COULD A NEW AGRICULTURAL AUCTION MARKET IMPLEMENT A GOOD MARKETING MIX?

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Abstract

As a new marketer, the Sleman auction market must compete with existing traders to meet consumer demand. One way to solve this problem by implementing a good marketing mix. This study aims to find out the implementation of the marketing mix in the Sleman auction market. The study was conducted in the Sleman Regency, Indonesia, from January to March 2020. The study used primary data from interviews with all auction market traders using a questionnaire and observation of various auction market activities. The data in this study was analyzed by the Likert scale. The study showed that implementing the marketing mix in the Sleman auction market was categorized as high. This is possible due to the managers' professionalism, support from external parties, complete infrastructure, and good relationships with other stakeholders. However, the Sleman auction market managers must increase the promotion using social media, improve auction market service training, increase the number of contract workers, transparent when delivering information to traders, and fix the Standard Operating Procedure.

Keywords: Chili, Likert, Marketing Mix, Sleman Auction Market

JEL classification: D12, D44, Q13

1. Introduction

Consumer behavior is challenging to predict because it can change rapidly, similar to how each actor has changed their lines, props, and costumes necessary to perform a film (Solomon et al., 2006; Anastasiou, 2020). Consumer behavior was influenced by various factors like individual, psychological, social, and marketing mix (Al Jeraisy, 2008). Engel et al. (2001) designed a model of consumer behavior when selecting a product or service influenced by the environment, individual, and psychological process. This model is strengthened by Kotler and Keller (2016), which stated that consumer decisions are influenced by marketing stimulus (marketing mix), other stimuli (economics, politics, technology, and culture), and consumers characteristics (individual, culture, social, and psychology). The model was dubbed the "black box" model that describes consumers' characteristics and decision-making processes.

When examined in-depth, each variable in consumers' behavior contains some items, such as the economic factors, including price, distance, and product grades (Asebe et al., 2007; Tadesse and Bahiigwa, 2015; Hendrarini et al., 2020). Individual factors that influence consumer purchasing intentions consist of age, gender, education, income, marital status, product knowledge (price, quality, and availability), and information accessibility (Kuhar and Juvancic, 2010; Gyulgyulyan and Bobojonov, 2019; Kumar and Kaushal, 2019); and social factors include advice from reference groups, culture, and religion (Noel, 2009; Kaewwongwattana et al., 2015; Domonko et al., 2018). The physical environment will also

influence consumer decisions (Stankevich, 2017). Because of these various factors, marketers will have to determine the right strategies for attracting consumers.

Since it is too complex, marketers will have a tough time identifying any factors that affect consumers' purchasing decisions. However, marketers should focus on optimizing the marketing mix because of its capabilities to boost product sales and marketers' comparative advantage (Badi, 2018; Wahyuningrum et al., 2019). It comprises four variables: product, price, place, and promotion, or the so-called 4P, which marketers use to generate appropriate consumer responses with what they want (Kotler and Keller, 2016).

New marketers would naturally pay attention to the marketing mix. One of them is the chili auction market in Sleman Regency, Yogyakarta Province. This auction market was founded in 2017 and is located in an urban area. This is different from other agricultural markets, primarily located in villages and near farmers (Akbasogullari and Duran, 2020; Nugroho et al., 2020). Farmers in Sleman Regency have relied on the chili auction market as the primary sale institution due to economic (products, prices, and access) and social (social interaction and extension) factors (Dewi et al., 2021).

The auction market's consumers are chili traders from all over the Sleman Regency. As a new marketer, the Sleman auction market must compete with existed traders. This auction market must win the competition because it will provide farmers with many benefits. According to some studies, the auction market has been proven to have many advantages, including the ability to sell farmers' products in large amounts at a reasonable price, to connect farmers with consumer demand, to create a national minimum price scheme, to improve the price discovery process, and to increase logistical efficiency by reducing transaction costs (Meulenberg, 1989; Meulenberg and Viaene, 1993; Heezen and Baets, 1996; Tourte and Gaskell, 2004; Prabhavathi et al., 2013).

