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Fakultas Pertanian dan Peternakan
Universitas Muhammadiyah Malang
Jl. Raya Tlogomas No. 246 Malang, Jawa Timur
Telp. 0341464318 ext. 116 Fax: (0341)460782.
email: agriecobis@umm.ac.id

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Alamat redaksi :Jl Raya Tlogomas 246 Malang, Gd. GKB 1 lt.5
Program Studi Agribisnis, Fakultas Pertanian Peternakan
Universitas Muhammadiyah Malang (65144) Telepon/WA : +62 813-3076-4818 ext.116. Email :agriecobis@umm.ac.id

Editorial Team

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Alamat redaksi :Jl Raya Tlogomas 246 Malang, Gd. GKB 1 lt.5
Program Studi Agribisnis, Fakultas Pertanian Peternakan
Universitas Muhammadiyah Malang (65144) Telepon/WA : +62 813-3076-4818 ext.116. Email :agriecobis@umm.ac.id

Administrasi : Fila Cipta Sasmita SP
Email : agriecobis@umm.ac.id
No : +62 813-3076-4818
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Research Article

The Interest of Young Agricultural Entrepreneurs (Young Farmers) on Chili Agribusiness in Kabupaten Garut

Ait Maryani[a1*], Dedy Kusnadi[b2], Wida Pradiana[c3]
[abc] Agricultural Development Polytechnic, Ministry of Agriculture, Bogor, Indonesia
Jalan Aria Surialaga, Nomor 1, Bogor, West Java, Indonesia
Email: [1]aitmaryanistpp@gmail.com, [2]dedyasgar57@gmail.com, [3]widaprstpp75@gmail.com
* corresponding author

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ABSTRACT

The study aims at analyzing the descriptions of the interests of young agricultural entrepreneurs (young farmer) and discovering the factors affecting their interest in chili agribusiness. The study was conducted in Kabupaten Garut from June to November, 2019. This study employs a quantitative approach. In this study, population was 1.376 of young agricultural entrepreneurs (young farmer) aged under 40 in chili production centers. Sample for this study was 233 people obtained by calculating following Slovin. The samples were scattered in sub-district of Banyuresmi (79 people), Wanaraja (72 people) and Cikajang (83 people). Sampling technique employed was proportional random sampling. Primary data were collected from respondents through direct interviews and focus group discussion (FGD). The research variables consisted of individual characteristics, external characteristics, and the interests of young agricultural entrepreneurs (young farmer). The collected data were analyzed by utilizing descriptive statistical analysis and multiple regression. The results of the study concluded show that most of the respondents stated their interest were at a moderate level. The average age of young agricultural entrepreneurs (young farmer) is 31.47 years. The majority are still elementary school educated, and most of them have never been involved in organizations and never joined apprenticeship/courses/training. However, cosmopolitan attitude is in the high category. The interest of young agricultural entrepreneurs (young farmer) is affected by institutional, non-formal education, cosmopolitan and external factors including government support, availability of infrastructure, agricultural extension, easy access to information, community leaders and production markets.

INTRODUCTION

Agriculture is still the main sector for rural communities. Agriculture as the main livelihood has become a source of income and reduces unemployment, especially for the younger generation in rural areas. Employment opportunities for the young generation in agriculture in the rural areas are wide open, and the

young generation are expected to play a role in agricultural development in the future. However, based on previous research, the younger generation's interest in agricultural activities has decreased (Ningsih & Sjaf, 2015). Research by Wiyono et al. (2015) reported on several issues concerning the interest of the younger generation. Most of the younger generation are not interested in being rice farmers (70%) or horticulture (73.3%). Some young farmers who have been engaged in agriculture said they were forced to become farmers because there were no other options (jobs).

The decline in the interest of the younger generation to pursue agriculture is suspected to be the cause of the decline in the number of agricultural actors. It can be proven by the percentage of the population in Indonesia who are engaged in agriculture tends to experience depreciation. Based on information from the agricultural census results, the distribution of farmers in 2003 was 55.7 percent, then in 2013, it decreased to 40.81 percent (Anwarudin et al., 2019; Dayat et al., 2020). Next, in 2018, the share of farmers was reported to be 31.90 percent (Statistics Indonesia (BPS), 2018). The results of the information comparison according to that period show that agricultural actors are experiencing an extreme decline.

Based on the preliminary survey, in several areas in Kabupaten Garut, it is discovered that many young people are engaged in agriculture. This young farmer is active in chili agribusiness. Garut is a substantial chili producing area in West Java. Chili is a strategic commodity that has been unable to meet national needs. Kabupaten Garut can supply 30 to 40 percent of chili needs of Jabodetabek.

Some researchers report that young farmers who have successfully engaged in agriculture tend to possess good interests. Successful agropreneurs in Cianjur have a high interest in agriculture (Harniati & Anwarudin, 2018b). Anwarudin & Haryanto (2018) recommends the importance of the role of government and non-governmental agricultural extension officials to involve the younger generation in extension and agricultural activities so that the gradual regeneration of farmers can be realized. Harniati & Anwarudin (2018) support these reports and recommendations by proving that most of the young farmers who are currently engaged in agriculture are the result of informal education. For instance, it is because parental involvement in agriculture; it is because they are interested in and follow the examples of successful advanced farmers; it is because of independent extension officials; and they are members of young farmer communities. This study aims at analyzing the extent to which young farmers are interested and discovering the factors affecting the young farmers' interest in chili agribusiness in Kabupaten Garut.

RESEARCH METHODS

This study was conducted in Kabupaten Garut from June to November 2019. This study employs a quantitative approach. The population of this study is 1376 young agricultural entrepreneurs (young farmers) aged under 40. A sample of 233 people was obtained through calculations following Slovin with an error rate of 6%. The samples are spread over several sub-districts: Banyuresmi (79 people), Wanaraja (72 people) and Cikajang (83 people). Samples were determined and selected based on proportional random sampling technique. Research data includes primary and secondary data. Primary data were obtained from respondents through direct interviews and focus group discussions (FGD). The research instrument used a questionnaire that had been tested for its validity and reliability with results showing it is valid and reliable.

The research variables consisted of: individual characteristics (X1), external support (X2), and interest of a young agricultural entrepreneurs (young farmers) (Y). Individual characteristics (X1) are defined as distinguishing characteristics (identifiers) with other individuals, consisting of: age ($X_{1.1}$), formal education ($X_{1.2}$), non-formal education ($X_{1.3}$), organizational experience ($X_{1.4}$), and cosmopolitan ($X_{1.5}$). External characteristics (X2) are components coming from outside the individual, consisting of: farmer group support ($X_{2.1}$), availability of infrastructure ($X_{2.2}$), government support ($X_{2.3}$), ease of access to information ($X_{2.4}$), extension activities ($X_{2.5}$), support from community leaders ($X_{2.6}$), and market availability ($X_{2.7}$). Interest of a young agricultural entrepreneurs (young farmers) (Y) is defined as the motives of the young agricultural

entrepreneurs (young farmers) to participate in agricultural activities, which are determined by: willingness to own a business ($Y_{1.1}$), become a successful entrepreneur ($Y_{1.2}$), and become a independent extension officials ($Y_{1.3}$). The data obtained were then analyzed according to the research objectives. To explain the interest of the young agricultural entrepreneurs (young farmers) like individual characteristics and external characteristics, descriptive statistical analysis was conducted. Multiple regression analysis was used to determine the factors affecting the interest of the young agricultural entrepreneurs (young farmers).

RESULTS AND DISCUSSION

Description of Research Variables

Individual characteristics of a young agricultural entrepreneurs (young farmers) in this study include age, formal education, non-formal education, organizational experience and cosmopolitan. The average age of them is 31.47 years. The youngest of young agricultural entrepreneurs (young farmers) engaging in agriculture is 16 years old, a relatively young age to be a worker or entrepreneur. Their involvement in agriculture is actually even younger than 16. Based on in-depth interviews, several young agricultural entrepreneurs (young farmers) have been involved in agricultural cultivation since school-age children. Most of the young agricultural entrepreneur (young farmers) started their farming activities by helping their parents in the family's farm and rice fields. They help their parents' farming business even if it is only modest or not full, even considered light agricultural activities (the level of activity is according to their parents' considerations). Some of these agricultural activities include planting, fertilizing and watering. Some young agricultural entrepreneur (young farmers) starts full-fledged farming after getting married or starting their own families. The results of interviews and observations found that the young agricultural entrepreneurs (young farmers) have greater responsibilities when they are married. Some parents give their children part of their agricultural land when their children get married. The land is intended as a means of earning a living so that the married children can fulfill their life needs independently and be separated from their parents.

The education of most of the young agricultural entrepreneurs (young farmers) is in the level of elementary, and some are junior high school, senior high school and Higher education (go to college). Therefore, all young agricultural entrepreneurs (young farmers) can read and write. When compared with the level of education of farmers in general, which is elementary (Qintamy et al., 2020; Hamdana et al., 2020; Maryani et al., 2020a), the portion of young agricultural entrepreneurs (young farmers) with this level of education is much smaller. This shows that the level of education of young agricultural entrepreneurs (young farmers) is better than that of general or adults' farmers. The results of this study are in line with previous studies (Dayat et al., 2020; Wardani & Anwarudin, 2018), yet it is different from Harniati & Anwarudin (2018) reporting that the majority of young farmers who are members of the agricultural entrepreneur community have education level at junior and senior high school.

Table 1. Individual characteristics of young agricultural entrepreneurs (young farmers) based on age, formal education, involvement in organizations, non-formal education and cosmopolitan attitude

No.	Category	Total of Respondent (person)	Percentage (%)
X_{11} Age of young agricultural entrepreneurs (young farmers) (year)			
1.	16 – 20	15	6.44
2.	21 – 25	36	15.45
3.	26 – 30	58	24.89
4.	31 – 35	65	27.90
5.	≥ 36	59	25.32
	Average: 31,47 years		
X_{12} Formal education			
1.	Elementary School	89	38.20
2.	Junior High School	68	29.18
3.	Senior High School	60	25.75
4.	Higher Education	16	6.87
	Modus: Elementary School		
X_{13} involvement in organizations/farmer organization			
1.	Never	203	87.12
2.	1 – 5 years	25	10.73
3.	≥ 5 years	5	2.15
	Modus: Not yet accommodated by young agricultural entrepreneur (young farmer) community		
X_{14} Non-formal education (workshop, internship)			
1.	Never	221	94.85
2.	1 – 3 days	10	4.29
3.	≥ 4 days	2	0.86
	Modus: Never join a course/ an internship (non-formal education)		
X_{15} Cosmopolitan attitude			
1.	Low	10	4.3
2.	Moderate	86	36.9
3.	High	137	58.8
	Average: 36 (High)		

Most of the young agricultural entrepreneurs (young farmers) have not been involved in farmer groups. Therefore, according to the recommendations from Dayat et al. (2020) , young farmers must be motivated and involved in existing farmer groups. In the three sub-districts where the research was located, Banyuresmi, Wanaraja and Cikajang, only one group of young agricultural entrepreneurs (young farmers) was found, the other was an adult farmer group. Young agricultural entrepreneurs (young farmers) who have never attended internships, training/workshop and courses are many. It is in line with the report written by Anwarudin et al. (2019). However, most of the young agricultural entrepreneurs (young farmers) reflected a high cosmopolitan attitude. This means they have high relationships and access to outside the village. It can encourage young agricultural entrepreneurs (young farmers) to get information and experience more quickly from sources other than where they live. Some information obtained by young agricultural entrepreneurs (young farmers) is the types or varieties of chili seeds, planting techniques, fertilization, disease management and selling prices as well as where to sell their crops at better prices.

The external support of young agricultural entrepreneurs (young farmers) studied in this study is the support of farmer groups, availability of facilities and infrastructure, government support, ease of access to

information, intensity of agricultural extension, support from community leaders, and market availability. The results of the descriptive statistical analysis of external support are presented in Table 2.

Table 2. External support of young agricultural entrepreneurs (young farmers) by category

No.	Category	Total of Respondent (person)	Percentage (%)
1.	Low	76	32.62
2.	Middle	145	62.23
3.	High	12	5.15
	Total	233	100
	Average	: 94.67 (Moderate)	

Most young agricultural entrepreneurs (young farmers) have moderate level of external support. External support for young agricultural entrepreneurs (young farmers) having been felt is government support, availability of infrastructure, intensity of agricultural extension, easy access to information, community leaders and production markets. Government support for young agricultural entrepreneurs (young farmers) has been carried out through training/workshop. The material having been delivered is in the form of technical and entrepreneurial aspects. Some other programs are internship facilitation and tool assistance. However, the program has only reached a few young agricultural entrepreneurs (young farmers). Government support pays more attention to adult farmers who already have farmer groups. Therefore, the government must pay attention to young agricultural entrepreneurs (young farmers) with the support of business capital and infrastructure because it can be an incentive to grow and develop a business in accordance with the report Anwarudin (2021).

Most young agricultural entrepreneurs (young farmers) have not been involved in agricultural extension activities. Extension activities have been routinely carried out, but they have not made young agricultural entrepreneurs (young farmers) the target of counseling. Agricultural extension is mostly intended for adult farmers. In the activities of fostering farmer groups, agricultural extension officials more often foster adult farmer groups whose members are elderly farmers. Therefore, agricultural extension officials must play an optimal role by starting to pay attention to young agricultural entrepreneurs (young farmers) as the targets of the extension in addition to adult farmers because young agricultural entrepreneurs (young farmers) will be the successors of their parents who are member of adult farmers group (Dayat & Anwarudin, 2020b). Through agricultural extension, it is hoped that young farmers can improve their knowledge, attitudes, skills, (Pradiana et al., 2020),business capacity and entrepreneurial spirit (Anwarudin et al., 2020a).

The next external factor is the support of the production market. The market has helped young agricultural entrepreneurs (young farmers) a lot. Some information regarding the production market is needed, such as information on selling prices, consumers and the volume of demand for commodities. The availability of a production market opens up business opportunities for young agricultural entrepreneurs (young farmers). The market is a place for young agricultural entrepreneurs (young farmers) to sell agricultural products, as well as the place for buying seeds and fertilizers. Busy markets can stimulate the businesses potency of young agricultural entrepreneurs (young farmers) to be sustainable (Anwarudin et al., 2020b). Through smooth market information, young agricultural entrepreneurs (young farmers) become good at identifying business opportunities (Dayat & Anwarudin, 2020a), and developing businesses to be more advanced (Anwarudin et al., 2020d).

Table 3. Interest of young agricultural entrepreneurs (young farmers) by category

No.	Category	Total of Respondent (person)	Percentage (%)
1.	Low	25	10.73
2.	Moderate	106	45.49
3.	High	102	43.78
	Total	233	100
	Average	: 57.5 (Moderate)	

All young agricultural entrepreneurs (young farmers) have an interest in agriculture. Their interests vary from low, moderate to high. Previous research on the interests of the younger generation has so far yielded mixed results. This study shows that most of the young agricultural entrepreneurs (young farmers) have an interest in the moderate category. However, this result is different from previous research conducted on the younger generation which found that their interest was in the low category (Wiyono et al., 2015). Another study conducted on young agricultural entrepreneurs found that their interest in working in the agricultural sector was high (Harniati & Anwarudin, 2018b). The difference between the results of this study and the research was caused by the research respondents. In this study, the respondents were young agricultural entrepreneurs (young farmers) of chili in rural areas, while in research by Wiyono et al. (2015) , the respondents were younger generation who did not have an agricultural business. In addition, previous research by (Harniati & Anwarudin, 2018b) , the respondents were young agricultural entrepreneurs who were relatively advanced.

Furthermore, related to young agricultural entrepreneurs (young farmers) who already have an interest in doing business in agriculture and are in the medium category, they need to be appreciated. This situation reflects the emergence of the younger generation to start a business in agriculture. This condition is allegedly also supported by the better perception of the younger generation on agribusiness as reported by Anwarudin & Dayat (2019) and Nazaruddin & Anwarudin (2019) writing that farmers began to have a good perception. Young agricultural entrepreneurs (young farmers) in Kabupaten Garut have started having a good perception of all agribusiness sub-systems, both upstream, farm, downstream and supporting. For the upstream sub-system, young agricultural entrepreneurs (young farmers) feel the importance of providing production facilities for chili agriculture. Some production facilities obtained from suppliers are chili seeds, fungicides, fertilizers, pesticides, and agricultural equipment like hoes. Young agricultural entrepreneurs (young farmers) feel their farming business is hampered when the production facilities for chili agriculture are unavailable at the production facilities provider. Therefore, communication links between young agricultural entrepreneurs (young farmers) and providers of production facilities began to be established and built. For the marketing sub-system, young agricultural entrepreneurs (young farmers) note the importance of chili prices at harvest time. Young agricultural entrepreneurs (young farmers) admit the price of chili is very volatile. The profits obtained by young agricultural entrepreneurs (young farmers) are comparable to the price of chili. When prices are low, young agricultural entrepreneurs (young farmers) also tend to suffer losses. Even, if the chili plants are unharvested because the harvest costs incurred are higher than the harvest income received. Based on the experience of low prices of chili at certain times, farmers perceive the importance of the chili processing sub-system. Currently, there is no chili processing process, meaning that young agricultural entrepreneurs (young farmers) directly sell their harvested chili through collectors, middlemen or directly to the market.

The rise of the younger generation as indicated by the increasing interest in chili agribusiness is good news for the sustainability of agricultural actors. This is related to several facts from 2003 to 2013 indicating the decline in the regeneration of agricultural actors in Indonesia. Indonesian Statistics (BPS) (2013) shows that the portion of young agricultural entrepreneurs (young farmers) is far below the portion of elderly farmers. The distribution of farmers by age category consisting of ages over 54, 35-54 and under 35 years,

respectively, is 32.76 percent, 54.37 percent, and 12.87 percent. This information shows that agricultural actors in Indonesia are dominated by elderly farmers. When the three age groups are compared, it turns out those agricultural actors aged above 54 years (32.76 percent) indicating more significant percentage than agricultural actors aged under 35 years (12.87 percent). Furthermore, It compares the data of BPS from 2003 and 2013 regarding households of agricultural actors. In 2003, the data presented households with agricultural actors as many as 31,232,184 or 55.73 percent of the total 56,041,000 households. Meanwhile, in 2013, the data shows there are 26,135,469 households engaged in agriculture or 40.81 percent of the total 64,041,200 households. Based on the comparison between the statistical data in 2003 (BPS 2003) and 2013 (BPS 2013), it is proven that there has been a decline in agricultural actors in the last ten years. The decrease is huge more about 15 percent. If results of the analysis of the data from BPS having been described are not taken seriously, according to Anwarudin et al., (2020c) , they can have an impact on the share of farmers in Indonesia which will more and more decrease.

The interest of young agricultural entrepreneurs (young farmers) in performing good chili agribusiness is driven by the desire to become good agro-preneurs. The result of this study supported by Anwarudin (2020) stating that the interest of the younger generation can grow because they have a passion for entrepreneurship. Therefore, the younger generation should have entrepreneurial capacity including leadership, adaptability, technical ability and the ability to build and foster cooperation (Anwarudin et al., 2020a). Based on field observations, most of the young agricultural entrepreneurs (young farmers) have good adaptability. It is indicated by the use of superior chili seeds. Furthermore, when there is an innovative way of seeding and fertilizing, young agricultural entrepreneurs (young farmers) immediately apply it. Most young agricultural entrepreneurs (young farmers) have technical or agribusiness skills for chili cultivation sub-systems obtained from their parents, the agricultural extension officials and their peers. Other agribusiness sub-systems like processing and handling chili products have been uncarried out. One respondent stated he did not have this ability. Activities carried out at this time, the chili harvest is directly sold to collectors and markets. This condition causes young agricultural entrepreneurs (young farmers) to experience difficulties when prices are low. Therefore, the needs of young agricultural entrepreneurs (young farmers) in the technical field that can be identified are handling and processing chili. Another need is mutually beneficial cooperation. Some parties involved are currently limited to collectors, big buyers and traders of agricultural production facilities. Young agricultural entrepreneurs (young farmers) are expected to establish cooperation with more large-scale parties such as instant noodle companies to become suppliers of dry chili powder.

The interest of young agricultural entrepreneurs (young farmers) in good chili agribusiness is prompted by the desire to possess their own advanced agricultural business (agrotechnopreneur). Most young married agricultural entrepreneurs (young married farmers) have their own farming business. The ownership is obtained from the parent's agricultural land grant to the child at the time of marriage. However, for young unmarried agricultural entrepreneurs (young unmarried farmers), they follow their parents in performing chili farming business. This finding is supported by report of Ranzez et al. (2020) and Anwarudin et al. (2020c) stating that parents can play a role in encouraging their children to become farmers through the cultivation of respect, socialization, and grants/inheritance. According to Dayat et al. (2020), the attitude of respect and socialization is shown by the involvement of young agricultural entrepreneurs (young farmers) in supporting their parents' farming business. Some of these agricultural activities include planting, fertilizing, watering and harvesting. Grant or inheritance are carried out by some parents when their children marry by sharing part of their agricultural land. The land is intended as a means of earning a living so that the married children can fulfill their life needs independently and be separated from their parents.

The interest of young agricultural entrepreneurs (young farmers) to pursue chili agribusiness is driven by a sense of togetherness among their friends. One of the choices to be a farmer arises because of the successful farming of peers, and life in the village which is dominated by agriculture. Young agricultural entrepreneurs (young farmers) with their peers and comrades have a habit of sharing stories of success, failure, hindrances, obstacles, and solutions for their handling. For young agricultural entrepreneurs (young farmers), sharing knowledge is not a loss, but it provides them a benefit. It is they encourage each other and

help their comrades. Young agricultural entrepreneurs (young farmers) have the desire to become successful farmers, and they have much information and relationships to work together. Therefore, they are capable to share with their peers who are pursuing the same business as an advanced farmer who becomes a independent agricultural extension officials.

Factors Affecting the Interest of Young Agricultural Entrepreneurs (Young Farmers)

Research on the interest of young agricultural entrepreneurs (young farmers) in chili farming in Kabupaten Garut consist of one dependent variable: the interest of young agricultural entrepreneurs (young farmers), and two independent variables: individual characteristics and external factors. Individual characteristics of young agricultural entrepreneurs (young farmers) include age, formal education, organizational experience, non-formal education and cosmopolitan. While external factors are a farmer institutional support, availability of infrastructure, institutional support, easy access to information, extension activities, support from community leaders and availability of production markets. The results of the regression analysis are listed in Table 4.

Table 4. Results of statistical analysis of multiple regression

Variable	Coefficient	*p-value*
R^2	0.453	
Constanta	1.543	0.764
Age (X_{11})	-0.250	0.797
Formal education (X_{12})	0.354	0.092
Organizational experience (X_{13})	0.956	0.028
Non-formal education (X_{14})	0.922	0.039
Cosmopolitan (X_{15})	0.866	0.043
External support (X_2)	0.660	0.049

Interest of farmers in chili agribusiness is significantly influenced by institutional, non-formal education and cosmopolitan. Other variables having a significant effect on the interest of young agricultural entrepreneurs (young farmers) are government support, availability of infrastructure, agricultural extension, easy access to information, community leaders and production markets. The results of the analysis discovered an R2 value of 0.453 indicating the interest of young agricultural entrepreneurs (young farmers) is affected by the variables in this study by 45.3%, while the rest is affected by other variables. In this study, age and formal education had no significant effect. The results of the regression analysis obtained the following equations:

$$Y = 0{,}956\ X_{13} + 0{,}922\ X_{14} + 0{,}866\ X_{15} + 0{,}66\ X_2$$

The study discovered that the involvement of young agricultural entrepreneurs (young farmers) in organizations or institutions had a positive effect on their interest. The higher the involvement, the stronger the interest in working in agriculture. Farmer institutions that are frequently discovered in agricultural communities are farmer groups and association of farmer groups. Most of the young farmers have been uninvolved in the farmer institutions. This is due to the limited existing farmer institutions. In the field, farmer institutions are dominated by adult farmer groups, and specifically there is one farmer group intended for young agricultural entrepreneurs (young farmers). Therefore, some young agricultural entrepreneurs (young farmers) become part of adult farmer groups The study found that the involvement of young agricultural entrepreneurs (young farmers), both male and female in farmer groups, has fostered interest, pleasure and pride in doing farming, as reported Liani et al., (2018). Through farmer group institutions, young agricultural entrepreneurs (young farmers) feel they have friends to ask questions and learn. Through farmer group institutions, young agricultural entrepreneurs (young farmers) can also develop their businesses and cooperate with other

parties. It is in line with farmer groups having a function as a place for learning, production units and a vehicle for working together (Pradiana et al., 2020; Maryani et al., 2020b). It means that the farmer groups have performed their functions well. The problem is that there are still many young agricultural entrepreneurs (young farmers) having not been accommodated by farmer institutions. For those reason, recommendation of Dayat & Anwarudin (2020b) to related parties to increase the involvement of the younger generation in existing farmer institutions or if possible to encourage the growth of institutions for young agricultural entrepreneurs (young farmers).

This study recommends that young agricultural entrepreneurs (young farmers) often obtain non-formal education. It is based on the finding that non-formal education such as training, courses and internships has a positive effect on the growth of interest in young agricultural entrepreneurs (young farmers). This study found that the majority of young agricultural entrepreneurs (young farmers) had never attended courses, training and internships, however, their participation in non-formal education had transformed young agricultural entrepreneurs (young farmers) to be interested in farming. It means that non-formal education providers like training centers; non-governmental organizations have a major role in growing the interest of the younger generation in the agricultural sector. Likewise, agricultural companies providing internship opportunities for young farmers have a positive role in attracting the attention of young agricultural entrepreneurs (young farmers) in the agricultural sector. This research has the implication that several government programs regarding internships to advanced farmers outside and within the country should be further improved. The Japanese internship program, for example, has proven that some of its alumni are now farmers. Even, in their groups, they become advanced farmers, head of farmer groups and become managers of agricultural trainings (Anwarudin et al., 2019).

