficient Customer Service
8	Discounted Prices	19	Ordering Process
9	Convenient Location	20	Interior Decoration of The Room
10	Comfortable Atmosphere	21	Well-Dressed Servers
11	Hygiene And Cleanliness		

Quadrant I (Concentrate here) on the IPA Cartesian diagram reveals the level of importance of a product attribute that consumers consider very important, but the performance shown is not optimal. For Pia Cap Mangkok, improving the performance of quality attributes of pia and pia packaging is a top priority to meet and increase customer satisfaction in this quadrant (Concentrate here).

Quadrant II (Keep Up the Good Work) on the Importance Performance Analysis (IPA) Cartesian diagram contains attributes considered necessary by consumers, and their performance level follows consumer expectations. Therefore, the Pia Cap Mangkok company must be able to maintain these attributes. The details included in this quadrant, such as the choice of taste, Pia flavor, comfortable atmosphere, cleanliness, prompt service by servers, product explanations by servers, friendly servers, skilled servers, order process, room decoration, and well-dressed servers, are essential to maintain customer satisfaction.

Quadrant III (Low Priority) on the Importance Performance Analysis (IPA) Cartesian diagram includes attributes that are perceived as less important by consumers, but their performance level is deemed sufficient. The attributes that fall into this quadrant for Pia Cap Mangkok are pia aroma, expiration date, pia price, price discount, strategic location, promotion on banners, promotion on social media, and special day promotion.

Quadrant IV (Possible Overkill) on the Importance Performance Analysis (IPA) Cartesian diagram represents attributes that are perceived by consumers as less important, but the level of performance is perceived as excessive. The findings of this research indicate that none of the attributes evaluated in this study fall into quadrant IV.

Consumer Loyalty

The assessment of consumer loyalty to Pia Cap Mangkok's quality is based on several loyalty criteria, namely the price factor (switcher/price buyer), the habit factor (habitual buyer), the satisfaction factor (satisfied buyer), the consumers' affinity for the brand (liking the brand), and the consumers who recommend others to purchase Pia Cap Mangkok products (committed buyer).

***Switcher buyer*,** who purchase Pia products at Pia Cap Mangkok due to the price factor, constitute 28% of the respondents who agreed or strongly agreed with this statement. However, the majority of the respondents are not price sensitive as they have a monthly income exceeding IDR 5,000,000, indicating that price may not be the primary driver of their purchase decision at Pia Cap Mangkok.

The ***Habitual Buyer*** segment comprises consumers who purchase Pia Cap Mangkok products out of habit. This group constitutes 16% of the respondents who answered "agree" and "strongly agree." Notably, most respondents did not identify habit as a primary reason for buying Pia Cap Mangkok products, likely due to the fact that pia is not a staple food commonly consumed by consumers.

Satisfied Buyer are the consumers who buy pia products at Pia Cap Mangkok because they are satisfied. According to the research results, 85 percent of the respondents agreed and strongly agreed that they buy Pia Cap Mangkok because they are satisfied with the product.

Liking The Brand is a level of consumer loyalty where consumers buy Pia Cap Mangkok products because they like the brand. As many as 85 percent of consumers fall into this level, indicating that they buy Pia Cap Mangkok products because they "agree" or "strongly agree" that they like the brand. Respondents who have a liking for this brand are more likely to make continuous purchases.

Committed Buyer namely consumers who answer "agree" and "strongly agree," are those who will continue to buy and promote Pia Cap Mangkok products to others, comprising 58 percent of the respondents.

The results of the Pia Cap Mangkok consumer loyalty research can be illustrated in Figure 3, which takes the form of a Loyalty Pyramid.

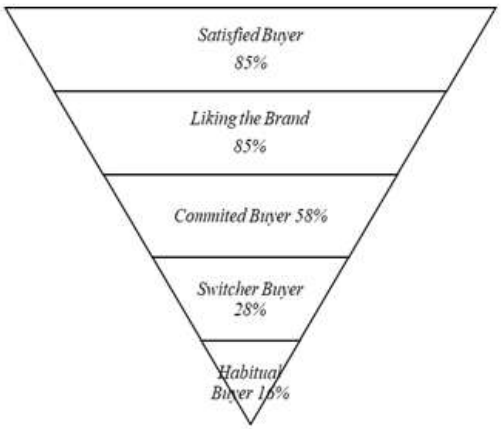

Figure 3. Pyramids can be created based on the results of research.
Source: Primary Data Processed (2022)

The research findings demonstrate that consumers of Pia Cap Mangkok are not only satisfied but also loyal, as reflected in the highest percentage of respondents. Consumers perceive that Pia Cap Mangkok is executing the marketing mix effectively. The inverted pyramid of the research results reveals that satisfied buyers comprise the top level, with a total percentage of 85%, signifying that most consumers are satisfied and loyal to Pia Cap Mangkok products. These results diverge from those presented by Evan and Wicaksana (2014), who positioned satisfied buyers of Starbucks at the third level.

Consumers who are habitual buyers of Pia Cap Mangkok are those who purchase the product out of habit. However, the number of respondents who disagreed in this level was quite significant with 43 respondents, leading to an imbalance in the loyalty pyramid. On the other hand, at the committed buyer level, seven respondents disagreed as they preferred other brands besides Pia Cap Mangkok despite liking the product.
According to Sakinah and Suhardi (2018), the level of trust that consumers have in a brand is a significant factor that influences the relationship between consumers and the brand. When consumers trust a brand, they tend to have high expectations of the brand.

CONCLUSION

Based on the findings of this research, it can be concluded that the majority of consumers are satisfied with Pia Cap Mangkok, with 74.44% falling into the "satisfied" category according to the Customer Satisfaction Index (CSI) method used to measure satisfaction across 21 attributes. The Importance Performance Analysis (IPA) identified several attributes that are important to consumers and require maintenance, including taste, flavor, atmosphere, cleanliness, and service-related aspects such as the speed, friendliness, and competence of waiters. However, the quality of pia and packaging were identified as areas for improvement. The loyalty pyramid analysis revealed that the majority of consumers are satisfied (85%) and like the brand (85%), with committed buyers making up 58% of the sample. A smaller percentage of consumers fell into the switcher buyer (28%) and habitual buyer (16%) categories. In order to enhance customer satisfaction, Pia Cap Mangkok should focus on improving the quality of their products and packaging.

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Research Article

Sweetening the Deal: Investigating the Impact of Product Quality and Price on Honey Purchase Behavior at PT Kembang Joyo Sriwijaya, Malang

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ABSTRACT

Consumer purchasing decisions are complex individual processes that involve numerous considerations before making a purchase. Product quality and price are two significant factors that influence consumer purchasing decisions. Understanding the influence of these factors is crucial for businesses seeking to improve their sales and meet the expectations of their customers. This study aims to investigate the impact of product quality and price on consumer purchasing decisions for honey at PT Kembang Joyo Sriwijaya Malang. The study employed a quantitative research design, using accidental sampling to select consumers who had purchased honey from the store more than once. Data was collected from 75 respondents, and structural equation modeling (SEM-PLS) was used to analyze the data. The analysis involved examining the relationship between product quality and price with consumer purchasing decisions. The findings of the study showed that product quality and price had a significant positive effect on consumer purchasing decisions. Product quality had a positive relationship with purchasing decisions, influencing 20.6% of the variance (path coefficient=0.206, t-statistic=2.410, p-value=0.016). Price had a stronger positive relationship, influencing 65.4% of the variance (path coefficient=0.654, t-statistic=10.534, p-value=0.000). These results suggest that both product quality and price are essential factors to consider when seeking to improve sales and meet customer expectations in the honey market at PT Kembang Joyo Sriwijaya Malang.

INTRODUCTION

The process of making purchasing decisions is a crucial aspect of consumer behavior. Alma (2015) defines purchasing decisions as an internal process that leads individuals to purchase products with the intention of achieving satisfaction from their consumption. Conversely, Devi (2019) views buying decisions as a manifestation of consumer behavior in product use, wherein consumers tend to choose products with superior quality based on attributes such as features, price, design, packaging, branding, labeling, service support, and product line decisions. One of the most critical factors that consumers must consider when making purchasing

decisions is the quality of the products they intend to purchase. Tjiptono (2008) states that good product quality can positively impact purchasing decisions, as consumers tend to choose products that meet their expected quality standards. Additionally, price also plays a crucial role in the purchasing decision, as it represents the amount consumers are willing to pay for the product. The seller's price, in turn, reflects the value of the product being offered to consumers (Saufi, 2018). To remain competitive, companies must be aware of their current and future consumers' needs and expectations. Consumers, on the other hand, must undergo several stages before arriving at a purchase decision, which includes seeking information through various sources, comparing different products, and evaluating their options (Fitriani et al. 2020).

As time progressed, the trend of consuming food and products that prioritize both taste and health benefits has increased, including the consumption of honey. However, honey was not initially favored by Indonesians, as evidenced by its low consumption rate. This is due to the common misconception that honey is only useful for medicinal purposes. Moreover, the quality of honey available in the market is often not guaranteed, which is one of the primary reasons why consumers are hesitant to purchase honey products. Beekeepers who produce honey often employ marketing strategies that involve selling their products directly to consumers in bulk or bottled form. However, their products are often packaged unattractively and lack specific trademarks regarding shape and size. According to Tjiptono (2008), good product quality can positively influence consumers' purchasing decisions, as it aligns with their expectations of the product's quality.

PT Kembang Joyo Sriwijaya produces high-quality honey and has implemented strict processes to maintain its purity and authenticity. The company's honey products are popular among the public, especially in Malang City, for their health benefits. PT Kembang Joyo Sriwijaya places significant emphasis on the evaluation criteria for its honey products, specifically on their authenticity, and has implemented a continuous system to ensure consistency. The community in Malang, Indonesia, has recognized the quality of PT Kembang Joyo Sriwijaya's honey, leading to an increase in purchases of their products. The company markets its products through various channels, including Shopee, Tokopedia, Bukalapak, Lazada, Instagram, and Facebook, reaching consumers throughout Indonesia. To remain competitive in the market, PT Kembang Joyo Sriwijaya conducts daily production activities and continuously optimizes its products. Therefore, this research aims to investigate the effect of product quality and price on consumers' purchasing decisions for honey products at PT Kembang Joyo Sriwijaya in Malang City.

METHOD

The present study aimed to investigate the purchasing decisions of consumers who bought honey at PT Kembang Joyo Sriwijaya. The sampling technique employed in this study was accidental sampling, which is a non-probability sampling technique in which individuals who happen to be available at the time of data collection are included as participants (Sugiyono, 2015). The data collection methods used in this study were questionnaires, observations, interviews, and documentation. The sample consisted of consumers who had purchased honey from PT Kembang Joyo Sriwijaya Malang more than once. The sample size was determined using Hair's formula (Hair et al., 2017) as the population size was unknown. The formula recommends a sample size that is 5-10 times the number of indicators, and based on this, a sample size of 75 respondents was obtained. The collected data was analyzed using Structural Equation Modeling (SEM) through smartPLS 3.0 software, which was used to test the relationships between the variables in the proposed model.

RESULTS AND DISCUSSION

Research Hypothesis Testing

Validity Test

Convergent validity is a crucial aspect of construct validation, which involves assessing the correlation between each indicator and the construct. To establish the validity of the indicators, a correlation value of above 0.70 is considered acceptable. As recommended by Ghozali and Latan (2015), indicators with factor loading values above 0.70 are considered valid. To assess the validity of the indicators in the current study, the factor loading values were obtained from the outer loading table in SmartPLS 3.0, and the results are presented in the following table:

Table 1. Outer Loading

	X1	X2	Y
X1.1	0.710		
X1.2	0.751		
X1.3	0.711		
X1.4	0.800		
X1.5	0.704		
X2.1		0.775	
X2.2		0.728	
X2.3		0.728	
X2.4		0.770	
Y1.1			0.747
Y1.2			0.710
Y1.3			0.726
Y1.4			0.744
Y1.5			0.731
Y1.6			0.718

Source: Primary Data Processed (2022)

The convergence validity assessment of the study is displayed in Table 1, indicating that the outer loading values have met the requisite criteria for validity. The results demonstrate that the factor loading values are higher than 0.70, suggesting that the indicators on each variable are valid as they satisfy the loading factor criteria.

Discriminant Validity Test

The evaluation of discriminant validity involves analyzing the cross-loading between indicators and their respective constructs. A construct's validity is established if the correlation between the construct and its measurement item is larger than the correlation with other constructs. This indicates that the construct predicts the variance of the corresponding block more accurately than it predicts the variance of other blocks. As per Primabudi (2017), cross-loading analysis expects each indicator block to exhibit a higher loading for its corresponding latent variable than for the indicators of other latent variables. The outcomes of the cross-loading analysis are presented below.

Table 2. Cross Loading

	X1	X2	Y
X1.1	0.710	0.189	0.201
X1.2	0.751	0.114	0.164
X1.3	0.711	0.187	0.293
X1.4	0.800	0.136	0.373
X1.5	0.704	0.336	0.259
X2.1	0.164	0.775	0.570
X2.2	0.250	0.728	0.408
X2.3	0.203	0.728	0.356
X2.4	0.190	0.770	0.675
Y1.1	0.199	0.452	0.747
Y1.2	0.472	0.470	0.710
Y1.3	0.481	0.359	0.726
Y1.4	0.186	0.698	0.744
Y1.5	0.177	0.565	0.731
Y1.6	0.157	0.467	0.718

Source: Primary Data Processed, 2022

Table 2 displays the factor loading values for each indicator of the latent variable, indicating the degree to which the indicator correlates with its corresponding construct. The discriminant validity can be evaluated by comparing the loading values of each indicator associated with its corresponding construct and those associated with other constructs. As stated by Primabudi (2017), the indicator block is expected to have a higher loading for its corresponding latent variable than for other latent variables. The results suggest that each latent variable exhibits good discriminant validity, as the loading values for each indicator are greater when associated with their corresponding construct than with other constructs. This finding indicates that the latent variables possess measures that are highly correlated with their respective constructs, or in other words, the discriminant validity is achieved at the indicator level.

Outer Loading

In the bootstrapping results, the outer loading value represents the correlation between the indicators and the latent variables, and it is evaluated through the p-value to determine the significance of each indicator. If an indicator is found to be invalid, it should be removed from the loading factor value, and the calculation must be repeated. The validity of the indicators is presented in the outer loading table, which includes loading factors that indicate the strength of the correlation between the indicators and the latent variables. To be considered valid, the loading factor value must be higher than 0.7 (Trenggonowati & Kulsum, 2018). The following section presents the outer loading table along with their corresponding p-values.