The auction market must pay attention to the type, quantity, and price of products and the rules to improve its performance (Vieira, 2015). Consumers will abandon the agricultural auction markets if they cannot offer optimal service and fulfill their desire (Nugroho et al., 2020). According to several studies, this desire will be influenced by the trust in the auction market, completeness of product information, negotiating mechanism, and shipping costs (Clark and Ward, 2008; Martinez and Kim, 2012; Chen et al., 2016; Nalinipriya et al., 2019).

Our study tries to find out the implementation of the marketing mix in the Sleman auction market. It's critical for new marketing organizations, especially in agriculture, to learn about how to stay competitive and attractive to consumers. Moreover, agriculture is the primary source of livelihood for people in developing countries (World Bank, 2007). However, Indonesian farmer often receives unreasonable prices, resulting in low welfare (Mukhlis et al., 2020).The development of the Sleman auction market will give an excellent opportunity for farmers to strengthen their bargaining power and earn a decent income (Dewi et al., 2021). Until now, there were no studies that tried to evaluate the performance of the agricultural auction market through the marketing mix when this organization was just established. However, it is essential to provide advice to help this auction market develop. In terms of the science concept, this study is expected to provide perspective for marketing institutions that have just been formed to better understand consumer desires, especially in developing countries.

2. Methods

2.1. Data Collected

The study was conducted in the Sleman Regency, which has a new agricultural auction market and contributes to nearly 20% of the overall chili production in Yogyakarta Province (Special Region of Yogyakarta Province Central Bureau of Statistics, 2021). This study was conducted for 3 (three) months from January to March 2020.

The study used primary and secondary data. Primary data was obtained through interviews using a questionnaire and observation of various auction market activities. A closed-ended questionnaire consisting of one section was used for the present study: The section included questions about consumer perception on marketing mix (product, price, place, and promotion) that conducted by the Sleman auction market.

The population in this study were all traders who bought chili at the auction market. According to data from auction market managers, 26 traders already participated in auction activities until the end of 2019. All traders were interviewed about their perceptions of the auction market, or we used the census method. This method is a complete enumeration of all things in the population. There is no element of chance left, and the highest accuracy is achieved. This can be done when the population is a small one (Kothari, 2004). The secondary data came from the Sleman agricultural office and documents from the Sleman Central Bureau of Statistics.

2.2. Data Analysis

The data in this study were analyzed using the Likert scale. The Likert scale is used to assess a person's or a group's beliefs, viewpoints, and expectations about the study variables. These variables are converted into indicators that are used to create statement items. Each item's response will range from highly positive to highly negative. It can take the form of words and is given a score based on the researcher's determination.

In this study, the Likert analysis was used to determine how the marketing mix (product, price, location, and location) implemented in the auction market. Likert scales are often used to assess attitudes measurement. An individual is asked to provide value to express his attitude towards a statement. This value concerns individual reflection of reality or human psychic disposition as feelings, desires, and conative dispositions (Likert, 1932). The use of Likert scales has grown in popularity, especially in the service sector, where consumer surveys are commonplace. Likert scales are also used in psychology, sociology, health care, marketing, and quality control (Gob et al., 2007). According to Likert (1932), one of the most important aspects of a Likert study is the need to do validity and reliability tests. Validity is the most critical criterion and indicates the degree to which an instrument measures what it is supposed to measure. In other words, validity is the extent to which differences found with a measuring instrument reflect actual differences among those being tested. Meanwhile, a measuring instrument is reliable if it provides consistent results. A reliable measuring instrument does contribute to validity, but a reliable instrument needs not be valid (Kothari, 2004).

Traders will rate the condition of the auction market on a scale of 1 until 4 on multiple questions for each indicator. Scale 1 for strong disagreement, scale 2 for disagreement, scale 3 for agreement, and scale 4 for a strong agreement. The data were converted from ordinal to intervals with the Method of Successive Intervals. This method is a psychological scaling technique in which stimuli are divided into successive intervals based on the degree of some defined attribute they are judged to possess (Edwards and Thurstone, 1952).

