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Farmers' Perception of Selling Chili to the New Auction Market: A Case at Sleman Regency of Indonesia

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ABSTRACT

Purpose : *The aim of this study is to know the effect of economic and social factors on the farmers' marketing decisions.*

Research Method : *This research was conducted from January to March 2020. The respondents were 60 (sixty) farmers who were chosen by purposing sampling. The analysis models used in this research are likert and correlation analysis.*

Findings : *The economic factor has a medium effect on farmers' marketing decisions. Ease of farmers' access to the auction market or to get information is the main economic variable to the farmers' marketing decision. Price has a very high effect on the farmers' marketing decisions. The social factor also affects the farmers' marketing decisions but at a weak level.*

Research Limitation : *The respondents only 60 farmers.*

Originality/ Value : *Provides information for the new marketing institution to stay competitive and attractive to customers.*

Keywords: *economic factor; farmers' marketing decision; new auction market; social factor*

INTRODUCTION

The farmer's position in the markets can be that of a a producer or consumer. He will be a producer when he produces an agricultural product. Meanwhile, he will be a consumer when he uses a marketing service. Farmers have many considerations when using marketing services, especially selecting the marketing channel. They will pay attention to the benefit of their decision in using the marketing channel. Farmers perhaps can have access to direct marketing because it gives many benefits to farmers, such as increasing revenue and reducing cost (Adanacioglu, 2016). However, if it is not possible, farmers will use the existing marketing channel, including selling their products at a low price.

Farmers' behavior when choosing a marketing channel has been widely studied by researchers. Engel *et al*. (2001) designed a model about consumer behavior that chooses a service influenced by some factors. Farmers' behavior as users of marketing service will be influenced by environment, individual, and psychology process. This model is strengthened by Kotler & Keller (2016) with the black box model which describes consumer's characteristics and decision processes. This model explains consumer's decisions influenced by marketing stimulus (marketing mix), other stimuli (economics, politics, technology, and culture), and consumer characteristics (individual, culture, social, and psychology).

The environment effect is usually more dominant for the farmers' decision as a user of marketing

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service (Ghazaryan *et al.*, 2018). This decision is influenced by economic and social factors (Hudeckova & Lostak, 2003; Artukoglu & Olgun, 2008). The economic factor consists of some variables comprising of price, distance, and standards grades of the product (Asebe *et al.*, 2007; Tadesse & Bahiigwa, 2015; Hendrarini *et al.*, 2020). The social effect has proven to make the agricultural sector more competitive (Hudeckova & Lostak, 2003). Many social factors, like advice from reference groups (pioneer farmers and family members), involvement in associations, culture, religion, and information technology can influence farmers' decisions (Noel, 2009; Kaewwongwattana *et al.*, 2015; Lawal *et al.*, 2017; Ataei *et al.*, 2019).

Chili farmers in Sleman Regency (Indonesia) are also careful in choosing a marketing channel because chili price fluctuates and makes farmers lose. One of the marketing channels selected by farmers is the Sleman auction market. This auction market has just been established in 2018, but many farmers sell their fresh red chili there. Some research indicates that the agricultural auction markets can link farmers with consumer demand, create a national minimum price scheme, change the price discovery process, and drive logistical efficiency by reducing transaction costs (Meulenberg, 1989; Meulenberg & Viaene, 1993; Heezen & Baets. 1996; Tourte & Gaskell, 2004).

Therefore, of course it is interesting to learn why farmers trust to sell their products to the new auction market. Moreover, the Sleman auction market currently has to compete with traders who usually buy chili from farmers. That way, this paper is important for a new marketing organization to learn about how to stay competitive and attractive to customers. The aim of this study is to know the effect of economic and social factors on the farmers' marketing decisions.

MATERIALS AND METHODS

Study Area and Sampling

This study was conducted for 3 (three) months from January to March 2020 in Sleman Regency.

This area was chosen because it has a new auction market of chili in Yogyakarta Province. The other reason is the chili farm in Sleman Regency contributes to almost 28 percent of the total percentage of chili production in Yogyakarta Province (Central Bureau of Statistics of Yogyakarta Province, 2020).