Table 3. Outer Loading (P-Value)

	Sampel Asli	Sampel Mean	Standar Deviasi	T Statistik	P Value
X1.1 <- X1	0.710	0.676	0.115	6.159	0.000
X1.2 <- X1	0.751	0.717	0.119	6.296	0.000
X1.3 <- X1	0.711	0.691	0.123	5.796	0.000
X1.4 <- X1	0.800	0.802	0.082	9.718	0.000
X1.5 <- X1	0.704	0.685	0.128	5.489	0.000
X2.1 <- X2	0.775	0.771	0.051	15.320	0.000
X2.2 <- X2	0.728	0.720	0.085	8.613	0.000
X2.3 <- X2	0.728	0.725	0.087	8.411	0.000
X2.4 <- X2	0.770	0.775	0.045	17.299	0.000
Y1.1 <- Y	0.747	0.745	0.059	12.690	0.000
Y1.2 <- Y	0.710	0.710	0.071	10.005	0.000
Y1.3 <- Y	0.726	0.730	0.054	13.521	0.000
Y1.4 <- Y	0.744	0.744	0.059	12.656	0.000
Y1.5 <- Y	0.731	0.728	0.074	9.839	0.000
Y1.6 <- Y	0.718	0.712	0.081	8.905	0.000

Source: Primary Data Processed (2022)

Table 3 presents the results of the validity tests, which include construct validity, discriminant validity, and bootstrapping loading (p-value). Invalid indicators should be removed from the loading factor, and the factor should be recalculated. This finding aligns with prior research by Jumardi et al. (2015). The loading factor values for all indicators on each construct exceeded the 0.7 threshold, indicating that convergent validity was achieved.

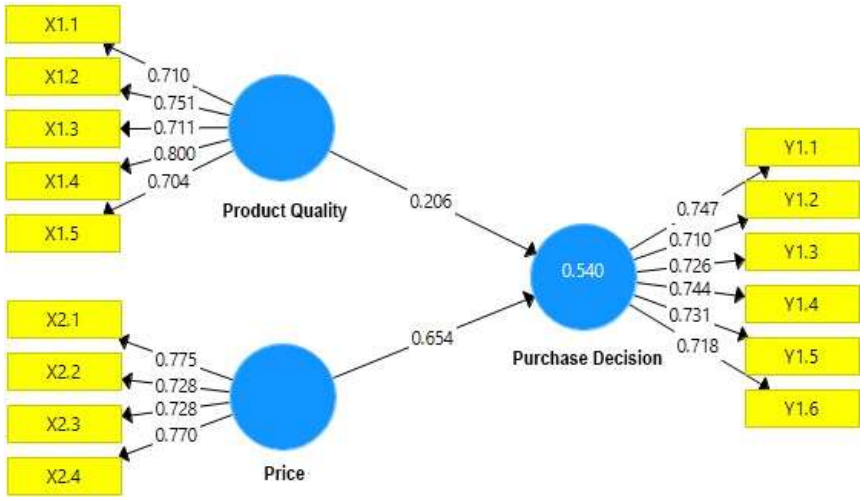

Figure 1. SEM Analysis Results
Source: Primary Data Processed (2022)

Outer Model

The outer model for exogenous latent variables of Product Quality (X1) in the basic equation model can be observed. The model in the figure presents the effect value of product quality (X1) from each indicator, including X1.1 (71.0%), X1.2 (75.1%), X1.3 (71.1%), X1.4 (80.0%), and X1.5 (70.4%).

The basic equation model for the outer model of the exogenous latent variable, namely Price (X2), is presented in the figure. The results indicate that the effect value of price is 77.5% for indicator X2.1, 72.8% for indicator X2.2, 72.8% for indicator X2.3, and 77.0% for indicator X2.4.

The outer model basic equation model for the latent variable Purchase Decision (Y) is presented in the figure. The impact of Purchase Decision (Y) can be explained by its effect on indicator Y1.1, which is 74.7%, Y1.2 is 71.0%, Y1.3 is 72.6%, Y1.4 is 74.4%, Y1.5 is 73.1%, and Y1.6 is 71.8%.

Construct Reliability Test

The construct reliability test aims to assess the level of reliability of the research variables. To evaluate reliability, composite values of the construct are examined. The measurement is considered reliable when it has a Cronbach's alpha coefficient and composite reliability of over 0.6, as stated by Ghozali and Latan (2015). Table 4 presents the values of Cronbach's alpha and composite reliability:

Table 4. Cronbach's Alpha dan Composite Reliability

Construct	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
X1	0.796	0.774	0.838	0.564
X2	0.752	0.832	0.872	0.532
Y	0.825	0.819	0.855	0.542

Source: Primary Data Processed (2022)

Table 4 presents the Cronbach's alpha and composite reliability values for the X1, X2, and Y variables. The values are above 0.6, indicating the variables' reliability. The structural model aims to assess the relationship between variables and the constructs they represent, as proposed by Junianto et al. (2020).

Hypothesis Test (Path Coefficient)

To determine the significance of the relationship between variables, it is necessary to use a bootstrapping procedure. This procedure involves resampling the entire original sample. The research hypothesis can be deemed valid if the P value is less than 0.05 or the T statistic is greater than 1.96 (Parhusip et al., 2021).

Table 5. Path Coefficient Test

	Original Sample	Sampel Mean	Standard Deviation	T Statistic	P Value
X1 => Y	0.206	0,220	0,085	2.410	0.016
X2 => Y	0.654	0,659	0,063	10.534	0.000

Source: Primary Data Processed (2022)

According to the results presented in Table 5, the following conclusions can be drawn:

1. The effect of product quality on consumer purchasing decisions is positive and significant, as evidenced by a p-value of 0.016, which is less than the significance level of 0.05, and a t-statistic of 2.410, which is greater than 1.96. The original sample (path coefficient) value of 0.206 indicates a positive relationship direction. These findings suggest that consumers are satisfied with the product quality in terms of its shape, style, durability, suitability, and characteristics.
2. Price also has a positive and significant impact on consumer purchasing decisions, as indicated by a p-value of 0.000, which is less than the significance level of 0.05, and a t-statistic of 10.534, which is greater than 1.96. The original sample (path coefficient) value of 0.654 indicates a positive relationship direction. These results suggest that consumers are satisfied with the price in terms of its compatibility with product quality, affordability, benefits, and competitiveness.

Basic Equations of the Inner Model

The equation formula used in a study with smartPLS can be stated generally as follows:

$$Y = aX1 + bX2 + e$$

Where:

Y = variation in consumer decisions
a,b = coefficient of influence of exogenous variables on endogenous variables
X1 = product quality variable
X2 = price variable
e = model error

Table 6 displays the results of the original sample test for path coefficients. The coefficient values for product quality (X1) and price (X2) are 0.206 and 0.654, respectively. Hence, the equation can be expressed as follows:

$$Y= 0.206X1 + 0,654X2+ e$$

Based on the data presented in the research, it can be concluded that:

1. the product quality coefficient of 0.206 indicates that product quality (X1) has the capacity to explain consumer decisions (Y) by 0.206 or 20.6%.
2. the price coefficient of 0.654 illustrates that the price variable (X2) can explain 65.4% of consumer decisions (Y).

Structural Model Evaluation

Structural model evaluation involves three methods, including analyzing the R-square value, Model Fit, and F-square test results as outlined below:

Results of Adjusted R-square Test

The R-square value measures the predictive power of the structural model for each endogenous latent variable. Any changes in the R-square value can be utilized to understand the impact of specific exogenous latent variables on endogenous latent variables that have a significant effect. The model strength can be determined by the R-square values of 0.67, 0.33, and 0.19, which signify strong, moderate, and weak models, respectively (Imam, 2009). A higher R-square value indicates a better predictive model for the proposed research model.

Table 6. R-square Test

	R-square	Adjusted R-square
Y	0.540	0.527

Source: Primary Data Processed (2022)

According to Table 6, the adjusted R-square value is 0.527, indicating that 52.7% of the variation in the consumer decision variable can be explained by the independent variables of product quality and price. Therefore, it can be inferred that both product quality and price significantly influence consumer purchasing decisions.

1. Results of Model Fit Test (NFI)

To test the fitness of the model, the Normed Fit Index (NFI) is employed. The NFI is a measure of how well the model fits the base or zero. If the value of NFI exceeds 0.957, it indicates that the model fits well in comparison to the baseline.

2. Model Fit Test (NFI)

According to the results of the model fit test, the Normed Fit Index (NFI) value is 0.524, which is below the cut off value of 0.957. Therefore, it can be concluded that the model is not a good fit, indicating that it is unable to accurately represent the observed data.

3. Results of F-square Test

The f-square test is used to determine if there is a combined influence on the dependent variable. This test measures the relative impact of an exogenous variable on an endogenous variable. As explained by Jufrizen and Lubis (2020), it is a useful measure for assessing the influence of an independent variable on the dependent variable.

Table 7. F-square Test

	X1	X2	Y
X1			0,086
X2			0,865
Y			

Source: Primary Data Processed (2022)

Table 7 presents the influence of product quality (X1) and price (X2) on consumer decisions (Y). The f-square values indicate the relative impact of the independent variables on the dependent variable. The results show that the effect of product quality (X1) on consumer decisions (Y) is 0.086, indicating a moderate influence as the f-square value is greater than 0.02. Similarly, the effect of price (X2) on consumer decisions (Y) is 0.865, which also has a moderate influence as the f-square value is greater than 0.02.

The Effect of Product Quality on Purchasing Decisions

The Path Coefficient Test reveals that product quality has a significant influence on purchasing decisions. The p-value of 0.016, which is less than the significance level of 0.05, and the t-statistic of 2.410, which is greater than the critical value of 1.96, indicate that product quality positively and significantly affects purchasing decisions. The path coefficient value of 0.206, obtained from the original sample, demonstrates that product quality (X1) can explain 20.6% of the variance in purchasing decisions (Y) in a positive direction. These results provide evidence that product quality significantly influences purchasing decisions, implying that product quality has a direct impact on purchasing decisions. Consumers tend to make faster and more stable purchasing decisions when the product packaging is diverse in form and size, visually appealing, has a longer storage period, appropriate specifications, and is environmentally friendly.

Honey product from PT Kembang Joyo Sriwijaya has a competitive advantage over other honey products sold in the market due to its appealing characteristics. Unlike other honey products that are packaged in unattractive bottles or sold in bulk without a particular brand, shape, or size, PT Kembang Joyo Sriwijaya honey is guaranteed to be hygienic and superior in quality. Consumers not only purchase products but also consider the benefits and uses of the products. The proposed questionnaire indicators for product quality variables include various types of honey with distinct shapes and sizes, attractive product packaging, extended shelf life, clear specifications of the benefits provided, and environmentally friendly packaging for each product.

The present study provides evidence supporting the acceptance of H1 and rejection of H0, indicating that product quality has a positive and significant influence on honey purchasing decisions at PT Kembang Joyo Sriwijaya. Therefore, product quality has a strong impact on consumers' purchasing decisions for honey products. These findings are consistent with previous research by Kurniawan and Mashariono (2021) and Kiswanto et al. (2019), indicating that product quality is an essential factor affecting purchasing decisions. Consumers prefer high-quality honey products that meet their needs and preferences. The better the quality of the products, the more likely consumers will decide to purchase them, especially for basic needs products like food and beverages (Tedjakusuma et al., 2001).

The Effect of Price on Purchasing Decisions

The results of the Path Coefficient Test indicate a significant effect of price on purchasing decisions. The statistical analysis revealed a p-value of 0.000, which is less than the significance level of 0.05, and a t-statistic of 10.534, exceeding the critical value of 1.96. The original sample value (path coefficient) of 0.654 indicates a strong positive relationship between price (X1) and purchasing decisions (Y), with price explaining 65.4% of the variation in purchasing decisions. These findings demonstrate that price is a crucial factor that influences purchasing decisions of honey products. The results are consistent with prior research by Kiswanto et al. (2019), which reported a significant effect of price on purchasing decisions. Consumers tend to consider price when making purchasing decisions, especially for basic needs such as food and drinks (Tedjakusuma et al., 2001).

The determination of the intended target market can be based on the price of the product. For PT Kembang Joyo Sriwijaya, the target market is middle-class consumers, hence the price of its honey products is relatively affordable, ranging from 15,000 to 200,000 Rupiah. These prices are in line with consumer expectations and purchasing power, and they can compete with similar products in the market. The findings from the questionnaire indicate that the price matching the quality, affordability, and benefits positively influences consumers' purchasing decisions. A competitive price also has a significant effect on increasing consumer purchasing decisions. According to Virawan (2013), price is the amount of money consumers pay to obtain goods and services from the party offering them.

In the context of PT Kembang Joyo Sriwijaya, price sensitivity is influenced by the perceived differentiation between competing products. In situations where products are seen as similar, consumers tend to choose the product with the lowest cost. The level of information provided to consumers regarding competing products and their respective prices directly affects their price sensitivity. When consumers are presented with simple comparisons of product options, it enables them to assess the value of different products and decide on their

willingness to pay. Therefore, price is a key factor influencing purchasing decisions at PT Kembang Joyo Sriwijaya. Kotler and Armstrong (2008) suggest that consumers seek products that offer them the best value in terms of benefits received for the price paid.

The present study provides evidence to support the acceptance of H2 and rejection of H0, indicating that price positively and significantly affects honey purchasing decisions at PT Kembang Joyo Sriwijaya. These results demonstrate that the price variable is a key determinant of honey purchasing decisions among consumers of PT Kembang Joyo Sriwijaya. Consistent with prior research, Firmansyah (2019) reported a positive and significant effect of price on purchasing decisions, with affordability being the most accepted aspect of price among consumers. Similarly, Safitri and Nani (2021) found a significant positive effect of price on purchasing decisions.

CONCLUSION

Based on the results of the research conducted at PT Kembang Joyo Sriwijaya Malang, it can be concluded that both product quality and price have a positive and significant impact on honey purchasing decisions. The study shows that product quality significantly influences consumers' purchasing decisions, as consumers tend to buy high-quality honey products. Similarly, price also significantly affects consumers' purchasing decisions, as consumers are more likely to purchase products that are affordable and provide good value for the price. The findings of this study are consistent with previous research that has shown the importance of product quality and price in consumer purchasing decisions. Overall, these results can be used by PT Kembang Joyo Sriwijaya Malang to develop effective marketing strategies that emphasize product quality and price to attract and retain customers.

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Research Article

Empowering Peatland Farmers: Exploring the Role of Farmer Participation in Enhancing the Quality of Honey Pineapple Commodities

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ABSTRACT

The participation of farmers in agricultural development has been identified as a crucial component for the transfer of knowledge and technology. Access to information on innovative agricultural practices is essential for farmers to implement procedures that support farming. Although active participation can take various forms, physical involvement is not the sole determinant of successful participation. Peatland honey pineapple cultivation has been a long-standing practice, and its production has experienced fluctuations over the years. The decline in honey pineapple production from 2017 onwards poses a challenge for both farmers and the district government, given the crop's potential for development in Galang Village, Mempawah Regency. This research study utilized a sample of 73 individuals and collected data through interviews, observations, and available references. Both quantitative and qualitative analyses were conducted to examine the level of farmers' participation in the development of honey pineapple commodities across three stages: participation, implementation, and evaluation. The study revealed that farmers' participation in the development of honey pineapple commodities at the participation stage fell into the independent category (1.43 >1.96), while at the implementation and evaluation stages, it entered the independent category, with values of 5.29 (>1.96) and 2.96 (>1.96), respectively. Age, education level, and length of farming experience were identified as factors that influenced farmers' participation in the development of honey pineapple commodities.

INTRODUCTION

The agricultural sector is a cornerstone of the Indonesian economy, given the country's reliance on agriculture as a primary source of livelihood for a majority of its population. The agrarian horticultural sector, which encompasses a range of commodities such as vegetables, fruits, ornamental plants, and biopharma plants, is a vital component of this sector and presents significant investment opportunities. Fruits, in particular, play a crucial role in ensuring a balanced diet for individuals, as they constitute an essential component of the food pyramid.