The measures of the Likert analysis are as follows:
1. Calculating each scale score and the overall score (Table 1).

Table 1. The Likert analysis calculations in this study

Category	Calculation	
The score for scale 1 (strong disagreement)	$= \sum SD \times 1$	$= A$
The score for scale 2 (disagreement)	$= \sum D \times 2$	$= B$
The score for scale 3 (agreement)	$= \sum A \times 3$	$= C$
The score for scale 4 (strong agreement)	$= \sum SA \times 4$	$= D$
Total score		$= E$

2. Calculating the ideal score.

- The ideal score is the total score if all respondents choose the highest scale (scale 4). Therefore, the ideal score is determined using the formula below.

The ideal score $= \sum$ respondents $\times 4$

- $= 26 \times 4$
$= 104$

3. Calculating the marketing mix.

Marketing mix $= \dfrac{\text{Total score}}{\text{Ideal score}} \times 100\%$

$$= \frac{E}{104} \text{ x } 100\%$$

4. Comparing the marketing mix with the criteria in table 2.

The distribution of criteria is calculated using the following interval formula.

- Minimum score   = total respondents x the lowest weight
- Maximum score= total respondents x the highest weight
- Lowest score $= \frac{\text{Minimum score}}{\text{Maximum score}} \text{ x } 100\%$
- Highest score $= \frac{\text{Maximum score}}{\text{Maximum score}} \text{ x } 100\%$
- Interval class   = 4
- Interval gap $= \frac{\text{Highest score} - \text{Lowest score}}{\text{Interval class}}$

Table 2. Criteria of the marketing mix

Score (%)	Criteria
25.00% - 43.75%	Very low
43.76% - 62.50%	Low
62.51% - 81.25%	High
81.26% - 100.00%	Very high

3. Findings and Discussion

3.1. The Sleman Auction Market's Mechanism

The fluctuating chili price is the main problem for chili farmers in Sleman Regency. The abundant production during the harvest season results in a drop in the market price of the agricultural products (Syahril et al., 2019). Then, the Puncak Merapi Horticultural Farmers Association initiated an auction market at the end of 2017 to solve this problem. This auction market partnered with the Sleman Agricultural Office and the Indonesian Central Bank. Both institutions aided in constructing an auction market building, provided tricycle motors, conducted management training for market managers, and assisted in the socialization of chili cultivation to farmers. This type of external parties' assistance is desperately needed by market participants (Balomenou and Maliari, 2013; Chairat and Pechsong, 2020). According to Khusaini et al. (2018), government spending on infrastructure has been shown to drive economic and regional growth.

More farmers are selling their chili to the auction market over time due to price transparency and direct payment systems. Likewise, the number of traders who participated in the auction market is growing because the auction system is simple, and traders do not need to go to the auction market. Traders only need to contact the market manager by text messaging (WhatsApp or message) or phone calls to submit a price bid for each type of chili.

The following are the mechanisms used in the Sleman auction market:

1. The auction market managers send information on the quantity, quality, and type of chili available to auction market participants (traders) by text messaging or phone calls,

2. Auction market participants offer a price to the auction market managers by text messaging or phone, only one bid is allowed, and it must be done before 8 p.m.,

3. The managers recapitulate the price and choose the highest bid to be the winner,

4. Managers write down an auction winner on the announcement board so that farmers or auction buyers can see it,

5. Winners pay in cash or via bank transfer to market managers, using the direct or defer payment systems (for up to three days after the transaction). The winning bidder shall pay the auction price plus US$ 0.03 per kg (additional money for auction market cash),

6. Chili can be collected directly by traders or using an expedition that transports it to other areas, and

7. If the auction winner does not buy all of the chili available, other traders can buy the remaining chili at the winner's price plus US$ 0.03 per kg.

3.2. Implementation of the Marketing Mix

As described in the method, before conducting a Likert analysis, we need to test the validity and reliability of the model in this study. Tables 3 and Table 4 demonstrate the results of the validity and reliability tests.