Young agricultural entrepreneurs (young farmers) have characteristics like other younger generations with high curiosity. To get more information, young agricultural entrepreneurs (young farmers) are very close to information and communication technology. In addition, they have a high range of the explorations; they establish many friendships and relationships with other people outside the village. This cosmopolitan attitude turned out to have a positive effect on growing the interest of young agricultural entrepreneurs (young farmers). It means that the higher the activity of farmers seeking information outside their village, the higher the interest of young agricultural entrepreneurs (young farmers) in carrying out their agricultural business activities. Like any other profession, farming requires high field experience. Young agricultural entrepreneurs (young farmers) are farmers who do not have high field experience. Most of them are novice farmers. Therefore, in carrying out their farming activities, they are encountered with obstacles which they think are something new. Their cosmopolitan attitude can encourage discovering solutions. They urged their parents, friends and explored other villages to find out new things. Some of them want to be more advanced in their farming than the surronding farmers. For that reason, they go to neighboring villages, kecamatan, kabupaten, visit exhibitions, and visit information source agencies to get information and innovation. Some of the things they are looking for are superior seeds, fertilizers, planting technology, commodity prices and markets. They seem to have the potential to be better farmers and are responsive to the latest technology as suggested Anwarudin et al. (2020a).

External factors cause a significant effect on the interest of young agricultural entrepreneurs (young farmers). It means that the greater the government support, the availability of infrastructure, agricultural extension, easy access to information, community leaders and production markets, the greater the interest of young agricultural entrepreneurs (young farmers). Government support for the growing interest of the younger generation to do business in agriculture has begun to be initiated. In 2013, the Ministry of Agriculture has issued Regulation of the Minister of Agriculture No. *07/Permentan/OT.140/1/2013* concerning Guidelines for the Development of Generation of the Young Agricultural Entrepreneurs (Young Farmers). The next few programs are the growth and development of young agricultural entrepreneurs that have been carried out in the last few years, such as the report from Anwarudin et al. (2020c) and Effendy et al. (2020). The program is rolled out based on Decree of the Minister of Agriculture of the Republic of Indonesia Number *10/Kpts/SM.210/I/05/2019* concerning Guidelines for the Growth of Young Agricultural Entrepreneurs. The

younger generation is provided with training and provided with business capital assistance. Of the large number of young generations, the portion targeted by the program is relatively small and limited only to alumni of universities majoring in agriculture and agricultural vocational high schools, but it has a positive effect on encouraging the younger generation to start businesses in the agricultural sector. Currently, the program of Ministry of Agriculture in collaboration with *International Fund for Agricultural Development* (IFAD) creating strong and quality millennial entrepreneurs through the Program of *Youth Entrepreneurship and Employment Support Services* (YESS). This YESS program has a broader target. It is unlimited to university graduates majoring in agriculture and agricultural vocational high schools. However, the target is also to the young generation in rural areas. Based on its location, this program is still limited to a few districts in Java and Kalimantan. However, the young agricultural entrepreneurs (young farmers) who were the respondents in this study did not enjoy the special programs for the younger generation. Yet, they experience the general programs aimed at farmers, such as assistance with agricultural tools and machineries as well as subsidized fertilizers.

Likewise, with infrastructure, the government through the ministry of agriculture has provided agricultural tools and machineries in sufficient quantities to farmers. The agricultural tools and machineries are then managed by an association of farmer groups or farmer groups or certain business groups like the Service Unit of Alsintan (*Unit Pelayanan Jasa Alsintan*; UPJA) depending on the location. Based on field observations, to operate these agricultural tools and machines, young agricultural entrepreneurs (young farmers) have more roles than older generations of farmers. In some locations, there are cases where older farmers hand over the management of agricultural tools and machineries to young agricultural entrepreneurs (young farmers). Several other findings show that young agricultural entrepreneurs (young farmers) are more inquisitive in managing their farms using agricultural tools and machineries. The use of agricultural tools and machineries makes land preparation faster, less tired and less burrowing with mud. Hence, agricultural mechanization has been able to attract young agricultural entrepreneurs (young farmers) to engage in agricultural activities to support research Anwarudin et al., (2020d). The use of agricultural tools and machineries in chili cultivation is not as high as in rice farming. Some of the agricultural tools and machineries used are tractors and water pumps. Tractors are used to cultivate the land, but it is only used for land that has been uncultivated for a certain period of time. Most of the land cultivation for chili cultivation is only by hoeing and making mounds. The water pump is used for watering chili plants. Especially, it is utilized when the dry season comes.

In the description of the role of agricultural extension officials, most of the young agricultural entrepreneurs (young farmers) rarely receive guidance from agricultural extension officials. Only a small number of young agricultural entrepreneurs (young farmers) have interacted simultaneously with agricultural extension officials. However, this interaction with agricultural extension officials has a positive effect and grows the interest of young agricultural entrepreneurs (young farmers). The role of agricultural extension officials is shown by their role as facilitators, communicators, dynamists and consultants (Helmi et al., 2019) and is expected to pay more attention to young agricultural entrepreneurs (young farmers) as the future generation of agriculture as stated Anwarudin et al. (2020b). Agricultural extension officials consist of extension officials from government, independent and private agency. In addition to the aforementioned roles, extension officials from government have the role of coordinating with those extension officials from independent and private agency. The extension officials from private agency are advanced farmers who are then asked to become extension officials for nearby farmers. Since independent extension officials are advanced farmers, the level of interaction with farmers is higher and the relationship is closer. To some extent, independent extension officials have been able to replace the very limited number of government extension officials. Independent extension officials often share their successful experiences with other farmers. Likewise, the success of independent extension officials as advanced farmers can be an example of success for young agricultural entrepreneurs (young farmers). For private extension officials, their role is still very limited. Activities having been carried out is the promotion of pesticides accompanied by technical application.

Access to information and communication has a positive effect in developing the interest of young agricultural entrepreneurs (young farmers). It means that the more access of young agricultural entrepreneurs (young farmers) to agricultural information sources, the stronger their interest to pursue agricultural business. This study in line with Prawiranegara et al. (2016) and Ardelia et al. (2020) that Information and Communication Technology (ICT) plays a role in growing interest. Furthermore, young agricultural entrepreneurs (young farmers) need more detailed information so that they will look for a person to whom they will to ask questions and learn. The figure is an agricultural extension official. This is in line with Anwarudin et al. (2020b) stating that access to agricultural information and agricultural extension officials are complementary. The implication of these findings is that agricultural extension officials and all parties can collaborate in providing information digitally through ICT media so that it can be accessed by many people, including young agricultural entrepreneurs (young farmers).

Rural communities are still relatively obedient to the role of community leaders. They are seen as leaders for the citizens, worthy of emulation and follow their advice. The result of this study supports the finding of Ranzez et al. (2020) stating that the role of parents is proven in spreading the interest of their children to continue their parents' business as farmers. These findings also apply to the parents in this research site in addition to the role of other very helpful community leaders in the research site. Based on field observations, it is recognized that a special farmer group for young agricultural entrepreneurs (young farmers) can be formed because of the role of community leaders. Therefore, the role of community leaders must be optimized to be able to encourage parents and the younger generation to return to activities in the agricultural sector.

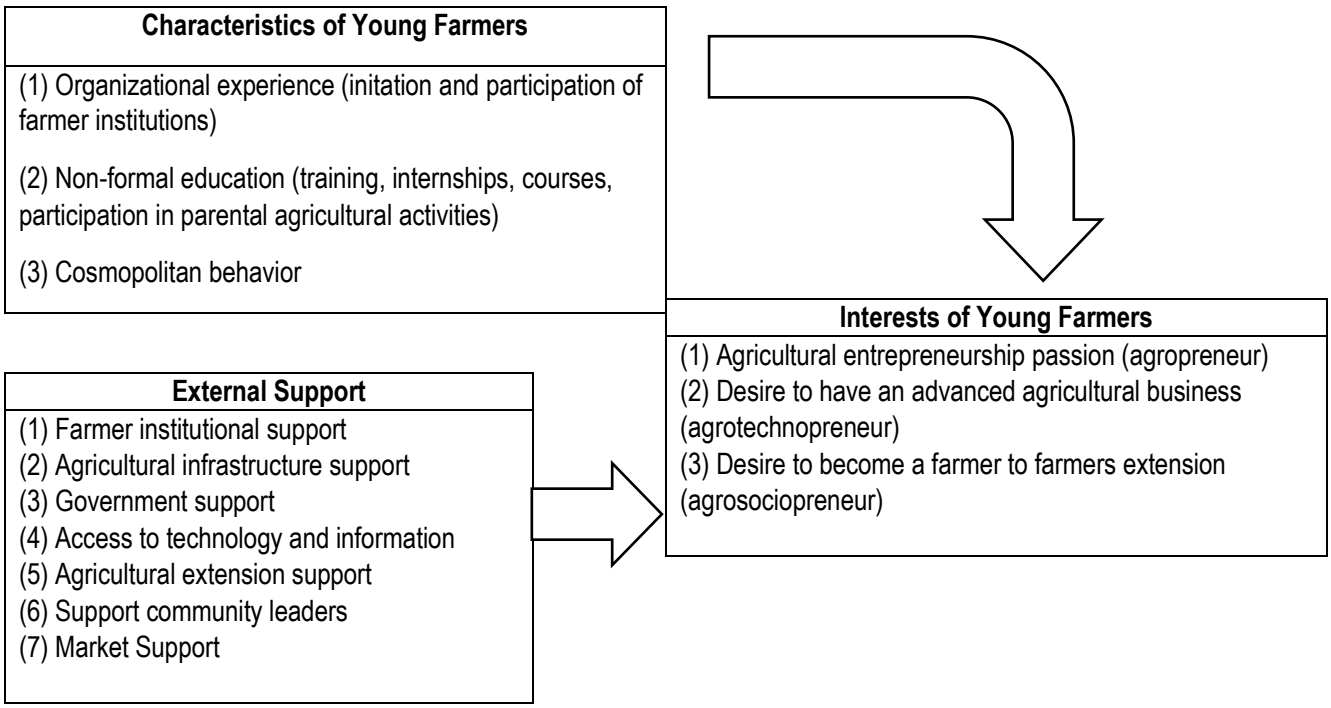

Figure 1. Approach to develop interest of young agricultural entrepreneurs (young farmers) in chili agribusiness.

The implications of this research are presented in Figure 1, the interest development of young agricultural entrepreneurs (young farmers) in chili agribusiness can be done by encouraging young agricultural entrepreneurs (young farmers) to have a passion for agricultural entrepreneurship (*agropreneur*), the desire to have their own advanced agricultural business (*agrotechnopreneur*) and the desire to share information with other farmers (*agrosociopreneur*). To develop the interest of these young agricultural entrepreneurs (young farmers), it is necessary to strengthen their individual characteristics through organizational experience. Young agricultural entrepreneurs (young farmers) must have a place to organize. In the New Order era, young

agricultural entrepreneurs (young farmers) had a group called the "*kelompok taruna tani*." However, over time the farmer groups that have survived to this day are the "*kelompok tani dewasa*." This study found that organizational experience determines the interest of young agricultural entrepreneurs (young farmers). Therefore, young agricultural entrepreneurs (young farmers) must be accommodated in farmer groups, either by initiating and forming a special organization for young agricultural entrepreneurs (young farmers) or joining an existing farmer group. The involvement of young agricultural entrepreneurs (young farmers) in farmer groups requires the efforts of farmer group administrators and agricultural extension officials (Anwarudin et al., 2020b).

Furthermore, strengthening the individual characteristics of young agricultural entrepreneurs (young farmers) can be done through non-formal education, namely training, internships, courses and participation in family farming businesses. Training for young agricultural entrepreneurs (young farmers) can be entrepreneurship and technical training. Internship activities have proven to be effective in forming new farmers. An example of an internship is a Japanese internship where some of the alumni have become advanced farmers, as reported Harniati & Anwarudin (2018). Likewise, parents can play an optimal role in instilling respect and socialization by involving their children in family farming. A small example carried out by several families is involving children in planting chilies by utilizing their yard. This activity supports reports from Nita et al., (2020) stating that the involvement of the younger generation in the use of their yard is effective in growing the interest of the younger generation.

The development of interest in young agricultural entrepreneurs (young farmers) can also be done by optimizing external support: farmer institutional support, support for the availability of agricultural infrastructure, government support, access to technology and information, the role of agricultural extension officials, community leaders and markets. Farmer institutions are a forum for farmers, including young agricultural entrepreneurs (young farmers), to share information, receive guidance and improve their bargaining position (Harniati & Anwarudin, 2018a). Farmer institutions can be in the form of farmer groups and association of farmer groups. The existence of farmer institutions specifically for young agricultural entrepreneurs (young farmers) is still limited in quantity. On the other hand, based on field observations, most of the young agricultural entrepreneurs (young farmers) have not been involved in the existing farmer groups. Therefore, the development of farmer institutions is sought to be able to embrace young agricultural entrepreneurs (young farmers) as members. With the involvement of young agricultural entrepreneurs (young farmers) in the organization can increase the interest of young agricultural entrepreneurs (young farmers) in agriculture as reported by Junaidi et al., (2020).

Agricultural extension officials consist of extension officials from government, independent and private agency. Agricultural extension officials can try making young agricultural entrepreneurs (young farmers) as target of agricultural extension. This is because based on observations in the field, the target of extension is still struggling with elderly farmers. Government extension officials can act as facilitators, communicators, motivators, consultants and coordinate with independent and private extension officials. Independent extension officials are advanced farmers in their domicile locations. The existence of independent extension officials can be optimized for their role as a successful example for young agricultural entrepreneurs (young farmers). Findings in the field, many young people become interested in agriculture after witnessing the success of advanced farmers. Therefore, government extension officials can coordinate with advanced farmers as independent extension officials to encourage them to share knowledge and experiences with young agricultural entrepreneurs (young farmers).

Community leaders who become formal and informal leaders in the village must be able to perceive and express the positive side of the agricultural sector. It is because most young agricultural entrepreneurs (young farmers) in rural areas still regard community leaders as role models. Therefore, all thoughts and actions of community leaders become the center of attention of young agricultural entrepreneurs (young farmers). When

several community leaders voiced their desire to work in the city, many young people in the village went to the city to work. On the other hand, when community leaders speak out for village development, the younger generation mostly lives in the village and works in the rice fields and fields. The attention of community leaders is very important in supporting the creativity of the younger generation. One of the special farmer groups for young agricultural entrepreneurs (young farmers) encountered in this study cannot be separated from the support and role of community leaders.

Market support in the form of selling price information, product demand volume and consumer quantity determine the interest of young agricultural entrepreneurs (young farmers). Therefore, the implication of this research is that information on the selling price of chili must be more transparent. The selling price of chili can be maintained stable and profitable for farmers. Transparency must also exist in information on the volume of chili demand and the quantity of consumers, both in location and time. The information must be fast and accurate so that chili farmers can prepare and schedule harvest times, the means of transportation used and the choice of locations for marketing purposes.

CONCLUSION

The interest of young agricultural entrepreneurs (young farmers) in Kabupaten Garut is at a moderate level. The average age of young agricultural entrepreneurs (young farmers) is 31.47 years; the majority have elementary school education; most of them have never been involved in organizations and have never had internships/courses/training. However, their cosmopolitan behavior is in the high category. The interest of young agricultural entrepreneurs (young farmers) is affected by organizational experience, non-formal education, cosmopolitan and external factors including government support, availability of infrastructure, agricultural extension, easy access to information, community leaders and production markets. This study recommends that young agricultural entrepreneurs (young farmers) often obtain non-formal education. The interest development of young agricultural entrepreneurs (young farmers) in chili agribusiness can be done by encouraging young agricultural entrepreneurs (young farmers) to have a passion for agricultural entrepreneurship (*agropreneur*), the desire to have their own advanced agricultural business (*agrotechnopreneur*) and the desire to share information with other farmers (*agrosociopreneur*).

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Universitas Muhammadiyah Malang, Jawa Timur, Indonesia

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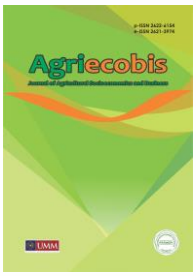

Research Article

Comparison of Staple Food Availability in Urban and Rural Households in Kabupaten Malaka

Falentina Adriana Nahak [a,1,*], Johanna Suek [b,2], Lika Bernadina [b,3]

[a,b,c] Program Studi Agribisnis Fakultas Pertanian Universitas Nusa Cendana, Jl Adi Sucipto Penfui No.85001, Lasiana Klp. Lima, Kota Kupang, Nusa Tenggara Timur

[1] adrianainanahak@gmail.com ; [2] johanna.suek@staf.undana.ac.id ; [3] likabernadina01@gmail.com

[*] Corresponding author

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ABSTRACT

This study aims to investigate the differences staple food availability and household consumption patterns in urban and rural areas. This research took place in Kabupaten Malaka, with the sample of 60 urban households and 60 households chosen through random sampling. The obtianed data were analyzed qualitatively and quantitatively. Results show that staple food availability respondents' household were from the production of own farming, purchasing, and assistance from relatives. However, the availability of staple food did not support household consumption needs for 365 days (1 year). Staple food availability index in urban areas was 58.4, and the rural households reached 57.2. These numbers were far below the national index of 100. Analysis of *z*-tests showed significant differences in staple food availability between urban and rural households.

INTRODUCTION

Staple food is among essential human needs that is consumed regularly in sufficient quantities. According to Law No. 18 year 2012, staple food refers to daily main meal as a source of basic nutrition, but lacking of nutrition. Dewi and Purwidiani (2015) state that different communities across regions consume different staple food following the local and cultural conditions. In Indonesia, staple food includes rice, corn, cassava, and sago.

Food availability is critical to determine the fulfillment of food consumption. In household levels, food availability is fulfilled when the they can access and afford the food. Food accessibility can be obtained from farm production or purchasing (Apu et al., 2017). Fallo and colleagues (2019) denotes that food access and ability of each household highly depends on their income. It can also be influenced by the ownership of farming land to cultivate family food.

Households with sufficient resources can cope with local food instability and are able to maintain access to food. However, there are factors that may affect food availability in each household. Soemarno (2010) argues that household's food availability is strongly influenced by income and farming production. In this

case, family income determines household's purchasing power, and thus their eating patterns and habits. This may result in similar food availability among households in a region. Reduced income caused by famine sometimes leads to food shortage. In a bigger scale, regional food deficit may occur, in which further impact eating habits. As a result, households with similar food availability in a particular region is equally affected by the famine, making them a food deficit area.

A current study by Pratiwi, Seran, & Bano (2016) found that people of Kabupaten Malaka has potentially diverse natural resources, enabling them to be the powerful food providers to the larger areas. Among their superior products are bananas, corns, green beans, rice, sorghum, various types of tubers, and horticultural products. These products had been helping during famine, which normally caused food insecurity for urban community. Specifically, low-income urban people have less food access than rural communities, led them in troubles during famine. The data from Dinas Tanaman Pangan (2019) shows annual increases during 2013-2017 with an average increase of 49.5%. This number only decreased in 2016 by 12.9% due to climate changes that affected regional crops and productivity.

Several studies on food availability by Rahayu (2014) constantly found that household's food availability is mainly supported by own production rather than purchases. This study is quantitaively supported by Fallo and colleagues (2019), which showed that the availability of household staple food was 276 kg of rice. This amount can only meet the needs for 207 days. Hence, food availability can be categorized as insufficient. Another study using the sample *t*-independent ($p>0.05$) evidenced that food availability of rural areas was greater than urban areas (Apriani & Baliwati, 2011).

In Kabupaten Ambarawa, Maiyani and colleagues (2017) found that household food availability only reached 67.99% of the AKE standard. It was shown that farmers' land areas and ages significantly affected the food availability. Banita (2013) also found that household food availability was moderate with rice as the main staple food. Pellokila, Oematan, and Kami (2020) explained that there is a positive correlation between household income and food availability.

Kabupaten Malaka is one of the Indonesia's outermost regions directly bordered with Timor Leste. It is largely potential in agricultural, consisting of people from various socio-economic layers determined through land ownership, education, job, income, and the number of family members. Such diversity creates differences in household supply and consumption. This issue underlies this present research that aims to describe the availability and differences in the level of household staple food availability in urban and rural areas of Kabupaten Malaka.

METHODOLOGY

The study was carried out in February to April 2020. Kabupaten Malaka was deliberately chosen by considering the accessibility. Kota Betun and Desa Naimana of Kabupaten Malaka were chosen. Stratification random sampling in urban and rural regions was employed. Participants from urban areas were stratified according to their jobs as civil servants (30 families), merchants (15 families), and private employees (15 families). In rural areas, the participants were stratified following their land areas, which were <0.5 ha = 15 families; 0.51-1ha = 20 families; 1,1-2ha = 10 families; and >2 ha = 15 families. In total, there were 120 urban and rural households involved in this study. Primary data was obtained by interviewing households following structured and semi-structured interviews with closed and open questions.

The criteria of food availability refers to food adequacy according to Soemarno (2010), in which: a) the household food supply meet 365 days, which is adequate; b) the household food supply meets between 1-364 days, which is less adequate; and c) the household does not have a food supply, which is inadequate.

Food Consumption Patterns were analyzed based on PPH referring to BKP (2015). The analysis included: a) actual consumption; b) actual energy; c) actual percentage; d) AKE percentage; d) actual score; and e) AKE score. The calculation of PPH score follows the condition that the maximum score. f the AKE

score > maximum score, the maximum score is used. The Comparative Analysis of staple food availability of rural and urban households employed the *z*-test (Sudjana, 2002). Before the test, all agricultural products were converted to rice equivalent using the standard price of rice at the research site. The categorization of household food security refers to Bickel, Nord, Price, Hamilton, and Cook (2000) described as follows:

- Secure
  If 2 out of 18 questions were answered with *often*, *sometimes*, and *yes*, *almost every month*, and *some months but not every month*.
- Prone to hunger, grouped into three categories, namely:
  - Mild hunger: if 3-5 out of 18 questions are answered with *often*, *sometimes*, and *yes*, *almost every month*, and *some months but not every month*.
  - Moderate hunger: if 6-8 out of 18 questions are answered with *often*, *sometimes*, and *yes*, *almost every month*, and *some months but not every month*.
  - Severe hunger: if > 9 out of 18 questions are answered with *often*, *sometimes*, and *yes*, *almost every month*, and *some months but not every month*.

FINDINGS AND DISCUSSION

Respondent profile

Respondent profile is the description of the situation and background of the household. The profiles include age, education, number of family members, farming experience, and area and status of land use.

It was found that the average age of respondents and their partners is relatively same in urban and rural areas: 45 years and 42 years, respectively. In urban areas, 52% of respondents are undergraduates, 27% are high school graduates, and the remaining 20% are elementary and junior high school graduates. In rural areas, 13% of respondents did not attend schools, 64% are elementary and junior high school graduates, and 23% are high school graduates. education.

In density, both urban and rural are relatively similar with 4-5 members of every household. The majority of respondents in urban areas are civil servants and non-civil servants; while mostly farmers in rural areas. The types of food crops are corn, rice, sorghum, tubers and various types of beans.

Household expenses

The household expenses are categorized into two, they are: food and non-food. Food expenses is monthly expense to buy various foodstuffs in cash, and non-food expenses are monthly expense for education, housing and facilities, clothing, various goods, and transportation costs. *Ojek* (public motorbike transport) was calculated monthly.

The following table shows the average expenses per capita in urban and rural households.

Table 1. Average expenses of urban and rural households

No	Expense category	Urban		Rural		Research location		Urban	Rural
		IDR/month	%	IDR/month	%	Total IDR/month	%	%	%
1	Food	1,365,444	60.05	564,813	59.16	1,930,257	60	70.74	29.26
2	Non-food	908,523	39.95	389,899	40.48	1,298,422	40	69.69	30.03
	Families	**2,273,966**	100	**954,711**	100	**3,228,679**	100	**70.43**	**29.57**
1	Food	341.361	60.05	141.453	59.16	482.814	60	70.70	29.30
2	Non-food	227.131	39.95	97.475	40.84	324.606	40	60.67	30.03
	Per capita	**568.492**	**100**	**238.298**	**100**	**807.402**	**100**	**70.41**	**29.59**

Source: Analyzed primary data, 2020.

It can be seen from Table 1 that partial food expenses were 60.05%, and non-food expenses were 39.95% in urban areas. In rural areas, food expenses were 59.16% and non-food expenses were 40.48%.

Proportionally, non-food expenses in rural areas were slightly larger than those of urban areas. This finding reflects collective cooperation and close community in rural life where hardships resolved together. Among the collective activities are traditional gathering, death ceremonies, marriages, and celebrations (Suek, 2018). In urban area, life tends to be heterogeneous and individual where less social expense was expected, contrasted to the people of rural area.

Overall food expenses in both locations reached 60% and 40%. By the ratio of total expenses in the two regions, food expenses in urban areas are almost three times of rural areas. This finding reflects that most types of food in urban areas are purchased, different from rural areas that are mostly sourced from farming production. On a bigger scale, the the total value of non-food expenses in urban areas was almost 2.5 times bigger than rural areas. Even so, the partial proportion of non-food expenses in rural areas was 0.53% greater than urban areas (40.48% - 39.95). These differences were affected by the diverse spending living in the city where household expenses may bigger than in rural areas. This finding lent a strong support to Hildayanti, Jenahar, & Oemar (2017) who found that household expenses are influenced by income and the number of household members.

According to BPS of Kabupaten Malaka (2019), per capita's expenses for food and non-food were IDR 373,084/month and IDR 235,046/month. This amount was greater than the food and non-food expenses in the two research locations. This pattern appears to follow Engel's Law where a greater income leads to a smaller food expense. Conversely, a smaller income leads to a lesser food expense.