Pineapple (*Ananas comosus (L.) Merr*) is a high-priority horticultural commodity for development due to its potential profitability and capacity to genelevel income for farmers. It is one of the tropical fruits with a significant economic value, ranking as the third-largest producer worldwide after bananas and oranges (Bartholomew et al., 2003). In West Kalimantan Province, pineapple is the second-most produced fruit commodity after *siamese tangerine*, with a total output of 126,502 tons. Pineapple alone has a production of 72,504 tons, followed by banana with a production of 59,776 tons.

Agricultural development participation serves as a bridge between farmers' practices and the knowledge and technology required to meet their evolving needs (Kartasapoetra, 2002). In order to implement effective farming practices, farmers must be informed about innovations in agriculture (Shodiq, 2022). Participation is not limited to physical involvement alone, as it encompasses a person's mental engagement, thoughts, and emotions in a group setting that motivates them to contribute to achieving common goals and take responsibility for the group's efforts.

Honey pineapple cultivation has been a longstanding practice in peatlands. Its production had been steadily increasing in the past five years, from 2013 to 2016, before declining in 2017. This decline poses a significant challenge for honey pineapple farmers and the district government, as honey pineapple has the potential to be a major commodity in Galang Village, Mempawah Regency. Encouraging community involvement in honey pineapple farming is one way to tackle this issue and further develop the commodity. Given these circumstances, the present study aims to investigate Farmer Participation in the Development of Leading Commodities in Peatlands.

METHOD

This study aims at assessing the extent of participation among honey pineapple farmers in Mempawah Regency. The primary research approach used in this study is the descriptive analysis method, which involves gathering, organizing, and analyzing data to provide a comprehensive depiction of the population. The descriptive method entails identifying factual evidence and interpreting it acculevelly. Descriptive research is utilized to investigate societal issues, practices employed in society, and various scenarios, including the interrelationships, activities, attitudes, perspectives, ongoing processes, and influences related to a given phenomenon.

The study was conducted in Galang Village, Sui Pinyuh Subdistrict, Mempawah Regency, which is the primary area for honey pineapple production and where the majority of the population depends on pineapple farming as a source of livelihood. The selection of this location was purposeful and based on its significance in the pineapple industry. The data collection for this research took place in 2019.

The present study focuses on honey pineapple farmers who are members of the farmer group in Galang Village, Sui Pinyuh District, Mempawah Regency, and consists of a population of 275 farmers belonging to 10 different farmer groups. The sample size comprised 73 respondents who were selected to participate in the study.

The data collection for this study involved interviews, questionnaires, observations, literature study, and recordings. The research variables were measured by assessing the level of farmer participation. The analysis method employed for this study was Structural Equation Modeling (SEM) analysis.

Operational Definition and Measurement of Research Variables

Participation Level

To determine the participation level of pineapple farmers in the honey pineapple development program, a qualitative approach was employed. The extent of their involvement in the program was measured as it relates to honey pineapple being a leading commodity in Mempawah Regency. The formula used for measurement was:

$$Interval\ Scale = \frac{Maximum\ Score - Minimum\ Score}{3}$$

Where:
Maximum Score = 24
Minimum Score = 8

Determination of Intervals:
Low Participation Level : 8 - 13 = score 1
Medium Participation Level : 14 - 19 = score 2
High Participation Level : 20 - 24 = score 3

Factors Affecting Participation

This study employs a hypothesis-driven approach where the independent variable (X) is believed to have an effect on the dependent variable (Y), which is the level of participation measured on a Likert scale. The independent variables (X) used in this research are internal and external factors.

Data Analysis Technique

Structural Equation Modeling (SEM) Analysis

Structural Equation Modeling (SEM) analysis is a statistical technique that allows for the examination of the relationships between latent variables and their indicators, as well as the relationships between latent variables themselves, while taking into account measurement errors. The SEM procedure typically involves several stages, including model specification, identification, estimation, fit test, and respecification, as outlined in Wijanto's book on Structural Equation Modeling with Lisrel 8.8 (2008).

The Relationship between Variables of Structural Equation Modeling (SEM)

In the present study, the significance level of the construct coefficient (γ) or gamma, representing the effect of the independent latent variable on the latent dependent variable, was determined by the t value. A higher t value indicates a more significant impact of the independent latent variable on the dependent latent variable. The critical value of the t-test at the 5% absolute level is 1.97, which was used to test the hypothesis proposed in this study. The structural equation model equation used in this study is presented below:

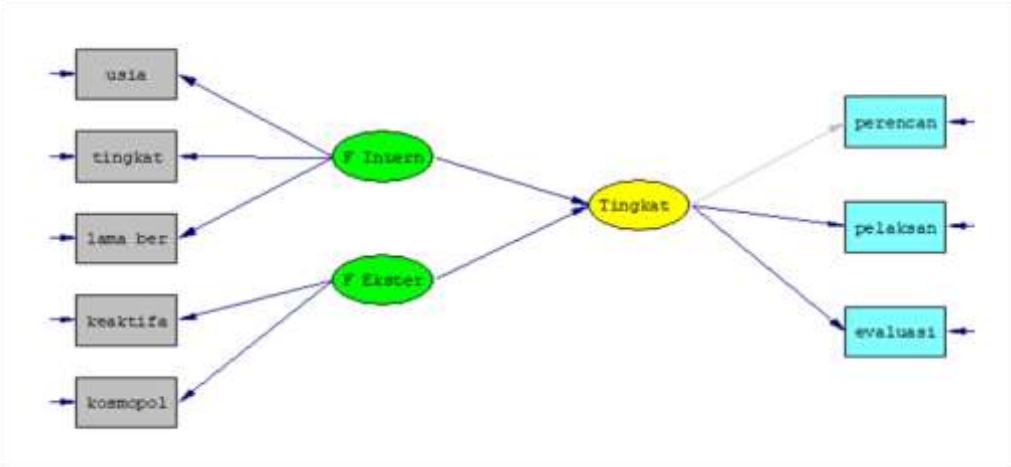

Figure 1. Structural Equation Model

Analysis of Farmers' Participation

The research employed a quantitative method to measure the level of farmer participation by aggregating scores from various variables. The analysis was conducted using Frequency Distribution to depict the respondents' characteristics and farmer participation. The measurement of the level of participation was determined by examining the indicators of participation such as the degree and authority in decision-making. It was categorized into three types: non-participation, tokenism, and citizen power based on the classification proposed by Arnstein (1969).

RESULTS AND DISCUSSION

Condition of the Research Site

Mempawah is one of the regencies located in West Kalimantan. Administratively, Mempawah Regency consists of nine districts, seven urban villages, and sixty villages. This research was located in Galang Village, Mempawah Regency, one of the largest pineapple producers in West Kalimantan. The production of honey

pineapple is not only for the needs of the people in West Kalimantan but also traded in other regions (other provinces). Some are even exported abroad and have received certificates from the local government.

Characteristics of Respondents

The present study consisted of seventy-three pineapple farmers who cultivate peatland without burning in Galang Village, which was the research location. The respondents' essential characteristics, such as gender, age, education, and number of family members, were recorded and presented in Table 1.

Table 1. Characteristics of Respondents

Characteristics of Farmers	Total of Farmers (person)	Percentage (%)
Gender		
Male	57	78
Female	16	22
Age of Farmers		
17-40 (Early Adulthood)	36	49,3
41-60 (Middle Adulthood)	32	43,8
>60 (Late Adulthood)	5	6,9
Education		
Less than elementary school education	31	42,5
Elementary school education	21	28,8
Junior high school education	6	8,2
High school education	13	17,7
Bachelor's degree	1	1,4
Master's degree	1	1,4
Length of Farming Experience		
≤5	12	16,4
6-20	40	54,7
≥21	21	28,7
Participation of Group		
- Sales objectives		
Active	32	43,8
Inactive	41	56,1
- Post-harvest		
Active	73	100
Inactive	0	0
- Group activities		
Active	61	83,5
Inactive	12	16,4
Cosmopolitan		
- Connections outside the village		
Active	73	100
Inactive	0	0

Source: Primary Data, 2019

The majority of pineapple farmers in this study were men, comprising 78 percent of the sample, while women accounted for 22 percent. The gender disparity can be attributed to traditional gender roles in which men are expected to be the primary breadwinners and heads of household, while women are primarily responsible for domestic duties. Furthermore, pineapple farming often involves physically demanding tasks, such as land cultivation, for which male labor is typically preferred. However, it was observed that some women involved in pineapple cultivation were widowed single parents or had husbands employed in non-farming occupations such as village officials or business owners.

Age can significantly affect an individual's work performance. According to Soekartawi (2013), as long as a person is still productive, their ability to work efficiently and effectively is not impacted by age. Furthermore, farmers in the early adult stage are more likely to be curious and eager to adopt new science and technology innovations. The majority of respondents in this study, 36 farmers or 49.3 percent, were between the ages of 20-40 years. This suggests that honey pineapple farmers in the early adult stage are more actively engaged in meeting their families' needs through their work.

Education is the process of acquiring knowledge, skills, and attitudes that are transferred from one generation to the next through teaching, training, or research. The level of education attained by farmers can influence their capacity to adopt technological and scientific innovations. Higher education levels can enhance farmers' opportunities to adopt and apply innovative technologies to improve the quality of their agricultural

production. However, the education level of many farmers remains low. In this study, the majority of respondents (42.5 percent) had not completed elementary school, which may be attributed to economic constraints and limited awareness of the benefits of education among farmers.

In the research site, the majority of farmers (54.7%) have farming experience ranging from 6 to 20 years. This indicates that farming experience significantly contributes to farmer participation, as those with more experience are more receptive to external input (Soekartawi, 2013). In fact, most farmers in the research location have been engaged in farming since a young age and have accumulated over ten years of experience. Consequently, farmers with more than ten years of experience are deemed suitable for decision-making regarding the allocation of compensation funds due to their mature and informed perspectives.

The level of participation of farmers can be affected by the activeness of the group they belong to. This is due to the spontaneous involvement and sense of responsibility that group membership entails towards achieving common goals (Sastroepoetra, 2004). Meanwhile, Mikkelsen (2005) defines participation as a voluntary process by the community in determining and implementing changes that affect them.

In the context of honey pineapple production, group activity plays a crucial role in determining potential sales directions and achieving transparency in market prices. The extent to which farmers actively participate in finding effective sales destinations is an important indicator of their engagement in the sales process. This information is presented in Table 1. The results indicate that 43.8 percent of the respondents (32 individuals) are actively seeking more efficient pineapple sales destinations, while 56.1 percent of the respondents (41 individuals) do not participate in such activities. Rather, they engage in private sales or sell to intermediaries who come directly to their yard.

In this study, post-harvest activities refer to the frequency of members' involvement in harvesting activities for pineapple plants that are sold directly to the market after post-harvest processing. The post-harvest frequency in this study was measured as 3 to 6 times of harvesting per year. The findings indicated that all respondents (73) were active members who aimed to improve their income and facilitate group activities.

In this study, group activity is defined as the frequency of attendance of group meetings by its members within a year. The meetings serve as a platform to discuss various aspects of honey pineapple cultivation and implementation of cooperative farming. The level of activity is classified as either "very active" or "less active." The former denotes members who actively participate in the meetings, contributing to the development of the group, while the latter indicates members who attend meetings less frequently due to other commitments. The findings of the study reveal that 83.5 percent of respondents (61 people) were very active in attending meetings, indicating that they recognized their role as group administrators and were committed to promoting cohesiveness among members in agricultural activities. In contrast, 16.4 percent of respondents (12 people) were less active in attending meetings due to personal and professional obligations.

According to the findings presented in Table 2, the majority of respondents from Galang Village, Mempawah Regency exhibit a high level of cosmopolitanism. This study shows that the relationship between cosmopolitanism and level of participation is highly correlated, with all 73 respondents (100%) exhibiting a high level of participation. Cosmopolitanism is defined as the frequency of travel outside of one's residential area to engage in activities beyond the immediate vicinity, as well as the frequency of contact with individuals outside of one's community. A low level of cosmopolitanism is indicated by infrequent travel outside the immediate area to attend agricultural events or extension services and lack of interaction with innovators. In contrast, respondents with a high level of cosmopolitanism obtain diverse information from various sources and are more likely to interact with individuals outside their community, which facilitates the acquisition of new information and ideas. Consequently, farmers with higher levels of cosmopolitanism are more innovative and creative, as they are exposed to a wide range of ideas and information about honey pineapple cultivation.

Participation Level of Honey Pineapple Farmers in Galang Village

Table 2. Values of Participation Level

Participation Level	Planning		Implementation		Evaluation	
	Total of Farmers (person)	Percentage (%)	Total of Farmers (person)	Percentage (%)	Total of Farmers (person)	Percentage (%)
Manipulation (skor1)	0	0	0	0	0	0
Therapy (skor2)	0	0	0	0	3	4,1
Information delivery (skor3)	0	0	0	0	1	1,3

Participation Level	Planning		Implementation		Evaluation	
	Total of Farmers (person)	Percentage (%)	Total of Farmers (person)	Percentage (%)	Total of Farmers (person)	Percentage (%)
Consultation (skor4)	0	0	0	0	1	1,3
Placation (skor5)	3	4,1	3	4,1	4	5,4
Partnership (skor6)	6	8,2	2	2,8	3	4,1
Delegated Power (skor7)	20	27,3	19	26,0	12	16,4
Citizen Control (skor8)	44	60,2	49	67,1	49	67,1
Total	**73**	**100**	**73**	**100**	**73**	**100**

Source: Primary Data, 2019

Participation of Farmers at the Planning Stage

The participation of farmers in the planning stage refers to their involvement in the planning process, wherein they contribute ideas to design various activities to be carried out in honey pineapple farming. Such planning necessitates the engagement of relevant stakeholders, including PPL, farmer group administrators, farmer group members, and certain village officials.

Based on the SEM analysis presented in Figure 4, the score for the number of farmers participating in the Planning Stage was calculated by estimating the average values of respondents. The resulting score of 1.43 (>1.96) indicates that participation of honey pineapple farmers is independent or citizen-controlled, and is not affected by the calculated value. This finding is consistent with the dominant value of respondent decision-making observed during fieldwork, where 60.2% (44 respondents) made independent decisions about planning their honey pineapple farming. The decision-making process is primarily driven by individual farmers and their families, with agricultural extension activities mainly limited to meetings with the chairman of the farmer group and management, and rarely conducted with all members of the group. The low level of education among farmers, particularly the majority who did not complete elementary school, poses a challenge for the diffusion of information and technology.

The cosmopolitan indicator showed the highest value of 100% (73 respondents), indicating that all participants engage in cosmopolitan activities, primarily traveling outside their domiciles for personal reasons instead of seeking agricultural extension services outside Galang Village. Despite their cosmopolitan tendencies, farmers still desire the presence of extension services to engage in discussions and seek assistance regarding problems commonly encountered in honey pineapple farming. Unfortunately, extension services are sparsely attended, as each village only has one extension worker, and agricultural activities lack specific programs. Consequently, in the planning stage, farmers make independent decisions without any intervention from extension services.

The study findings reveal a significant correlation between education level and farmer participation, with the highest proportion of participants (31 individuals or 42.5%) having not completed elementary school. To foster greater participation, it is essential to involve farmers through non-formal education programs, such as counseling sessions offered through state-sponsored extension programs. These initiatives can enhance the skills and knowledge of farmers, particularly regarding the cultivation of superior commodities such as honey pineapple.