Table 3. The validity test results for the marketing mix

Indicator	Item	R stat (>0.388)	Conclusion
Product	Quantity information	0.428	Valid
	Quality information	0.837	Valid
	Accuracy information	0.865	Valid
	Product type	0.640	Valid
	Packaging makes transport easier	0.752	Valid
	Packaging maintains product quality	0.693	Valid
	Product quality is good	0.887	Valid
	Product stills good after transportation	0.291	Invalid
	Better quality than middlemen	0.439	Valid
	Products are always available	0.616	Valid
Price	The auction price follows market price changes	0.825	Valid
	The auction price depends on the season	0.469	Valid
	The auction price following the buyer's expectation	0.693	Valid
Place	Easy to reach by various modes of transportation	0.561	Valid
	Easy to find	0.711	Valid
	There is a signboard	0.468	Valid
	It can be accessed on Google Maps	0.606	Valid
	There are human resources that help in transportation	0.476	Valid
	There is workers cost	0.522	Valid
	Good parking facilities	0.700	Valid
	A good place to load products	0.563	Valid
Promotion	Promotional information from social media	0.524	Valid
	Promotional information from the news	0.745	Valid
	Discounts	0.695	Valid
	Tells about the transaction experience	0.696	Valid
	Sources of information from farmers	0.528	Valid

In table 3, it is known that there is an invalid statement, so it is not used in further analysis. This occurs because the R-stat is less than the R-table (Gujarati, 2004). Meanwhile, valid items indicate that the prepared statement can be used to assess the Sleman Auction Market's marketing mix.

Table 4. The reliability test results for the marketing

Variable	Indicator	Cronbach Alpha	Conclusion
Marketing mix	Product	0.916	Reliable
	Price	0.647	Reliable
	Place	0.700	Reliable
	Promotion	0.676	Reliable

Based on table 4, it can be seen that Cronbach Alpha value of the marketing mix is more significant than 0.6 (Gujarati, 2004). As a result, this indicator can be used to help assess the marketing mix.

Next, we conducted the Likert analysis to meet the study's aim. The Sleman auction market has a high level of marketing mix implementation (Table 5). The indicator with the highest score is the price that accordance with the traders' expectations. The chili price in the Sleman auction market follows the fluctuating chili price in the market. This price will rise in the first week of every month and is US $ 0.03 - 0.07 per kg more than the market price. At this moment, traders will reduce the amount bought due to a lack of funds. In microeconomics, as prices rise, consumers typically reduce the number of products they buy due to budget constraints (Pindyck and Rubinfeld, 2013). This condition should encourage banks to lend to market participants to boost the auction market performance (Abd. Majid et al., 2018).

Traders also try to buy chili directly from farmers, but farmers will refuse to sell chili and recommend traders to buy chili in the auction market. And if there are farmers who sell to

intermediaries, it is because they have a debt to the middlemen and agreed to sell chili to them in the harvest season. Meanwhile, the auction price is US $ 0.01 - 0.23 per kg lower than the market price in the second week until the end of the month. Every chili price that forms in the auction market would be subject to a margin of US$ 0.03 per kg by the managers. The margin will be used for cash in the auction market and wages of the auction market managers and workers.

When viewed as a whole, the prices formed in the auction market are significantly lower than market prices, resulting in profits for traders. This occurs because of the short marketing chain from farmers to the auction market. So, there are no marketing costs or profits from other institutions (intermediary or collective traders).