It can be concluded that both urban and rural areas of Kabupaten Malaka have relatively low welfare. In this case, their welfare is strongly influenced by the economic access to food, which further affects food's quality and quantity consumed. This result is in line with Arida et al., (2015) where household welfare is reflected through the proportion of food expenses, which is higher than the proportion of non-food expenses. In line with Engel's Law, Heriyanto (2018) wrote that higher income level likely leads to decreased food expenses, and vice versa. In this study, high proportion of food expenses were caused by low income, in which households prioritized fulfilling food needs over other needs. Similar to a study by Rahmansyah (2020), it is evident that food expenses in Kabupaten Malaka is high.

Staple food availability

One of the main aspects in building food security is food availability (Mariyani et al., 2017) where the availability of staple food in a household becomes a reference for the amount of food available. Availability of staple foods analyzed in this study are corn, rice, and sorghum. Respondents' efforts in meeting the availability of staple food were in the forms of own farming production, purchases, and aids from relatives. Apart from own cultivation to get the type of food they want, people can get food by buying it (Sugiarti & Gita, 2020). Staple food availability in this research did not include rice subsidized by the government *(raskin).* This leaves a room for further research to take into account the availability of *raskin* as a staple food.

In terms of sources, 76.66% of households in urban areas obtained staple food from solely buying, and 11.65% from the combination of buying and aids from relatives. A total of 6.68% obtained staple food from the combination of own farming and buying. The remaining 1.67% obtained staple food from the combination of farming, buying, and aids from relatives. On the other hand, 61.67% of rural households obtained staple food from farming and buying; 3.33% obtained staple food from the combination of farming, buying, and aids from relatives. The remaining 33.67% obtained staple food solely from farming. This finding is line with the study by Rahayu (2014) where availability of staple food in rural areas mostly comes from own farm production.

Staple food availability and consumption period

Based on the staple food availability and consumption period, it was found that the staple food availability for urban households comes from own production of 834 kg/year with an average consumption period of 294 days. From the number of purchases per year, it was found that the availability of corn, rice, and sorghum is 560 kg, 9 kg, and 11 kg respectively with the consumption periods of 235 days, 3 days and 5 days. From the relatives' aids, the availability of rice is 18 kg and corn is 15 kg, with a consumption period of 7 days and 5 days, respectively. It can be concluded that the staple food availability for urban households is mostly through purchases, yet not sufficient for consumption periods of 365 days. This is in line with Mbana et al., (2015) who states that various strategies are pursued to meet these needs for a year.

Availability and consumption period of rural households for annual production of rice, corn and sorghum are 285kg, 203kg and 136 kg, respectively, with a consumption period of 302 days, 78 days, and 63 days, respectively. The amount of rice purchased was 641 kg with a consumption period of 235 days. Shorgum is purchased as much as 10 kg with a consumption period of 5 days. It can be concluded that the staple food availability in rural areas is sufficiently coming from rice for 235 days, with corn and sorghum as back-ups during the remaining time until the next harvest season. This follows a study by Gunadi and colleagues (2018) where rice is the main food source for rural households.

Hence, the strategies used by households to meet annual food availability are: 1) *adaptive* by reducing food portions, switching to cheaper food, looking for additional jobs; 2) *selling assets* such as cattle, buffalo, chickens, and pigs; 3) *using available seeds*, in which some are consumed; and 4) *selling/ pawning* agricultural equipment. It is noteworthy that the fourth strategy is only carried out by a small number of households.

Energy availability in households

The average energy availability of per capita urban households in the forms of rice, corn, and sorghum is 1,539 kcal, 26 kcal and 24 kcal, respectively. These numbers are considered low. Based on the classification of food adequacy stability by Soemarno (2010) the majority of urban households (95%) are on inadequate staple food, while the remaining 5% are on adequate basic food availability. In the rural househols, per capita's energy availability of rice, corn, and sorghum are 1,539 kcal, 495 kcal and 302 kcal, respectively. These numbers are considered high as they are exceeding the national energy availability of 2,200 kcal/capita/day. Such high availability might be caused by the food resources from own farm production. However, the disparity is quite high where average energy availability is not evenly distributed, considering that 80% of households are classified as inadequate. That leaves only 20% of households have adequate availability of basic food energy. Hence, this present study concluded that the average availability of basic food energy for rural households is higher than urban households.

Consumption pattern, habit, and meal frequency

Patterns of food consumption include portions, types of food consumed, eating habits and food management. Such patterns are highly determined by the number of family members, parents' education, income, and the availability of family food (Satmalawati Endah, 2016). Household eating habits are influenced by attitudes towards food, customs, and religion. In example, rural farmers prefer to eat rice plus side dishes; while urban households tend to consume congee, local food, and snacks. Daily pattern of food consumption in both urban and rural households is relatively similar, where rice and corn are the main meal plus side dishes. Generally, the consumption pattern is dominated by carbohydrate food sources.

In terms of eating frequency, Adha & Suseno (2020) stated that the amount and type of food determine humans' level of energy sufficiency in a day where eating frequency is among the important aspects of diet. The average eating frequency of both urban and riural households are three-times big meals including breakfast, lunch, and dinner, and additional snacks.

Meal pattern expectations

Meal pattern expectations (MPE) *(Pola Pangan Harapan/PPH)* refers to the prepared main food groups where the required calories and nutrients are met according to the body's needs (Saputro & Fidayani, 2020). In WNPG X (2013), the recommended energy intake is 2,150 kcal/cap/day. Results of this study shows that the average actual energy consumption (AEC) of rural households was 2,169 kcal/cap/day, which exceeds the normal AEC. On the other hand, the AEC of urban households is 1.990 kcal/cap/day, which is smaller than the normal AEC. These findings are in line with Damora and colleagues (2008) where the average energy consumption of a farmer household reached 2,020 kcal/cap/day. The data from their study exceeds the recommended figure at that time, which was 2,000 kcal/cap/day. The following Table 2 summarizes the expected food pattern index for households in urban and rural areas.

Tabel 2. Results of Meal Pattern Ex[ectation (MPE) in the respondents' households

No	Food group	MPE composition				National MPE	
		Urban		Rural		Energy (kcal)	MPE score
		Energy (kcal)	MPE score	Energy (kcal)	MPE score		
1	Grains	835	19.4	1,002	23.3	1,075	25
2	Tubers	137	2.5	375	2,5	129	2.5
3	Animal source food	132	12.3	80	7.5	258	24
4	Oil & fat	239	5	121	2.8	215	5
5	Oily fruits & seeds	170	1	192	1	64.5	1
6	Nuts	418	10	332	10	107.5	10
7	Sugar	26	0.6	27	0.6	107.5	2.5
8	Fruits & vegetables	33	7.6	41	9.5	129	30
9	Others	0	0	0	0	64.5	0
	Total	1,990	58.4	2,169	57.2	2,150	100.0

Source: analyzed primary data, 2020

It can be seen from the Table 2 that the score for urban households is 58.4 higher than the rural household, which is 57.2. However, the MPE score in both locations is below the national MPE target of 100. This finding lend a astrong support to a study by Hamid and colleagues (2013) where MPE score for rural households is averagely 60.27, and urban households is 82.14. its is indicated that the household consumption in both urban and rural areas has never been diverse, in which less attention to the quantity and quality of food consumed has been paid. Both rural and urban households must pay attention to a balance consumption patterns to meet adequate nutritional needs. This expectation follows Mustopa (2019) where diversification of food consumption must meet sufficient nutritional content, in which rice can be substituted for other staple foods such as corn and cassava.

The higher MPE score of urban households compared to rural households means better food quality in urban households. As can be seen from MPE score against the normal MPE, grains, tubers, oily fruit/seeds, animal foods, oils and fats, and nuts provide the largest contribution. However, all these food groups have not yet reached the national average. It means that the food quality in both urban and rural households require improvement by taking into account the maximum limit of MPE score. In other words, food consumption of both rural and urban houses must be diversified. The push for food quality improvement is in line with Poernomo & Winarto (2020) who state that diversification can reduce dependence on one type of food, and help fulfill nutritional needs.

The comparison of staple food availability in the households

Comparison of staple food availability is obtained by converting various staple foods into the equivalent of rice. Differences in the availability of staple food in urban and rural households were tested for the average difference (*z*-test). Results show that the average availability of staple food in rural and urban households was significantly different at <0.05. This means that the availability of staple food for rural households is greater than that of urban households. However, the existing availability does not guarantee the quality of food consumption. This might be due to the variation in staple food sources of carbohydrates, which are more widely available in rural areas rather than urban households. This result echoes Apriani dan Baliwati (2011), who found that the amount of food availability in rural areas is higher, but not significant at p>0.05. The availability of staple food per capita in rural areas is higher than urban areas although the MPE score of urban households are greater than that of rural households.

Food security in the households

Food security is measured through the stability and security of staple food availability in a household (Faatihah *et al.*, 2021). Food insecurity refers to a situation where a person does not have physical, social, and economic access to sufficient food (Wardani, *et,al*., 2018). Furthermore, various, safe, and nutritious staple food is absolutely required for a healthy and active life. Meanwhile, the aspect of the proportion of food expenditure and energy consumption are used to determine household food security.

The distribution of household food security in Table 3 follows Bickel *et al*., (2000). It is said that in urban food security, there are 32 (53.33%) households belong to the food security category; 20 (33.33%) households belong to the food insecurity category with mild hunger levels; 5 (8.33%) households belong to the food insecurity category with moderate hunger levels; and the remaining 3 (5%) household belong to the food insecure category with severe hunger levels.

There are 7 (11.67%) food security households in rural households; 34 (56.67%) belong to the insecurity category with mild hunger levels; 14 (23.33%) households belong to the food insecurity category with moderate hunger levels; and the remaining 5 (8.33%) households belong to the food insecure category with severe hunger levels.

Table 3. Respondents' Household Food Security

No	Food security category	Urban		Rural	
		Numbers of household	Percentage (%)	Numbers of household	Percentage (%)
1	Secure	32	53.33	7	11.67
2	Insecure with low hunger level	20	33.33	34	56.67
3	Insecure with mild hunger level	5	8.33	14	23.33
4	Insecure with severe hunger level	3	5.00	5	8.33
	Total	60	100.00	60	100.00

Source: analyzed primary data, 2020

It can be seen from the table that urban households are more food secure than the rural ones. This condition is presumably due to the relatively available cash income, where urban households can buy a variety of other types of food besides carbohydrates. They can purchase other foods with protein and others. This analysis follows Saputri and collaegues (2016) where high food security is determined by the ability of households to access it. Hence, urban households' ability to access food sources other than carbohydrates secure the family members despite the 27 (46.34%) urban households are categorized as severe to mild hunger.

Moreover, although rural households have quite a variety of food sources from carbohydrates, their access to protein and other food sources is relatively limited. This may be influenced by their dependence on

the largest cash income in the forms of agricultural production, where they must decide on the use of agricultural products for household consumption to meet subsistence needs versus for sale. This finding is in line with Sari (2017) about reasons behind low food security of rural households. In this study, the percentage of household food security in urban areas was greater than that of rural areas. It contradicts a study by Ashari and colleagues (2017) where the number of food insecure rural households was 27.1%, slightly higher than urban households of 18.8%. Our study evidences that the household's knowledge about food diversification is relatively low. It is noteworthy that knowledge on food diversification will help households in determining the quality of food. An understanding of food diversification is important because rural households mostly think that food security is determined by the numbers of rice consumption, or are dominated by carbohydrates.

Conclusion

A. The availability of staple food for both urban and rural households was insufficient for a period of 365 days.
B. The ACE of rural households is 2,169 kcal/cap/day, which is higher than that of of urban households with 1,990 kcal/cap/day. On the other hand, the MPE score of urban households was 58.4. which is greater than that of the rural gouseholds with 57.2. However, the MPE scores of both urban and rural households are lower than the national MPE score of 100.
C. The average household staple food availability in urban areas is 604 kg/year, which is significantly ($\alpha<0.05$) lower than the average staple food availability for rural households of 678 kg/year.

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Research Article

Consumer Preferences toward Goat Milk

Yohana Agustina[1], Jangkung Handoyo Mulyo[2], Lestari Rahayu Waluyati[3], M. Zul Mazwan[4]

[a,d] Program Studi Agribisnis, Fakultas Pertanian-Peternakan, Universitas Muhammadiyah Malang, Jl. Raya Tlogomas No. 246, 64141, Indonesia

[b,c] Program Studi Magister Manajemen Agribisnis, Fakultas Pertanian Yogyakarta, Universitas Gadjah Mada, Jl. Flora, 55821, Indonesia

[1]yohana.a@umm.ac.id *, [2] jhandoyom@gmail.com , [3]lestarirahayu_wlyt@yahoo.co.id , [4]mzulmazwan@umm.ac.id

* corresponding author

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ABSTRACT

The high level of business competition in this current globalization requires companies to produce quality products. Among the efforts of product improvement is through understanding consumer preferences. This study aims to identify consumer preferences of several attribute combinations of goat milk branded *Bumiku Hijau*, Yogyakarta. Conjoint analysis with pairwise-comparison was employed in this study. The combination of attributes analyzed were price, flavor variant, types of milk, and packaging. Results showed that the best combination results were obtained on stimuli number 13 with a total usability value of 3.709, which was 0.356 on the product price. The chocolate flavor variant attributes to the largest total usability value of 0.166. Based on the type of milk, the total usability value of powdered milk (skim) is 0.073, and the highest usability value was obtained through carton packaging (200gr) of 0.077. Consumers favored powdered goat milk products with new flavor variants that suit teenagers and adults. They also want 100 gr product packaging as it is easier to measure and consume.

INTRODUCTION

The current globalization era has sent businesses and industries to undergo tight competition. This requires companies to create meaningful innovations to maintain existence and sustainability over time. Hence, companies must understand consume's desire for the products (Resmawati et al., 2013). Among the strategies are conducting market research that connects consumers, customers, and the wider public with marketers.

Milk processing is among the industries that is currently growing rapidly and competitively in Indonesia. The processing industry includes the production of powdered milk, sweetened condensed milk, sour milk, and milk cream, including its preservation, such as sterilization and pasteurization. The promising market potential to boost profit is milk processing industry and its derivative products (Holmes et al., 2016).

Milk is a source of complete nutritions needed by human body (Bytyqi et al., 2020; Phan et al., 2020; Šugrová, 2018). However, the Pusat Data dan Sistem Informasi Pertanian (2019) states that the level of consumption of liquid milk in Indonesia is 11.09 liters/capita/year. Such increase is relatively low compared to several countries in ASEAN whose average consumption level reaches 20 liters/capita/year.

The low level of milk consumption in Indonesia is visible from the type of milk product that dominates the market share in Indonesia. Various dairy products that dominate the market share include 40% sweetened condensed milk, 40% powdered milk, and 20% liquid milk (Widaryanti & Retnaningsih, 2018). Indonesians assume that all types of dairy products – both pure milk and its derivative products – have the same nutritional quality. This makes consumers prefer to consume processed milk products, in the form of sweetened condensed milk or milk powder, than consuming whole milk. This preference is based on taste and long shelf life compared to whole milk ready for consumption.

In addition to cow milk – which dominates Indonesian dairy industry market – goat milk is an alternative with equal nutritional content and benefits, and offers a solution for those allergic to cow milk. Goat milk is produced by female goats after giving birth. Within 0-3 days, its colostrum contains many nutrients and are the best source of protein, even almost equivalent to breast milk. Goat milk is also potential for medicine and improve body nutrients (Ranadheera et al., 2019).

The price of goat milk is higher than cow milk, driven by the goat business. Etawa breed, especially, is a promising business prospect in the long term (Tarigan et al., 2020). Yogyakarta in Central Java, Indonesia, has a fairly high population growth of the Etawa crossbreed. This crossbreed is well-adapting to Indonesian climate with affordable maintenance costs (Prihanani et al., 2020). As milk producers, goat holds 60% more than meat producers. Maesya & Rusdiana (2018) noted that a prospective increase in demand for goat products in Indonesia will potentially take place in the next 10 years.

Previous research on consumer preferences for dairy products (pure milk, processed cow milk, and processed goat milk) has been widely carried out. There are research on consumer behavior in buying dairy products (Bytyqi et al., 2020; Šugrová, 2018), the influencing factors on consumers' purchasing behaviors of milk products (Kaliji et al., 2019; Shunekeyeva, 2020), consumers' preference towards goat milk (Fanani & Thohari, 2018; Guney & Ocak, 2013; Solikah & Dewi, 2016), impacts of brands on consumers' decision (Kishokumar & Suganya, 2019; Velcovská & Larsen, 2021; Wijesinghe et al., 2020), and quality evaluation on production process of the powdered goat milk (Widodo et al., 2012).

A prevalent similarity emanates from these studies where none analyzed consumer preferences for dairy products between pure and powdered goat milk. Research on the quality control of the raw materials of powdered goat milk conducted by Agustina and colleagues (2020) did not explain in detail about consumers' preference for different types of goat milk.

Bumiku Hijau is a dominating goat milk producer in Yogyakarta since 2007. The company produces various processed goat milk, including pasteurized, powdered goatmilk, yoghurt, ice cream, and goat kefir. Their products are of high quality and benefits with prospective selling value. However, many people do not realize the benefits of powdered goat milk.

Based on this background, it can be said that there is less information on the literature about consumer preferences between pure and powdered goat milk. This present study aims to study consumers' preferences on goat milk. It analyzed consumers' decision process, and the attributes of their main considerations in purchasing goat milk from *Bumiku Hijau* Yogyakarta.

METHODOLOGY

This present study took place in *Bumiku Hijau*, a producer of pure goat milk and its derivative products, namely powdered goat milk with various flavors (original, chocolate, and vanilla) in Yogyakarta. *Bumiku Hijau* was chosen through purposive sampling method as it dominates the market share in Yogyakarta. This company consistently develops products by producing various flavors of powdered goat milk.

The stages of the research included preliminary survey, identification of variables, data collection of research samples, and conjoint analysis. The variables used in this present study are attributes consisting of several levels. Product attributes are the elements considered important by the customers, which serve as the basis for decision making (Hidayat et al., 2012; Tekea, 2021).

Accordingly, preference is the evaluation outcome of several product attributes including the type of product, characteristics, organoleptic, and product benefits to consumer health (Fanani & Thohari, 2018). The preference itself is generally influenced by consumer motivation that comes from internal and external factors. Variable identification consists of characteristics in a product, and would be analyzed using the Conjoint method consisting of price attributes, flavor variants, types of milk, and packaging. These attributes act as the basis of an initial survey of consumer considerations in buying dairy products from *Bumiku Hijau* Yogyakarta. The attributes used in this study are as follows:

Table 1. Identification of attributes of goat milk produced by *Bumiku Hijau*

Attribute	Level
Price	1. IDR 15,000
	2. IDR 25,000
Flavor variants	1. Original
	2. Vanilla
	3. Chocolate
Type of milk	1. Pasteurized
	2. Powdered (Skim)
Packaging	1. Bottle (330ml)
	2. Carton (200 gr)

Conjoint analysis is a multivariate technique used specifically to find out consumers' preference over a product. This type of analysis could also get the combination or composition of the attributes of a product in the form of new products, or products that have been circulating in the market favorable by the consumers. Attributes are elements contained in a product to describe the character of a product under study.

Sampling was done intentionally (purposive sampling) with random sampling. The sample in this study were consumers of *Bumiku Hijau* who purchased pasteurized and powdered goat milk. The criteria for consumption are at least twice in the last month, and aged over 17 years. According to Yasmin and colleagues (2017), the recommended number of samples in research using the Conjoint analysis method is between 50 to 100 samples. In this study, the samples were 100 respondents per April 2020.

The next stage in this research is to form product combination stimuli from predetermined attribute levels as presented in Table 1. The formation of combination stimuli is obtained by combining attribute levels into a stimulus or profile formed to analyze the research data through SPSS 17.0 software for Windows.

The combination of stimuli was used to obtain respondents' assessment on the best combination of attributes based on their preferences. The combination of stimuli was 2x3x2x2 in order to obtain 24 stimuli. However, this study did not display entirely in the questionnaire because it was deemed too much. Therefore, 16 main stimuli were used based on the formation.

The data of this study were based on consumer ratings on attribute combinations, starting from the combination stimulation number 1 to number 16 with a score rating on the Likert scale, presented as follows:

Table 2. Likert scale for the questionnaire

Statement	Score
Highly favorable (HF)	5
Favorable (F)	4
Average (A)	3
Not favorable (NF)	2
Highly unfavorable (HU)	1

Results of the respondent's assessment of the combination of attributes were used to process consumer preference data using the conjoint method. Consumer ratings on 16 combination stimuli processed using conjoint analysis to study the utility value of each attribute, the total usability value, and the level of attribute importance. The usability value is generated from consumer assessments, indicating the level of consumer preference with a positive value refers to the high preference. As the opposite, a negative value indicates a lower level of consumer preference (Ong et al., 2021).

Following this, the total usability value was obtained to determine which attribute combination is the best based on the conjoint calculation. The calculation of the total usability value in the Conjoint method is presented as follows:

$$\mu\,(x) = A_0 + \sum_{i=1}^{m} \sum_{j=1}^{k} a_{ij}\, x_{ij}$$

note:

$\mu(x)$	= usability value of each profile
A_0	= average constant value from consumers' assessment on each profile
X_{ij}	= independent variable in the forms of I attribute and j level
M	= amount of attribute
N	= amount of level in each attribute

After calculating the total usability value to get the best combination stimuli of attributes, the level of attribute importance was obtained by calculating the percentage.

FINDINGS AND DISCUSSION

Company profile

Bumiku Hijau has its own farm in Yogyakarta, and the business was founded in 2003 under the management of CV Barokah Adhiniaga Firdaus (CV BAF). The company has relied its development on increasing the number of Etawa crossbreeds along with the increasing public demand for goat milk. Seeing the development and business prospects of Etawa crossbreed goats and goat milk, the business stood alone in November 2010, named in *Bumiku Hijau.* Its activities include goat breeding, producing and selling Etawa crossbreed goats, and selling Etawa crossbreed goat milk and its processed products.

Etawa crossbreed goat has high potential to develop in Indonesia (Pristawati & Fikri, 2021). Hence in 2010, pure Etawa crossbreed goat milk and its variations (i.e., ice cream) are sold through the goat milk shop located in Jalur Lingkar Utara. *Bumiku Hijau* also provides delivery services. In early 2010, the number of livestock in *Bumiku Hijau* increased to 188 located in Jalur Lingkar Utara, Sayegan, and Magelang. In 2018, the total number of livestock reached more than 275 in those three locations. In Magelang alone, there are more than 125 sheep.

Bumiku Hijau's goat milk has gradually increased along with consumer orders and direct buyers on the shop. Consumers come from Yogyakarta, Muntilan, Magelang, Kebumen, Semarang, Kudus, Temanggung, Wonogiri, Solo, Jakarta, Sumatra, and Kalimantan. Consumers from outside Yogyakarta come directly to the shop or order online. The intercities expedition is carried out through a freight forwarder. *Bumiku Hijau* provides delivery services to customers in Yogyakarta with a minimum purchase of five bottles of milk.

Pure whole milk is bottle-packaged in a size of 330 ml for IDR 15,000 per bottle and 1 liter for IDR 39,000 per bottle. Goat colostrum milk is packaged in 330 ml bottles at a price of IDR 50,000 per bottle. Ice cream is packaged in cups for IDR 3,500 per cup. The price was determined following the market price with the principle that the total costs incurred are below the market price. The results would be the selling price by *Bumiku Hijau.* Discounts are given to consumers who buy more than ten bottles of goat milk, at a price of IDR 13,000 per bottle. The payment system is done by cash.

The 330 ml goat milk is sold at the company's shop, and is also sold at the food stores and individuals as agents in its sales. The marketing channel is through direct selling and selling agents. A total of twelve agents selling *Bumiku Hijau* products in Yogyakarta, spread across Bantul (two agents), Ngampilan (one agent), Casagrande (one agent), Pathuk (one agent), Godean (two agents), Kotagede (one agent), Glagahsari (one agent), Wirobrajan (one agent), Jalan Solo (one agent), and Jalan Monjali (one agent).

Consumers' convenience in purchasing has become a primary concern for *Bumiku Hijau.* They are currently running a selling point named *Kedai Susu Kambing*, making it easy for consumers to get their products. To get closer to consumers, the company provides ready-to-delivery services. *Bumiku Hijau* guarantees that the goat milk received by the end-users remains in good condition. The delivery service is carried out using a styrofoam box to keep the milk frozen for 24 hours and in good quality. The distribution is carried out from *Bumiku Hijau* directly to the final consumer.

Bumiku Hijau promotes its business through brochures in city centers and places visited by many people. In addition to distributing brochures, the company also promote through the internet, advertisements in mass and electronic media, including banners and billboards. *Bumiku Hijau* also participates in several food and livestock product exhibition events held by the department or university. The goal is to encourage consumers

who are not familiar with goat milk products to become familiar, understand, and confident to buy the products.

The characteristics of consumers of *Bumiku Hijau*

Demographic factors such as gender, age, and education level greatly affect the acceptability of functional food ingredients, as well as the benefits of these foods on health. Table 3 shows that the majority of purchases of milk produced by *Bumiku Hijau* are dominated by female consumers as much as 64%, while male consumers are 36%. This happens because women tend to have a higher consumptive nature than men. In line with the opinion from Nugroho and colleagues (2020), female consumers – especially housewives – play a critical role in determining and deciding foodstuffs consumed by their family members. The majority of respondents are between 31-40 years old with a percentage of 47%. This is in line with Ratnamentari and collaegues (2016) who states that the majority of goat milk's consumers is between 30-50 years old.