Data Collected

The study used both primary and secondary data. Primary data were obtained from interviews with 60 (sixty) farmers who sold chili to the auction market. The samples were chosen by purposive sampling. Farmers chosen in this research are those who stay in Pakem, Seyegan, and Ngemplak sub-districts. The farmers in Pakem sub-district were chosen because their location is near to the auction market. Meanwhile, farmers in the Seyegan dan Ngemplak sub-district were chosen because their locations are far from the auction market and have different conditions with farmers in the Pakem sub-district. The secondary data were obtained from the local agricultural office and the Central Bureau of Statistics' documents.

Data Analysis

1). The likert analysis was used in determining the implementation of farmers' economic and social factors. The economic factor consists of three variables which are product, price, and access. Meanwhile, social factor variables consist of two variables including social interaction and extension. The analysis also measured the farmers' marketing decision to the auction market. Each of these variables has a question indicator that has been tested for validity and reliability.

The likert score in this study consists of 1–5 in which 1 for strongly disagree, 2 for disagree, 3 for being neutral, 4 for agree, and 5 for strongly agree. The average of likert score of each question from all respondents was converted by the following formula:

$$Index = \frac{Total\ respondents'score}{Highest score} \times 100$$

The results were categorized into five groups ranging from very low to very high

2) Spearman correlation test was used for examining the relationship between the economic and social factors with the farmers' marketing decision to the auction market of chili. The first step of this analysis is done with the normality test using the Kolmogorov-Smirnov One-Sample test. When the distribution of the data was known, it can be continued with this correlation test. The formula of the Rank Spearman correlation test is followed by the study of Rees (2000):

$$r_s = 1 - \frac{6\sum_{i=1}^{n} d_{i^2}}{n^3 \text{-} n}$$

Where,

r_s = Spearman correlation coefficient

$\sum d_i^2$ = total square of the difference between ranks

n = total respondents (person)

The correlation criteria used in this research are shown in Table 02.

RESULTS AND DISCUSSION

Economic Factor

The initial step taken in analyzing the data in this research is the validity and reliability test to ensure the question items correct and can be used for research. Based on the results of the validity and reliability test, all questions were valid and reliable so that they could be used in this study.

The economic factor characteristics consist of 3 (three) variables, i.e. product, price, and access. These characteristics were categorized as high because the score of that variable reached 78.45%. Access is the highest variable in the economic factor characteristics. The indicator with the highest score on the access variable is the auction market location. The auction market is located in the middle of Sleman Regency so farmers easily have access to it. Furthermore, the auction market also has a gathering point spread across several sub-districts. The gathering point makes farmers who are far from the auction market easy to sell chili to the auction market. The chili price at the gathering point follows the price formed from the auction process in the auction market of Sleman Regency.

Table 01: **Factor characteristic criteria**

Interval	Category
0 – 19.99%	Very Low
20 – 39.99%	Low
40 – 59.99%	Medium
60 – 79.99%	High
80 – 100%	Very High

Table 02: **Correlation between economic and social factors with farmers' marketing decision**

Interval	Correlation Level
0.00 – 0.19	Very Weak
0.20 – 0.39	Weak
0.40 – 0.59	Medium
0.60 – 0.79	Strong
0.80 – 1.00	Very Strong

Table 03: **Economic factor condition**

No.	Statement	Average Score	Percentage (%)	Criteria
Product				
1	Farmers only sell good quality chili to the auction market	4.07	81.33	Very high
2	Farmers only sell chili to the auction market when the production is high	3.67	73.33	High
3	Farmers know about the standard of product in the auction market	3.33	66.67	High
Score of Product		3.69	73.78	High
Price				
1	High prices encourage farmers to sell chili to the auction market	4.07	81.33	Very high
2	Auction price is in accordance with chili quality	3.67	73.33	High
3	There is price information from the auction market	4.13	82.67	Very high
4	There is price information from the traders	4.05	81.00	Very high
5	There is price information from the other farmers	4.12	82.33	Very high
Score of Price		4.01	80.13	Very High
Access				
1	Easy access to the auction market	4.55	91.00	Very high
2	Easy entry to the auction market	4.05	81.00	Very high
3	Easy access to contact the auction market manager	4.07	81.33	Very high
4	Easy access to get information from the auction market	4.02	80.33	Very high
5	Easy access to get payment from the auction process	4.13	82.67	Very high
6	The payment is on time	3.67	73.33	High
Score of access		4.08	81.61	Very High
Score of Economic Factor		3.92	78.51	High