Several initiatives have been undertaken to advance the development of honey pineapple cultivation. These include organizing discussion meetings with the farmer group's chairman and management, outlining strategies to expand farming areas, developing plans for creating ditches and boundaries between farmer groups, introducing organic pineapple certification programs, and exploring avenues for processing honey pineapple into value-added products like *dodol nanas* (sweet toffee-like sugar made from pineapple), pineapple syrup, and pineapple chips. Extension workers have also enlisted the expertise of researchers to investigate diseases and pests that commonly afflict honey pineapple crops. Additionally, marketing efforts have been expanded by utilizing social media platforms such as WhatsApp and Facebook.

Several factors have been identified as affecting farmer participation in the planning stage, including the inadequate communication between extension workers and farmers, insufficient communication skills on the part of extension workers in publicizing socialization meetings, and limited access to agricultural extension tools such as whiteboards, stationery, and projectors. In addition, extension aids such as printed materials (e.g., pamphlets, posters, and photos), projected images (e.g., slide films and video films), and graphic symbols (e.g., graphs, diagrams, and maps) conveyed during farmer socialization meetings also influence participation levels.

Participation of Farmers at the Implementation Stage

The successful implementation of the honey pineapple farming program requires the involvement of both farmers and extension workers. The cultivation process involves monitoring the growth and development of the pineapple plants in the field, paying particular attention to factors such as plant height, pest infestation, and weed growth. Subsequently, farmers receive guidance on how to address any identified issues. Furthermore, during the extension forum, farmers and extension workers exchange insights and observations, which can inform subsequent farming practices.

The study's findings reveal the impact of agricultural extension on honey pineapple farming participation levels. Specifically, the calculated t-value of 5.29 (>1.96) indicates a statistically significant relationship between the implementation stage of honey pineapple development and the number of participating farmers. Furthermore, based on the most dominant decision of the respondents during fieldwork, it falls into the category of independent or citizen control, with 67.1% (49 respondents) determining this decision. This suggests that farmers may perceive the agricultural extension program to be insufficiently active in engaging with them, leading to a reliance on independent decision-making. Consequently, farmers may struggle to voice their aspirations based on factual information and adopt technological innovations effectively. In interviews, farmers expressed a desire for counseling during the implementation stage, as well as improved access to information from the agricultural extension. Currently, farmers rely mainly on their own experiences and inherited knowledge to carry out farming activities.

In the context of pineapple farming, agricultural extension activities extend beyond crop cultivation and encompass post-harvest practices such as fruit collection and sorting. This sorting process involves segregating pineapples into different grades based on size. Notably, Grade A pineapples weighing between 900 gr, and 1 kg fetch a higher selling price of IDR 8000, while smaller-sized pineapples (<900 gr) command a price of IDR 5000. Any damaged fruit or those falling under Grade Care repurposed as raw materials for producing processed pineapple products. This approach to post-harvest management highlights the importance of maximizing profits and reducing waste in the pineapple industry.

Several factors can influence farmers' participation in the implementation stage of honey pineapple farming. The timing of implementation is a crucial factor, as it can coincide with farmers' working hours and affect their availability. Additionally, the duration of time farmers has resided in Galang Village and their domicile status can also impact participation levels. Notably, some farmers who are not domiciled in the area may engage in honey pineapple farming due to land lease agreements. These factors underscore the complexities of engaging farmers in agricultural extension programs and highlight the need for tailored strategies that consider the unique circumstances of individual farmers.

Participation of Farmers at the Evaluation Stage

Evaluation is the final indicator of the effectiveness of honey pineapple farming extension programs. This stage is characterized by farmers' and extension workers' assessments of the program's impact on crop yields, changes in planting methods, and overall satisfaction with the farming program. Typically, the evaluation process is conducted in two stages. The first stage involves analyzing the problems faced in the field, based on observations made jointly by extension workers and farmers. In the second stage, the evaluation is conducted before the closure of extension activities. This evaluation is carried out through a meeting attended by all farmer group participants, village officials, and extension workers. Key aspects assessed during this stage include farmers' involvement in the evaluation process, their level of awareness about the importance of evaluation, and their assessment of the quality of agricultural extension programs. These findings highlight the need for continuous monitoring and evaluation to ensure that the extension program's goals are achieved effectively.

Based on the calculation results, the number of respondents participating in the evaluation stage of honey pineapple development through agricultural extension has a t-value of 2.96 (>1.96), indicating a positive effect on the level of farmer participation. This falls into the category of independent or citizen control, based on the most dominant decision of respondents during field activities. Specifically, 49 respondents, accounting for 67.1%, fell into this category. However, the extension workers' work program is perceived as less active in terms of interaction and work visits, particularly in providing advice or input for evaluating honey pineapple farming activities in Galang Village. These findings emphasize the importance of increasing the extension program's level of interaction with farmers to promote effective monitoring and evaluation.

The preceding issues are identified as contributors to the low level of farmer involvement in honey pineapple extension activities. The insufficient visits by extension workers and the absence of a particular program for honey pineapple farming are factors that influence farmers to work independently and to make decisions and solve problems without guidance from extension personnel. The low educational attainment of farmers, with most not completing elementary school, also hinders their participation in extension activities. Inadequate numbers of extension personnel and their lack of capacity constrain the provision of guidance and counseling to farmers. Overcoming low participation in the education stage requires involving farmers with increased educational backgrounds in non-formal education programs that focus on the development of superior honey pineapple commodities.

Models Fit before Respecification

In the current study, the model fit test stage was conducted to assess the Goodness of Fit (GOF) measure and determine the level of compatibility between the model and the data. To establish the overall adequacy of the model, various approaches can be employed alone or in conjunction. Table 3 presents the GOF measures and measurement errors for each instrument in the measurement model of the initial model before respecification.

Table 3. Models Fit Test before Respecification

No	GOF	Target Fit	Estimation	Conclusion
1	*Chi Square/X²*	The smaller, the better	36.41 (P=0.0)	Good
2	X^2/DF	1.0 ≥ x ≤ 5.0	2.99	Good
3	NCP	Small value, narrow interval	15.89 (3.40; 36.17)	Good
4	SNCP (NCP/n)	Small value	0.16	Good
5	RMSEA	≤ 0.08	0.097	Good
6	ECVI	Small value, and close to ECVI with *Satuleveld* Model	M=0.75 S=0.73 I=3.50	Good
7	AIC	Small value, and close to AIC with *Satuleveld* Model	M=70.89 S=72.00 I=346.60	Good
8	CAIC	Small value, and close to CAIC with *Satuleveld* Model	M=139.39 S=201.79 I=375.44	Good
9	NFI	≥ 0.90	0.89	Less Good
10	NNFI	≥ 0.90	0.89	Less Good
11	PNFI	High value, better fit	0.54	Less Good
12	CFI	≥ 0.90	0.94	Good
13	IFI	≥ 0.90	0.94	Good
14	RFI	≥ 0.90	0.82	Less Good
15	GFI	≥ 0.90	0.92	Good
16	AGFI	≥ 0.90	0.84	Less Good
17	PGFI	0-1	0.44	Good
18	RMR	≤ 0.05	0.034	Good
19	CN	≥ 200	91.84	Less Good

Source: Primary Data Analysis, 2021

Table 3 displays the results of the Goodness of Fit (GOF) measure analysis of the initial model before respecification, revealing that only 13 measures meet the good criteria, whereas the remaining 6 measures do not. Despite this, the initial model can still be considered good since more GOF measures have not met the standard or target fit value criteria. To improve the GOF measure, the model is modified or respecified by utilizing the information on modification indices available in the printed output. The modification indices suggest two ways to improve the model: the first is by adding paths, and the second is by adding covariances. In this study, the second method is employed by adding covariances. Researchers can obtain the complete list of modification indices by adding the MI option to the statement options in the SIMPLIS program.

In the modification process, each indicator can be tested for adding covariance. If a warning occurs during the modification process, the recently added covariance can be removed, indicating that the indicator has no correlation with other indicators, and adding it will not affect the t-value or GOF. If error covariances have been added to all indicators, the chi-square value will decrease, followed by a reduction in the degrees of freedom, p-value, and RMSEA. As adding a covariance reduces the degrees of freedom by 1, theoretically, adding more covariances will result in a decrease of the df value towards zero. When the df value is zero, the model is

considered just-identified, with a unique solution, and the overall fit of the model in the just-identified model is referred to as a perfect fit and a one-level model (Wijanto S. H., Structural Equation Modeling dengan LISREL 8.8, 2008).

In pursuit of achieving the most minimal chi-square probability (P≥0.05), excessive addition of error covariance could lead to over-fitting and render the model implausible. Thus, it is crucial to stop the model modification when several GOF measures display a good model fit since chi-square is not the sole measure of GOF.

Model Fit Test after Respecification

The revised model obtained from modification or respecification is subject to further testing using Goodness of Fit (GOF) criteria to match the standard or target value of the fit with the statistical GOF value estimated from the final model. Table 4 presents the GOF and measurement error measures for the measurement model of each instrument in the final model.

Table 4. Model Fit Test after Respecification

No	GOF	Target Fit	Estimation	Conclusion
1	*Chi Square/X²*	The smaller, the better	16.08 (P=0.097)	Good
2	X^2/DF	1.0 ≥ x ≤ 5.0	1.39	Good
3	NCP	Small value, narrow interval	6.08 (0.0; 21.16)	Good
4	SNCP (NCP/n)	Small value	0.05	Good
5	RMSEA	≤ 0.08	0.078	Good
6	ECVI	Small value, and close to ECVI with *Satuleveld* Model	M=0.69 S=0.73 I=3.50	Good
7	AIC	Small value, and close to AIC with *Satuleveld* Model	M=68.08 S=72.00 I=346.60	Good
8	CAIC	Small value, and close to CAIC with *Satuleveld* Model	M=161.82 S=201.79 I=375.44	Good
9	NFI	≥ 0.90	0.95	Good
10	NNFI	≥ 0.90	0.93	Good
11	PNFI	High value, better fit	0.34	Less Good
12	CFI	≥ 0.90	0.98	Good
13	IFI	≥ 0.90	0.98	Good
14	RFI	≥ 0.90	0.900	Good
15	GFI	≥ 0.90	0.96	Good
16	AGFI	≥ 0.90	0.89	Less Good
17	PGFI	0-1	0.27	Good
18	RMR	≤ 0.05	0.026	Good
19	CN	≥ 200	135.44	Less Good

Source: Primary Data Analysis, 2021

Table 4 presents the results of the model fit evaluation after modification or respecification. The analysis indicates an improvement in the model fit, as evidenced by an increase in the number of GOF measures meeting the good criteria from 13 to 16, while only 3 GOF measures remain below the recommended thresholds. These measures include X2/DF, NCP, SNCP, RMSEA, ECVI, AIC, CAIC, NFI, NNFI, CFI, IFI, GFI, IFI, RFI, GFI PGFI, and RMR. However, despite the overall improvement, certain criteria still do not meet the desired thresholds.

Wijanto (2008) stated that several measures of model fit in SEM and model fit assessment are assessed based on how many model measures can be met by the research model. The more GOF values that are good or fulfilled by the model, the better the research model. Then there is another opinion also saying that if two or more of the overall GOFs used have shown a good model fit, then the research model can be said to be good (Ghozali, 2008). When viewed from the underlying theory, the model in this study can be considered pretty good, with 16 out of 19 GOF measures falling into good criteria.

The final model estimation resulted in a chi-square (X^2) value of 16.08 with a significance level of P=0.097, accompanied by a degrees of freedom (df) value of 10, indicating that the model is still good. The chi-square value assesses the degree of similarity between the sample covariance matrix and the model covariance matrix. If the obtained chi-square value is lower, it indicates a better fit. Conversely, a high chi-square value indicates a significant difference between the estimated model and the covariance matrix. According to Wijanto

(2008), researchers aim to achieve a low X^2 value with a significance level greater than or equal to 0.05 (P≥0.05), indicating that H0 is accepted, and the predicted and actual input matrices are not statistically different. However, other researchers suggest that an ideal chi-square value should be less than three, and a value closer to zero or X^2=0 would indicate no difference (H0 is accepted). Nonetheless, since there is no minimum size, chi-square cannot be used as the only measure of the model's overall fit.

The normed chi-square (X^2/df) is a measure of how well the model fits the data, and it is calculated by dividing the chi-square value by the degrees of freedom. In the final model, the X^2/df ratio is 1.39, which is lower than Wheaton's upper limit of 5.0 but falls within the range suggested by Carmines and Zeller (2.0) (Ghozali, 2008). Wijanto (2008) suggests that the normed chi-square value should be between 1.0 and 5.0, indicating a pretty good fit while controlling for the complexity of the model. Therefore, based on the X^2/df value, the final model can be considered to have a relatively good fit.

The Non-Centrality Parameter (NCP) of the final model is 6.08, and its 90% confidence interval is (0.0; 21.16), which is relatively narrow, indicating a good model fit. NCP is a fixed parameter associated with the degrees of freedom that quantifies the difference between the population and observed covariance matrices. A small NCP value implies a negligible difference between the population and observed covariance matrices. Hence, it is essential to obtain a small or low NCP value in the model.

The scaled non-centrality parameter (SNCP) is a refinement of NCP, and it is calculated to be 0.05. A lower SNCP value indicates a better fit, and the obtained value suggests a good fit for the model.

In the final model, the RMSEA value was 0.078, which is less than the recommended threshold of 0.08, indicating a good model fit. Moreover, the RMSEA value falls within the 90% confidence interval of (0.0; 0.15). RMSEA is a measure used in covariance structure modeling that takes into account the discrepancies between the observed covariance matrix and the population covariance matrix.

In the final model, the ECVI or Expected Cross-Validation Index was calculated to be 0.69. The ECVI value for the *Satuleveld* Model was found to be 0.73, while the ECVI for the Independence Model was 3.50. These values fall within the 90% confidence interval of 0.63 to 0.84. The ECVI is used to compare the suitability of models with samples of the same size and population. A model with an ECVI value that is close to the ECVI value of the *Satuleveld* Model is considered a good fit, and in this case, the final model is deemed to show good fit.

In this study, the AIC or Akaike Information Criterion for the model was calculated as 68.08, while *Satuleveld* AIC was 72.00 and Independence AIC was 3.50. AIC is commonly used to compare models with different numbers of constructs. Based on the findings presented, models with AIC values similar to Satuleveld Model suggest good model fit.

CAIC, or Consistent Akaike Criterion Information, is a statistical criterion similar to AIC that is used to compare models with different numbers of constructs. In the final model, the CAIC value was determined to be 161.82, while the CAIC with *Satuleveld* model and Independence CAIC were 201.79 and 375.44, respectively. A small CAIC value and proximity to the CAIC value for the *Satuleveld* Model suggest that the final model has a good fit.

The NFI (Normed Fit Index) and NNFI (Non-Normed Fit Index) are measures used to compare the proposed and null models. Both indices range from 0 to 1 and are derived by comparing the hypothesized model with a particular independent model. The NFI and NNFI values of the final model were 0.95 and 0.96, respectively, indicating a good fit (with a criterion of ≥0.90 for both indices).