In that age range, one will always try to meet protein needs both for himself and his family. Most of the respondents' education levels are undergraduate with a total of 44%. This is in line with Pristawati & Fikri (2021) who state that the respondent's education level affects knowledge of dairy products in general. Characteristics of respondents based on gender, age, and education level are shown in the following table:

Tabel 3. The characteristics of consumers of goat milk

No	Characteristic	Number (in person)	Percentage (%)
1	Gender		
	Female	64	64
	Male	36	36
		100	100
2	Age group (year-old)		
	20-30	22	22
	31-40	47	47
	41-50	23	23
	>50	8	8
		100	100
3	Education level		
	Primary school	11	11
	Junior high school	22	22
	Senior high school	13	13
	Bachelor/ undergraduate	44	44
	Master	10	10
		100	100

Source: analyzed primary data, 2020

Correlation test of research data

Consumer preferences for goat milk were analyzed using conjoint analysis with a pairwise approach. The attributes of goat milk included price, flavor variant, type of milk, and packaging. In making purchases of a processed food product, consumers cannot be separated from the view of the attributes that exist in food, which will affect their preferences (Tuan et al., 2013). This correlation test aimed to determine the relationship between the research data, namely the combination of attributes with consumer preferences for *Bumiku Hijau* goat milk products. The correlation test was carried out by analyzing the product moment correlation, which was the Pearson's *r* value and the sig. value. The results of the correlation test of the research data are presented as follows:

Table 4. Results of the correlation test of research data

Criteria	Value	Sig.
Pearson's *r*	.918	.000
Kendall's tau	.701	.000
Kendall's tau for Holdouts	1.000	-

Source: analyzed primary data, 2020

Table 3 shows a relationship between the combination of attributes and consumer preferences based on Pearson's *r* value with 0.918. The value of consumer preferences influences as much as 91.8%. this indicates a very strong correlation level supported by a significance value of 0.000. This number signifies strong value as it does not exceed the significant level used, which is 0.05. A correlation between 0.80 and 1.00 is very strong between preferences and the data obtained (Jin et al., 2019).

The utility value on each attribute level based on consumers' preference

The utility value describes each respondent's opinion in numbers as the basis for determining the level of satisfaction (Shingh et al., 2020; Velcovská & Larsen, 2021). In the study of consumer preference on goat milk using the conjoint method, the usability value describes the consumer's assessment of each attribute level with positive numbers and negative numbers. The positive and largest values indicate the level of the attribute that is most preferable, while the negative value means that consumers do not like it much. The utility value at each attribute level based on consumer preferences can be seen in the table below:

Table 5. The utility level on each attribute level based on consumers' preference

Attribute	Attribute level	*Utility Estimate*	Std. Error
Price	IDR 15,000	-0.317	0.068
	IDR 25,000	0.356	0.067
Flavor variants	Original	-0.159	0.046
	Vanilla	0.145	0.043
	Chocolate	0.166	0.046
Types of milk	Pasteurized	-0.073	0.041
	Powdered (Skim)	0.073	0.041
Packaging	Bottle (330ml)	-0.057	0.048
	Carton (200gr)	0.077	0.048
	(Constant)	3.709	0.047

Source: analyzed primary data, 2020

In the usability value analysis, there are four attributes of goat milk that are assessed, namely price, flavor variant, type of milk, and packaging. Based on the usability value obtained, the product attributes ranging from the most desirable to the less attractive are price attributes, flavor variants, packaging, and types of milk.

Attribute of price

The price attribute is the main consideration for consumers in purchasing goat milk products. Based on the table above, it is shown that consumer preferences for goat milk attributes, namely powdered milk type for vanilla and chocolate flavor variants, for IDR 25,000 with 200 gram carton packaging. The price attribute has the highest usability value as a preference, followed by flavors, packaging and types of milk. This shows that consumers prefer goat milk products at a price of IDR 25,000 as indicated by a positive number on the usability value of 0.356 and accepted by consumers.

In terms of price, although consumers have to pay more expensive products than powdered milk, they did not seem to mind because powdered goat milk have a variety of flavors. The suitability of product prices went along with the quality, which is rich in nutritional benefits for consumers' health.

Attribute of flavor variants

The flavor variant attribute has a fairly high utility value after the price attribute. In line with Nugroho and colleagues (2020), consumer decision making shows that the attribute of the flavor variant is an important

aspect to consider before making a purchase. Out of the three flavors offered in the attribute of the flavor variant (original, vanilla, and chocolate), consumers prefer chocolate and vanilla with a utility value of 0.166 and 0.145, which are positive, while the utility value of the original taste is negative. This shows that the flavor variants that consumers prefer are different, so that the choice of flavor variants is an important attribute in order to meet consumer needs closer to the portion of consumer preferences.

The variant of chocolate flavor became the main choice of consumers compared to other flavor variants. Results showed that consumers stated that chocolate powdered goat milk chocolate taste better without any goat aroma presented in other flavor variants. These results are in line with Boniface & Umberger (2012); Kapaj & Albania (2018); Kurajdova & Táborecka-Petrovicova (2015); and Yang & Dharmasena (2020), where the product taste variants influence the purchasing decisions of consumers of dairy products regardless its expensive price.

Attribute of packaging

Packaging is the third attribute considered by consumers in purchasing *Bumiku Hijau* goat milk. Although they did not make the form of packaging a top priority, consumers paid attention to the practical side. This is indicated by the packaging attribute where consumers prefer the type of carton size (200 gr) with a utility value of 0.077, which is positive. This shows that consumers prefer packaging that is more practical than bottled packaging, which of course has a more expensive packaging price.

Attribut of milk type

The type of goat milk is the last attribute considered by consumers. The type of preferable goat milk is the powdered type compared to the pasteurized type. This follows a study by Santoso and collaegues (2012) who states that more consumers prefer powdered milk than pasteurized milk. Powdered goat milk is more practical for consumers without refrigerator where the remaining powder in the packaging can be consumed at a later date. Consumers prefer powdered milk is also certainly more durable than pasteurized milk which should be consumed within 7 to 10 days.

Results also show that the needs and budget of consumers are among the reasons for choosing the size of the goat milk packaging to suit the needs of family members, and fitting the budget that has been set. For consumers, packaging is a valid attribute (although less considered) because any changes in packaging does not affect consumers' purchasing habit because they can coinsider product prices and flavor variants.

The process of consumer preference for goat milk is the same as for food in the form of consumer goods (food ingredients for daily consumption), namely through a trial stage, which is influenced by marketing or promotion strategies, lifestyle, association, and others. If they experience satisfaction, the consumers will purchase repeatedly.

CONCLUSION

This study reveals that consumer preferences focus on the results of the best combination of stimuli based on the utility value and the level of importance of the attributes in it. It was found that the best combination results are obtained on stimuli number 13 with a total usability value of 3.709; on the product price attribute of 0.356; and on the chocolate flavor variant of 0.166 will be obtained. In the attribute of the type of milk, the total usability value of powdered milk (skim) is 0.73; and the attribute of the packaging is the carton packaging (200gr) of 0.77. Majority of consumers preferred powdered goat milk products with new flavor variants that suit the tastes of teenagers and adults. Consumers also preferred 100 gr product packaging because it is easier to measure and consume. Based on the utility value, the preferred attributes are price, flavor variant, type of packaging, and type of milk.

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Research Article

Corporate Farming for Farmer Labor Efficiency in Trimulyo Village, Bantul Regency

Neti Herlina [a,1], Ismiasih [b,2*], Tri Endar Suswatiningsih [c,3]

[a,b,c] Department of Agribusiness, Faculty of Agriculture, INSTIPER, Jalan Nangka II, Maguwoharjo Yogyakarta. 55282. Indonesia

[1] netiherlina02@gmail.com ; [2] ismiasih@instiperjogja.ac.id ; [3] endar_instiper@yahoo.co.id

* corresponding author

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Labor

ABSTRACT

Agriculture is one of the dominant sectors in the economic structure in Daerah Istimewa Yogyakarta. This is because the agricultural sector contributes to meeting food needs and the supply of industrial raw materials. The corporate farming (CF) program located in desa Trimulyo, Daerah Istimewa Yogyakarta is one of the empowerment programs for farming communities by farming in groups. The purpose of this study was to determine the implementation of the CF program and the impact of the CF program on labor efficiency at the farm level. The research method used was descriptive qualitative and quantitative with t-test. The method of determining the sample was purposive with 30 farmers as respondents. The technique of collecting data was done by observation, interview and questionnaire. The results showed that the CF program is a program by combining several farmer-owned lands into one large area (land consolidation) and carried out jointly in one management from land preparation to harvest using modern agricultural tools and machines. The rice productivity produced by farmers before the CF program was 323.03 Kg/UT or 3,654.05 Kg/Ha. After the existence of the productivity program is 268.13 Kg/UT or 3,032 Kg/Ha. The need for labour in one season prior to the program was 43.8 HOK/UT or 1,464.76 HOK/Ha. The need for labor after the program was 31.52 HOK/UT or 716.79 HOK/Ha. The impact of the CF program on labor efficiency shows no significant difference. This means that the efficiency of the labor before and after the program is the same.

INTRODUCTION

Most people in Indonesia work as farmers. Based on BPS (2021) there are about 33.4 million farmers engaged in the agricultural sector. However, the majority of the farmers are just doing what they can do. This means that farmers are cultivating their agricultural land without thinking about profits, especially for food

farmers such as rice. They work on their agricultural land only to meet their daily needs, or as subsistence farmers. According to the Ministry of Agriculture (2021), farmers are the main actors in agricultural development, meaning that it is farmers who play an important role as development actors. Hence, to improve the welfare of farmers, farmers must try to increase their productivity by working more effectively and efficiently.

Agriculture as a sub-sector is quite important in supporting the economic structure in the Special Region of Yogyakarta (DIY). This is because the agricultural sector plays a role in meeting food needs, providing industrial raw materials, absorbing large numbers of workers, and contributing highly to regional income. This shows that the development of the agricultural sector is one of the pillars of most people in DIY, especially in rural areas. The dominance of the agricultural sector also shows that the agricultural sector needs to be handled in a sustainable manner because it is related to achieving farmers' welfare.

In the current era of globalization, there is a lot of competition. Especially with the implementation of free market competition, every farmer would want high production yields with efficient work. Efficient work results will certainly produce higher profits for rice farmers. Therefore, an empowerment program is very crucial for farmers so that the production and productivity achieved can be further increased. Given that the average farmer in Indonesia in managing their farming is still subsistence, which is cultivating agricultural land conventionally with the aim of meeting daily needs, not for the purpose of making a profit.

Farming in general has the following characteristics: not a legal entity, narrow land (less than 0.5 ha), lack of capital, manual use of agricultural technology, and a large amount of labor (Suratiyah, 2015). It is an obstacle for farmers to increase their farming because, as it has been widely known that, the production of a farm certainly requires capital such as for the purchase of: fertilizers, pesticides, agricultural tools and the provision of labor wages. The solution to this is that both government and non-government can contribute by creating a program. This program is specifically aimed at reducing the costs incurred by farmers so that those who lack capital can still manage their farms in order to get high production yields and income. In general, farmers manage their farms individually, so that the production results from these farms are very diverse.

Agricultural conditions in Bantul Regency are characterized by narrow land areas in the form of small plots that are bordered by land boundaries. In addition, the youth's low interest in agriculture causes a lack of available manpower to help manage agricultural land. Meanwhile, most of the existing farmers are elderly. Based on the background of the existing conditions, the government initiated a program to overcome farmers' problems through a program called the corporate farming program.

The corporate farming (CF) program is one of the empowerment programs for farming communities with the aim of increasing farmer yields through effective management for more efficient results through better management. The CF program was successfully realized in desa Trimulyo, Bantul DIY and plays a very important role in the effort to empower farming communities so that the production results obtained are not unequal, or all farmers are prosperous. Joint management is expected to increase farm productivity. Production is considered to be efficient if the costs incurred are smaller than the results obtained or the production is greater than the costs incurred. With a planned program, the activities will become easier to carry out. The CF program carried out in desa Trimulyo had succeeded in convincing farmers to agree on commercial farming activities with one management, namely under farmer groups with technical guidance from academics and government.

Production can be increased by extensification, that is by expanding the land, and intensification, which is by optimizing land use such as utilizing technological innovations in the cultivation of agricultural crops. All of these efforts can be successful if they are supported by easier access to capital for farmers and provision of technical assistance from an institution. Without this, it will create a possibility for farmers to return to the old way again so that high productivity will be difficult to achieve (Firmana et al., 2017).

Production activities are said to be efficient if the use of input factors is less than the output produced. The CF program held in Bantul Regency is one of the programs with the aim of increasing efficiency through farming management with a "farming collectively" approach in the entire process with the application of technology. The corporate farming program is implemented with the aim of overcoming various problems, including the limitations of farmers' access to capital, availability of land and scarcity of labor. Through the CF program, farmers are introduced to various modern agricultural tools so that it is hoped that the problem of

limited land as well as in the use of labor can be resolved. In addition, the CF program that is executed collectively makes it easier for farmers to manage their agricultural land. The amount of labor and time devoted by farmers is decreasing due to the use of modern agricultural machinery so that it is more efficient.

The concept of CF is essentially a collaboration with a management system from a small-scale business to a larger-scale business so that it fulfills economies of scale which can make the business more efficient, have high productivity, homogeneous products, and higher quality of production, which is a prerequisite to increase competitiveness. The CF program is also one way to effectively and efficiently increase farm productivity (Iskandar & Jamhari, 2020; Ismiasih, 2020). Several studies on labor productivity and efficiency have been conducted by previous researchers, including Mamondol (2018) and Asrizal (2018).

The existence of a program will certainly have a significant impact and contribution for the actors. By holding the CF program in desa Trimulyo, it is hoped that farmers will gain an impact in their farming and productivity. Problems regarding resource scarcity and farm management can be solved by implementing the CF program. Based on the existing problems, the purpose of this research is to find out the implementation of the CF program activities in desa Trimulyo and the impact of the CF program on labor efficiency at the farmer level in rice farming in desa Trimulyo.

METHOD

The research was conducted by employing a descriptive method, which is a method that has a purpose in describing an object, the character of a variable, group, or social phenomenon that exists in society (Martono, 2014). The research location was chosen by using purposive sampling, which is in desa Trimulyo, with the consideration that in desa Trimulyo the CF program is being implemented. The research sample was determined by purposive sampling, which is by selecting farmers who really knew or had competence about the research topic (Martono, 2014). The sample consists of 30 farmers from a total population of 140 farmers as participants of the CF program. The determination of the sample with a total of 30 is based on the assumption that the sample is close to a normal distribution and is feasible in representing the population (Sugiyono, 2016). Data were collected through observation, interviews, and questionnaires, which is by giving structured questions to respondents. The types and sources of data were primary and secondary, which were obtained from the farmers, desa Trimulyo Officials, and the head of the farmer group, who knew in depth about the implementation of the CF Program.

The implementation of the CF program in desa Trimulyo was analyzed using a qualitative descriptive method. Rice productivity can be known by applying the following formula (Suratiyah, 2015):

$$\text{Productivity} = \frac{\text{output dalam in one growing season (Kg/MT)}}{\text{Harvested area (Ha)}} \quad (1)$$

description: MT = *musin tanam* (growing season)

The impact of the CF program on labor efficiency is analyzed using a paired sample t-test or a related sample t-test, which is an analysis of the same sample subject to an action whether the two have significantly different averages (Sugiyono, 2016).

The t-test formula (t-test) is calculated using the following model

$$t' = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{(S_1^2/n_1) + (S_2^2/n_2)}} \quad (2)$$

Description:

$\overline{X}_1$ = average farm labor efficiency before the CF program

$\overline{X}_2$ = average farm labor efficiency after the CF program

S_1 = standard deviation of labor efficiency before the CF program

S_2 = standard deviation of labor efficiency after the CF program

$n_{1,2}$ = number of farmer samples

Hypothesis testing was carried out at the 95% confidence level or α = 0.05. The proposed hypotheses are:

H_0: It is suspected that there is no difference in labor efficiency before and after the implementation of corporate farming program.
H_1: It is suspected that there is a difference in labor efficiency before and after the implementation of corporate farming program
The test criteria are as follows:
a) If t count > t table, then H_0 is rejected and H_1 is accepted, meaning that there is a difference in labor efficiency before and after the CF program.
b) If t count ≤ t table, then H_0 is accepted and H_1 is rejected, meaning that there is no difference in labor efficiency before and after the CF program.

RESULTS AND DISCUSSION

Characteristics of Farmers in Desa Trimulyo

Farmers as the CF program actors in desa Trimulyo were generally of productive age. Based on the identification of respondents, it can be seen that the age of farmers was in the age range of 58-64 years, with a total of 10 farmers (33%). The youngest ages of farmers were in the age range of 44-50 years old, which included 3 farmers (10%) and the oldest was in the age range of 72-78 years with 3 farmers (10%). Age is an important factor for farmers in farming because the older the farmer, the less efficient he is in managing his farm. The education background of farmers was mostly from the elementary school (SD) level with a total of 13 people (43.3%). The highest level of education was in higher education (PT/university) with a total of 2 people (6.7%), and the lowest was no – school with a total of 4 people (13%). It implies that the average education of farmers was generally still low, which was the elementary school level. Thus, significantly influenced them in managing their farming. Education is one of the important factors in running a farming business because educated farmers will find it easier to accept new innovations such as the Corporate Farming program.

The average farming experience was in the range of 20-26 years with a total of 7 farmers (23%) and the longest was in the range of 47-53 years with a total of 2 farmers (7%). While the least was in the range of 6-12 years with a total of 5 people (17%). Farming experience is one of the important factors that support the farmers' success in managing their farms. Hence, even though the average education of farmers is low, they were able to manage their farms because they were armed with experience. For farmers, farming experience is a learning process in running a farm. However, farming experience cannot reflect whether or not the farmers were implementing technological innovations easily because farmers in general were already accustomed to the old pattern as seen when farmers received the CF program where there were some members who were not motivated to join the program. Thus, some of their farms were handed over to be carried out by other team members

The average land ownership status of farmers was in their own ownership, with 16 farmers (53.3%) and there were 14 farmers as sharecroppers (46.7%). These sharecroppers were divided into 2 types. First, there were some sharecroppers whose production was divided by two with the owner (1:1) and there were also sharecroppers whose production was divided into 2 for the cultivator and 1 for the land owner (2:1). Afrianika, Marwanti & Khomah, (2020) stated that land owned by sharecroppers/smallholders is more efficient in spending production costs compared to tenant farmers, due to the costs incurred by tenants in renting the land they manage. Therefore, if the management of the farm is handed over to the sharecroppers or the owner farmers, the productivity will be even better in the hope of getting more profit from the results of their production.

Farmer's land area is one of the input factors that also affects production results and production costs incurred by farmers. Based on the results, the average farmers' land ownership was 0-500 m2 with 13 farmers (43.3%) and the largest area was > 2000 m2 with only 1 farmer (3.3%). It can be seen that the average land ownership of farmers was relatively narrow (<500 meters2) so that farmers' production results were low. Small land area can lead to the farming management system that cannot be optimal. The application of modern agricultural technology will be difficult to do. Land area is one of the determinants of production results because the larger the land area, the more production results obtained. Hence, with the implementation of the

CF program, it is hoped that management will become easier so that farmers' production results are even better because the land is managed in a consolidated manner into a large expanse without any boundaries between farmers' lands, so that cultivation with the application of modern technology will be easy to carry out.

Table 1. Characteristics of Farmers in the Corporate Farming Program in desa Trimulyo, Jetis, Bantul, DIY

No	Farmers' Characteristics	total (persons)	Percentage (%)
1	Age (year old):		
	44-50	3	10,0
	51-57	7	23,3
	58-64	10	33,3
	65-71	7	23,3
	72-78	3	10,0
2	Education level:		
	Elementary school	13	43,3
	Junior high school	5	16,7
	Senior high school	6	20,0
	Higher education/university	2	6,7
	No school	4	13,3
3	Farming Experience (year):		
	6-12	5	16,7
	13-19	6	20,0
	20-26	7	23,3
	27-33	3	10,0
	34-40	6	20,0
	41-46	1	3,3
	47-53	2	6,7
4	Land ownership:		
	One's own	16	53,3
	Sharecropper	14	46,7
5	Land area (m^2):		
	0 - 500	13	43,3
	501 - 1000	8	26,7
	1001 - 1500	5	16,7
	1501 - 2000	3	10,0
	2001 - 2500	0	0,0
	2501 – 3000	1	3,3

Source: Primary Data Analysis (Processed), 2020

The Implementation of Corporate Farming Program

Prior to the CF program, farmers in desa Trimulyo were doing their farming individually or independently. Farmers' land area was in the form of small plots because the land owned by farmers was small and narrow on average. There were borders between land owned by one farmer and another. Land preparation was done using a hoe or small tractor. Seeding was done by using more labor according to the size of the land. Planting also required more labor because the planting was done manually with human labor. The larger the area of the land owned by farmers; the more labor used by farmers would also be.

The CF program activities in desa Trimulyo have been held since 2017. Farmers involved in the CF program must be registered as members of the farmer group. This is done so in order to facilitate the delivery of information, coordination and responsibility for the implementation of the corporate farming program. The land for the implementation of the program was 6 ha which was owned by 140 farmers divided into 22 teams. The land owned by the farmers was combined with approximately 4-5 people in one (1) team and each team already had its own team leader. The farmer group that was chosen to conduct a trial of the corporate farming program was the *Barokah* Farmer group. The implementation of the corporate farming program began with socialization. After the farmers agreed, the new program could be proceeded. After that, the land preparation

stage was begun by consolidating land or merging land owned by farmers so that there would be no longer borders between land owned and the land became one large area.

This is in line with the research by Dalimunthe & Kurnia (2018), which states that corporate agriculture is an activity done by uniting agricultural land into one vast area with joint management by farmers and integrated into one single management. Land preparation is managed jointly by using large tractors and small tractors. Seedling and planting are done in groups using a seedling tool (*dapog*) and a planting machine (transplanter). The planting machine used by the Barokah Farmers group is a 2:1 *jarwo* planting machine, meaning 2 rows are close together and 1 row is far apart. The system of planting care, weeding, spraying insecticides to harvesting was done by the farmers themselves. The availability of insecticides wass managed by the group. Thus, the spraying process is carried out simultaneously by farmers. At the beginning of the implementation, meetings and counseling were often held, especially in learning about CF farming techniques and training to operate modern tools or machines and control pests and diseases.

The following are the stages of implementing corporate farming activities carried out by farmers in desa Trimuyo:

a. Land Preparation
   Land preparation is the first step in starting a farm. One of the things that needs to be done by farmers in this activity is to cultivate the land so that it is ready to grow plants. Land preparation is done by using a tractor. In the *Barokah* farmer group, 2 types of tractors were used to plow the fields, which were a large tractor and a small tractor. Large tractors were used to plow fields that was of more than 1000 m2. Before the corporate farming program was carried out, some of the farmers were still doing land preparation manually using a hoe
b. Seedling
   Seedling is the process of spreading seeds on land that has been prepared for a certain time so that they grow into seeds that are ready to be moved and planted on farm land.
   Before the corporate farming program was held, seedling was done manually and individually. After the corporate farming program was implemented, the seedling process was done using a seedling machine (*dapog*) and managed in group.
c. Planting
   Planting is the activity of planting seeds on a farming land. Prior to the CF program, planting activities were carried out manually by employing human labor. Meanwhile, after the corporate farming program was held, planting was done using a transplanting machine (transplanter).
d. Weeding
   Weeding is an activity to clean unwanted wild plants or weeds in paddy fields. Before the program and after the CF program, weeding was done using the same method, which was manually by farmers using a hoe or *gasrok*. The duration for weeding the land depended on the volume of weeds in the farmers' land. For farmers who had large enough land, to control weeds sometimes involved other waged workers If farmers did not employ other workers' labor, usually the farmers controlled it themselves gradually day by day.
e. Watering
   Irrigation is an activity to irrigate dry rice fields. Irrigation in the *Barokah* farmer group already utilized an irrigation system, so when the farmers' rice fields were dry, farmers could irrigate their fields by opening the cover of the water channel that flowed into the farmers' fields. The duration of the irrigation process depended on the dryness level of the land and the number of farmers who were irrigating the fields. If the farmer's land were completely dry, irrigation could take up to 3-4 hours. Similarly, if many farmers were doing irrigation at the same time, the irrigation time would take long too because the water flowing to the farmers' land had to be shared. Before and after the corporate farming program, the irrigation process was carried out individually. However, there were still several teams that were still compact as a CF team. These team divided the irrigation workforce of 2-3 HOK/4-5 farmers' land which had been combined into 1 team.

f. Fertilization and Pest Control
   Fertilization means giving nutrients to rice plants. Usually, farmers use NPK fertilizer. Before and after the corporate farming program, the fertilization process was done the same, that was individually. The application of NPK fertilizer was by sowing. Meanwhile, pest control is the eradication of pests in plants. Pest control was carried out by using organic insecticides, namely *bacillus*, which was made by the farmer groups themselves.
   Prior to the CF program, insecticides were sprayed separately or not simultaneously. Meanwhile, after the CF program, the insecticide spraying process was carried out simultaneously with the insecticides that were already provided by the group. The duration of completing the application of fertilizers and insecticides usually lasted 2-3 hours.
g. Harvesting
   Harvesting is the activity of harvesting the results of plant cultivation. Before and after the corporate farming program, harvesting was done in the same way, that was by using labor. The labor cost was usually 1 sack of grain divided by the number of workers. There were also those who were not paid because they were given forage instead that they used to feed their livestocks.