Source: Primary Data Analysis, 2020

The next indicator is the ease of getting payment for farmers. The auction market will pay farmers in cash after the price of the auction process is formed. The price will usually appear at night around 7.30 p.m and will be informed to farmers on that day. However, this condition is different from farmers who sell chili through a gathering point. The farmer will get paid 3-4 hours after the auction process closed. It is because the manager needs time to bring funds from the auction market to the gathering point. Consequently, the farmer at the gathering point will take his money in the next day or when he delivers the chili again to the gathering point. This condition makes some farmers feel the payment for chili is not timely. Another indicator in the access variable shows that it is very easy for farmers to contact the auction market manager using WhatsApp application and it is easy to become a member of the auction market because there are no administrative costs for registering as auction market members.

Furthermore, the variable in the second-ranking of the economic factor is the price, and it is found as in the very high category. The majority of farmers choose to sell chili to the auction market because the prices are higher than selling to traders. Farmers have been comparing prices on the auction market with prices at traders through information from other farmers, auction market managers, and traders. The price formed in the auction market is higher 0.67 to 1.07 US$ per kg

than the price offered by traders. This is a major consideration for farmers to sell chili to the auction market.

However, some farmers feel that prices in the auction market do not match the chili quality. There are 4 (four) grades of chili on the auction market which are SP, SP1, SPK, and SX. Each grade has a different price, for example in February-March 2020, the price of SP is 0.87 US $ per kg, while the price of SP1 is 0.73 US $ per kg. The difference in grade perception generally happened between farmers and auction market managers. The grading process by the auction market manager often resulted that the quality grade of farmers' chili have a decline or does not match the grading results at the farmers' level. As a result, farmers will accept grading results from the auction market manager because the accuracy is higher, and it is following the SOP (Standard Operating Procedure) of the auction market.

The lowest variable in the economic factor is the product. The indicator scores on this variable indicate differences in perceptions of chili quality between farmers and auction market managers, especially farmers at the gathering point. The chili supplied by farmers to the gathering point is still fresh and not deformed. However, chili quality has not followed the grade types determined by the auction market. The first grade of chili is SP or the best quality with criteria of length of 10-15 cm and 100% perfect red color. Next, the SP1 grade is chili with a length of 8-10 cm and a color of ripeness between 90-100%. Meanwhile, grade SPK has a characteristic form of ripeness 60-90% with a curved fruit shape and the length is quite short, 6.5-8 cm. Finally, the SX grade is the lowest quality and is smaller than 6.5 cm so that the selling price is low. This difference in perception because farmers do not know about the grade. It makes auction market manager work hard to grade chili from farmers. The auction market managers are forced to return poor quality chili produce to farmers. This difference in perception shows that farmers' knowledge of the quality grade of chili in the auction market is still poor.

Another indicator in product variables is the quantity and continuity of the chili supply. This indicator is considered as high category because farmers only sell chili in the 1st -14th picking harvest. During the harvest period, the quantity of chili is very high so that the continuity of chili supply to the auction market is always there. Meanwhile, when the harvest season is nearing the end, farmers will sell chili to traders because the quantity and quality of chili start to fall compared to the peak harvest. However, the different harvest periods between the chili supply to the auction market by farmers are not disrupted. This result is in line with conditions in other countries, such as Sri Lanka. Agribusiness companies rely on farmers to ensure they get an adequate supply of fruit and vegetables without interruption. Companies are forced to spend more than 30-40 percent of wastage due to the discontinued supply of products from farmers (Esham & Usami, 2006).

Social Factor

The social factor can influence farmers to make marketing decisions. In this study, the social factor consists of 2 (two) variables which are; social interaction and extension. The social factor score in this study is 66.67 and included in the high category.