The Parsimonious Normed Fit Index (PNFI) is a variant of NFI and is employed for comparing models with varying degrees of freedom. A difference of 0.06 to 0.09 between PNFI values of two or more models indicates a significant difference between the models. Nevertheless, according to the presented table, the final model's PNFI value is 0.34, indicating a poor fit. Consequently, the PNFI value for the present model is inadequate, and further modifications to the model are required to enhance its fit.

The Comparative Fit Index (CFI) in the final model is 0.98, indicating a good fit as it exceeds the acceptable threshold of 0.90. CFI is an incremental fit index that is relatively insensitive to sample size and model complexity. As a modified version of NFI, it addresses the issue of low model fit in small samples. Therefore, the CFI provides an effective measure for assessing model fit.

The IFI (Incremental Fit Index) and RFI (Relative Fit Index) are fit indices that address the parsimony and sample size issues associated with NFI. Their values range from 0 to 1, and if they are greater than or equal to 0.90, the model is considered to have a good fit. In the final model, following the respecification process, the IFI value is 0.98, and the RFI value is 0.90, both of which meet the standard of ≥0.90 for a good fit. Therefore, it can be concluded that the model has a good fit value.

The Goodness of Fit Index (GFI) value in the final model is 0.96 (≥ 0.90), indicating a good fit value. On the other hand, the Adjusted Goodness of Fit Index (AGFI) has a value of 0.89 (≥ 0.90), indicating a poor fit value. Both GFI and AGFI serve as measures of absolute fit and describe the overall level of model fit by comparing the squared residuals of the predicted model to the actual data.

Moreover, Parsimony Based Indexes of Fit, also known as PGFI, take into account the complexity of the hypothesized model in relation to the overall model fit. PGFI is a tool for comparing the fit of alternative models, and values range from 0-1, with an ideal fit of 0.9. In the final model, the PGFI value of 0.27, although not ideal, indicates a good parsimony model.

The model's fit value can be assessed using the Root Mean Square Residual (RMR), which is calculated by obtaining the average value of all residuals and standardizing them with the variance-covariance matrix of the sample data. A value of 0.026 obtained in the model indicates a good fit (≤ 0.05). The standardized RMR represents the mean value of all standardized residuals and has a range between 0-1.

In this study, an additional measure of goodness-of-fit (GOF) is CN or Critical N, which indicates the adequacy of the sample size used. It represents the largest sample size that can be used to accept the hypothesis that the model is accurate. A sufficient sample size is indicated by a CN value > 200. However, in the final model, the CN value is 135.44, which is lower than the acceptable limit. This suggests that the sample size used in this study may be insufficient and needs to be increased to achieve a good fit model.

Factors Affecting Participation of Honey Pineapple Farmers in Galang Village

The estimated relationship between exogenous variables and the participation of honey pineapple farmers can be discerned through the results of the modified or improved indices. The strength of these relationships in the Structural Equation Modeling (SEM) model is illustrated by the path diagram model's t-value and parameter estimation coefficients, as depicted in Figures 1 and 2 below.

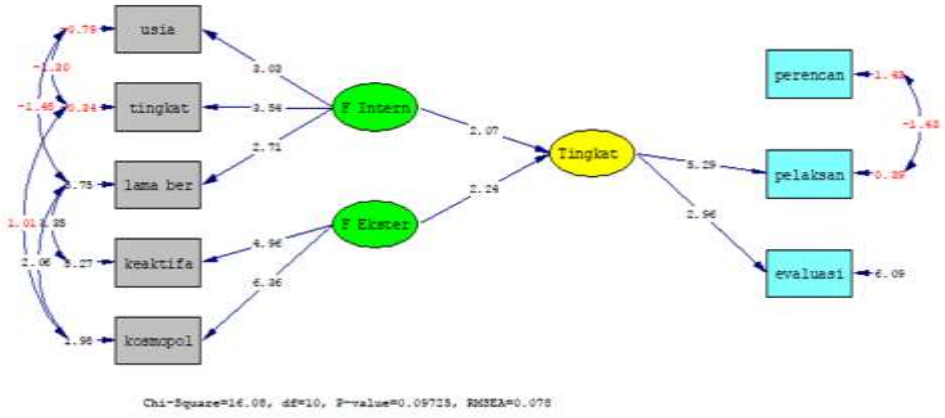

Figure 2. T-value of Structural Model of Factors Affecting Participation of Honey Pineapple Farmers

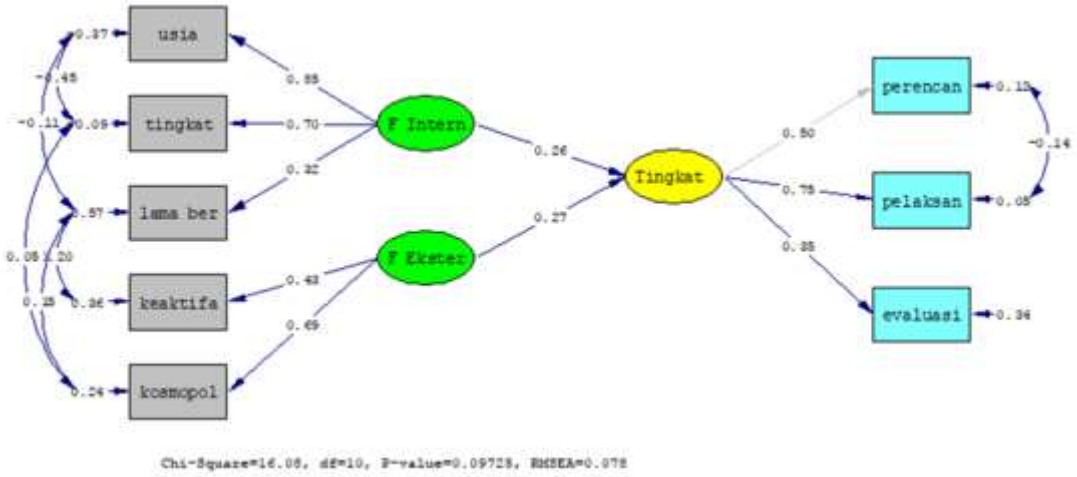

Figure 3. Coefficient of Estimation of Structural Model of Factors of Participation of Honey Pineapple Farmers

The R^2 value calculated from the structural model equation is 0.19, indicating that the variables included in this study account for 19% of the variation in the farmer participation rate. Other factors outside the research variables may contribute to the remaining 81% of the variance. During the questionnaire discussions, most respondents agreed with the estimated results obtained from the data analysis as presented in the t-values reported in Figure 3.

This study measures the participation factor of honey pineapple farmers using various indicators such as age, education level, length of farming experience, group activity, cosmopolitanism, and the level of participation in planning, implementation, and evaluation. The findings suggest that high levels of participation among farmers have the potential to positively influence the learning process. These results support the argument made by Hébert and Mincyte (2014).

The impact of age on the participation factor of honey pineapple farmers was examined in this study. The results indicated that age is a significant variable, with a t value of 3.03 < 1.96, indicating that age affects the participation factor of honey pineapple farmers. Specifically, respondents between the ages of 17-40 had the highest average age value of 49.3%, indicating a very low to medium age scale. Physical and stamina that is healthy and stronger at this age positively influenced farmer participation. Respondents within this age range were also more receptive to the information and directions provided. In contrast, farmers over 60 years old had the lowest age value of 6.9%, indicating a very high scale of age. This group was less likely to participate in activities organized by extension agents due to factors associated with advanced age. Productive age was found to be between 15-55 years old, indicating that individuals within this range have relatively greater potential to increase their farm production due to their healthy physical condition and ability to accept innovations and information provided. These findings contribute to the understanding of the role of age in farmer participation and can inform the development of strategies to enhance farmer participation in agricultural activities (Marphy and Priminingtyas, 2019).

The impact of education level on farmer participation was investigated in this study. The results showed that education level is a significant factor, with a t value of 3.54 (>1.96), indicating a real effect on accelerating farmer regeneration. Respondents who had not graduated from elementary school had the highest average value of 42.5%, indicating a very low scale with a score of 1. Farmers with this level of education were less likely to participate or attend farmer group activities or activities organized by extension workers. In contrast, respondents with a bachelor's degree had the lowest value of 1.4%, indicating a very high scale with a score of 5. Farmers with higher education levels, especially the head of the farmer group, were more likely to participate in group activities and activities organized by extension workers. Formal and non-formal education levels were found to have a positive influence on farmer regeneration. The higher the level of education, the higher the level of knowledge in agriculture, particularly in the development of honey pineapple commodities. Previous studies have reported a similar positive relationship between education level and knowledge in the field (Mohamad, 2018; Farry et al., 2018). These findings contribute to the understanding of the role of education level in farmer participation and can inform the development of educational programs aimed at enhancing farmer knowledge and participation in agricultural activities.

This study also investigated the length of farming as a factor influencing farmer participation. The results showed that farming experience has a real effect on farmer participation, with a t value of 2.71 (>1.96). Respondents who had been farming for 6-20 years had the highest average value of 54.7, indicating a low to high scale. The length of farming is crucial for participation because honey pineapple farming is often carried out from generation to generation or inherited from parents. Farmers with more experience in honey pineapple farming are more skilled in overcoming challenges that may occur during farming. This finding is consistent with previous research conducted by Marphy and Priminingtyas (2019), Farry Primandita, Suwarto (2018), Rumiati Khasanah, Suwarto (2020), and Sri Mulyati, Rochdiani, Dini Yusuf (2016). These findings suggest that efforts to enhance farmer participation should consider the role of farming experience and the importance of passing down farming knowledge and skills from generation to generation.

The fourth indicator examined in this study is the level of group activity as an external factor affecting the participation of honey pineapple farmers. The study found that farmers' level of involvement in group activities significantly influences their participation, as evidenced by a t value of 4.96 (>1.96). Participating in farmer groups and attending meetings provides farmers with practical knowledge, such as exchanging ideas with other farmers, which is highly valued by most respondents. The results indicate that 43.8% of respondents were categorized as having active sales objectives, with 32 farmers being highly involved in group activities. In contrast, 56.1% of respondents were categorized as having less or inactive sales objectives, with 41 farmers showing a lack of participation in farmer group activities and counseling on honey pineapple sales techniques in Galang Village.

In Galang Village, all 73 respondents achieved a perfect score of 100% in the post-harvest category, indicating that all farmers participated in post-harvest activities. In terms of active farmer group activities, 83.5% or 61 respondents were active participants, while 16.4% or 12 respondents were not. This suggests that the majority of farmers in Galang Village are engaged in farmer group activities that are organized by the head of the farmer group and extension workers. These activities provide valuable knowledge and skills to the honey pineapple farmers, allowing them to improve their commodity and become more competitive in the Mempawah Regency area.

The fifth indicator examined in this study is the level of cosmopolitanism among honey pineapple farmers. Results indicate that this indicator has the highest value, and its contribution to the farmer participation factor is statistically significant with a t value of 6.36 (>1.96). Findings reveal that all 73 respondents (100%) possess a high level of cosmopolitanism, indicating that they frequently engage in meetings with community leaders from other villages. Additionally, most respondents reported using electronic media as a means of communication.

Farmers are crucial stakeholders in the development of superior commodities, particularly in the implementation and evaluation stages, while their participation in the planning stage has been relatively low. Therefore, to enhance farmers' participation in the planning stage, this study suggests improving the education level of farmers, as the level of education has a significant impact on their participation, according to the research results. The majority of respondents have not completed elementary school, and only a few have graduated. Hence, non-formal education, such as extension programs that offer training, could enhance farmers' skills, knowledge, and capabilities to participate in planning, implementation, and evaluation processes.

This study shows that each indicator measuring the farmer participation factor is representative and strongly correlates with varying values. Notably, the cosmopolitan indicator has the highest load of 6.36, indicating that an increase in farmer participation ability in this area will have a significant impact on the development of honey pineapple in Galang Village. Thus, enhancing farmers' participation in cosmopolitan activities could be a key strategy for improving the development of honey pineapple in the region.

Community participation is essential in development, as it places the community as a subject rather than an object of development programs. This approach ensures that the community actively participates in the planning, implementation, and evaluation of development programs, preventing the feeling of indifference and a lack of ownership of existing programs. Without community participation, development programs may face criticism and be ineffective.

Active participation of the community in development involves more than just passive involvement. It requires active and creative participation, where the community plays a role in every stage of the program, from decision-making in planning, implementation, and evaluation. This fosters the community's creative power, which enhances its ability to shape and influence the direction and performance of a program. To recognize farmers' participation as an actual activity, three main factors must support it, namely external and internal factors.

CONCLUSION

Based on the results of research on participation in the development of superior pineapple honey commodities, it can be concluded that: The level of participation of farmers in the development of superior honey pineapple commodities in Galang Village is found to be lacking in the planning stage. The category of independent or Citizen Control is the most frequent response with a value of 1.43 (>1.96), indicating that farmers' participation is not influential enough with the highest value of 60.2 or 44 respondents. This can be attributed to the lack of non-formal knowledge through extension programs facilitated by extension workers. However, at the implementation and evaluation stages, farmers who are categorized as Independent or Citizen Control show a positive impact with values of 5.29 (>1.96) and 2.96 (>1.96), respectively, with the highest response rate of 67.1 or 49 respondents.Various factors significantly influence the participation of honey pineapple farmers in Galang Village, including age, level of education, length of farming, group activeness, and cosmopolitan. External factors such as cosmopolitan indicators have a high influence, as all respondents engage in activities related to this indicator. The second highest factor is the level of education, with 31 respondents (42.5%) reporting its influence. The planning stage of farmer participation is categorized as independent or Citizen Control, which has a negative impact and a value of 1.43 (>1.96), indicating inadequate farmer involvement. Insufficient non-formal knowledge through extension programs provided by facilitators or extension workers may be the root cause. However, at the implementation and evaluation stages, farmers categorized under independent or Citizen Control have a positive impact, with values of 5.29 (>1.96) and 2.96 (>1.96), respectively. The highest value of 67.1 or 49 respondents reported a positive impact at these stages.

Based on the conclusions obtained, several things can be suggested including: The farmers in the village of Galang are categorized as independent or citizen control at the planning stage, which has a negative impact. It is recommended that the farmers be directed towards a state of manipulation, as in this state, they can exchange ideas with fellow farmers. The level of education has a significant influence on the participation of farmers, particularly due to the lack of formal education among them. In this regard, facilitating non-formal education through extensive training programs can be a viable solution to address this challenge. Facilitators and instructors can employ various techniques, such as providing practical demonstrations, presenting innovative methods for growing honey pineapples, and employing visual aids like slides and videos to enhance the farmers' knowledge and understanding of agriculture, particularly in the development of superior honey pineapple commodities.

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Research Article

Assessing the Viability of Establishing a Dairy Milk Business in the Village Unit Cooperative of Gandusari District, Blitar Regency: A Feasibility Analysis

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Business Feasibility
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Dairy Cow

ABSTRACT

Milk is a vital animal-derived food product, along with meat and eggs, for human consumption. In Indonesia, the dairy industry is dominated by small and medium-sized dairies. Dairy cows are a significant source of animal protein, and their primary product is milk. In the North of Blitar Regency lies the sub-district of Gandusari, where dairy cow milk is produced in the villages under the coverage of the Village Unit Cooperative called KUD "Semen." This research was initiated to address a problem. Primary and secondary data were collected using a puIDRosive sampling technique, questionnaires, literature review, and observation. The collected data is quantitative, and investment criteria were utilized for analysis. The results of the NPV analysis showed an amount of IDR 18,672,631,280, IRR of 29%, B/C Ratio of 184.04, and PP for eight years and six days, indicating the feasibility of investing in KUD "Semen." Sensitivity analysis was performed based on three assumptions, including the increase in feed costs, operational costs, and decreased milk production of dairy cows. The analysis revealed that the dairy milk business in KUD is sensitive to increased feed prices and decreased production, among the three assumptions.