Table 2 presents the stages of the CF Program activities with agricultural machine tools (usually called *alsintan* in Bahasa Indonesia) used by farmers before and after the program. In terms of using machine tools, before the CF program, there were still many who used the tool manually. Meanwhile, after the program, the use of machine tools adopted the use of modern agricultural machinery

Table 2. Agricultural Machine Tools used Before and After The Corporate Farming Program

No.	Activity	Agricultural Machine Tools	
		Before CF	After CF
1	Land Prepartion	Hoe, Small Tractor	Large Tractor, Small Tractor
2	Seedling	Manual	Seedling Machine (*dapog*)
3	Planting	Manual	Planting Machine (*transplanter*)
4	Weeding	*Gasrok* (a weeder tool)	*Gasrok* (a weeder tool)
5	Watering	Irrigation	Irrigation
6	Fertilization and Pest Control	Manual, Sprayer	Manual, Sprayer
7	Harvesting	Sickle	Sickle

Source: Primary Data Analysis (Processed), 2020

Impact of Corporate Farming Program on Workforce Efficiency

Labor is an input factor that plays an important role in supporting the achievement of production results. Manpower is a person who manages, runs or carries out the technical activities of a business. It is stated that manpower is a population of working age (10-64 years) who has the potential to do work and is able to produce goods or services. By regulating labor need properly, it is expected that the production of a business will be efficient. Efficient production can be obtained through a decrease in the cost of the labor involved, so that it can lead to an increase in income from its business commodities (Ulfah, Restuhadi & Rosnita, 2016).

The average use of farmers' labor during farming activities before and after the Corporate Farming (CF) program can be seen in Table 3. The calculation of labor in farming is carried out using the Working Person Day (HOK/*Hari Orang Kerja*) unit. People's One Working Day (HOK) is approached by working for approximately seven hours. Based on the need for labor involved in farming (Table 3), it can be seen that the overall average labor need after the CF program was 716 HOK/Ha or 31.52 HOK/UT. This means that after the program, the need for manpower was less than the average use of manpower before the CF program, which was 1464.76 HOK/Ha or 43.8 HOK/UT. It can be seen that there is a difference in labor need in land preparation between before and after the CF program. Prior to the program, the workforce needed was 2.5 HOK/UT or 32.4 HOK/Ha, while after the program the required manpower was 3.78 HOK/UT or 1.8 HOK/Ha. The need for labor seems to have decreased because in the land preparation step, farmers had used agricultural machines, namely from small tractors to large tractors, so that their workforce needs became more efficient.

There was also a decrease in the need for labor in seedling activities. Before the program, the workforce needed was 24.73 HOK/UT or 843.18 HOK/Ha and after the program it was 14.97 HOK/UT or 498.89 HOK/Ha. The previous seedling activities were carried out manually, and after the program, seedling was

carried out using agricultural tools called *dapog*, so that no large amount of labor was needed. The need for labor in planting also seems to have decreased significantly. Previously, the labor required was 6.73 Hok/UT or 381.93 HOK/Ha, and after the program, planting required 2.46 HOK/UT or 1.12 HOK/Ha. In the CF program, the rice planting process uses a transplanter machine so it does not require a lot of labor. Thus, the implementation of an effective CF program has reduced the number of labor due to the use of modern agricultural tools or machinery.

The application of modern agricultural machinery is easier to operate if the land is wider than if the land is still in the form of plots. Hence, with the CF program, farmers can be more effective in overcoming the shortage of labor in farming. This condition is due to the fact that after the CF program, many of their workforce were replaced by modern agricultural machinery, from land preparation to planting.

Table 3. The Average Need fo Labor in Farming With and Without the Implementation of CF Program in Desa Trimulyo

No.	Description	The Need for Labor Before the CF Program (HOK)		The Need for Labor After the CF Program (HOK)	
		Per UT	Per Ha	Per UT	Per Ha
1	Land Preparation	2,5	32,4	3,78	1,08
2	Seedling	24,73	843,18	14,97	498,89
3	Planting	6,73	381,93	2,46	1,12
4	Weeding	4,8	57,2	5,07	62,07
5	Watering	0,41	4,6	0,44	5,06
6	Fertilization and Pest Control	0,48	5,85	0,58	6,73
7	Harvesting	4,15	139,6	4,22	141,84
	Total	43,8	1464,76	31,52	716,79

Source: Primary Data Analysis (processed), 2020

Each program can certainly have a positive or negative impact, depending on how the farmers respond to it. Similar to the CF program, if farmers think positively about the program, the program can run smoothly even though their production yields declined. Ismiasih in her study (2020) concluded that the farmers' perception or response to the CF program in desa Trimulyo was quite positive. On average, farmers felt that with the CF program, farming in wetlands became easier and more efficient. As seen in Table 4, farmers' production during one harvest season showed a decrease in yields when compared to before the CF program. Farmer productivity before the CF program was higher than after, which was 323.03 Kg/UT or 3654.05 Kg/Ha. After the CF program, the resulting productivity was 268 Kg/UT or 3023.73 Kg/Ha. This is because when the research was being conducted for one season, farmers' rice paddy field was attacked by rats and insects so that their production decreased. Another contributing factor was the social aspect of farmers, where some farmers were not yet adaptive to the CF program so that farmers, in carrying out the program, are still not optimal.

Table 4. Average Productivity, Need for Labor (*HOK*) and Workforce Efficiency before and after the Corporate Farming Program

No.	Description	Rice Farming before the CF Program		Rice Farming after the CF Program	
		Per UT	Per Ha	Per UT	Per Ha
1	Productivity (Kg)	323,03	3654,05	268,13	3032,73
2	Need for Labor (HOK)	43,8	1464,76	31,52	716,79
3	Workforce Efficiency (Kg/HOK)	7,38	3,36	8,51	5,50
	t – Test				
	t – count	1,18			
	t – table	1,67			

Source: Primary Data Analysis (processed), 2020

Every farming activity wants to obtain optimal production results from a combination of various available input factors. According to Suratiyah (2015), farming is defined as the knowledge possessed by a farmer in allocating the availability of existing resources, such as land, human resources, capital, and equipment, effectively and efficiently to obtain high profits at a certain time. The availability of human resources is very influential on the resulting production. Their abilities and expertise can be used to manage the land by using the available equipment optimally so that the results obtained can be maximized. According to Suratiyah (2015), the measurement of labor efficiency can be done by comparing the number of jobs that can be completed per day per required workforce. The less the number of available workers with more production, the more efficient the work will be. Based on Table 4, it can be seen that the efficiency of labor before the CF program was 7.38 Kg/UT or 3.36 kg/Ha, while the efficiency of labor after the CF program was 8.51 kg/UT or 5.50 kg/Ha. According to the results of the statistical test (t-test) the results of the t-count were 1.18 at α = 5% (0.05) and the t-table was 1.67. This explains that t-count was smaller than t-table or in other words Ho is accepted and Ha is rejected, meaning that there is no difference in labor efficiency both before and after the CF program. The labor efficiency before the CF program was not much different from the labor efficiency after the CF program, or in other words, the labor efficiency of the two farms was the same.

CONCLUSION

1. The implementation of the corporate farming program in desa Trimulyo was carried out well, starting from the socialization stage to the implementation of the program, namely from land preparation, seedling, planting, irrigation, maintenance to harvesting. Activities from land preparation to planting were carried out in groups, while from weeding to harvesting were carried out by the land owners themselves. The use of modern tools and machinery was involved during land preparation, which was by using small tractors and large tractors. Seedling was done using a seedling machine (*dapog*). Planting was done using a transplanting machine (transplanter).
2. The impact of the corporate farming program on labor efficiency shows insignificant results. This means that the efficiency of the workforce both before and after the CF program is not much different or just the same. The need for the use of labor after the program was fewer than before the program because after the program, farmers utilized modern agricultural tools and machines in managing some of their farming.

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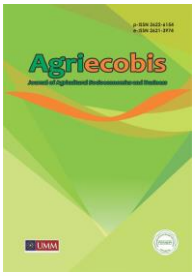

Research Article

Effect of Marketing Mix on Consumer Purchase Decisions to Buy *Cavendish* Banana at Modern Markets in Semarang

Tutik Istiqomatin [a,1,*], Agus Setiadi [b,2], Titik Ekowati [b,3]

[a,b,c] Department of Agribusiness, Faculty of Animal and Agricultural Sciences, Universitas Diponegoro, Jl. Prof. Soedarto, SH. Tembalang, Semarang, Central Java

Istiqomahws78@gmail.com, agus_setiadi2006@yahoo.co.id, tiekowati@yahoo.co.id

*Corresponding author

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ABSTRACT

This study aims at identifying marketing mix of purchase decisions to buy *Cavendish* banana and analyzing the effect of marketing mix on purchase decisions to buy *Cavendish* banana at modern market in Semarang. This research was conducted at modern market in Semarang, namely Gelael Supermarket, Ada Swalayan, Superindo and Giant. Survey was employed as research method in this study. 100 respondents were taken for research sampling. The independent variables used were products, prices, places, and promotions, while the dependent variable was decisions. Descriptive analysis having been conducted shows that the variables of product have an average of 4.14; a variable of price is 3.65; a variable of place is 4.32, a variable of promotion is 3.26; and a variable of purchase decision is 3.85. Statistical analysis having been carried out shows that the *f-test* of product, price, place and promotion variables simultaneously affect the consumer purchase decision to buy Cavendish bananas with an *f-count* value of 26.378. Besides, the results of the *t-test* of product, price and promotion variables partially affect the consumer purchase decision to buy Cavendish bananas with *t-count* value of 1.984. Moreover, the place variable does not partially affect the consumer purchase decision to buy at Modern Market in Semarang.

INTRODUCTION

Bananas are one of the commodities easily cultivated and developed in Indonesia. According to Badan Pusat Statistika (2018), province of Central Java becomes the fourth most significant producer in Indonesia after Province of East Java, Lampung and West Java in which the province be able to produce 7.26 million tons of annual fruit crop, bananas, in 2018. Bananas offer much nutritional content, among others: fat, magnesium, potassium, phosphorus, iron, calcium and vitamins (Suyanti & Supriyadi, 2008). Bananas also have a relatively cheap price, and they are easy to obtain. Therefore, bananas are in great demand by the public.

Bananas are is the most commonly found fruit. There are several types of bananas in Indonesia, such as baba banana, cavendish banana, cotton banana, latundan banana, *ambon* banana, plantain, *badak* banana and *nagka* banana, all of which have their own characteristics. These types of bananas can be consumed directly or processed first into processed products. One type of bananas that can be consumed directly is

Cavendish banana. Cavendish bananas are bananas cultivated through tissue culture. Cavendish bananas have a clean yellow peel, soft flesh and not too sweet taste. Cavendish bananas are more commonly known as Ambon bananas. It is due to the taste and shape of Cavendish bananas which are almost the same as *Ambon* bananas (Shintia, 2019). The advantages of Cavendish bananas frequently cause consumers thinking that Cavendish bananas are imported bananas even though Cavendish bananas have been cultivated locally and produced by several companies with various brands like Sunpride and Frui Petite.

The increasing number of companies cultivating or producing Cavendish bananas with various brands has resulted in competition in marketing activities. Marketing is an activity in delivering products or services to consumers by a company or marketer (Shinta, 2011). Marketing activities aim at maintaining production activities, gaining profits and developing its production activities. It is also important for producers to know the wish and needs of the target market, namely what factors influence consumers in making purchases (Indriyanti et al., 2019). This goal can be achieved if marketing activities are well designed and planned, so that the company or marketer can compete with other companies (Pertiwi et al., 2016).

The design and planning of marketing activities can be done by using a marketing strategy in the form of a marketing mix. According to Shintia (2019), marketing mix can be used as a tactical plan to meet the needs of the market to join the competition. The marketing mix consists of external and internal factors. External factors are factors coming from outside the company such as government, competitors, environment and technology, while internal factors consist of several variables, namely price, product, promotion and place or distribution channel (Pertiwi et al., 2016). Factors that can be cultivated by producers or marketers are internal factors consisting of price, product, promotion and place or distribution channel. These components are combined as a marketing tool to increase consumer interest in making a purchase (Octaviani et al., 2017). marketing mix affects purchase decisions. It is because if consumers decide to make a purchase, the purpose of doing a marketing mix strategy will be achieved, namely increasing sales volume and increasing profits (Suardika et al., 2014).

There are several studies on purchase decisions toward banana. First, research conducted by Rumapea et al. (2021), in their research, they show that the factors considered by consumers in deciding to buy bananas are taste, peel color, size and number of banana per comb, while in buying bananas, consumers have their preferences, namely banana size which is medium, bananas with a greenish yellow peel color, bananas which taste slightly sweet and a great number of banana per comb. Second is research by Shintia (2019) showing that in making the decision to purchase Cavendish bananas, consumers are based on their habits, and it also because of content contained in Cavendish bananas. Consumers also obtain information from family members and promotions carried out in making the decision. Consumers are satisfied buying Cavendish bananas because the place of to buy this banana is complete. The novelty of this study is to analyze several factors affecting the decision to purchase bananas in previous studies, which are integrated into the marketing mix, namely product, price, place and promotion. This study aims at identifying and analyzing the effect of the marketing mix on the decision to purchase Cavendish bananas at Modern Market in Semarang. This research is expected to provide an overview of the decision to purchase Cavendish bananas, so that it can be taken into consideration in the preparation of the marketing strategy of Cavendish banana.

METHOD

The research was conducted from November 2020 to January 2021 at modern markets in Semarang, namely Gelael Supermarket, Ada Supermarket, Superindo and Giant. Determination of the research site is conducted by using the purposive method. In this method, the site is determined based on certain criteria and considerations. The consideration of taking this site is based on the fact that these modern markets are markets in Semarang selling Cavendish bananas, and they are modern markets having been around for a long time and already have several branches in Semarang. The research method employed is survey. Survey is a research method carried out by taking samples from the population that will be used in research (Yusuf, 2017). The method of determining the sample uses a quota of 100 respondents, while for sampling using accidental sampling. According to Darmawan(2017), accidental sampling is a sampling technique with an element of accident or coincidence. Respondents involved are consumers purchasing and consuming Cavendish bananas sold in modern markets in Semarang, namely *Gelael Supermarket*, *Ada Swalayan*, *Superindo* and *Giant*. The independent variables involved are price, product, promotion and place, while the dependent variable is purchase decisions.

In this study, the data analyzed are conducted on secondary and primary data. Primary data were collected by utilizing a questionnaire. Meanwhile, secondary data were collected by observation and literature study. Descriptive and quantitative analysis are employed for data processing. Descriptive analysis is used to answer the first objective, namely identifying the marketing mix (price, product, promotion and place) and decisions to purchase. Descriptive analysis is a way of analyzing the data used to provide an overview of the data collected (Sugiyono, 2015). Quantitative analysis is used to answer the second objective, namely to analyze the effect of the marketing mix on decisions to purchase. Quantitative analysis is a way of analyzing data using numbers, and the way to calculate those numbers is using statistical application like SPSS (Darmawan, 2013).

Validity test is a test employed to measure the validity or accuracy of a data or instrument in research (Murod et al., 2018). The validity test can be seen through the value of Corrected Item-Total Correlation. If the value of $r_{count} > r_{table}$, the data can be said to be valid (Padmi et al., 2017).

Reliability test is a test utilized to test an instrument that is quite reliable in collecting research data so that the measurement results are relatively the same even though the measurement of variables is repeated (Murod et al., 2018). Hanifaradiz dan Satrio (2016) states that if the value of Cronbach alpha in the reliability test is >0.6, the instrument is reliable. Therefore, if it is repeated, the same data will be obtained even though it is carried out at different times.

Normality test is a test aiming at determining the distribution of a data used in whether the regression model is normal or not (Murod et al., 2018). A data is said to be normal if the data spreads along a diagonal line that is in the direction of the line of 45° (Sugiarto et al., 2017). The normality test is carried out using the Kolmogorov-Smirnov test. The condition is that if the significant value is 5% or 0.05, the data is normal (Annisa et al., 2017).

The multicollinearity test aims at finding out whether the independent variables of this study have a relationship or not. If the independent variables do not have a relationship, the variable is eligible to be used as an independent variable (Rakasyifa & Mukti, 2020). The multicollinearity test can be determined by using the tolerance value and the variance inflation factor (VIF). The data is said to have no multicollinearity if the tolerance value is > 0.10, and the value of VIF is < 10 (Sugiarto et al., 2017).

The autocorrelation test aims at determining the occurrence of a correlation between the current confounding variable and the previous confounding variable (Manik & Rianti, 2019). Autocorrelation test can be found through the Durbin-Watson test. There are three criteria in the autocorrelation test. First, if DW lies between dL and dU or between (4 - dU) and (4 - dL), it cannot be concluded with certainty; second, if DW lies between dU and (4 - dU), there is no autocorrelation; and third, if dW<dL or dW > (4 – dL), autocorrelation occurs (Zamroni, 2016).

The heteroscedasticity test aims at determining the variance of the residuals between observations. If the variance of the residuals from one observation to another observation is not the same, the observation has heteroscedasticity (Murod et al., 2018). The heteroscedasticity test can be implemented through the scatterplot graph. If the points on the scatterplots do not spread and form a pattern or are above or below the value of 0 on the Y axis, the data does not experience heteroscedasticity (Sugiarto et al., 2017).

Multiple linear regression test aims at measuring the effect between two variables and showing the direction of the relationship of the independent and the dependent variable (Sugiarto et al., 2017). The multiple linear regression equation in this study is as follow:

$$Y= \alpha+\beta_1 X_1+\beta_2 X_2+\beta_3 X_3+\beta_4 X_4+e$$

Information:
Y = Purchase decision (score)
α = Constanta
X_1 = Product
X_2 = Price
X_3 = Place
X_4 = Promotion
β0 – β4= coefficient of every variable
e = *error*

F -test

F-test is a test aiming at proving the effect of the marketing mix (price, product, promotion and place) on the decision to purchase Cavendish bananas at Modern Market of Semarang simultaneously.

H_0=> Price, product, promotion and place factors simultaneously have no effect on the decision to purchase Cavendish bananas at Modern Market in Semarang.
H_1=> Price, product, promotion and place factors simultaneously affect the decision to purchase Cavendish bananas at Modern Market in Semarang.
Acceptance Rules according to Ghozali (2018) :
H_0 is rejected, and H_1 is accepted if the significance value is 0.05. Therefore, the independent variables (price, product, promotion and place factors) have a significant effect on the dependent variable (purchase decisions).
H_0 is accepted, and H_1 is rejected if the significance value is > 0.05. Therefore, the independent variables (price, product, promotion and place factors) have no significant effect on the dependent variable (purchase decisions).

T-test is a test aiming at partially proving the effect of the marketing mix (price, product, promotion and place) on the decision to purchase Cavendish bananas at Modern Market of Semarang.
H_0 => Price, product, promotion and place factors partially have no effect on the decision to purchase Cavendish bananas at Modern Market in Semarang.
H_1 => Price, product, promotion and place factors partially affect the decision to purchase Cavendish bananas at Modern Market of Semarang.
Acceptance Rules according to Ghozali (2018) :
H_0 is rejected, and H_1 is accepted if the significance value is 0.05. Therefore, the independent variables (price, product, promotion and place factors) have a significant effect on the dependent variable (purchase decisions).
H_0 is accepted, and H_1 is rejected if the significance value is > 0.05. Therefore, the independent variables (price, product, promotion and place factors) have no significant effect on the dependent variable (purchase decisions).

RESULTS AND DISCUSSION

General overview of respondents

Table 1 shows that the number of respondents is 18 men and 82 women. It means that consumers consuming and purchasing Cavendish bananas in modern market of Semarang are dominated by women. It is in line with Eliza et al. (2011) stating that women perform an significant role in accommodating the daily needs of a household, including in making decisions to purchase fruit including bananas. Women tend to gain weight more easily, either from hormonal disturbances or from a lack of physical activity. Therefore, consuming Cavendish bananas is good for women. According to Setianingsih et al. (2017), Cavendish bananas contain crude fiber which is good for the digestive tract, and it can be consumed in large quantities because it contains relatively little fat.

Table 1. General overview of respondents

No.	General overview of respondents	Total of Respondent (person)	Percentage (%)
1	Gender		
	Man	18	18
	Woman	82	82
2	Age		
	≤ 20 y.o.	16	16
	21- 30 y.o.	66	66
	31- 40 y.o.	3	3
	41- 50 y.o.	11	11
	51- 60 y.o.	4	4
3	Last education		
	Elementary School	3	3
	Junior High School	5	5
	Senior High School	52	52
	Diploma III	9	9
	Bachelor (S1)	31	31
4	Profession		
	Student	48	48
	Housewife	12	12
	Entrepreneur	24	24
	Health workers	3	3

No.	General overview of respondents	Total of Respondent (person)	Percentage (%)
	Teacher	2	2
	Farmer	2	2
	Civil servant	1	1
	Private sector employee	1	1
	Fresh graduate	7	7

Source: Primary Data Analysis, 2021

The most consumers of Cavendish bananas at modern market in Semarang are in the age range of 21-30 y.o where this age is an active age with the peak of the body's metabolic rate. Therefore, sufficient nutritional content can help the body's metabolic processes and reduce the risk of diseases that may arise. It is in line with the opinion of Setianingsih et al. (2017) stating that protein and crude fiber contained in Cavendish bananas play a role in the growth process and the digestive tract so that they can be a source of protein and fiber. It is supported by Amanda(2011)stating that the potassium content in Cavendish bananas is about 476 mg which is useful for lowering blood pressure. Most of the respondents' last education are senior high school. It means that consumers purchasing Cavendish bananas at the modern market in Semarang are educated. The education that has been taken provides them insight and awareness of the importance of the nutritional content, like minerals, carbohydrates, vitamins, protein, fat and water, to be consumed. Hence, they are aware that consuming bananas can fulfill some of the nutrients required by their body. Setianingsih et al. (2017) state that bananas contain various nutritional content like minerals, carbohydrates and vitamins, while the protein and crude fiber content in Cavendish bananas is relatively higher, and the fat content is relatively lower.

The respondents in this study have a variety of jobs and some are still studying. It shows that consumers purchasing and consuming Cavendish bananas sold in the modern market of Semarang are respondents who already have jobs, so they can afford to purchase. It is in line with Amilia (2017) stating that personal factors that can affect the purchasing decisions are age, cycle and lifestyle, profession, personality and economic circumstances. Respondents who are still studying, like students and university students, also purchase and consume Cavendish bananas because they are still in the active age category with the peak of the body's metabolic rate so that sufficient nutritional content can help their body's metabolic processes. Setianingsih et al. (2017) state that the protein and crude fiber contained in Cavendish bananas play a role in the growth process and the digestive tract so that they can be a source of protein and fiber.

Instrument feasibility test

The results of the validity test showed that the variables of price, product, promotion and place had a value of $r_{count}>r_{table}$, and all of them had a significance value of <0.05 so that the instrument used was valid. It means that the measuring instrument is able to measure what is measured in this study. It is in line with the opinion of Prasastiningtyas & Djawoto (2016) stating that the provisions in the validity test in a study in which if the r_{result} or r_{count} is greater than r_{table} with a significance value of less than 5%, the instrument is already valid.

Table 2. Result of reliability test

Variable	Cronbach's Alpha	Information
Product	0.723	Reliable
Price	0.879	Reliable
Place	0.867	Reliable
Promotion	0.950	Reliable
Purchasing Decision	0.891	Reliable

Source: Primary Data Analysis, 2021

Based on Table 2, it can be seen that the variables of price, product, promotion, place and purchase decisions have a Cronbach's alpha value of more than 0.6. Hence, it can be said that the instrument used is reliable. It is in line with Hanifaradiz & Satrio (2016) stating that in the reliability test, if the value of Cronbach alpha > 0.6, the instrument can be said to be reliable. Therefore, if it is repeated, it will produce the same data even though it is done at different times.

Descriptive analysis

The data analyzed in descriptive analysis are the variables of price, product, promotion, place and purchase decisions. The distribution of respondents' answers is presented in the following table:

Table 3. Distribution of respondents' answers on product variables

No.	Statement	Respondent's Answer (%)					Mean
		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	
1	Attractive Cavendish banana peel color	0	0	4	54	42	4.38
2	Sweet and flavorful taste of Cavendish banana	0	2	11	64	23	4.08
3	a great number of bananas per comb	0	2	26	45	27	3.97
		X_1					4.14

Source: Primary Data Analysis, 2021

Table 3 shows that the appearance of Cavendish bananas in terms of peel color is good and attracts the attention of consumers to purchase. It is as opinion of Shintia (2019) stating that Cavendish bananas have a clean yellow peel, soft flesh and not too sweet taste, so it is often considered that Cavendish bananas are imported bananas even though Cavendish bananas have been cultivated locally. The taste and aroma of Cavendish bananas are in accordance with the wishes of most respondents although there are still some that are not in accordance with the wishes of some respondents. Most consumers prefer Cavendish bananas in large quantities to Cavendish bananas in small quantities. It is in line with Rumapea et al. (2021) stating that the most often purchased bananas at the research site were *baba* banana, *latundan* banana, *ambon* banana, and cavendish banana. Moreover, consumers prefer bananas with a large number of bananas per comb to bananas with fewer number of bananas per comb.

Table 4. Distribution of respondents' answers on variables of price

No.	Statement	Respondent's Answer (%)					Mean
		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	
1	The price of Cavendish bananas is affordable	2	5	35	46	12	3.61
2	Cavendish banana price is according to its quality	0	2	15	61	22	4.03
3	There is a discount applied on Cavendish bananas	7	10	41	28	14	3.32
		X_2					3.65

Source: Primary Data Analysis, 2021

Table 4 shows that the price of Cavendish bananas is still affordable for most consumers, while the others do not agree with that. It may be due to the different profession possessed by the respondents, resulting in different incomes. It is in line with the opinion from Sungkawa et al. (2015) stating that consumers prefer to purchase bananas at prices that match their income. Consumers are satisfied with the quality obtained when compared to the price given considering the Cavendish banana cultivation process is carried out with standard that has quality. Jamaluddin et al. (2019) argues that the cultivation and care of Cavendish bananas is carried out specifically starting from leaf pruning, injections to the banana blossom, bulking, flower removal, fruit disposal, fruit barrier removal, installation of fruit screens, fertilization, handling plant diseases to the harvesting process. The discount applied to price of Cavendish banana products is still rare, so some consumers never get the discount. Therefore, discounts to the products must often be done so that consumers are interested in purchase the product. According to Sundalangi et al. (2014), Discounts given by a company to a product can increase the interest to purchase the product.