Table 5. Implementation of the marketing mix in the Sleman auction market

Item	Score	Percentage	Average (%)	Category
Product				
Quantity information	81.00	77.89		
Quality information	78.00	75.00		
Accuracy information	76.00	73.08		
Product type	81.00	77.89		
Packaging makes transport easier	80.00	76.92	74.52	High
Packaging maintains product quality	81.00	77,89		
Product quality is good	70.00	67.31		
Better quality than middlemen	77.00	74.04		
Products are always available	73.50	70.67		
Price				
The auction price follows market price changes	88.00	84.62		
The auction price depends on the season	79.00	75.96	78.02	High
The auction price following the buyer's expectation	77.00	74.04		
Place				
Easy to reach by various modes of transportation	90.00	86.54		
Easy to find	86.00	82.69		
There is a signboard	65.00	62.50		
It can be accessed on Google Maps	62.00	59.62	75.00	High
There are human resources that help in transportation	79.00	75.96		
There is workers cost	73.00	70.19		
Good parking facilities	86.00	82.69		
A good place to load products	83.00	79.81		
Promotion				
Promotional information from social media	69.00	66.35		
Promotional information from the news	54.50	51.97		
Discount	46.00	44.23	57.89	Low
Tells about the transaction experience	65.00	62.50		
Sources of information from farmers	67.00	64.42		

The problem related to the price is that traders often bid very high prices for chili but only buy limited amounts. Other traders are forced to follow these prices, but they buy in limited amounts too. As a result, chili in the Sleman auction market was not completely sold, forcing market managers to sell the next day. This condition is detrimental to both parties due to the fluctuating chili price and declining quality. Also, traders who dare to bid high prices are often unable to pay, and chili either fails to sell or is sold for a lower price because the quality has declined.

The place is the indicator with the second-highest implementation. This indicator is made up of 3 main items: location, worker, and facilities. First, the Sleman auction market is located in a strategic place. This is critical for agriculture to improve its business performance and facilitate access to information and stakeholders (Jaworski et al., 2017). The Sleman auction market is centrally located in the regency, making it easily accessible from all parts of Sleman. The auction market is close to the highway, easier to be reached by various transportation such as cars and trucks. The auction market position can be found in the Google Maps application, although most traders (92.31%) have known the auction market location since it was established. The majority of traders (96.15%) also said a sign indicating

the location of the Sleman auction market, even though it was located inside the auction market ward and was not visible from the highway.

Second, the Sleman auction market managers provide workers to help traders in hauling chili in the auction market. Traders do not need to pay them for their services because the wages have been paid by the auction market managers from cash funds. Due to the limited number of workers, the hauling process takes a long time, especially during the chili harvest season. Finally, traders will bring their workers to expedite the hauling process. As a result, traders must incur additional costs to pay their workers.

Meanwhile, traders have benefited from the efforts of the recording and weighing workers. If a mistake is made, the auction market's workers will immediately correct it. Also, the marketing workers have given friendly service to the traders.

Third, the Sleman auction market also has various facilities such as two rooms that can load 5 tons of chili and a large parking lot. However, managers must pay close attention to the tidy arrangement of vehicles to make transportation in the Sleman auction market smoother. Also, there are facilities to support auction market operations, such as computers, scales, blowers, crates, and three-wheeled vehicles. This is in line with the findings of Dovbiy et al. (2017), who stated that infrastructure development is critical to the development of a competitive and balanced agricultural business.

The product is another indicator with a high implementation score. This indicator is made up of 4 main items: information, types, quantity, and quality. First, the auction market managers regularly convey information about the type, quantity, and quality of products to traders via WhatsApp, message, or phone call. This is in line with Subejo et al. (2020) research findings, who found that developments in information and communication technology in agriculture can facilitate access to market information.

Second, curly chili and cayenne pepper are two varieties of chili available in the Sleman auction market. The managers have communicated the chili amount to be auctioned every day. Almost all farmers in Sleman sell chili to the auction market. This is because there are 13 gathering points spread over several sub-districts In the Sleman region. Farmers who live far from the auction market will quickly sell chili to the auction market thanks to the gathering points (Dewi et al., 2021).

Third, chili is always available in the auction market during the year to satisfy the needs of traders. One of the most popular market wishes is for farm goods to be available during the year (Chan, 2011). The amount of chili produced during the lean season (February-June) is minimal, less than 1 ton, while the amount produced during the harvest season (July-January) can exceed 4 tons every month (Table 6).