Advice from families and other farmers encourage farmers to sell chili to the auction market. The family will drive the farmers to sell to the auction market. Moreover, calls from other farmers and farmer groups strengthen farmers to sell chili to the auction market. Currently, many interactions have been conducted by the auction market manager who is also the head of the farmers' group. The interaction is performed during the farmer group meeting, where it is discussed between the head of the farmer group and its members to sell chili to the auction market.

The lowest score of the social interaction variable is a promotion from the auction market. The information about the auction market in the mass media only contains news about the auction market and do not massively promote the auction market. The auction market promotion is only conducted by agricultural extension officers through leaflets as part of an extension with regard to benefit of auction marketing.

Table 04: **Social factor condition**

No.	Statement	Average Score	Percentage (%)	Criteria
Social Interaction				
1	Family support farmers to sell chili to the auction market	4.13	82.67	Very high
2	Farmers ffollow the other farmers to sell chili to the auction market	4.05	81.00	Very high
3	The tie with the auction market manager makes farmers sell to the auction market	3.35	67.00	High
4	The promotion from auction market makes farmers sell to the auction market	1.93	38.67	Low
Score of Social Interaction		3.37	67.34	High
Extension				
1	Becoming a member of farmer group makes farmers sell to the auction market	3.78	75.67	High
2	Extension from agricultural extension officer makes farmers sell to the auction market	3.15	63.00	High
3	Extension from head of the villages makes farmers sell to the auction market	2.97	59.33	Averga
Score of Extension		3.30	66.00	High
Score of Social Factor		3.34	66.67	High

Source: Primary Data Analysis, 2020

The extension from the farmer group is the highest indicator in the next variable. The farmer group meeting is an activity to encourage farmers to sell chili through the auction market. Trust to the head of the farmer group convinced farmers to sell their chili to the auction market. The next indicator is the extension from agricultural extension officers which encourage farmers to sell chili to the auction market. Agricultural extension officers are intense in attending farmer group meetings to provide solutions for various agricultural problems, like encouraging farmers to sell chili to the auction market in order to overcome the low price of chili at the farm level. Furthermore, there are some farmers who sell to the auction market because of an agreement with the local government officer. Moreover, the farmers get production inputs from farmers' group if farmers sell their chili through the auction market. The lowest indicator for this variable is the extension from the village heads. They never do extensions activities to the farmers to sell chili to the auction market.

Table 05: **Farmers' marketing decision**

No.	Statement	Average Score	Percentage (%)	Criteria
1	I always sell chili to the auction market	4.38	87.67	Very High
2	I will recommend the auction market to other farmers	4.12	82.33	Very High
Score of Farmers' Marketing Decision		4.25	85.00	Very High

Source: Primary Data Analysis, 2020

Farmers state that they sell chili to the auction market as long as this institution still exists in Sleman Regency. It is due to many conveniences and benefits gained from partnering with the auction market. Furthermore, the services provided by the auction market have been considered quite good. Farmers also recommend other farmers to sell their chili in the auction market, especially farmers who stay in Sleman Regency. All farmers in Sleman are perhaps willing to sell chili to the auction market so equalize the chili price in Sleman Regency and raise Sleman Regency as one of the chili producer regions in Indonesia.

The product variable has a significant relationship with the farmers' marketing decision to the auction market. If the production quantity is high, the farmers will choose a market which has absorption in large quantities (Kyaw, 2018). It is in line with the results of this study that farmers often sell to the auction market during the peak harvest period. Moreover, the farmers' marketing decision is also strengthened by the mechanism implemented by the auction market to accept the whole chili produce from farmers. Although in the next mechanism, the grading process is performed by the auction market manager, and it will lead to the possibility that chili can be returned to farmers because it is not worth selling. But, it happens only in small quantities.

The price variable also has a significant relationship with the farmers' marketing decision to the auction market in a moderate correlation. Olwande & Mathenge (2012) stated that farmers would sell large quantities of products to marketing institutions which can offer high prices. High prices are considered as an incentive to sell products and will positively influence farmers' decisions and participation (Nyaga *et al*., 2016). The auction market has proven to be able to provide a higher price than traders in the vicinity of the farmers' residence. It certainly becomes the main basis for farmers in deciding to sell chili to the auction market.