Table 5. Distribution of respondents' answers on variables of place

No.	Statement	Respondent's Answer (%)					Mean
		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	
1	Sale point is easy to reach	1	1	5	44	49	4.39
2	Cleanliness of the sale point is guaranteed	0	0	7	38	55	4.48
3	The availability of Cavendish banana products is guaranteed	0	0	13	64	23	4.10
4	Cavendish banana products are placed in an easy-to-find place, and they are neatly arranged	0	1	5	57	37	4.30
		X_3					4.32

Source: Primary Data Analysis, 2021

Table 5 shows that the selected place as a sale point is strategic because most respondents feel that the place is easy to reach so that consumers can easily find the place even though there are still some respondents who do not agree. It is in accordance with the opinion of Enggal et al. (2019) stating that road access to the sale point, a clean and comfortable place affects purchasing decisions. The place of sale is considered clean so that consumers are more comfortable in making purchases. It is similar to Sesunan et al. (2015) stating that the quality of service, sales promotion and cleanliness of the place significantly affect purchase decisions.

Cavendish bananas sold at the Modern Market in Semarang are readily available so that consumers do not feel disappointed if the desired product is not available. According to Apriando et al. (2019), in making purchase decisions, one of the important things is to ensure the availability of a product because if the availability of the product is not guaranteed, it can reduce consumer's interest in making purchase. Most consumers consider that the arrangement of Cavendish banana products is good because they are neatly arranged, and consumers are easier to find so that it will be easier to make purchase decisions even though there are still respondents who disagree. It is in line with Winawan & Yasa (2014) stating that the arrangement of a product has an effect on purchase decisions, where the better the product structuring strategy, the more opportunities in making purchase decisions will also increase.

Table 6. Distribution of respondents' answers on variables of promotion

No.	Statement	Respondent's Answer (%)					Mean
		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	
1	Promotions carried out through events/exhibitions cause the consumers are interested in making purchase	10	7	43	27	13	3.26
2	Promotions carried out through advertisement cause the consumers are interested in making purchase	11	9	38	33	9	3.20
3	Promotions carried out through social media cause the consumers are interested in making purchase	11	6	35	37	11	3.31
		X_4					3.26

Source: Primary Data Analysis, 2021

Table 6 shows that promotions carried out through events/exhibitions and advertisements are less than optimal, while promotions through social media are maximal enough. Therefore, they need to increase the promotion to attract consumers to purchase Cavendish bananas. It is as the opinion from Weenas (2013) stating

that to attract consumers' interest to purchase, producers need to carry out promotions through brochures, web, television, print media or exhibitions.

Table 7. Distribution of respondents' answers on variables of purchase decision

No.	Statement	Respondent's Answer (%)					Mean
		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	
1	The consumers purchase Cavendish bananas at the Modern Market in Semarang because they need and feel that the product is suitable for them.	0	1	16	53	30	4.12
2	The consumers purchase Cavendish bananas at the Modern Market in Semarang because they get information about the product according to the information that they needed through the promotions carried out	3	9	34	40	14	3.53
3	The consumers purchase Cavendish bananas at the Modern Market in Semarang because they have evaluated and compared in terms of price and place	4	6	22	55	13	3.67
4	The consumers purchase Cavendish bananas at the Modern Market in Semarang because they have made the decision to purchase by considering the product, price, place and promotion	2	4	13	60	21	3.94
5	The consumers are satisfied with the product, and they will make a repeat purchase	1	0	19	57	23	4.01
		Y					3.85

Source: Primary Data Analysis, 2021

Table 7 shows that Cavendish banana products sold at the Modern Market in Semarang are in accordance with consumer desires in terms of appearance, quantity, taste and aroma so that consumers decide to purchase. It is as opinion from Rumapea et al. (2021) stating that consumers in making decisions to purchase banana consider several things, like taste, peel color, size and number of banana per comb. Meanwhile, most of consumers' reason to purchase Cavendish bananas is because the promotions carried out are in accordance with the information needed, while some others claim that the decision to purchase is not because of promotions. Therefore, there needs to increase they way of promotions through media that are currently on hype so that consumers will more easily find out the promotion. Enggal et al. (2019) argues that the way that can be done in promoting a product is to do promotions according to the media that is often used so that consumers can easily find out about the promotion.

Most of the consumers decide to purchase Cavendish bananas after evaluating or comparing Cavendish bananas in terms of price and place in several places. Meanwhile, some others only compare in terms of price, but they do not compare in terms of place or vice versa. It is in line with Kurniawan & Astuti (2012) stating that in deciding to purchase, price and place are important, in which consumers prefer having products at prices

matching their income to having products with higher price, and they prefer safer and easier to reach compare to other places.

While most of the respondents decide to purchase Cavendish bananas because they claim it was suitable from all variables namely product, price, place and promotion, while others decide to purchase because they claim it was suitable only from one variable or only from several variables. According to Enggal et al. (2019), the marketing mix in the form of product, price, promotion and place has significant effect on purchase decision. In addition, consumers who are satisfied with the Cavendish bananas they purchased in terms of product, price, place and promotion will decide to repurchase. It is in line with the research conducted by Pupuani & Sulistyawati (2013) stating that the marketing mix consisting of product, price, place and promotion affect consumer repurchase behavior, where if consumers are satisfied, the opportunity to make repeat purchases will also be higher.

Normality test

Table 8. Result of normality test

Variable	*Asymp. Sig. (2-tailed)*	Information
Product	0.093	Normal
Price	0.103	Normal
Place	0.088	Normal
Promotion	0.120	Normal
Purchase Decision	0.082	Normal

Source: Primary Data Analysis, 2021

Table 8 shows that the data used is normally distributed because it has a significance value of more than 0.05 (5%). It is in accordance with Annisa et al. (2017) stating that the normality test is carried out using the Kolmogorov-Smirnov test. The condition is that if the significant value is 5% or 0.05, the data is normal.

Classic assumption test

The results of the multicollinearity test indicate that the regression model used in this study does not occur multicollinearity because all variables used have a VIF value <10 and a tolerance> 0.10. It is as opinion from Sugiarto et al. (2017) stating that in the multicollinearity test, if the tolerance value is > 0.10 and VIF < 10, the data is said to have no multicollinearity.

The value of DW from the results of the autocorrelation test carried out was between the values of dU and (4 – dU) so that in this study there was no autocorrelation, namely 1.758 < 1.836 < 2.242. It is in accordance with Zamroni (2016) stating that there are three criteria in the autocorrelation test. First, if DW lies between dL and dU or between (4 - dU) and (4 - dL), it cannot be concluded with certainty; second, if DW lies between dU and (4 - dU), there is no autocorrelation; and third, if dW<dL or dW > (4 – dL), autocorrelation occurs

The results of the heteroscedasticity test show that the points in the scatterplot graph of the heteroscedasticity test do not form a certain pattern and spread to almost all parts of the graph including those above and below 0, it can be said that there is no heteroscedasticity in the data used in this study. Sugiarto et al. (2017) argues that the heteroscedasticity test can be identified by using the scatterplot graph, if the points on the scatterplots spread and do not form a certain pattern or are above or below the 0 value on the Y axis, the data does not experience heteroscedasticity.

Normality error test

The results of the normality error test show that the data is spread out following the diagonal line, which is along the line of 45^{o} and the residual data has an value of Asymp. *Sig. (2-tailed)* of 0.422. It shows that the data has a normal distribution. In line with the opinion of Ilat et al. (2018) stating that if a data is spread around a diagonal line of 45^{o} on a normal plot graph, the data is normal. It is supported by Ayuningtyas & Gunawan (2018) stating that if the residual data in a study has a significance value > 0.05, the residual data has a normal distribution.

Coefficient of determination

The coefficient of determination test having been carried out shows the Adjusted R Square (R2) value of 0.506, which means that as much as 50.6% of the diversity of the dependent variable, namely the decision to purchase Cavendish bananas can be explained by independent variables (price, product, promotion and place) while the rest are 49.4% is explained by other variables that are not used in this study. The value of the coefficient of determination produced is included in the good category because the value is close to 1 so that it is able to

explain the dependent variable. It is in accordance with Ghozali (2018) stating that if a data has an R2 value or a coefficient of determination close to 1, the ability of the independent variable to explain the dependent variable is getting better, and if a data has an R2 value or a coefficient of determination that is small and is getting away from 1, the ability of the independent variable to explain the variation of the variable dependent is also limited.

Multiple linear regression test

Based on the Multiple Linear Regression Test having been carried out, the following results are obtained:

$Y = 1{,}430 + 0{,}299X_1 + 0{,}670X_2 + 0{,}234X_3 + 0{,}284X_4 + e$

These equations can be explained, as follow:

1. The constant (α) is 1.430, which means that if the price, product, promotion and place variables are constant. The decision to purchase Cavendish bananas at the Modern Market in Semarang is 1.430.
2. The product variables (X1), price (X2), place (X3) and promotion (X4) have positive regression coefficient values so that all these variables have a positive relationship to the decision to purchase Cavendish bananas at the Modern Market in Semarang. It is in accordance with Dewi dan Sutanto (2018) stating that in the multiple linear regression test, an independent variable can be said to have a positive relationship to the dependent variable if it has a positive coefficient value.

Table 9. Result of F-test

	Model	*Sum of Squares*	Df	*Mean Square*	F_{count}	F_{table}	Sig.
1	*Regression*	532.373	4	133.093	26.378	2.47	0.000[a]
	Residual	479.337	95	5.046			
	Total	1011.710	99				

Source: Primary Data Analysis, 2021

The value of F_{count} and F_{table} contained in Table 9 shows that the H_1 of this study was accepted and H_0 was rejected because the calculated $F_{count} > F_{table}$ was 26.378> 2.47 and the sig value. < 0,05 which means that the independent variables used in this study are price, product, promotion and place simultaneously affect the dependent variable, namely purchasing decisions. It is as opinion from Lubis & Hidayat (2017) stating that the independent variable in a study can be said to have a simultaneous effect on the dependent variable if the calculated $F_{count} > F_{table}$ and has a significant value < 0.05. It is supported by Ghozali (2018) stating that if H0 is rejected and H1 is accepted with a significance value <0.05, it can be concluded that the independent variables simultaneously affect the dependent variable. According to Pertiwi et al. (2016), marketing mix, product, place, price and promotion, have a joint effect on purchasing decisions, because it is a marketing tool that can be planned according to market desires.

Table 10. Result of t-test

Variable	t_{count}	t_{table}	Sig.
Product	1.999	1.984	0.048
Price	5.055	1.984	0.000
Place	1.849	1.984	0.067
Promotion	3.266	1.984	0.002

Source: Primary Data Analysis, 2021

Based on the t-test that has been carried out, the calculated t_{count} on the product variable is 1.999 with a sig value. of 0.048; the price variable is 5.055 with a sig value. of 0.000; the place variable is 1.849 with a sig value. of 0.067; and the promotion variable is 3.266 with a sig value. of 0.002. This value indicates that H0 is rejected and H1 is accepted on the product, price and promotion variables because it has a $t_{count} > t_{table}$, which is 1.999 > 1.984 and a sig value. of < 0.05, while H1 is rejected and H0 is accepted on the place variable because it has value of $t_{count} < t_{table}$ which is 1.849 > 1.984 and a sig value. of > 0.05. It means that the variables of price, product and promotion has significant effect on purchase decisions, while the variable of place has no effect on purchase decisions. It is in accordance with research conducted by Kurniawan dan Astuti (2012) stating that the price and place variables have no effect on purchase decisions partially. It is supported by Shandy (2015) stating that in the research conducted, price and promotion variables have a partial effect on purchase decisions, while product, place or location, people, physical evidence and process variables have no effect on purchase decisions.

Selang (2013) states that consumers in making decisions to purchase consider many factors, like product advantages, price advantages and services, so it is evident that the product and price variables in this study affect the decisions to purchase Cavendish bananas in the Modern Market of Semarang. Consumers decide to purchase Cavendish bananas because this banana has advantages over other bananas. According to Shintia

(2019), Cavendish bananas have a clean yellow peel, soft flesh and not too sweet taste. In addition, it also has good nutritional content for the body, as stated by Setianingsih et al. (2017) stating that Cavendish banana contains crude fiber which is good for the digestive tract and can be consumed in large quantities because it contains relatively little fat, and Cavendish banana also contains protein which is good for the growth process. Amanda (2011) states that the potassium content in Cavendish bananas is about 476 mg which is useful for lowering blood pressure. Most consumers also agree about the price given, which is affordable price. Moreover, the price is in accordance with the quality provided, and there is a discount so that consumers decide to purchase Cavendish bananas at the Modern Market in Semarang. It is in accordance with the opinion from Dewi dan Sutanto (2018) stating that purchase decisions can be affected by prices that match the benefits of a product, affordable prices and prices that match product quality.

Promotion is also carried out through various media, namely through events/exhibitions, advertisements and social media that can make it easier for consumers to obtain information about products, so that it can cause consumers easier to decide whether to make a purchase or not. It is as Sangadji (2019) stating that the more promotions are carried out, the more information consumers will receive so that the more the chances of consumers purchase the product. Cavendish banana is a type of banana that is more often found in modern markets than in other sales places so that consumers consider other factors more than the place like the cleanliness of the place, product availability and product arrangement. Therefore, those other factors can be paid more attention. It in in line with the research by Marendra (2018) stating that the factors requiring to be considered in the selection of sales point are the surrounding environment, competition with competitors similar to the business, the possibility of expansion and road access.

CONCLUSION

The conclusions that can be drawn from the above discussion are:

1. Descriptive analysis shows that the product variable has a fairly good average; the price variable has an average value that is less good; the place variable is good enough; the promotion variable also has an average value that is less good; and the purchase decision variable has an average value with fairly good average.
2. Statistical analysis shows that the variables of price, product, promotion and place simultaneously affect the purchase decision of Cavendish bananas. Price, product and promotion variables have a partial effect, while the place variable has no effect on purchase decisions for Cavendish bananas at the Modern Market in Semarang.

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Universitas Muhammadiyah Malang, East Java, Indonesia

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Research Article

Design and Planning of The *Porang* Supply Chain in South Sumatra

Agustina Bidarti [a,1,*], Yulius [b,2], Erni Purbiyanti [c,3]

[a,b,c] Department of Agricultural Social-economic, Faculty of Agriculture, Universitas Sriwijaya, Jl. Raya Palembang-Prabumulih KM 32, Indralaya, Ogan Ilir, South Sumatra.

[1] agustinabidarti@unsri.ac.id; [2] yulius@fp.unsri.ac.id; [3] erni.purbiyanti@fp.unsri.ac.id

* Corresponding author

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ABSTRACT

The length of the existing porang (*Amorphopallus Muelleri B)* supply chain is causing a problem on *porang* farmers in South Sumatra. The purpose of this research was to construct a P4S Karya Tani *porang* supply chain with two evaluation steps. First beginning, identify the potential demand for *porang* in South Sumatra from either the demand and supply perspective. Second, consider the challenges of maximizing market demand in the *porang* supply chain in South Sumatra. The research employed a qualitative descriptive method with a philosophical approach to supply chain management theory. Based on the discussion, P4S as evaluated the *porang* supply chain design, determining that small and large traders must be eliminated as intermediaries, allowing them to sell *porang* raw materials direct to consumers and agro-industry enterprises that export porang. All elements, including that of the local government, Sriwijaya University, the corporate sector, and banking institutions, should be involved in the P4S *porang* supply chain planning. This collaboration is crucial in order to connect and transform the paradigm of direct sales to consumers, enabling P4S *porang* farmers to sell to the nearest consumer, PT PIP in South Lampung, via a contract farming system.

INTRODUCTION

Porang (*Amorphophallus muelleri B*) is the new agricultural commodities export prima donna (Lontoh *et al,* 2019) Farmers who are members of P4S Karya Tani, South Sumatra, are deeply invested in porang cultivation and management. South Sumatra's P4S Karya Tani must be provided with such an alternative and strategy for constructing a porang supply chain that's also shorter and distinctive from the existing *porang* supply chain. *Porang* (*Amorphophallus muelleri B*) is now being intensely grown in South Sumatra at the Karya Tani Rural Farming Training Center (P4S) in Tanjung Batu, Ogan Ilir. Farmers who are members of P4S Karya Tani significantly contribute in the development and improvement of *porang* cultivation using seeds created by P4S Karya Tani using in tissue culture. This method works well with stem tubers, stem tubers, and leaf tubers or

bulbil (Wang *et al.*, 2017) The popularity a nd substantial economic value of the *porang* plant in Indonesia for industrial export cannot be separated from the development of *porang* cultivation (Yoshida *et al.*, 2020; Lontoh *et al.*, 2019). *Porang* exports are in high demand due to its high glucomannan content, which is widely employed in the food industry (Zhang *et al.*, 2014), health (Behera & Ray, 2016), and industrial (Dai *et al.*, 2020; Kashima *et al.*, 2016).

In addition to want a systematic alternative planning, *porang* farming in P4S Karya Tani must be followed by the construction of effective supply chain management. *Porang* market demand is quite strong, in line with the growth of *porang exports*, which is increasing every year. However, domestic cultivation and raw materials did not condemn the increase in *porang* exports, as the supply of *porang* was only fulfilled by farmers and small traders. Because of the lack of meticulous planning, delivering supplies from small farmers might be problematic. Small farmers' behaviors, which are based on their income, savings, debt levels, requirements, and spending preferences, often result in sales, supply issues, and injury to farmers in the supply chain management system (Nee, 2008; Sharma *et al.*, 2013; Wu *et al.*, 2016; Berty & Mulligan, 2016)

Supply chain management in agriculture, according to Bidarti *et al.* (2019), would include the supply process of suppliers to the company or supplier network, processing in the company or integrated enterprise, distribution and export or distributive network, and distribution and export or distributive network. Because *porang* farmers are the primary producers, the supply method of suppliers to companies is critical in supply chain management. At this point, supply chain management must cut off as many suppliers as possible, allowing farmers to interact directly with the company all through the bargaining process (Perdana *et al.*, 2020; Handayani *et al.*, 2015; Patil & Kale, 2016). Farmers, as well as producers, can deal directly with customers and agro-industry firms in this process, maximizing sales volume and ensuring that the market is on target (Amarala *et al.*, 2020; Pradani *et al.*, 2021). Based on the foregoing, study into alternatives to the establishment of the *porang* supply chain itself from P4S Karya Tani *porang* farmers is required, particularly in the target market. The purpose of this study, first is design of the *porang* supply chain formation. Second, getting the development of the *porang* supply chain at P4S Karya Tani which sided with farmers.

METHOD

The *porang* supply chain structure technique was used a qualitative descriptive method similar to Kumar & Kushwaha (2018). The study was place in Tanjung Batu, Ogan Ilir Regency, South Sumatra Province, at the Karya Tani Rural Agricultural Training Center (P4S). Because a large-scale *porang* cultivation is now being created in South Sumatra Province, where the majority of the members are rubber farmers, P4S Karya Tani is utilized as an example to produce a *porang* supply chain.

This research was part of an effort to help increase regional potential in South Sumatra by increasing the effectiveness and sustainability of the *porang* supply chain, which is being actively cultivated by P4S Karya Tani farmers and includes *porang* agro-industry, *porang* farmers, local government, private sector partners, and academics. In-depth interviews with resource persons, observation, and focus group discussions (FGD) were used to collect data from Tanjung Batu *porang* farmers, P4S Karya Tani administrators, the local government of Ogan Ilir Regency and South Sumatra Province, banks, and private parties who were sampled in this study. The questions in this interview are open-ended to provide for more versatility and to allowing for the exploration of new themes or concerns that develop during the interview process.

This study, both descriptively and exploratorily, employs supply chain management theory as a philosophical method in producing supply chain management in building value that is focused on consumer demand. The very first study was conducted in P4S Karya Tani, South Sumatra, as many as 60 member farmers to determine the current situation of *porang* cultivation and the market chain. The evaluation's findings are also used to shape the construction of the P4S Karya Tani in South Sumatra *porang* supply chain mapping. The supply chain is being developed in multiple ways, the first of which is identifying the potential need for *porang* in South Sumatra from both the demand and supply sides. Second, consider the difficulties of completing the P4S Karya Tani South Sumatra *porang* supply chain in terms of optimizing market demand through *porang* supply chain management planning. This step also looks at the problems of *porang* cultivation and supply chain structure at P4S Karya Tani in South Sumatra, such as identifying problems with the P4S Karya Tani supply chain in South Sumatra based on the distribution and profit sharing levels of actors in the *porang* supply chain system at P4S Karya Tani in South Sumatra with 10 small traders, 3 wholesalers, and 2 exporters as respondents.

RESULTS AND DISCUSSION

Map and Design of the *Porang* Supply Chain in P4S Karya Tani's

Based on existing theory. There's many several important considerations to take when mapping the *porang* supply chain in South Sumatra. First, *porang* supplies are expected to be scarce in 2020 due to a number of interconnected factors. Santoso (2015) observed the growth of *porang* exports to Japan, Malaysia, Pakistan, and the United Kingdom, which reached in 1991-1997 and then declined from 1998 to 2010. Furthermore, according to Santoso, *porang* exports have declined due to a lack of domestic cultivation and processed raw materials, rather than a drop in overseas market demand. *Porang* supplies are in low supply as a result of this situation, particularly in South Sumatra, where *porang* cultivation at P4S Karya Tani is taking place.

To beginning with, there is a tendency to for supply curve to shift to the left. This is due to the cultivation of *porang* in South Sumatra, as opposed to East Java, Central Java, West Java, and Lampung, where porang is grown like mushrooms during the wet season. *porang* plant agriculture in South Sumatra is uneven, with centers only in Musi Banyuasin Regency, Banyuasin Regency and Ogan Ilir Regency. *Porang* cultivation, on the other hand, is nearly non-existent in 14 other cities and regencies in South Sumatra. As a result, there is a scarcity of land for *porang* farming, which must compete with other industrial plant grounds (Yanuriati, *et al,* 2017; Yanuriati & Basir, 2020).

Second, there is a proclivity for the supply curve to shift to the right. *Porang* production in South Sumatra should be in the form of flour or *porang* chips, however *porang* nurseries in South Sumatra are primarily in the form of tubers, including stem tubers and frog tubers, due to price control and to generate double demand. This means that farmers that produce *porang* in order to satisfy their expected seed needs tend to store the crop instead of distributing it to top customers, such as *porang* agro-industriy companies in the supply chain.

Based on this, the *porang* supply chain mapping in South Sumatra generally covers the basic pattern:

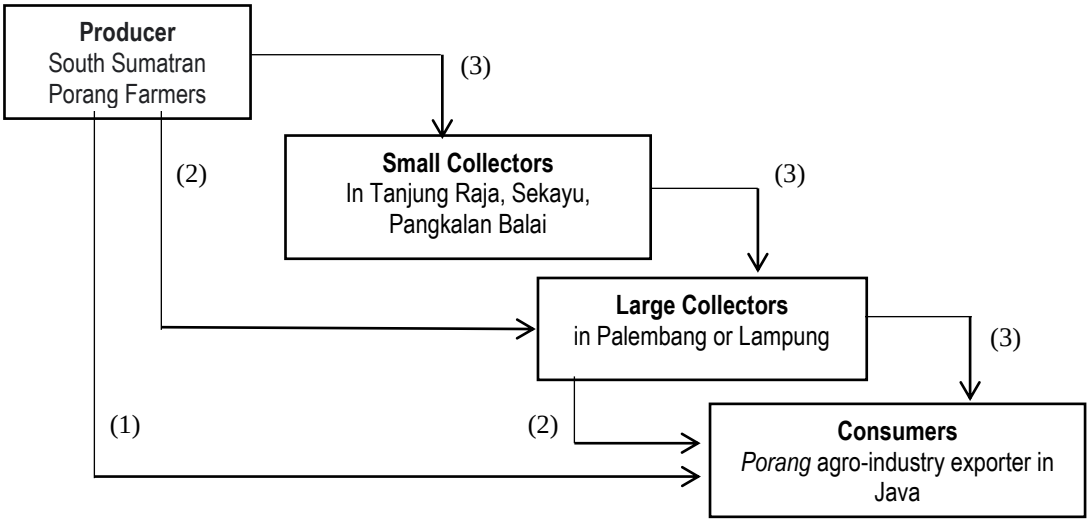

Figure 1: Supply Chain Map at Porang, South Sumatra

Third, *porang* production costs tend to increase as a result of *porang* farmers' lack of creativity, as they prefer to acquire seeds directly. Farmers, for example, do not know how to generate seeds using in vitro growing tissue. Fourth, even on the island of Sumatra, the *porang* market for porang agro-industry companies in South Sumatra is still lacking. PT Ambiko, PT Asia Prima Konjac, CV Agro Alam Raya, PT Algalindo, CV Jia Li in East Java, Star Konjac Nusantara, CV Porang Center Indo, CV Sanindo Putra in West Java, and PT Jagat Raya Indonesia in Jakarta are among the largest *porang*-exporting agro-industry companies in the world (Yanuriati *et al.*, 2017; Dermoredjo *et al.*, 2021). PT. Mitra Porang Nusantara (MPN) in Pekanbaru, Riau, and PT Paidi Indo Porang (PIP) in South Lampung are the only two agro-industrial companies in Sumatra that export *porang*. Both of them have only been in operation since 2021.