INTRODUCTION

The dairy industry in Indonesia is primarily composed of small and medium-sized enteIDRrises, as reported by Anindyasari et al. (2015). Dairy cows, which provide animal protein, produce milk as their main product. Milk, along with meat and eggs, is a crucial food ingredient of animal origin that is essential for human life due to its high nutritional value. However, milk is highly susceptible to microbial growth and deterioration, rendering it unsuitable for consumption within a short period, and it is typically rejected for marketing puIDRoses (Zain, 2013). Despite this, milk is highly beneficial, and its consumption in Indonesia has increased significantly. Unfortunately, domestic milk production has failed to keep up with this trend, forcing the government to import milk from other countries. As Poetri's (2016) research indicates, milk is among the most frequently consumed livestock products. However, due to the gap between milk production

and consumption in Indonesia, the country needs to import raw materials from other milk-producing nations. Hence, additional business development is required to satisfy the nation's milk consumption needs.

Table 1 above displays the annual changes in fresh milk production between 2019 and 2021, indicating a tendency for fresh milk consumption to rise annually. Among the most significant milk-producing regions is East Java. Detailed information on the production of fresh milk for each province is presented in the subsequent table:

Table 1. Milk Production by Province

Province	Fresh Milk Production by Province (Tons)		
	2019	2020	2021
West Java	300337.16	281198.94	283361.18
Central Java	102948.90	102707.88	102508.64
Yogyakarta	5925.69	5385.60	5306.04
East Java	521123.43	542860.27	556431.78
Banten	53.74	121.22	121.22

Source: BPS (Fresh Milk Production by Province) 2021

Dairy milk production is a significant agricultural activity in East Java, and the villages of the Gandusari district, situated in the northern region of Blitar Regency, are among the dairy milk-producing areas. The production activities are coordinated by a Village Unit Cooperative (KUD) called KUD "Semen," which provides necessary facilities to farmers. Against this backdrop, this study aims to address several research questions. First, what are the costs and revenues associated with running a dairy milk business for farmers or KUD "Semen" members? Second, what is the feasibility of the dairy milk business run by KUD "Semen"? Finally, how does the sensitivity analysis affect the dairy milk business in KUD "Semen"? Answering these research questions will provide insights into the financial viability of the dairy milk business in the study area and will be beneficial to policymakers, dairy milk farmers, and other stakeholders.

Enhancing the efficiency of dairy farming is a strategic approach towards augmenting the income of farmers at the household and national levels (Asmara et al., 2015). Business feasibility theory is a scientific approach that assesses the viability of a business operation. The role of business feasibility studies is pivotal in providing recommendations to business owners for ensuring continuity of operations. Previous research has established that a cattle farming business is financially feasible if the net present value is greater than zero (NPV > 0), although the payback period should be less than the project life of ten years.

Khafsah et al. (2018) conducted a study on the financial and non-financial feasibility of dairy farm production by PT Fructi Agri Sejati. Their findings suggested that the business is viable since the investment criteria were met with NPV = 0 and R/C value > 0. Nevertheless, this research differs from the present study in terms of the analyzed population. Notably, this study did not examine the sensitivity of the dairy farm production business. Previous research conducted by Poetri et al. (2016) investigated the development of Kunak dairy farming in Pamijah village, Bogor Regency, using both investment criteria and sensitivity analysis. The results of the investment criteria analysis indicated that the business is feasible with NPV>0 and IRR>0, while the sensitivity analysis showed that the business is still viable and insensitive to assumed changes. The objective of this study is to provide an overview and information on the feasibility of the dairy milk business, specifically on its financial aspects, by utilizing the existing investment criteria to evaluate the feasibility of the dairy milk business in KUD "Semen".

METHOD

The present study employs both primary and secondary data sources. The former was gathered through interviews and observations conducted with breeders or members of KUD "Semen." To ensure representativeness, a puIDRosive sampling technique was utilized, as described by Arifin (2017). This technique involves selecting participants based on specific criteria established by the researcher. For the puIDRoses of this investigation, a sample of 30 breeders was deemed adequate and expedient for data processing. Data collection involved the administration of questionnaires, which were used to gather information on various aspects of the respondents' identities, including their names, gender, age, livelihoods, educational background, and farming experience. The questionnaire technique is in line with the approach suggested by Sugiyono and Purbarani (2013), who describe it as a set of written questions administered to respondents, which can be considered a form of observation. Only families involved in lactating dairy cow

farming in Gandusari District were selected as respondents, with selection criteria determined in advance by the researcher. Samples were designated from various villages or KUD "Semen" coverage areas. The data gathered from the respondents was quantitative and analyzed using investment criteria specific to dairy milk businesses. These criteria were defined as follows:

Net Present Value (NPV)

$$NPV = \sum_{t=1}^{n} \frac{Bt - Ct}{(1 = i)^t}$$

Where:
Bt = Benefit of year t
Ct = Cost of year t
i = Interest rate
t = Economic lifetime in dairy cows (10 years)

Criteria for decision-making:
1. if NPV > 0, the dairy milk business is deemed feasible.
2. if NPV < 0, the dairy milk business is deemed unviable.
3. if NPV = 0, the dairy milk business is considered to be at the break-even point.

Payback Periode

$$Payback\ period = \frac{Investment\ Value}{Net\ Cash}\ x\ 12\ months$$

Where:
Investment Value = Initial Investment
Net Cash = the benefits earned in each period

Assessment criteria for the payback period (PP):
1. If Payback Period < economic lifetime in dairy cows, the dairy milk business is deemed feasible.
2. If Payback Period > economic lifetime in dairy cows, the dairy milk business is deemed unviable.

Benefit of Cost Ratio (B/C Ratio)

$$\frac{B}{C} ratio = \frac{Total\ Benefit}{Total\ Cost}$$

Where:
Bt = Benefit of year t
Ct = Cost of year t

Assessment criteria for Benefit Cost Ratio (B/C):
1. If B/C > 1, the dairy milk business is deemed feasible.
2. If B/C < 1, the dairy milk business is deemed unviable.
3. If B/C = 1, the dairy milk business is considered to be at the break-even point.

Internal Rate of Return (IRR)

$$IRR = i_1 + \frac{NPV_1}{(NPV_1 - NPV_2)}(i_2 - i_1)$$

Where:
NPV_1 = Positive NPV
NPV_2 = Negative NPV
i_1 = Interest rate of NPV_1
i_2 = Interest rate of NPV_2

Assessment criteria for Internal Rate of Return (IRR):
1. If IRR > interest rate, the dairy milk business is deemed feasible.
2. If IRR < interest rate, the dairy milk business is deemed unviable.
3. If IRR = interest rate, the dairy milk business is considered to be at the break-even point.

Sensitivity Analysis

$$Sensitivitas = \frac{\frac{|X_1 - X_0|\ x\ 100\%}{X}}{\frac{|Y_1 - Y_0| x\ 100\%}{Y}}$$

Where:
X = Average change in NPV/IRR/Net B/C ratio
Y1 = Selling price/production cost/production after changes occur
Y0 = Selling price/production cost/production volume before the change
Y = Average change in selling price/production cost/production

Criteria for Sensitivity rate:
1. Sensitivity rate > 1, the results of the business or project are sensitive to changes.
2. Sensitivity rate < 1, the results of the business or project are insensitive to changes.

RESULTS AND DISCUSSION

The dairy industry represented by the Village Unit Cooperative (KUD) Semen is located in Slumbung Village, Gandusari District, Blitar Regency, and is managed by cooperative farmers. Originally established in 1972 under the name of the Village Unit Business Agency (BUUD), BUUD was seen as less effective at mobilizing the community as a whole. Consequently, based on government regulations outlined in Presidential Instruction No. 2 of 1978 concerning Village Unit Business Entities/Village Unit Cooperatives, BUUD was combined with KUD. KUD Semen's Business Unit comprises a range of operations, including a Dairy Milk Processing Unit, Dairy Concentrate Feed Processing Unit, KSMart Unit, Home Biogas Unit, Animal Health Service Unit, and Savings and Loan Unit, with the Dairy Milk Unit serving as the main and featured unit. KUD Semen boasts 71 employees, 16 structural administrators, and 650 active farmers as members. The cooperative's vision is to "make KUD Semen a binder of members and the community in improving the quality of life based on cooperative values", while their mission is "to improve the standard of living of members and the community in fulfilling their livelihood based on the cooperative's principles".

The type of dairy cows commonly farmed in the area is Friesian Holstein (FH) dairy cows. The population of dairy cattle is stratified by age, with calves aged approximately 1-3 months comprising the breeding stock of the farmed mother, while cattle aged approximately 1-3 years are the primary source of dairy milk or lactating cows. Farmers undertake several maintenance procedures to ensure optimal milk quality, beginning with regular cleaning of the cattle's living quarters, which is required by the cooperative. The observations indicate that the dairy milk business run by KUD is clean and well-maintained, with cowsheds equipped with automatic feeding and drinking tubs known as water life. The cooperative recommends the use of water life to meet the mineral requirements of dairy cows, as water is a crucial component of milk production, which is composed of 87% water and 13% dry matter (Sudono et al., 2003). The farmers provide fresh and fermented grass as the primary source of forage feed, given twice daily, in the morning and evening. Concentrate feed is also provided to increase the quantity and quality of milk production. Operating costs associated with feeding, as well as other costs incurred by farmers to support the dairy milk business, are classified as operational and fixed costs (Ula, Mahfudlotul, et al., 2017).

Structure of Costs

Fixed Costs

Fixed costs are expenses that remain constant regardless of the level of production within a specific range and are not influenced by fluctuations in business activity. Fixed costs incurred by dairy farmers include various items such as milk cans, buckets, sieves, scrapers, sickles, and brooms. Equipment depreciation refers to the process of allocating the cost of equipment over its useful life, after accounting for its residual value.

Table 2. Fixed costs incurred by each farmer

No	Fixed Costs	Depreciation	Average
1	Milk can	1.098	1.581.667
2	Bucket	931	44.667
3	Sieve/strainer	116	8.333
4	Scraper	861	82.667
5	Broom	620	89.333
6	Sickle	133	6.400
Total		**3.759**	**1.813.067**

Source: Primary Data Processed (2022)

According to the findings of this research, the milk can is the most expensive piece of equipment to purchase compared to other farming tools. As the number of cows on a farm increases, the need for more milk cans also increases. However, this conclusion differs from the findings of Khafsah (2018), who reported that the most expensive tool for dairy farmers to purchase is the scale used to measure milk production.

Variabele Costs

Variable costs are expenses that are directly associated with dairy farming activities (Aprillia et al., 2021). In the present study, operational costs incurred by farmers consist of various items, such as fuel oil (BBM), labor, concentrate feed, and medicines.

Table 3. Operational costs incurred by each farmer.

No	Operational Costs	Total	Average
1	Fuel oil	28.733.400	957.780
2	Labor	88.800.000	986.667
3	Concentrate Feed	27.608.400	306.760
4	Drugs	19.745.000	219.389
Total		**164.886.800**	**2.470.596**

Source: Primary Data Processed (2022)

The findings of this study are consistent with those of Anindyasari et al. (2015), who reported that labor costs account for the highest percentage of expenses among dairy farms in Banyumanik, Getasan, and Cepogo, which are the areas covered by this study. However, this perspective contrasts with the findings of Asperinche (2018), who suggested that feed costs are the most significant expense incurred by dairy farmers.

Business Feasibility Analysis

A business feasibility analysis is a comprehensive evaluation from the perspective of the company owner, taking into account all income and expenses based on prevailing domestic prices and interest rates. A financial feasibility analysis provides information on the level of profitability, payback period, and credit interest rate that the business activity can sustain. The findings indicate that both costs incurred, and revenues earned increase each year, with farmers earning a profit annually.

Table 4. Results of Feasibility Analysis of Dairy milk business at KUD "Semen"

No	Investment Criteria	Calculation Result	Description
1	NPV (Net Present Velue)	354.769.584	Profitable
2	BCR	4,72	Feasible
3	IRR (Internal of Return)	28%	Feasible
4	PP (pay Back Period)	8 years 9 months 7 days	

Source: Primary Data Processed (2022)

Net Present Value (NPV) of Dairy milk business at the KUD "Semen" in Gandusari District, Blitar Regency

The Net Present Value (NPV) method calculates the net value of a project by discounting all cash inflows and outflows over the project's life to their present value, thereby determining the difference using the same basis as the current market price. In this study, the NPV criterion was used to evaluate the feasibility of a dairy milk business in KUD "Semen" Gandusari District Blitar Regency. The financial analysis of the dairy milk business showed that the NPV obtained with a discount factor of 13.25% was IDR 354,769,584, indicating that the net profit obtained over seven years was around IDR 354,769,584 in present value terms. Thus, the dairy milk business run by farmers is feasible and profitable with an initial capital of IDR 247,956,864. This result is consistent with the findings of Aspirienche's (2018) study, which also concluded that the business can continue because the NPV value exceeds zero.

The financial feasibility of a business is largely dependent on bank interest rates, which can significantly impact the net present value (NPV) of the business. In this study, it was found that an increase in bank interest rates of up to 18.86% per year did not result in a negative NPV for the dairy milk business. Specifically, the calculated gain was IDR264,230,692, indicating that the business remained profitable and feasible for development. This result differs from the findings of Kartikasari (2015), who noted that an increase in interest rates can cause the NPV of a business to fall into the negative, rendering it unfeasible. A detailed summary of the analysis with an interest rate increase of 18.86% is presented in the following table:

Table 5. *Net Preasent Value (NPV)*

Investment Criteria	Calculation Result
NPV1	18.672.631.28
NPV2	14.172.315.01
B/CR	184,04
IRR	29%
Df 1	12%
Df 2	16%

Source: Primary Data Processed (2022)

Internal Rate of Return (IRR) of Dairy Milk Business at the KUD "Semen" in Gandusari District, Blitar Regency

The Internal Rate of Return (IRR) is a technique used to determine the interest rate that equates the present value of all cash inflows to cash outflows of an investment. It also represents the discount rate that causes the net present value (NPV) to be equal to the total investment cost of a project. IRR can be useful in assessing a project's ability to repay interest on loans from internal financial institutions that finance the project. The present study computed the IRR for the dairy milk business in the "Semen" cooperative and found it to be approximately 28%. This indicates that the business can still generate a profit and continue to operate if the interest rate increases to 28%. As the IRR value of 28% exceeds both the interest rates of 13.25% and 18.86%, the dairy milk business is worth developing due to its high rate of return. The results of this study are consistent with those of Khafsah (2018), which suggest that the IRR value above the specified discount rate makes the business viable for development.