Table 6. The average quantity of chili in the Sleman auction market every month in 2019

Month	Type of Chili		Total (kg)
	Cayenne (kg)	Curly (kg)	
January	834	616	1,450
February	274	72	346
March	141	89	230
April	33	191	224
May	68	101	169
June	462	89	551
July	950	822	1,771
August	1,258	1,048	2,306
September	1,663	2,415	4,078
October	1,462	2,694	4,156
November	841	1,531	2,373

Fourth, there are 4 (four) grades of chili: SP, SP1, SPK, and SX. The first grade of chili is the SP or the best quality, with lengths of 10-15 cm and a flawless red hue. Next, the SP1 grade is chili with a length of 8-10 cm and a ripeness color of 90-100%. Meanwhile, grade SPK has a characteristic ripeness form of 60-90%, a curved fruit shape and a length of 6.5-8 cm. Finally, the SX grade is the lowest standard and is less than 6.5 cm in length, resulting in a low sale price. Each grade has a different price; 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. Traders said the chili standard in the Sleman auction market was higher than the chili offered by collective traders, so they

were delighted. Sorting and grading are strictly enforced in the auction market, whereas collective traders only sort without grading. This process is crucial because it can influence market value, the consumer's preference and choice. The better the agricultural product makes, the higher the value and the more preferred by consumers (Hozouri and Shahbazi, 2020; Bhargava and Bansal, 2021).

However, before selling chili outside the region, traders still sort and re-grade it. This is because various grades of chili are often blended. The auction market managers warned workers to be more cautious, but there are no consequences for those who make mistakes. Chili is also packaged in cardboard boxes weighing 30 kg each. This packaging makes the distribution more manageable and can maintain quality. After neatly packing it, traders will immediately send it to other areas, especially to the islands of Sumatra and Kalimantan.

Even though it has a high level of implementation, the product indicator still has some weaknesses, such as the fact that the managers only send the information to a few traders who actively participate in the auction activities during the lean season. This made traders feel dissatisfied because they were treated unfairly and not according to the standard operating procedure (SOP). This complaint has been conveyed to the auction market managers and the Sleman agricultural office, but the auction market managers have yet to respond or fix it.

Promotion is the indicator in the marketing mix with the lowest implementation score. Sleman auction market managers have never promoted using various information media and discounts. Promotion is only done personally by market managers, farmers, and traders. Currently, the majority of traders (84.61%) got information about the auction market from farmers. After completing an auction market buy, the trader informs to another trader. Hsu (2009) stated that good positive word of mouth would attract consumers to participate in auction activities. It will also expand network marketing and increase auction market income (Makni, 2014). The auction market managers also never give a discount because they must pay chili to the farmers according to the auction price. As a result, if a discount is made, the auction market will lose profits.

4. Conclusion

This study demonstrates that a newly formed marketing organization can perform well. From the perspective of a consumer, the Sleman auction market has a high level of marketing mix implementation. Price, place, product, and promotion were indicators with a range of values from high to low. This is possible due to the managers' professionalism, support from external parties, complete infrastructure, and good relationships with other stakeholders.

However, we also give recommendations for developing the Sleman auction market, among others: First, managers must increase promotion by conducting online promotions through social media and the "Panenin" app and offline promotions to chili trader associations around the Sleman Regency. This must be achieved for a large number of traders will participate in the auction market. As a result, traders' price rivalry is becoming more intense, making the auction market more competitive. Second, managers must also improve auction market service training and entrepreneurship, especially in administration and service quality. The auction market managers can collaborate with the Sleman agricultural office to coordinate this training (Vlachos and Malindretos, 2012). Improved service and entrepreneurship skills will increase the competitiveness of the agro-industrial enterprise and the level of economic development (Korres and Kokkinou, 2011; Sahin et al., 2011; Dovgal et al., 2017). Third, managers need to increase the number of contract workers, especially during the harvest season. This worker will be in charge of helping traders. Fourth, the auction market managers should be transparent in conveying information not to arouse jealousy and suspicion of traders. Finally, managers must also strengthen SOP, especially about trader obligations and rights.

Our study still has limitations, such as looking at the auction market's performance only from consumer's perspective. We believe further research is needed on the performance of the auction market in terms of suppliers (farmers) and the impact of this auction market on the economy.

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