Farmers as *porang* producers, small collectors situated in the district capital, and large collectors headquartered in the province capital are the three entities in the *porang* supply chain in South Sumatra, according to Figure 1 above and in-depth interviews conducted for this study. Farmers as *porang* producers, particularly in the Musi Banyuasin and Banyuasin areas, and as *porang* raw material suppliers. *Porang*

harvests are marketed in stages in flow 1, with some going to small collectors, major collectors, and even direct customers of *porang* agro-industry enterprises in Java. *Porang* producers frequently sell porang straight in the shape of bulbs or frog bulbs in the sales process described above, without separating them first.

Small collectors in the district capital, especially in Ogan Ilir Regency in Tanjung Raja, Musi Banyuasin Regency in Sekayu or Sungai Lilin, and Banyuasin Regency in Pangkalan Balai or Betung and Sumbawa, are usually individual suppliers, and there are also groups such as *porang* farmer groups whose activities include selling *porang* to large collectors in addition to aiding in government programs. The raw materials for *porang* are usually sorted by small collectors, who separate the good quality items from the damaged ones before selling them to the big collectors. The price of separated *porang* raw materials varies according to the size and physical shape of the *porang*.

Large collectors based in Palembang are suppliers who buy *porang* raw materials from both *porang* farmers and small collectors in Palembang. All *porang* raw materials are re-sorted at big collectors to distinguish *porang* raw materials of acceptable grade from *porang* raw materials that are not possible. Good-quality raw materials are processed, both in the form of *porang* chips and *porang* flour, to ensure that the moisture level of *porang* and *porang* glucomannan satisfies the quality standards demanded by *porang* agro-industrial exporters in Java.

Porang raw features are processed by consumers of *porang*-exporting agro-industry enterprises not only from major collectors in Palembang, but also through several supply chain entities, as shown in Figure 1: First, flow 1 of the *porang* supply chain is the flow with the shortest trajectory, in which farmers directly sell *porang* cultivation goods to consumers, as well as *porang* agro-industry enterprises in Java. Farmers are usually able to offer *porang* raw materials in significant quantities and have a cooperative partnership with an agro-industry enterprise that exports *porang* on the island of Java through a contract system. However, the supply chain flow of *porang* 1 is very low, barely 3%, according to questionnaires and interviews.

The *porang* 1 supply chain's flow in South Sumatra, particularly at P4S Karya Tani, needs to be improved. This rise, however, must be accompanied by attempts to build a pattern of cooperation and supply chain shortening by reducing the number of parties in the *porang* supply chain, crop rotation to engage directly with *porang* agro-industry companies' consumers. In addition, forming consumers closer to farmers must be followed by cooperation and efforts to cut *porang* supply chain actors. PT Paidi Indo Porang (PIP) in South Lampung is the *porang*-exporting agro-industry enterprise nearest to P4S Karya Tani. The contract agreement between porang farmers at P4S Karya Tani and PT Paidi Indo Porang (PIP), a *porang*-exporting agro-industry enterprise, is more than just a commitment to provide agricultural products. However, as Ncube (2020) and Kangogo *et al.* (2020) point out, there must be an affirmation of progress and sustainability, especially the company's guidance to farmers to always improve the quality of their *porang* products. Consequently, eliminating the actors in the *porang* supply chain reduces the flow of the *porang* supply chain. Good supply chain management, according to Altman (2015) and Zhang *et al.* (2021), must be able to cut out as many actors as possible, product quality and farmers to sell their products directly to final consumers at high prices.

Second, the flow of 2 maps of the *porang* supply chain, namely *porang* farmers as producers to large collectors in the provincial capital and then to consumers, *porang* agro-industry exporters on Java. As according Wahyuni *et al.* (2020), the utilization of *porang* in the form of *porang* chips requires the use of washing tools and *porang* tubers to remove calcium oxalate compounds present in *porang*, enabling for more special adviser of *porang* glucomannan. According to Pasaribu *et al.* (2020), to produce glucomannan flour, the water content must be around 12 and 35 percent, the fineness must be very fine, the color must be shiny white, the sulfite residue must be less than 0.6, and the glucomannan content must be greater than 80 percent. Farmers still receive insufficient information on the quality of processing and processing technologies for *porang*, thus farmers sell more *porang* in the form of tubers than chips or flour. *Porang* farmers that create P4S Karya Tani should be acquainted with *porang* processing technologies in order to sell at a better price and sell directly to end users, such as agro-industriy enterprises that export *porang*. According to the questionnaire and interview flow 2, this *porang's* supply chain is still modest, at roughly 16 percent.

Third, compared to other trajectories, the flow of the *porang* supply chain in South Sumatra is the longest, starting with farmers producing *porang* and passing thru all the small collectors in the district capital, large collectors in the provincial capital, and and at last final consumers, agro-industry companies that export *porang* in Java. However, the flow of these 3 *porang* supply chains is long, with 81 percent of them are being finished. As a result, this path must be reduced so that *porang* farmers do not share too much of their sales with other actors in the *porang* supply chain, where farmers receive little to no maximum sales. Lin and Wu (2011) propose that in an effective supply chain trajectory, intermediaries for short flows being eliminated, enabling *porang* farmers to sell raw materials directly to customers at relatively high rates. In order for *porang* farmers at

P4S Karya Tani to sell directly to consumers, technology that minimizes the risk of damage to *porang* tubers in storage as well as high-quality *porang* processing technology must be accessible.

***Porang* Supply Chain Management Development Strategy at P4S Karya Tani, South Sumatra**

Porang cultivation and business should therefore be developed in view of potential market opportunities in South Sumatra. There are several more obstacles to the development of the *porang* supply chain in South Sumatra, including at P4S Karya Tani, as per the supply chain map at the top of this research. The significant effect of intermediaries who enter as actors in the *porang* supply chain is the main obstacle faced in the structure of the *porang* supply chain in South Sumatra. Farmers as *porang* producers must be able to market directly to opportunity to realize, agro-industry enterprises that export *porang*, by reducing the flow structure of the *porang* supply chain.

In order to shorten a long supply chain flow, all actors must be involved. The involvement of the local government, both the district government of Ogan Ilir and the provincial government of Sumatra, is essential since higher education institutions, such as Sriwijaya University, which is a major educational institution and the nearest to P4S Karya Tani, must collaborate. The local government is responsible with persuading investors, the private sector, and especially the banking sector, to participate in supplying capital to *porang* farmers so that they can cultivate more porang in response to customer needs. Higher education institutions, such as Sriwijaya University, are credited with finding *porang* organization increase their institutions by teaching them how to grow and process *porang* crops.

A most essential step in improving the creation of the *porang* supply chain at P4S Karya Tani in South Sumatra is to improve farmer institutions so that at the initial stage, the supplier network starts at the product ordering stage, initial product processing, transportation of *porang* products, and warehouses for porang storage. The best solution is to find the closest *porang*-exporting agro-industry enterprises to P4S Karya Tani. *Porang's* main consumers in South Sumatra have so far been agro-industry enterprises that distribute porang to Java. The many agro-industry enterprises that export *porang* in Java, such as PT Ambiko, PT Asia Prima Konjac, Star Konjac Nusantara, CV Porang Center Indo, PT Jagat Raya, and others, all are adding to this predicament. In truth, in South Lampung, there is a *porang* exporting agro-industry enterprise called PT Paidi Indo Porang (PIP). If the local government should engage *porang* farmers in P4S Karya Tani in South Sumatra with PT Paidi Indo Porang (PIP), the contract farming system will benefit *porang* farmers in P4S Karya Tani. According to Kumar & Kushwaha (2018), developing a supplier model will automatically cut supply chains that are too long, benefiting porang farmers. Direct farmers as *porang* producers at the local level who can directly relate to *porang* factory exporters will automatically cut supply chains that are too long.

Moreover, the *porang* supply chain's contract farming system can reduce the risk of *porang* cultivation at the farmer level. Contract farming will reduce the risk of *porang* farmers being not able to sell goods, as well as restrict high sales of *porang* tubers for P4S Karya Tani farmers. The inclusion of contract farming in the *porang* supply chain at P4S Karya Tani will help assure the security of *porang* raw material supply to the exporting industry, resulting in more reliable *porang* raw material procurement. PT Paidi Indo Porang (PIP) and P4S Karya Tani farmers in South Sumatra can develop a centralized contract farming model in order for this contract farming to be mutually beneficial between the two interests of the processing industry and *porang* exporters. PT Paidi Indo Porang (PIP), which functions as the buyer of porang raw materials and determines the quality standards of *porang* products to farmers, conducts contract farming centered on industry and exports. However, PT Paidi Indo Porang (PIP) must have a responsibility to P4S Karya Tani farmers in terms of transforming brand product quality standards.

At times such as these, the Sriwijaya University educational institution can take the services of P4S Karya Tani *porang* farmers to share their knowledge and talents in processing raw materials to meet the demands of PT Paidi Indo Porang (PIP). As a result of these observations, several things are needed to ensure the effective and efficient flow of the short *porang* supply chain, as follows. To begin, a community or *porang* farmer group must be established in P4S Karya Tani. Because the P4S is a non-governmental organization that is managed in groups for agricultural training and education programs, establishing this farmer group is not uncomplicated. (Solihin *et al.*, 2019)

Similarly, the Agricultural Human Resources Extension and Development Agency (BPPSDMP) of the Ministry of Agriculture in Jakarta supports P4S Karya Tani. (Amalia. 2020) Second, in P4S Karya Tani, South Sumatra, there are investors in the *porang* processing industry who can provide increased added value in *porang* cultivation and business. These investors are good, including investment aid from local government subsidies, agricultural loans from the Bank of South Sumatra, and programs specifically for *porang* plants sponsored by Bank Indonesia Representatives in Palembang.

Hamzah et al. (2020) conducted a competitiveness study to increase exports by studying one of Indonesia's commodities. According to this study, the Trade Specialization Index (ISP) value for Indonesian coffee commodities ranges from 0 to 1, indicating that Indonesian coffee is already competitive and tends to be an exporting country. Because the Acceleration Ratio (AR) for Indonesian coffee commodities has been positive (more than one). As a result, the value of the Acceleration Ratio, which is always positive, indicates that Indonesia is capable of seizing the international coffee commodity market. From 2008 to 2017, the value of Indonesia's Revealed Comparative Advantages (RCA) was always positive (more than one). A positive RCA value indicates that Indonesian coffee commodities have a comparative advantage over the global average, or that Indonesian coffee commodities are highly competitive in the international market.

However, according to this study, Indonesia's Trade Specialization Index value is between 0 and 1, indicating that the commodity's competitiveness is still at the export stage if Hiratsuka's product cycle theory is correct. As a consequence, in order to progress, at least two things must be accomplished: To begin, Indonesian coffee commodities must produce on a large scale and begin increasing exports while remaining in the domestic market. Second, the supply of coffee commodities exceeds demand.

P4S Karya Tani should conduct similar investigations into porang supply chain design and planning, particularly in terms of competitiveness. To attract competitiveness in P4S Karya Tani, a large-scale porang product production strategy must be pursued in order to achieve a supply level greater than the demand for porang among P4S Karya Tani porang farmers and agro-industrial companies. According to Relawati et al. (2019), Malang apple agribusiness actors such as farmers, packaging traders, wholesalers, and retailers are already highly integrated. Because the marketing chain is already quite short, this integration is necessary. Only three marketing actors, namely packers, wholesalers, and retailers, bridge the gap between farmers and consumers. In fact, there is no wholesaler's role in determining the price, because the packing trader from Malang Raya determines the selling price to retailers in the consignment system.

Furthermore, in an integrated market, the role of packaging traders is quite dominant. However, it is also stated in this study that, despite being well integrated, it still necessitates three strategy formulations. The three strategies are as follows: increasing Malang apple production and sales; increasing Malang apple promotion; and segmenting the Malang apple market.This study is significant because it is one of the points in the design and planning of the porang supply chain at P4S Karya Tani South Sumatra, particularly in terms of promotion and branding, both through print and electronic media available today. The study of Amarala et al. (2020) found a gap in the use of online social media to reach wider publications, both through the district government website and market places that already exist online.

Maysaroh et al. (2018) conducted a study of a similar supply chain with cassava commodity, and this study found that, while the supply chain management model is standard and good, it consists of farmers, collectors, market traders, and agro-industry parties as chain actors, each of which carries out different activities depending on the inputs they have and the output they produce. Furthermore, the channel is deemed efficient in this study because it has a lower marketing margin value, a higher farmer's share, and a higher profit-to-cost ratio than other channels. However, supply chain development must continue, with the cassava supply chain development mechanism operating in two modes. The first is the supply chain target, with a domestic target market and a development target in the form of technology improvement. Second, the advancement of chain and network management, including efforts to improve coordination and collaboration, as well as the acquisition of formal contractual agreements.

However, further development of this supply chain in its corridor must include cooperation based on verbal contracts between members, a cash transaction system, and government support in the form of capital, equipment, and human resource development training. This research will also help in the design and planning of the porang supply chain at P4S Karya Tani in South Sumatra. The continuous involvement of all parties, including the government, private sector, and universities, is required to maintain the cooperative transaction system between farmers and porang agroindustry, particularly in terms of capital, training, and resource development of porang farmers at P4S Karya Tani.

Furthermore, by involving all parties, this development has many economic and social benefits. Economically, the presence of porang cultivation in P4S with careful design and planning in the supply chain will encourage increasing sustainable porang production (sustainability), which is quite promising, in addition to having abundant land and human resources in porang farming in Ogan Ilir Regency so that profits can be made in improving the welfare of farmers, particularly porang farmers, through the supply chain. Second, from a social standpoint, the existence of porang cultivation with such design and planning will be usually lauded in Ogan Ilir Regency in particular and South Sumatra Province in general. A good porang supply chain

management agricultural program will serve as a model for other commodities in other districts in South Sumatra and Indonesia.

Furthermore, for the Independent Agricultural and Rural Training Center (P4S) Karya Tani, Ogan Ilir Regency, the porang farming program with a sustainable supply chain in Ogan Ilir Regency, it is hoped that this collaborative effort will expand more broadly to various regions of South Sumatra and Indonesia, raising the name of the Ogan Ilir Regency Government in the national arena. Porang cultivation has a lot of potential, and there are a lot of market needs that can't be met completely, so it can be widely marketed to other areas of the Ogan Ilir Regency with a very large area coverage. Furthermore, the Independent Agricultural and Rural Training Center (P4S) Karya Tani, Ogan Ilir Regency can benefit by gaining experience in serving porang consumers as a downstream porang for export. It can then be used to indirectly increase the production of porang agricultural products while also increasing the income and welfare of farmers in Ogan Ilir Regency and South Sumatra Province.

The efficiency of transportation costs and the efficiency of processing costs related to the processing of porang tubers that can be done at P4S Karya Tani are both important considerations in the design and planning of the porang supply chain at P4S Karya Tani. The study of Baroh et al. (2021) found that focusing on transportation costs reduced the efficiency of porang prices to the agro-industry of exporting companies. The first step in determining the price efficiency of transportation costs is to calculate the total purchase price of porang as well as transportation costs to the location of the exporter's agro-industry company. Essentially, and theoretically, in supply chain management, the transportation marketing function is typically carried out by marketing agencies, i.e. middlemen.

Of course, in accordance with the study of Iqbal *et al*. (2020), by cutting channels to middlemen and large collectors. As a result, because middlemen and other collectors are being eliminated in the design and planning of this supply chain, consumers, namely the porang exporting agro-industry companies, bear transportation costs. The efficient measurement of transportation costs can be seen if the average cost incurred is still less than the price difference. Meanwhile, for price efficiency based on processing costs, the sum of the purchase price of the coffee and the processing costs that must be less than the selling price of porang is price efficiency based on processing costs (Santoso, 2015; Iqbal *et al.,* 2020)

Furthermore, the difference between the selling price and the purchase price of porang, which must be greater than the processing cost, can be analyzed. Loading and unloading, sorting, drying, separating porang tubers, roasting, and packaging costs can be charged to P4S Karya Tani farmers. Based on this, raising according to Yanuriati *et al.* (2020) the price at the agro-industry level of porang exporters in Lampung.

CONCLUSION

According to the findings of the study, the porang supply chain in South Sumatra has a relatively long flow. *Porang* farmers selling directly to final consumers, as well as agro-industry enterprises exporting *porang* in Java, account for only 3% of the total. Meanwhile, flow 2 in the *porang* supply chain in South Sumatra is still low, at around 16 percent, with farmers as *porang* producers selling to wholesalers in the province capital. Flow 3 of the *porang* supply chain in South Sumatra, with a tiered structure of *porang* farmers selling to small traders in the district capital, then wholesalers, and finally consumers. Agro-industry enterprises that export *porang* in Java account for around 81 percent of the total. This requirement is to design the structure of the *porang* supply chain in P4S Karya Tani, South Sumatra, by removing small and large traders as intermediaries. P4S Karya Tani *porang* farmers would be able to sell *porang* raw materials directly to consumers and *porang*-exporting agro-industry enterprises.

Furthermore, all elements, including district governments, provincial governments, Sriwijaya University, and private and banking institutions, such as Bank Sumselbabel and Bank Indonesia Representative in Palembang, must be involved in developing the *porang* supply chain structure at P4S Karya Tani while minimizing problems in the supply chain structure. The role of the local government in linking and transforming the sales-to-consumer paradigm, which has previously been dominated by agro-industry enterprises exporting *porang* in Java, is essential. Additionally, a pattern like this in the porang supply chain in South Sumatra can not only improve the existing *porang* supply chain structure, but also increase and popularize *porang* crop cultivation and processing in all other cities and regencies, ensuring that the motto of South Sumatra as a national food barn is properly realized.

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Universitas Muhammadiyah Malang, East Java, Indonesia

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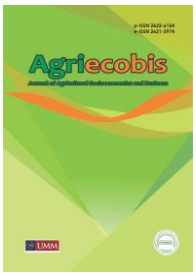

Research Article

Service Quality, Product Quality, and Perception of Price for Consumer Satisfaction at *Aqiqah* Business

Nabilah Zhafirah[1], Rahayu Relawati[2,*], Bambang Yudi Ariadi[3]

[1,2,3] Program Studi Agribisnis, Fakultas Pertanian-Peternakan, Universitas Muhammadiyah Malang Jln. Raya Tlogomas 246, Malang, Indonesia.
firanabilah99@gmail.com,[1] rahayurelawati@umm.ac.id,[2] bambang_y@umm.ac.id [3]
* corresponding author

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ABSTRACT

Consumer Satisfaction is an assessment of the features of a product or service that provides a level of pleasure to customers related to meeting customer consumption needs. Aqiqah Nurul Hayat has been serving aqiqah services since 2003 and already has more than 30 branches spread throughout Indonesia. The purpose of this study was to determine the relationship between price perception, service quality, and product quality to consumer satisfaction with aqiqah Nurul Hayat Malang Branch. The research location is at the office of Nurul Hayat Malang branch on Jl. S. Supriadi No. 7 Sukun. Sampling used the accidental sampling method, the respondents obtained were 73 people. The analytical method used in this study is Spearman's Correlation. The data used are primary data. The results obtained indicate that the perception of price, service quality, and product quality have a relationship with customer satisfaction Aqiqah Nurul Hayat Malang branch. The results of the analysis show that perceived price, service quality, and product quality have a strong relationship with customer satisfaction at the Aqiqah Nurul Hayat Malang branch. The recommendation given is to maintain customer satisfaction by continuing to maintain the quality of both services and products.

INTRODUCTION

The awareness of the Muslim community in Indonesia regarding the implementation of their children's aqiqah is currently quite high. According to the Association of Indonesian Sheep and Goat Breeders, in 2020, the need for goats for aqiqah reached 6.3 million heads per year with normal aqiqah growth reaching 10-12% per year. Aqiqah is slaughtering goats as an expression of gratitude for the birth of the baby, which is carried out on the seventh day of birth (Ad-Dib, 2008). In this modern era, many entrepreneurs have established aqiqah service providers. These service providers make it easy for consumers so that consumers no longer have to bother cutting goats and processing the meat. This innovation can be an answer for consumers who do not have time to prepare for the aqiqah. Consumers only need to pay the price as offered. According to the Association of Indonesian Sheep and Goat Breeders, there are 601 aqiqah service providers that are the members of the association in 2020.

In the business world, competitionis bound to happen. In order to survive in the intense competition, businesses need to have more value in order to be superior. One of the things that affect the success of a

business is management. Management is a process of planning, organizing, coordinating and controlling resources to efficiently and effectively achieve goals (Pratama, 2020). Meanwhile, marketing is the whole system and process in fulfilling needs and desires that are related to business activities (Musnaini et al., 2021).

The marketing function can be measured in terms of the quality of the products marketed, the suitability of the prices given to consumers, and the timeliness of delivery of goods. Product viability can be measured by looking at how the company makes use of the excess capacity it faces. The main purpose of the marketing concept is for consumers to be satisfied with what they want (Heri, 2020). Marketing management is an effort to plan, implement (which consists of organizing, directing, coordinating) and supervising or controlling marketing activities in order to effectively and efficiently achieve organizational goals (Agustina, 2011). According to Priangani (2013) the company's marketing strategy is related to 3 aspects, including the customer, the company and competition. Marketing optimization is also influenced by the marketing mix. Marketing mix is a marketing strategy that uses data related to products, prices, places, and promotions to increase product sales.

Customer satisfaction is a feeling of pleasure or disappointment of a customer that arises from the customer's experience in using the services or products of a business. There are many factors that influence customer satisfaction. In food service, the quality factor plays an important role. Meanwhile, staff-related service quality emerged as an important factor for revisit intentions. The findings also highlight the role of atmosphere and the mediating effect of food quality on return visits (Bichler et al., 2020). Consumers who have a good or satisfied experience when using a product or service will become loyal, make repeat purchases and can recommend the business to theirb friends or relatives. Conducting a consumer survey related to product quality, service and price can help companies know clearly what things need betterment and improvement, that will ultimately make customers loyal, stay, and provide referrals. This makes surveys from the consumer's point of view necessary. Measurement of satisfaction is strongly related to product quality (goods or services). Quality measurement has benefits such as knowing how a business process works. Marketing knows that it is better to retain existing customers than replace them with new customers, ensuring that existing customers get satisfaction from purchasing and using their products (Firmansyah, 2018).

According to Firmansyah (2018), satisfaction will occur if the company is able to provide products, services, prices and other aspects according to consumers' expectations or exceeding customers' expectations. Customers are satisfied if their expectations are met and will be very satisfied if the quality exceeds their expectations. Measurement of satisfaction has a strong relationship with product quality. Quality measurement offers benefits such as knowing how a business process works. Measurement of satisfaction can also be used to find out where to innovate and improve in order to satisfy customers, especially for things that are considered important to customers.

The first variable is price perception. Price is the amount of money that consumers have to pay to get the goods or services purchased. According to Zimmerer et al. (2009), the factors considered by business owners when setting the price of goods or services include: the usual product or service; market factors (demand and supply); competitor prices; the company's competitive advantage; economic conditions; company location; seasonal fluctuations; psychological factors; terms of credit and sales discounts; customer sensitivity to price; and the desired image. If the consumer makes a purchase, it means that the price is right, but if, on the contrary, the consumer refuses to buy, then the price becomes a consideration for review. Price perception is the dominant factor of consumers in determining or considering choices. If the consumer makes a purchase, it means that the price is right, but if the consumer refuses to buy, the price becomes a consideration for review.

The second variable is service quality. Service quality is the level of good or bad of a product or a service provided by a company's employees to consumers. According to Ulfa (2016), to achieve good service quality, there are several types of service criteria, including: timeliness of service; minimizing errors in services and transactions; courtesy and friendliness when providing services; ease of getting services; and consumer convenience such as supporting facilities, cleanliness and availability of information.

The third variable is product quality. Product quality is the level of good or bad of a product or a service according to the assessment of customer experience. A product is anything that can be offered to a market for attention, demand, consumption that might satisfy a want or need. Products can be physical, services, places, organizations and ideas (Kotler, 2006). According to Lupiyoadi & Hamdani (2009), the measurement of product quality dimensions include: performance that includes brands and attributes that can be measured;

product diversity; reliability; suitability; endurance; service capability; product aesthetics; and perceived quality.

One of the well-known aqiqah service providers is Nurul Hayat. Aqiqah Nurul Hayat was started in 2003 under the Nurul Hayat Foundation. Aqiqah Nurul Hayat business unit is expected to be the main motor for Nurul Hayat's independence. Aqiqah Nurul Hayat is spread over 60 districts in Indonesia. Within a month, Aqiqah Nurul Hayat can slaughter 3000 goats and distribute them to 60 cities throughout Indonesia. Nurul Hayat's vision is to serve Allah by building the ummah. Nurul Hayat's mission is to spread benefits and empowerment in the social, da'wah, health, education and economic fields. If consumers buy aqiqah packages from Aqiqah Nurul Hayat, the profits will be used to support Nurul Hayat's da'wah and social programs. In order to maintain the trust of customers, Aqiqah Nurul Hayat has the MUI Halal label to prove that Aqiqah Nurul Hayat is safe and halal. One of the branches of Aqiqah Nurul Hayat is in Malang. Aqiqah Nurul Hayat Malang branch has a head office, bureau office and partnerships to expand sales.