Net Benefit Cost Ratio (Net B/CR) of Dairy Milk Business at the KUD "Semen" in Gandusari District, Blitar Regency

The Net Benefit Cost Ratio (Net B/C) method is an essential analysis technique that evaluates the previous assessment results with additional methods. This technique is widely used during the initial stages of investment planning evaluations. Table 5 presents the Net B/C data obtained from the dairy milk business in KUD "Semen" farmers in Gandusari District, Blitar Regency. The Net B/C Ratio provides a measurement of the benefits obtained from the costs incurred by the project. In this regard, a project is deemed feasible if the Net B / C Ratio value exceeds one. The analysis results of the dairy milk business's Net B/C Ratio reveal a value of 4.72, which is significantly greater than one. As such, the higher the value of the Net B / C ratio, the greater the profit obtained, and the more feasible it is to develop (Utari, 2015). This study's results corroborate the findings of Dewi and Fatmawati (2011), who contend that the Net B/C Ratio is greater than one, indicating that the business development criterion is feasible to run.

Payback Period (PP) of Dairy Milk Business at the KUD "Semen" in Gandusari District, Blitar Regency

To determine the profitability and feasibility of the dairy milk business in KUD "Semen," it is necessary to perform a Payback Period (PP) analysis. This tool helps to assess the financial viability of an investment by calculating the length of time required to recover the initial investment. Investments with a faster payback period are preferred as investment options. The PP value for the dairy milk business in KUD "Semen" is calculated by dividing the initial capital invested by the net benefits obtained each year. The calculated PP value for the dairy milk business is eight years, nine months, and seven days. These results show that the dairy milk business can return the invested capital in a time period that is not too long and is less than the 10-year economic life of the dairy milk production factors in KUD "Semen." Furthermore, the results of this study align with previous research by Khafsah et al. (2018), which states that a dairy farming project is considered feasible if the point of return on investment is 9.63. The analysis of the dairy milk business's feasibility, based on the NPV, IRR, B/C Ratio, and PP calculations, indicates that the business is worth developing, and the hypothesis is accepted.

Sensitivity Analysis of Dairy Milk Business at the KUD "Semen" in Gandusari District, Blitar Regency

A sensitivity analysis is an essential tool for evaluating the impact of investment parameters under different scenarios that may arise during the investment's lifespan. It helps to determine the extent to which situational factors and conditions can influence the investment's profitability and significantly affect decision-making. This analysis usually involves testing various assumptions to assess how sensitive the investment is to changes in these assumptions. In this study, we evaluate the sensitivity of the dairy milk business in KUD "Semen" to a 20% increase in feed costs. The results of this sensitivity analysis are presented below.

Table 6. Results of sensitivity calculations to feed price increases

No	Investment Criteria	Calculation Result	Description
1	NPV (Net Present Velue)	331.410.492	Profitable
2	Net B/C Ratio	1,13	Feasible
3	IRR (Internal of Return)	17%	Feasible
4	PP (pay Back Period)	10 years 0 months 5 days	

Source: Primary Data Processed (2022)

In addition to genetic factors, the success of a dairy business is also influenced by operational costs, such as feed expenses. Insufficient food may lead to a decrease in milk production due to lack of energy in the milk-producing animals. Therefore, high-quality dairy cows producing a large quantity of milk require adequate maintenance, such as vitamin supplements and highly nutritious feed. One of the critical factors that can impact the feasibility analysis of a joint venture is the increase in feed costs. To test the hypothesis, the researcher conducted a sensitivity analysis on the impact of feed price increase on the dairy farm's feasibility. The sensitivity analysis focused on a 20% increase in dairy feed prices.

Based on the assumptions from previous studies, a decision was made to expand the dairy business. To determine the viability of this decision, a sensitivity analysis was conducted to examine the impact of a 20% increase in feed costs on the business. Results indicate that total costs would increase by IDR 251,403,400, but the NPV value of IDR 331,410,492 suggests that expansion is still possible. Furthermore, the Net B/C ratio of 1.13 indicates that investment in this business is feasible. The IRR value in the sensitivity analysis is 17%, and all four investment criteria give positive and profitable results. However, the profits are minimal compared to the earnings before the food price increase. The payback period under a 20% increase in food prices is ten years 0 months five days. The rate of return on capital has exceeded the economic period, indicating that the cow's milk business has limited potential for growth. These findings are consistent with research by Kartikasari (2015), which indicates that dairy cattle farming is becoming increasingly unfeasible. Overall, the sensitivity analysis results show that the milk business KUD "Semen" is not sensitive to price changes.

The present study aims to conduct a sensitivity analysis of variable costs associated with dairy farming in KUD "Semen." Specifically, the study focuses on evaluating the impact of forage silage feed costs during the dry season on the feasibility of dairy farming in KUD "Semen." The study considers the assumption that additional costs will be incurred during the dry season due to the scarcity of forage for dairy cows. This assumption is based on the feedback received from the respondents who reported taking silage measures during the dry season. The results of the sensitivity analysis are presented below.

Table 7. Results of sensitivity calculations to the addition of variable costs

Investment Criteria	Calculation Result
NPV	IDR 442.099.047
B/CR	5,7
IRR	27%
PP	8,08

Source: Primary Data Processed (2022)

The study aimed to determine the feasibility of incorporating dairy cows in KUD "Semen" by conducting a sensitivity analysis of the addition of variable costs, specifically the cost of forage silage feed during the dry season. The research team added this assumption based on feedback from respondents indicating that silage is made during the dry season. The results presented in Table 7 indicate that the dairy milk business remains viable despite the added variable costs. The additional variable costs incurred amounted to IDR 250,836,864, initially IDR 247,956,864. The NPV value of IDR 442,099,047 demonstrates that members who incur additional costs for forage hay during the dry season can still achieve profitability and maintain feasibility. An IRR value of 27% shows that members can still benefit and survive at this interest rate. The Net B/C result of 5.7 indicates that the additional cost of forage silage feed can produce a significant value and is increasingly feasible to develop. The return on capital is eight years, nine months, and seven days, which is nine months longer than the original analysis. These findings contrast with those of Duwi et al. (n.d), who assert that dairy cattle are less sensitive to variable changes.

In this study, a sensitivity analysis was conducted to assess the feasibility of the dairy cattle milk business in KUD by analyzing the impact of a decline in milk production. The objective of the study was to test the hypothesis based on prior research that a decline in milk production of 41.36% would render the dairy cattle milk business unviable. The results of the analysis are presented below.

Table 8. Results of sensitivity calculations to decreased production (41.36%)

Investment Criteria	Calculation Result	Description
NPV	180.313.485	Feasible
Net B/CR	3.0	Feasible
IRR	29%	Feasible
PP	10,195	

Source: Primary Data Processed (2022)

The aim of this study was to evaluate the feasibility of the dairy cattle milk business in KUD by analyzing the sensitivity of a 41.36% decrease in milk production, based on previous research. The results of the analysis indicate that the business remains viable even with a decrease in production. However, a reduction in NPV value was observed, from IDR 354,769,584 to IDR 180,313,485. Net B/C ratio also declined from 4.72 to 3.0. The IRR value remained at 29%, similar to the previous analysis. Return on capital from the dairy milk business in KUD against a decrease in production was found to be ten years one month and nine days, exceeding the economic life of 10 years. The results of this study contrast with those of Duwi et al. (n.d), which state that the dairy cattle business becomes financially unfeasible with a 41.36% decrease in production.

CONCLUSION

Based on the findings of this research, it is concluded that the dairy milk business in KUD "Semen" is feasible to operate with an NPV value of IDR 354,769,584, net B/C value of 4.72, IRR value of 28%, and PP of 8 years, 9 months, and 7 days. Further sensitivity analyses were conducted to examine the impacts of increased feed prices, additional variable costs, and decreased production on the feasibility of the business. The sensitivity analysis results demonstrate that the dairy business is not sensitive to the addition of variable costs as the investment criteria calculation does not align with the decision. However, the increase in prices and decrease in production significantly affect the feasibility of the dairy milk business in KUD "Semen." These results are consistent with previous research, which suggests that a decrease in production by 41.36% makes the dairy cattle business financially unfeasible.

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Research Article

Optimizing Marketing Efficiency and Farmer's Share in the Oil Palm Industry: A Study of Marketing Channels and Margins in Pasar VII Namo Terasi Village, Sei Bingai District, Langkat Regency

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ABSTRACT

Oil palm farmers is act as producer and price takers and their bargaining position is often unequal, and farmers are disadvantaged by the condition. A large number of intermediaries involved in the marketing process indicates long marketing channel. Long marketing channel of a product results in greater marketing costs; such circumstances would lead to inefficient marketing channel. This research is purposed to analyze marketing channel, marketing margin, famer's share and marketing efficiency for oil palm in Pasar VII Namo Terasi Village. Result shows that there are 2 types of Marketing channels for Oil Palm in Pasar VIII Namo Terasi Village, Sei Bingai District, Langkat Regency which are Marketing Channel I (Farmers–Intermediaries–Oil Palm Factory) and Marketing Channel II (Farmers–Oil Palm Factory). Marketing Channel with the highest Farmer's Share is Marketing Channel II, with the share of farmer's value being about 100%. Either marketing channel 1 and marketing channel II are categorized as efficient.Result shows that marketing channel pattern II is the most efficient marketing channel.

INTRODUCTION

Oil palm has become a crucial commodity for many countries, particularly Indonesia and Malaysia, which export large quantities of its products such as oil, meal, and other derivatives (Murphy, 2019; Shodiq, 2021). Oil palm gave highest contribution to household income (Abdina, 2019). The cultivation and processing of oil palm plants have the potential to improve the welfare of 4.2 million oil palm farming families in Indonesia, as it can provide employment opportunities (Direktorat Jenderal Perkebunan, 2017). It is widely recognized that palm oil has brought economic benefits to both national economies and local communities.

North Sumatra Province is an area that has more oil palm development. Every year the size of smallholder oil palm plantations in North Sumatra increases significantly due to the land conversion of agriculture such as

rice fields to land for planting oil palm which often occurs in Langkat, Serdang Bedagai, Labuhan Batu. The land conversion that occurred in North Sumatra in 2019 is about 439.315 Ha and increased in 2020 to reach 441.399,52 Ha with the production of 7.199.750 tons of smallholder oil palm. Langkat Regency total area of smallholder oil palm plantations in 2021 is about 47.263 hectares with production about 168.176,16 ton of smallholder oil palm (Direktorat Jendral Perkebunan, 2020).

Pasar VIII Namo Terasi Village in Sei Bingai District, North Sumatra, is known for its significant oil palm production. Local smallholder farmers in this area rely heavily on marketing agencies and intermediary traders to market their products. However, farmers often face issues with unpredictable pricing that does not proportionally reflect the rising cost of inputs such as fertilizers. Furthermore, farmer groups in the area have not played a substantial role in supporting smallholder oil palm farmers, as government programs aimed at assisting these groups, such as providing support for superior seeds, have only been focused on other commodities such as rice.

The oil palm farmers of Pasar VIII Namo Terasi Village, located in Sei Bingai, Langkat regency, have a limited role as producers and are subject to the prices set by intermediaries. The unequal bargaining power of the farmers leaves them at a disadvantage, with intermediaries setting prices for their products. The purchase price of fresh fruit bunches paid to farmers fluctuated between IDR 2,800-2,900/kg, while the final consumer price was IDR 3,300/kg. The price disparity between the prices paid to farmers and the prices received by final consumers is significant.

In addition to the issue of low prices received by smallholder palm oil farmers, marketing their products also presents another challenge. The extensive involvement of intermediary traders in the marketing process results in high marketing margins, which leads to a significant disparity between the prices paid by the end consumer and received by the smallholders. Consequently, related marketing agencies may take a larger share of the profits (Girikerto et al., 2021; Ikhtiagung et al., 2022). The presence of numerous intermediaries indicates a lengthy marketing chain, leading to higher marketing costs and an inefficient marketing channel (Ardillah & Hasan, 2020; Riyadh, 2018; Saefudin, 1982; Sarkum et al., 2020).

Given the challenges faced by smallholder oil palm farmers in Pasar VIII Namo Terasi Village, it is essential to examine the marketing practices of oil palm in the area (Pinem et al., 2018). Specifically, an analysis of the various marketing channels employed and their relative efficiency is necessary to identify potential solutions that can enhance the profitability and sustainability of smallholder oil palm farming in Namo Terasi Village.

METHOD

A purposive sampling method was employed to select Pasar VIII Namo Terasi Village, Sei Bingai District, Langkat Regency, North Sumatra Province, as the research site due to its significant smallholder oil palm plantations. The research was conducted to achieve specific research objectives. The study sample comprised of 31 smallholder oil palm farmers, 3 collectors, and factories involved in the distribution of palm oil in Pasar VIII Namo Terasi Village.

The primary data for this research was collected through interviews with every actor involved in the oil palm marketing chain. Meanwhile, secondary data was obtained from several related agencies, including the Central Bureau of Statistics North Sumatra, the Central Bureau of Statistics Langkat, and the District Plantation and Forestry Service of Langkat.

The marketing channels of smallholder oil palm plantations were analyzed using descriptive analysis. The marketing margin and share of oil palm smallholders at the research location were analyzed using the calculations outlined in Baroh et al. (2021).

The study employs the following calculations (Baroh et al., 2021) to analyze the marketing margin and share of smallholder oil palm farmers in Pasar VIII Namo Terasi Village: Marketing Margin (MP) is computed as the difference between the price paid by the producer (Pf) and the price received by the consumer (Pr); Marketing Profit (KP) is determined using the following formula: Pj – Pb – Bp, where Pj is the Selling Price of the Marketing Institution, Pb is the Purchase Price of the Marketing Institution, and Bp is the Marketing fee; Profit Margin (MK) is calculated as MP divided by Pr multiplied by 100, and Marketing Cost (BP) is MP plus Bp. The farmer's share (SP) is expressed as a percentage of the price received by farmers from the price at the consumer level (Umar et al., 2020; Wahyuni et al., 2021). Descriptive analysis is utilized to analyze the marketing channels for smallholder oil palm plantations.

$$MP = Pr - Pf \quad (1)$$

$$KP = Pj - Pb - \Sigma Bp \quad (2)$$

$$MK = Mp - Bp \quad (3)$$

$$SF = \frac{Pf}{Pr}\ x\ 100\% \quad (4)$$

To evaluate the marketing efficiency of palm oil in the research area, the following formula can be employed:

$$Ep = \frac{Marketing\ Cost}{Product\ value}\ x\ 100\% \quad (5)$$

The level of marketing efficiency of palm oil in the research area was evaluated using the following criterion: if the EP value is ≤ 50%, it indicates that the marketing channel utilization in the research area has reached an efficient level; conversely, if the EP value is ≥ 50%, the marketing channel in the research area has not yet achieved an efficient level.

RESULTS AND DISCUSSION

Pattern of Marketing Channel

Marketing is a fundamental process whereby organizations interact with their customers, cultivate positive relationships, and generate value for these customers in order to receive favorable feedback and generate profits, thus increasing customer assets (Kotler & Armstrong, 2018). Essentially, marketing is the process of moving products from producers to consumers. It is a crucial activity in the production cycle, as good production can be wasted if market prices are low. Consequently, high production levels without effective marketing may not translate into high profits.

The marketing channel for palm oil refers to the process of marketing the fruit bunches from the producers, namely the palm oil farmers, to the consumers, namely the palm oil mills. The marketing agency, which is an intermediary involved in the marketing activities of fruit bunches from the farmers to the mills, plays a crucial role in these activities. The distribution of production results in marketing activities necessitates an important role from intermediaries or marketing agencies. The volume of production per unit area, calculated per year or per harvest, is a factor that influences the selection of marketing channels (Mawardarti, 2018).