The access variable has a significant relationship with the farmers' marketing decision to the auction market. Easy access to information will improve farmers' knowledge and skills, especially in marketing their products (Melesse, 2016). Recently, the auction market has been very transparent in providing information on the quantity, quality, and price of products for farmers. It makes farmers confident to sell chili through the auction market. Furthermore, the location of the auction market and the gathering point makes farmers' access to this marketing institution closer. Mbitsemunda & Karangwa (2017) revealed that the long-distance between the market and farmers will cause farmers not interested to sell the product to the marketing institutions, Moreover, long distance makes transportation costs increase (Abayneh & Tefera, 2013). Another indicator is a quick cash payment process for farmers which makes farmers more interested to sell chili to the auction market. Farmers consider that its ability to provide fast payment is greater compared to other marketing institutions.

Table 06:   **The correlation of economic and social factors with farmers' marketing decision**

Variable	Score Spearman Correlation	Result
Product	0.412*	Medium correlation
Price	0.433**	Medium correlation
Access	0.439*	Medium correlation
Social Interaction	0.313*	Weak correlation
Extension	0.366**	Weak correlation

Source: Primary Data Analysis, 2020

* = significant at the 95% (α = 5%); ** = significant at the 99% (α = 1%)

The social interaction variable has a significant relationship with the farmers' marketing decision to the auction market. Jari & Fraser (2009) explained that social interaction encourages to determine the market. In this study, social interaction has a weak relationship with the farmers' marketing decision to the auction market. It is because farmers' decisions are very dominantly influenced by their initiatives, without much influence from the outside environment. However, social interaction variables, such as family and other farmers, have little effect on farmers' decisions.

The extension variable has a significant and direct relationship with the farmers' marketing decision to the auction market. Dlamini-Mazibuko *et al*. (2019) argued that extension will increase farmers' knowledge about various types of markets that can be accessed by farmers. In this study, the relationship between extension and farmers' marketing decisions is still weak because extension efforts are still not conducted massively by all stakeholders. The main extension is performed by farmer groups while the village Heads do not commit to encourage farmers to sell chili to the auction market.

CONCLUSIONS

Farmers are very careful in choosing marketing institutions to sell their chili. However, farmers in Sleman Regency have trusted the auction market of chili to be the main selling institution. This situation is significantly influenced by the economic (products, prices, and access) and social factors (social interaction and extension).

Farmers choose to sell chili to the auction market because this institution is willing to accept the entire supply of chili from farmers, especially during the harvest season. Even the auction market still accepts chili that has not been through the grading process by farmers. Various facilities on this product variable make farmers sure to sell chili to the auction market. The price variable is the main factor for farmers' marketing decisions to the auction market. The price offered by the auction market to farmers is higher than the price offered by traders. This condition is certainly an incentive for farmers to sell chili to the auction market.

The access variable also attracts farmers to sell in the auction market. The strategic location of the auction market makes farmers easy to reach it. Moreover, in some sub-districts also there are gathering points that facilitate marketing access for farmers who are far from the auction market. It becomes a lesson for new marketing institutions to ensure physical access to producers. In addition, the auction market also guarantees economic access for farmers by providing fast cash payments. This condition is certainly in accordance with the characteristics of farmers who want to immediately enjoy the harvest funds as soon as possible.

The farmers' social factor is also proven to encourage farmers' marketing decisions, even though it is in a weak correlation. Families, farmer groups, and agricultural extension officers recommend farmers to sell chili to the auction market. The farmers consider it before making a decision on which marketing institution will be chosen. These various pieces are not major considerations because basically, farmers continue to see the economic factor in choosing a marketing institution.

The development effort needs to be conducted continuously by the auction market, including the socialization of grading to farmers and the promotion of the auction market to the public. Farmers need to be invited more thoroughly with regard to the process to reduce the post harvest loss of chili. The auction market manager needs to deliver grade rule in the auction market or makes technical guidelines for chili that farmers must comply. The auction market also needs to increase promotion in order to raise the number of farmers participating in the auction process.

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