Previous research on the effect of customer satisfaction on service quality, product quality and price (Afnani, 2012; Arguello et al., 2019; Asti & Ayuningtyas, 2020; Aulia & Hidayat, 2017; Bagus, 2016; Bahar & Sjahruddin, 2017; Boushaba & Elatife, 2020; Cahyani & Sitohang, 2016; Hayani, 2021; Ibrahim & Thawil, 2019; Khasan et al., 2021; Moraes et al., 2020; Mukti, 2017; Ofela, 2016; CA Putri & Trisnowati, 2021; L Putri, 2017; Ridho, 2021; Santoso, 2019; Sari, 2019; Susila et al., 2017; Suyono et al., 2019; Ulfa, 2016; Wijaya, 2017) show that there is an influence of price, service and product on consumer satisfaction. Research on consumer satisfaction on service quality, product quality, price and other variables (Fadhli & Pratiwi, 2021; Hanifudin et al., 2017; Ovita et al., 2019; Rasmikayati et al., 2020; Rendy et al., 2012; Solosichenko et al., 2021) find out that not only service quality, product quality and price affect consumer satisfaction but also other variables do. Previous research on the level of consumer satisfaction (Andreani, 2010; Bahar & Sjahruddin, 2017; Bichler et al., 2020; DS et al., 2020; Fauzia et al., 2020; Kristanti & Wasito, 2018; Suchánek & Králová, 2019; Tasya & Rita, 2018; Widjaja & Nugraha, 2016) reveal that there are many ways to calculate customer satisfaction and there are many factors that influence consumer satisfaction, most of the consumers are satisfied on average.

The novelty of this research is to find the correlation between service quality, product quality and price perception with consumer satisfaction, plus customer satisfaction reviews for the improvement of risk management in Aqiqah business. This study integrates indicators from previous studies in an analysis of customer satisfaction, so that it not only presents quantitative data but also presents qualitative data on customer satisfaction. The purpose of this study is to determine the relationship between price perception, service quality and product quality on consumer satisfaction at Aqiqah Nurul Hayat Malang Branch. The research hypothesis is that price perception, service quality and product quality correlate to consumer satisfaction

METHOD

The research was conducted from January to June 2021. The research was carried out at Aqiqah Nurul Hayat Malang branch located at Jl. S. Supriadi no. 7, Sukun, Kecamatan Klojen, Kota Malang and the bureau office is located on Jl. Sengkaling Raya no. 164, Kecamatan Dau, Kabupaten Malang. This study employs a quantitative descriptive method. The data collected are the variables of price perception, service quality and product quality on consumer satisfaction Aqiqah Nurul Hayat Malang Branch.

Data collection techniques include questionnaires, interviews, observation and documentation. The questionnaire uses a Likert Scale which has a value range of 1 (one) to 5 (five) with the following information: Strongly Agree (SS) is rated 5; Agree (S) is rated 4; Enough (C) is rated 3; Disagree (TS) is rated 2; and, Strongly Disagree (STS) is rated 1. The questionnaire was also designed to have questions in the form of free and short answers to describe qualitatively the customer experience at Aqiqah Nurul Hayat Malang branch. Interviews were also conducted to obtain information outside the questionnaire. Observations were made to obtain information in the form of phenomena related to research around the research site. Documentation was carried out in the field to find information that already exists as a support in this research.

The sample of respondents in this study were consumers of Aqiqah Nurul Hayat Malang branch who had purchased aqiqah packages at Aqiqah Nurul Hayat Malang branch and had consumed aqiqah Nurul Hayat products in Malang branch. The sampling technique used accidental sampling. Accidental sampling is a sampling technique based on coincidence where anyone who coincidentally meets a researcher can be used

as a sample, if it is seen that the person met is suitable as a data source (Silalahi, 2015). This method was taken because the number of consumers of Aqiqah Nurul Hayat Malang branch was erratic from one period to another.

The data were then processed using Spearman Correlation with analytical aids. Spearman correlation is a non-parametric test used to measure the degree of relationship between variables. The Spearman rank correlation test does not carry assumptions about the distribution of the data (Ali, 2018). Here is the Spearman correlation test formula

$$\rho = 1 - \frac{6 \sum d2}{n(n2 - 1)}$$

ρ (rho) : Spearman's rank correlation coefficient
d : difference between the two ranks of each observation
n : number of observations

The spearman correlation value is between -1 ≤ p ≤ 1. If the spearman correlation value = 0, then there is no correlation or there is no relationship between the dependent and independent variables. If the value of p = +1, then there is a correlation between the independent variable and the dependent variable. If the p value = -1, then there is a negative correlation between the independent variable and the dependent variable. The strength of the correlation between variables is shown through the correlation value. The following is a table of correlation values and their meanings: 0.00 – 0.19 (Very Low); 0.20 – 0.39 (Low); 0.40 – 0.59 (Medium); 0.60 – 0.79 (Strong); 0.80 – 1.00 (Very Strong).

Validity is a tool used to measure and determine the level of validity (truth) of a questionnaire made by researchers. The high and low validity of the instrument shows the extent to which the data collected does not deviate from the description of the intended validity. The validity test was conducted to examine whether the questionnaire was valid and could be used as a measuring tool. The condition of the validity test is the probability or if sig. less than 0.05, it is called valid. The other way is using the condition that Rsquare is greater than Rtable. The Rtable used is a 5% probability with a total of 20 data, which is 0.468.

Table 1. Validity Test X1 (Perception of Price)

Variable	Sig.	Rsquare	Status
X1.1	,010	0,561	Valid
X1.2	,002	0,648	Valid
X1.3	,004	0,618	Valid

Source: Processed Primary Data 2021

Table 1 shows that in the X1 variable regarding price perception, there are 3 indicators, namely X1.1, X1.2 and X1.3. The X1.1 indicator has a probability value of 0.010 which is less than 0.05 and an Rsquare value of 0.561 which is more than 0.468, meaning that the X1.1 indicator is valid. The X1.2 indicator has a probability value of 0.002 which is less than 0.05 and an Rsquare value of 0.648 which is more than 0.468, meaning that the X1.2 indicator is valid. The X1.3 indicator has a probability value of 0.004 which is less than 0.05 and an Rsquare value of 0.618 which is more than 0.468, meaning that the X1.3 indicator is valid. All indicators in the X1 variable are valid to be used as research or the questions that are used to measure the variables studied.

Table 2. Validity Test X2 (Service Quality)

Indicator	Sig.	Rsquare	Status
X2.1	,000	,847	Valid
X2.2	,000	,712	Valid
X2.3	,000	,774	Valid
X2.4	,000	,835	Valid

Source: Processed Primary Data 2021

Table 2 shows that in the X2 variable regarding service quality, there are 4 indicators, namely X2.1, X2.2, X2.3 and X2.4. It can be seen from table 2 that the X2.1 indicator has a probability value of 0.000 which is less than 0.05 and an Rsquare value of 0.847 which is more than 0.468, which means that the X2.1 variable is valid. The X2.2 indicator has a probability value of 0.000 which is less than 0.05 and an Rsquare value of

0.712 which is more than 0.468, which means that the X2.2 variable is valid. X2.3 has a probability value of 0.000 which is less than 0.05 and an Rsquare value of 0.774 which is more than 0.468, which means that X2.3 is valid. The X2.4 variable has a probability value of 0.000 which is less than 0.05 and an Rsquare value of 0.847 which is more than 0.468, which means that the X2.4 variable is valid. All indicators in the X2 variable are valid to be used as research or the questions that are used to measure the variables studied.

Table 3. Validity Test X3 (Product Quality)

Indikator	Sig.	Rsquare	Status
X3.1	,000	,830	Valid
X3.2	,000	,712	Valid
X3.3	,000	,732	Valid
X3.4	,000	,558	Valid

Source: Processed Primary Data 2021

Table 3 shows in the X3 variable regarding product quality, there are 4 indicators including X3.1, X3.2, X3.3 and X3.4. The X3.1 indicator has a probability value of 0.000 which is less than 0.05 and an Rsquare value of 0.830 which is more than 0.468, which means that the X3.1 variable is valid. The X3.2 indicator has a probability value of 0.000 which is less than 0.05 and an Rsquare value of 0.712 which is more than 0.468, which means that the X3.2 variable is valid. The X3.3 indicator has a probability value of 0.000 which is less than 0.05 and an Rsquare value of 0.732 which is more than 0.468, which means that the X3.3 variable is valid. The X3.4 indicator has a probability value of 0.000 which is less than 0.05 and an Rsquare value of 0.558 which is more than 0.468, which means that the X3.4 variable is valid. All indicators in the X3 variable are valid to be used as research or the questions that are used to measure the variables studied.

Table 4. Validity Test Y1 (Consumer Satisfaction)

Indicator	Sig.	Rsquare	Status
Y1.1	,000	,733	Valid
Y1.2	,000	,778	Valid
Y1.3	,000	,707	Valid
Y1.4	,000	,856	Valid

Source: Processed Primary Data 2021

Table 4 shows that the Y1 indicator of customer satisfaction has 4 indicators, namely Y1.1, Y1.2, Y1.3 and Y1.4. The results from Table 4 show that the Y1.1 indicator has a probability of 0.000 which is less than 0.05 and an Rsquare of 0.733 which is more than 0.468, which means that the Y1.1 variable is valid. Y1.2 has a probability value of 0.000 which is less than 0.05 and Rsquare 0.778 which is more than 0.468, which means that the Y1.2 variable is valid. The Y1.3 indicator has a probability value of 0.000 which is less than 0.05 and Rsquare 0.707 which is more than 0.468, which means that the Y1.3 variable is valid. The Y1.4 indicator has a probability value of 0.000 which is less than 0.05 and an Rsquare value of 0.856 which is more than 0.468, which means that the Y1.4 variable is valid. All indicators in the Y1 variable are valid to be used as research or the questions that are used to measure the variables studied.

Reliability is a measuring tool to find out if there are similarities in data at different times. Measurements that do not have reliability cannot be used to determine whether or not there is a correlation between variables. Reliability test is used to test whether the variable is feasible to use. The reliability test uses the Cronbach's Alpha formula to calculate the reliability of a test that does not have a 'true or 'false' or 'yes' or 'no' choice. The requirement of the reliability test is that if Cronbach's alpha is more than 0.6, then the variable is reliable. If the value of Cronbach's alpha is less than 0.6, then the variable is unreliable.

Table 5. Realiability Test

Variable	Cronbach's Alpha	Status
X1 (Perception of Price)	,697	Reliable
X2 (Service Quality)	,812	Reliable
X3 (Product Quality)	,779	Reliable
Y (Consumer Satisfaction)	,803	Reliable

Source: Processed Primary Data 2021

Table 5 shows that the X1 variable has a Cronbach's alpha value of 0.697 which is greater than 0.6, which means that the X1 variable is reliable. Variable X2 has Cronbach's alpha value of 0.812, which is greater than 0.6, it means that the X2 variable is reliable. The X3 variable has a Cronbach's alpha value of 0.779 which is greater than 0.6, which means that the X3 variable is reliable. Variable Y has a value of 0.803 which is greater than 0.6, which means that Y variable is reliable. All variables, namely variables X1, X2, X3 and Y in the questionnaire can be used and are feasible to support research.

RESULTS AND DISCUSSION

The respondents of this study were Aqiqah Nurul Hayat consumers who were taken randomly and it was obtained as many as 73 people or respondents. Characteristics of respondents in this study include, among others, gender, income, education and occupation. The data are summarized and presented in Table 6.

Table 6. The Characteristics of Respondents

	Characteristics	Number of respondents (persons)	Percentage (%)
Gender	Male	23	31,5%
	Female	50	68,5%
	Total	**73**	**100%**
Income	<Rp 1.000.000	7	6,9%
	Rp 1.000.000 – Rp 2.999.999	22	30,1%
	Rp 3.000.000 – Rp 5.999.999	26	35,6%
	Rp 6.000.000 – Rp 8.999.999	11	15,1%
	≥ Rp 9.000,000	7	9,5%
	Total	**73**	**100%**
Education	Elementary School	1	1,4%
	High School	16	21,9%
	D1	3	4,1%
	D3	2	2,8%
	S1/Undergraduate	42	57,5%
	S2/Master Degree	6	8,2%
	Total	**73**	**100%**
Occupation	Private Employee	24	32,9%
	Civil Servant	15	20,6%
	Entrepreneur	14	19,2%
	Housewife	13	17,8%
	Teacher or Lecturer	6	8,2%
	Honorary Employee	1	1,4%
	Total	**73**	**100%**

Source : Processed Primary Data Year 202

Based on Table 6, it can be seen that the number of male respondents was 23 people or 31.5% of the total respondents. Female respondents were 50 people or 68.5% of the total respondents. Characteristics of respondents based on gender are dominated by women as many as 50 people or 68.5%. The results of this study are in line with Ulfa's research (2016) which shows that most Aqiqah consumers are female with a percentage of 61% of the total respondents.

Based on the income characteristics of the respondents in Table 6, it can be seen that the respondents who earn less than Rp. 1,000,000 are 7 people or 6.9% of the total respondents. Respondents who earn Rp. 1,000,000 to Rp. 2,999,999 are as many as 22 people or 30.1% of the total respondents. Respondents who have an income of Rp. 3,000,000 to Rp. 5,999,999 are as many as 26 people or making up 35.6% of the total respondents. Respondents who earn between Rp. 6,000,000 to Rp. 8,999,999 are 11 people or 15.1% of the total respondents. Respondents who earn more than or the same as Rp 9,000,000 ae as many as 7 people or 9.5%. Characteristics of respondents based on income are dominated by those who have an income of Rp. 3,000,000 to Rp. 5,999,999, with 26 people or 35.6% of the total respondents. In contrast to L. Putri's research (2017), whose study shows that most aqiqah consumers have an income of Rp. 1,000,000 to Rp. 3,500,000.

Table 6 shows that respondents who have an elementary education background are 1 person or 1.4% of the total respondents. Respondents who have a high school education background are 16 people or 21.9% of the total respondents. Respondents who graduated from D1 are as many as 3 people or 4.1% of the total

respondents. Respondents with undergraduate education are 42 people or 57.5% of the total respondents. Respondents who have a master's education background are 6 people or 8.2% of the total respondents. The characteristic of respondents based on educational background is dominated by S1 level as many as 42 people or 57.5%. The result of this study is not in line with Putri's (2017) where the characteristic of respondents based on educational background is mostly high school education.

Based on Table 6, it can be seen that there are 24 respondents working as private employees or 32.9% of the total respondents. Respondents working as civil servants are 15 people or 17.8% of the total respondents. Respondents who work as entrepreneur are as many as 14 people or 19.2% of the total respondents. Respondents who work as housewives are as many as 13 people or 17.8% of the total number of respondents. Respondents working as a teacher or lecturer are as many as 6 people or 8.2% of the total respondents. Respondents who are honorary employees include 1 person or 1.4% of the total respondents. The characteristic of respondents based on occupation is dominated by private employees with as many as 24 people or 32.9%. This is in line with L. Putri's research (2017) which found that most of the respondents worked as private employees.

The results of the responses from the respondents were then entered into the analysis tool to be processed using the Spearman correlation method. The results of data processing or data processing output are presented in Table 7.

Table 7. Correlation Spearman

		Perception of Price	Service Quality	Product Quality	Consumer Satisfaction
Perception of Price	Correlation Coefficient	1,000	0,589	0,569	0,696
	Sig. (2-tailed)	.	0,000	0,000	0,000
	N	73	73	73	73
Service Quality	Correlation Coefficient	0,589	1,000	0,648	0,791
	Sig. (2-tailed)	0,000	.	0,000	0,000
	N	73	73	73	73
Product Quality	Correlation Coefficient	0,569	0,648	1,000	0,739
	Sig. (2-tailed)	0,000	0,000	.	0,000
	N	73	73	73	73
Consumer Satisfaction	Correlation Coefficient	0,686	0,791	0,739	1,000
	Sig. (2-tailed)	0,000	0,000	0,000	.
	N	73	73	73	73

Source: Processed Primary Data 2021

Based on the results of the correlation above, wecan see the correlation between price perception and consumer satisfaction, the correlation between quality and customer satisfaction and the correlation between product quality and customer satisfaction. Table 7 shows that there is a positive correlation between price perception and customer satisfaction, service quality and customer satisfaction and product quality and customer satisfaction. The correlation between price perception and consumer satisfaction has a value of 0.000, which means that price perception has a significant correlation with consumer satisfaction. The correlation between service quality and customer satisfaction has a value of 0.000 which means that service quality has a significant correlation with customer satisfaction. The correlation between product quality and customer satisfaction has a value of 0.000, which means that product quality has a significant correlation with consumer satisfaction. According to research by L. Putri (2017), it was found that the variables of product quality, price perception and service quality had a positive and partially significant effect on customer satisfaction.

The results of this study are not in line with Mukti's research (2017) which found that there was a significant correlation in service quality to customer satisfaction while there is an insignificant correlation between product quality and customer satisfaction. Exploring the specific direct effects of each of the four dimensions considered on service quality, we recognize that, in the current post-crisis context, the three more intangible variables (personnel, outcomes and social quality) are central dimensions in emotion determination.

positive results generated by clients during services in offices (Arguello et al., 2019). Widjaja & Nugraha (2016) stated that there are other factors that influence consumer satisfaction, namely features, emotions, success, perceptions and expressions.

Customers have their own satisfaction experience. Some customers feel that the service at Aqiqah Nurul Hayat is very good, such as good and informative employees, fast responses and punctual delivery times. Customers are also satisfied because the ordering and payment process is very easy and fast. Customers can do some down payment for ordering. Aqiqah Nurul Hayat Malang branch also facilitates customers if they want to be helped in distributing their aqiqah and consumers who use that facility are feel very much hepled and satisfied. Free delivery facility is also one of the things that make consumers satisfied. In buying a product or service, consumers have sacrificed their money, time and energy to compare the products and finally decide to buy. If the the products or services obtained exceed consumer expectations, then in general consumers will feel satisfied (Mastarida et al., 2020).

Consumer satisfaction has a significant effect on repurchase intention. This is because the indicators of the satisfaction variable have a huge influence, namely on the product attribute indicators. After the consumer makes another purchase, the consumer will make a repeat purchase by buying a different product (Bahar & Sjahruddin, 2017). The results of Asti & Ayuningtyas' research (2020) state that there is an influence of service quality and price on consumer satisfaction, but product quality does not affect consumer satisfaction. Another study by Aulia & Hidayat (2017) shows that the variables of product quality, service quality and price have a positive influence on consumer satisfaction.

a. The Correlation between The Perception of Price and Consumer Satisfaction

According to the correlation calculations in Table 7, it can be concluded that price perception has a strong correlation with customer satisfaction at Aqiqah Nurul Hayat Malang branch. The correlation value between price perception and consumer satisfaction is 0.686, which means that the correlation between the two variables is strong. According to Susila et al. (2017), price is very important because the value of a product is measured through the price set by the producer so that the price becomes a consideration for consumers to make a purchase. These considerations are the first step before the exchange occurs, basically satisfaction is generated after the exchange is done so that when consuming the product that has been obtained, the consumer then compares it with the level of value that has been exchanged. If it has good results, consumers will feel satisfied, and vice versa. Therefore, the price is the most important factor to create a sense of satisfaction felt by consumers and the price has a sufficiently strong correlation with it. Research from Fauzia et al. (2020) shows that price has a significant effect on consumer satisfaction. A different study shows that price is in the first rank of the factors that influence consumer satisfaction (Boushaba & Elatife, 2020).

This can be seen from customer reviews obtained in this study. Most consumers felt that the prices at Aqiqah Nurul Hayat Malang Branch were affordable. Consumers felt that the price paid was commensurate with the products and facilities they get. In fact, many consumers felt that the products and services they received exceeded their expectations. One consumer also felt that with the many choices of aqiqah packages, consumers could freely choose aqiqah packages that suit the budget and consumer needs. According to Cahyani & Sitohang (2016), pricing for an item or service can have a major influence on a business, because price is a determinant of consumers making decisions and price can affect the competitive position of the business. More broadly, price is the sum of all the values that customers give up in order to benefit from having or using a product or service. Thus, the price is a sacrifice that must be made in the form of money, labor or other things so that someone gets an item or service (C. A. Putri & Trisnowati, 2021). The result of research by Ridho (2021) shows that the price variable has positive results (unidirectional) and has a significant effect on consumer satisfaction, which means that the price given by the company is in accordance with the benefits obtained by consumers, so that consumers will feel satisfied.

b. The Correlation between the Service Quality and Consumer Satisfaction

According to the results of the correlation calculations in Table 7, it can be concluded that the quality of service has a strong correlation with customer satisfaction at Aqiqah Nurul Hayat Malang branch. The correlation value between service quality variable and customer satisfaction is 0.791, which means that the correlation between the two is strong. Research conducted by Santoso (2019) states that the service quality variable has an influence on the consumer satisfaction variable. Another study by Sari (2019) found consistent results, in which the service quality variable has an influence on consumer satisfaction. Research by Khasan

et al. (2021), found out that there was a significant effect between Product Quality variables on Consumer Satisfaction.

The customers gave reviews about the services of Aqiqah Nurul Hayat Malang branch, most of the customers stated that the employees of Aqiqah Nurul Hayat Malang branch were responsive and agile. Customers also felt that the employees of Aqiqah Nurul Hayat Malang branch were very informative and communicative so that consumers were not confused and got clear and complete information when buying aqiqah packages at Aqiqah Nurul Hayat Malang branch. Employees were very responsive to provide evidence such as distribution of aqiqah, goat slaughter time, and others. The level of customer satisfaction on the quality of service is very high. Customers are increasingly aware of the importance of service quality, in addition to product quality (Andreani, 2010). This can be seen from the research of Bagus (2016), which states that service quality has a significant influence on customer satisfaction. Research by - suggests that the service quality variable has a positive effect on customer satisfaction. Research by Hayani (2021), mentions that there is a significant effect of service quality on customer satisfaction. This shows the ability of employees to provide fast service to consumers, clearly proving the quality of service provided by the company will further increase customer satisfaction.

c. The Correlation between Product Quality and Consumer Satisfaction

According to the results of the correlation calculations in Table 7, it can be concluded that product quality has a strong correlation with customer satisfaction at Aqiqah Nurul Hayat Malang branch. The correlation value between product quality and consumer satisfaction is 0.739, which means that the two variables have a strong relationship. Wijaya's research (2017), shows that product quality has a positive influence on consumer satisfaction, meaning that the better the quality of the product provided, the more customer satisfaction will increase. Research by Jeffry F.T. et al. (2014), states that product quality partially has a positive effect on consumer satisfaction. Another study by Ovita et al. (2019), shows that the product has a direct effect on consumer satisfaction, meaning that increasing product quality will increase consumer satisfaction. These studies provide evidence that the consumer's experience in buying a product will result in a consumer's assessment of the product.

Customers felt that the food product from Aqiqah Nurul Hayat Malang branch was delicious and did not smell. This is because Aqiqah Nurul Hayat Malang branch has its own standards and recipes for processing the goat meat. The existence of standards and recipes also keeps the quality and taste of Nurul Hayat's food product maintained and consistent as perceived by consumers. Consumers also felt that the packaging of Aqiqah Nurul Hayat Malang branch was hygienic, neat and had an elegant design. The product quality variable is the ability of a product to meet the consumers' needs while providing satisfaction (Suyono et al., 2019). Supranto (1997) states that the level of customer satisfaction is highly dependent on the quality of a product, which are goods or services. The quality of organic vegetables that is in accordance with consumer expectations will make consumers satisfied (Rasmikayati et al., 2020). The influence of product quality on consumer satisfaction is known because the company has a sense of responsibility to improve their product quality (Fadhli & Pratiwi, 2021). According to research by Ibrahim & Thawil (2019), it states that there is a significant correlation between product quality and consumer satisfaction.

CONCLUSION

Aqiqah Nurul Hayat is a fairly large aqiqah service provider business with 30 branches spread throughout Indonesia. This study collected 73 respondents who came from consumers of Nurul Hayat Malang branch. The characteristics of the respondents were dominated by female, had an income of Rp. 3,000,000 to Rp. 5,999,999, graduated from undergraduate program and worked as private employees. Consumer satisfaction of Aqiqah Nurul Hayat Malang branch is correlated to price perception, service quality and product quality. This can be seen from the results of questionnaire data processing through analytical tools using the Spearman correlation method. The results of data processing show that there is a strong correlation between price perception and consumer satisfaction with a correlation value of 0.686, a strong correlation between service quality and customer satisfaction with a value of 0.791, and product quality variables with customer satisfaction have a strong correlation with a correlation value of 0.739.

Suggestions in this study are given to Aqiqah Nurul Hayat Malang branch to continue to maintain and even increase customer satisfaction. This can be realized by maintaining service and product quality by

adding internal (employees) and external (consumer) evaluations. Evaluation can also be a way to find innovations in solving existing problems. Improving the quality of both services and products can also be done by conducting research and reviews of good services and products. Price is one of the things that most customers consider when making a purchase, therefore Aqiqah Nurul Hayat Malang branch needs to keep their prices stable so that consumers will make repeat purchases.

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$$\frac{\partial \rho}{\partial t} = -\nabla \cdot (\rho \, \mathbf{u}) \quad (1)$$

$$\rho \left(\frac{\partial}{\partial t} + \mathbf{u} \cdot \nabla \right) \mathbf{u} = -\nabla P + \rho \mathbf{g} + \frac{1}{c} \mathbf{J} \times \mathbf{B} \quad (2)$$

$$\rho \left(\frac{\partial}{\partial t} + \mathbf{u} \cdot \nabla \right) e = -P \nabla \cdot \mathbf{u} + \rho \mathbf{u} \cdot \mathbf{g} + \frac{1}{\sigma} \mathbf{J}^2 \quad (3)$$

Images and Tables

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.

Table 1. Table format

	Table Column Head		
Table Head	***Table column subhead***	***Subhead***	***Subhead***
copy	More table copy[a]		

[a.] Sample of a Table footnote. *(Table footnote)*

Instead of inserting figures or graphics directly, it is suggested to use text box feature in MS. Word to make them stable towards the format changes and page shifting.

Figure 1. Example of image information

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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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