The results of the study on the marketing channel of smallholder oil palm in Pasar VIII Namo Terasi Village suggest the existence of two types of marketing channels that involve marketing agents. The participation of marketing agents is a significant factor in determining the magnitude of marketing margins, marketing costs, and profits.

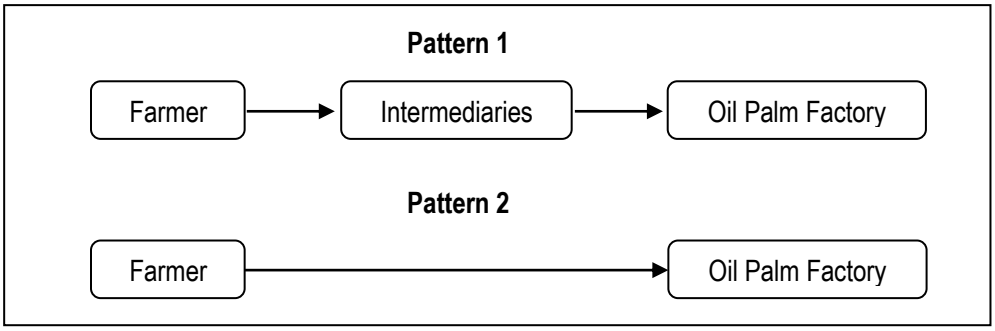

Figure 1. Fresh Fruit Bunch Marketing Channel in Smallholder Farmer in Pasar VIII Namo Terasi

The study revealed that out of the 31 smallholder oil palm farmers sampled, 27 farmers utilized marketing channels to sell their fresh fruit bunch (FFB) produce to collectors, who acted as intermediaries. The quantity of FFB sold to collectors by farmers varied depending on their land size and harvest yields. Incurring only harvesting and transportation expenses, the farmers were charged a minimal fee. The farmers opted to sell to collectors as they lacked adequate yields and transportation means to sell directly to the oil palm factory (Noor, 2013; Kana et al., 2022).

Farmers choose to sell to collectors due to transportation constraint. Farmers do not have means of transportation to transport FFB to oil palm factory. The distance between farmer's land and the factory become

one of the reason farmers sell their FFB to collector. This is in accordance with previous research which explains that distance is one of factor that affect farmer decision to sell their product using intermediaries (Ananda, 2017). In addition, the small area of farmer land is one of the obstacles for farmers. Factories usually ask for FFB in large quantities, which is making it difficult for smallholder farmers to fulfill the requirement (Mawardati, 2018).in addition research by (Noor, 2013) explained that farmers who sell their crops through this channel will be directly paid in cash by the collecting traders. This is what makes farmers choose this marketing channel.

The fresh fruit bunches produced by smallholder oil palm farmers in Pasar VIII Namo Terasi were sold to collectors at a price range of IDR 2,800 to 2,900 per kilogram, while collectors sold them to an oil palm factory at IDR 3,300 per kilogram. The PT Serdang Hulu Factory in Sei Bingai sub-district was the destination for these fruits. The average costs incurred by farmers for harvesting and transporting the fresh fruit bunches amounted to IDR 226 per kilogram. All the costs associated with the marketing process were borne by the collectors (Kana et al., 2022; Noor, 2013).

It must be recognized that the existence of collectors cannot be separated from the lives of farmers in the oil palm marketing system, especially in oil palm plantations that are self-supporting. Cooperation between farmers and collectors generally has been established for a long time and it is difficult for farmers to break away from their existence. Apart from marketing their crops, collectors also play a major role in helping farmers, especially in procuring production inputs such as fertilizers and seeds (Sumartono et al., 2018).

The second marketing chain (MC II) in the fresh fruit bunch (FFB) distribution of smallholder oil palm farmers involves a simpler channel pattern, where the farmers directly sell their FFB to the processing factory without the involvement of intermediaries. This channel is less commonly utilized, as it requires larger quantities of FFB, with a minimum purchase requirement of 4,000 kg, which not all farmers can meet. Among the sample farmers, only four were found to use MC II. These farmers opt to sell their FFB directly to the oil palm factory due to their larger land holdings, higher yields, and private transportation capabilities.

MC II involves several costs, including harvesting, transportation, and loading/unloading costs. Smallholder farmers in this channel sell their palm oil directly to the PT Serdang Hulu Factory located in the Sei Bingai sub-district. The selling price for farmers' palm oil to the factory is IDR 3,300 per kilogram. This price is determined per day by the factory based on calculations and uses world CPO prices. The world price of CPO fluctuates very actively, causing the price of FFB to fluctuate every day (Ananda, 2017).

Margin Analysis

The market margin analysis is employed to measure the discrepancy between the purchase price paid by collectors and the selling price of FFB received by smallholder farmers at different stages of the marketing channel, culminating in the final marketing agency, i.e., the factory (Baroh et al., 2021). The marketing channel of palm oil becomes longer as more marketing agencies get involved, resulting in higher marketing margins.

Table 1. Marketing Margins and Profits in the Oil Palm Marketing Channel for Smallholder Farmers in Pasar VIII Namo Terasi

No	Marketing Agencies	Price (IDR/Kg)
Marketing Channel Patern 1		
I	Farmer	
	1. Selling Price	2850
	2. Harvesting Cost	226
II	Collectors (Intermediaries)	
	1. Buying Price	2850
	2. Selling Price	3300
	3. Marketing Price	304
	- Labor	250
	- Transportation	27
	- Loading/Unloading	28
	4. Profit Marketing Channel 1	146
III	Oil Palm Factory	
	1. Buying Price	3300
IV	Marketing Margin	450
Marketing Channel Patern 2		
I	Farmer	
	1. Selling Price	3300
	2. Marketing Price	276
	- Labor	225
	- Transportation	24
	- Loading/Unloading	27

No	Marketing Agencies	Price (IDR/Kg)
	3. Profit Marketing Channel 2	146
II	Oil Palm Factory	
	1. Buying Price	3300
III	Marketing Margin	0

Marketing channel 1 involves smallholder farmers distributing their palm bunches to collectors for a price of Rp. 2850/kg, who in turn distribute the FFB to PT. Serdang Hulu Factory for Rp. 3.300/kg. The marketing margin for marketing channel 1 is IDR 450/kg, while the marketing costs such as labor costs for vehicle drivers, transportation costs, and loading and unloading costs amount to Rp. 305/kg and are borne by the collectors. The profit earned by collectors in the marketing process is IDR 146/kg. On the other hand, farmers in marketing channel 1 incur harvesting and transportation costs of Rp. 226/kg.

Based on field observations, the oil palm harvesting process involves the use of traditional tools such as dodos and egrek to cut palm bunches. After the fruits have been cut, they are collected in wheelbarrows or on motorbikes using a tajok. The loose fruits and harvested palm bunches are then gathered at a collection point beside the road. Typically, a dump truck is used to transport the FFB. However, care must be taken during transportation to ensure that the number of bundles being transported does not exceed the vehicle's capacity (Kana et al., 2022).

The second marketing channel involves direct distribution of fresh fruit bunches (FFB) from farmers to PT Serdang Hulu Factory at a selling price of Rp. 3300/kg. As a result, this channel has no marketing margin, and the farmers receive a profit of Rp. 3024/kg. However, they do incur marketing costs, including labor costs for harvesting and transportation (Rp. 225/kg), transportation costs (Rp. 24/kg) and loading and unloading fees (IDR 27/kg). The total marketing cost borne by the farmers is IDR 276/kg. It is important to note that the price variation across different marketing agencies is substantial and depends on the level of profits taken by each entity involved in the marketing process.

Margins in each marketing channel are different due to differences in marketing costs incurred and profits earned for each trading level. A small margin value indicates that the channel is efficient because the difference in selling prices at the farm level and the buying price at the final level is small, this will benefit farmers (Ananda, 2017). Marketing channel efficiency can be seen from the marketing margin value. The lower the margin indicate the more efficient the channel. It is accordance with (Kusworo & Iswarini, 2021) that longest marketing channel, the higher marketing margin.

Farmer's Share

The farmer's share refers to the proportion of the final consumer price that farmers receive. It is measured by calculating the percentage of the price received by farmers compared to the final consumer price (Yunita & Noviar, 2020). The size of the farmer's share is impacted by the marketing channels used and the selling price at the retail level. The farmer's share indicates whether the distribution of profits between collectors, wholesalers, retailers, and farmers is equitable.

Table 2. Farmer's Share and Marketing Efficiency in the Oil Palm Marketing Channel among Smallholder Farmers in Pasar VIII Namo Terasi

Marketing Channel	Price in Farmer Level (IDR/Kg)	Price in Consumer Level (IDR/Kg)	Farmer's Share (%)	Marketing Efficiency (%)
I	2903	3300	86,36	10,68
II	3300	3300	100	8,36

Based on Table 2, it is explained that the Farmer's Share in marketing channel I (farmers-collectors-factories) is 86.36%. It is accordance with study by (Sarkum et al., 2020) that farmer share in Labuhan Batu Regency, North Sumatra is 62%, study by (Lifianthi et al., 2022) shows that farmer's share in Banyuasin South Sumatera is 61,11 % and study by (Hasanuddin, 2021) show that farmer's share in Tomo District, Mamuju is 59,79%.

The highest farmer's share is in marketing channel II (farmers - factories). In Pasar VIII Namo Terasi Village, Sei Bingai District, Langkat Regency, there are 4 smallholder oil palm farmers who are able to distribute their FFB Straight to Oil Palm factory so that the price share received by farmers is 100%. Previous research by (Alham et al., 2020) also showed that farmer's shares who sell directly to factory is 100%. Thus, marketing channel II is the most profitable marketing channel for farmers in marketing palm oil. This is in

accordance previous research (Kana et al., 2022) that explained marketing channel which farmer sell directly to factory is the most efficient channel.

Based on Table 2, it shows that the efficiency value of marketing channel 1 is 10.68% < 50%, it means that the marketing channel 1 is efficient. The efficiency value of marketing channel 2 is 8.36% < 50%, it means that the marketing channel 1 is also efficient. From the results obtained, it can be concluded that marketing channel 2 is the most efficient channel, because farmers sell their palm oil not through marketing agencies, so the marketing costs in channel 2 are lower than channel 1 (Fatmawati & Zulham, 2019).

The finding is consistent with Anindita's (2017) explanation that marketing inefficiency can be attributed to three causes, namely lengthy marketing channels, high marketing costs, and market failures. Long marketing channels typically result in high marketing costs from producers to final consumers, such as the palm oil mill in this case. Additionally, the perishable nature of agricultural commodities is a significant factor contributing to the inefficiency of marketing agricultural products when compared to industrial goods (Anindita, 2017).

CONCLUSION

There are 2 types of Marketing channels for Oil Palm in Pasar VIII Namo Terasi Village, Sei Bingai District, Langkat Regency, Marketing Channel 1 (Farmers–Intermediaries–Oil Palm Factory) and Marketing Channel 2 (Farmers–Oil Palm Factory). Marketing Channel with the highest Farmer's Share is Marketing Channel 2, with the share of farmer's value being about 100%. Either marketing Channel 1 and marketing channel 2 are categorized as efficient.

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Type the paper title, Capitalize first letter (19 pt, The Title Describes the Conducted Research, Arial Narrow, Font Size 19, Single Line Spacing, 0 pt after spacing)

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ABSTRACT (10 PT)

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INTRODUCTION (*Heading 1*) (bold, 12pt)

This section could also provide the expected results. The introduction must be written in single line spacing. The introduction comprises of: (1) research problem; (2) insight and problem solve planning; (3) summary of theoretical studies and the results of the present study (state of the art), related to the observed problems (gap), and (4) research aims.

According to Armagan (2014), the introduction section comprises the first portion of the manuscript, and it should be written using the simple present tense. Additionally, abbreviations and explanations are included in this section. The main goal of the introduction is to convey basic information to the readers without obligating them to investigate previous publications and to provide clues as to the results of the present study (references should be selected from updated publication with a higher impact factor, traceable, and prestigious source books). To do this, the subject of the article should be thoroughly reviewed, and the aim of the study should be clearly stated immediately after discussing the basic references.

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The body articles must be written in Arial Narrow, font size 11, 0 pt before spacing, and 0 pt after spacing.

METHOD

Basically, this section describes the way the research was done. The main materials must be written here: (1) research design; (2) population and samples; (3) sample collection techniques and instrumental development; and (4) data analysis techniques.

The specification and type of tools and materials must be written in case the researches have been conducted by using them.

The qualitative research, such as classroom action research, case studies, and so forth, need to mention the researcher attendance, research subject, and participated informants, as well as the methods used to explore the data, research location, research duration, and the description of research results validation.

It is suggested that the authors avoid organizing the article content into the smaller parts than second subheading in this section. However, in case of unavoidable factors, the writing style must follow the “Results and Discussion” section.

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RESULTS AND DISCUSSION

This section is the main part of the research result article in which the "fix" results are served. The data analysis processes, such as statistical computing and hypothesis testing, are not necessary to be served. The materials reported are the analysis results and hypothesis testing results. In addition, tables and graphics are also can be showed to enunciate the verbal narration. Tables and images must be given a comment or discussion. The details of qualitative research written in some sub-topics which directly related to the focused category.

The discussion of article aims to: (1) answer the problems and research questions; (2) show the ways the findings obtained; (3) interpret the findings; (4) relate the finding results to the settled-knowledge structure; and (5) bring up new theories or modify the exist theories.

Research results must be clearly concluded in answering the research questions. Interpreting the findings should be done by using logics and present theories. The findings in form of facts found in the research fields are integrated to previous researches or present theories. This must be supported by reliable references. In case the researchers bring a new theory, the old theories can be confirmed or rejected, or modify the old theories.

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Abbreviations and Acronyms

The extensions of common abbreviation, such as UN, SI, MKS, CGS, sc, dc, and rms are not necessity to be described. However, it is crucial to give the extension for uncommon abbreviations or acronyms which made by authors. For instance: OIDDE (Orientation, Identify, Discussion, Decision, and Engage in behavior) learning model can be used to train mastering solving problem skills. It is suggested to not using abbreviation or acronyms in the manuscript title, unless unavoidable.

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$$\frac{\square}{\square}\left(\frac{}{}+\square\cdot\nabla\right)\square = -\square\nabla\cdot\square + \frac{I}{\sigma}\square^2 \quad {}_{\square\square}\,\square\square\cdot\square + \qquad (3)$$

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Place the labels above for tables and below for images. Write the table label specifically, for example Table 1, in case the author refers the Table 1 mentioned. The example of writing table and figure information is as below.

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CONCLUSION

This part provides the summary of results and discussion which refers to the research aims. Thus, the new principal ideas, which are essential part of the research findings, are developed.

The suggestions, which are arranged based on research discussed-findings, are also written in this part. These should be based on practical activities, new theoretical development, and/or advance research.

ACKNOWLEDGMENT

This section can be written in case there are certain parties need to be acknowledged, such as research sponsors. The acknowledgement must be written in brief and clear. In addition, avoid the hyperbole acknowledgment.

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Supplementary Material

Supplementary material that may be helpful in the review process should be prepared and provided as a separate electronic file. That file can then be transformed into PDF format and submitted along with the manuscript and graphic files to the appropriate editorial office.

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