



ANALYSIS OF MARKETING MIX FACTORS AFFECTING THE PURCHASE DECISION OF HYBRID CORN SEEDS BISI-2 (Case Study in Pelem Village, Pare District, Kediri Regency)

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Abstract

This study has some objections, for instance (1) to Analyze the correlation of marketing mix that consist of product, price, distribution, and promotion to purchasing decision of BISI-2 hybrid corn seed (2) to analyze marketing mix factors that consist of product factor, price factor, distribution factor, and promotion factor that affecting to farmer decision on purchase BISI-2 hybrid corn seed for once again in the next corn plant season or not. The location of study was purposively determined in Pelem Village, Pare Subdistrict, Kediri Regency with the consideration that area is center of corn cultivation. Sample total of this study is 105 respondents by accidental sampling method. The methods of analysis data in this study are descriptive analysis and quantitative analysis. Descriptive analysis used for describe the respondent answer of the question that given. The Quantitative analysis consist of Rank Spearman Correlation used for analyze the correlation of marketing mix to purchasing decision and Logistic Regression used for analyze marketing mix factors that affecting to farmer decision on purchase of BISI-2 hybrid corn seed for once again or not in the next corn cultivation. According to the result of analysis correlation marketing mix to the purchasing decision of BISI-2 hybrid corn seed by Rank Spearman Correlation shown all of the marketing mix factors consist of product, price, distribution, and promotion have a correlation to purchasing decision of BISI-2 hybrid corn seed. According to the result of analysis marketing mix factors that affecting to farmer decision on purchase of BISI-2 hybrid corn seed for once again or not in the next corn cultivation by Logistic Regression shown all of marketing mix factors consist of product, price, distribution, and promotion affecting to farmer decision on purchase of BISI-2 for once again or not, product factor has the highest effect on that farmer decision.

Keywords: Marketing Mix, Purchase Decision, Bisi-2 Hybrid Corn Seeds.

1. Introduction

The community's need for the commodity of corn (*Zea Mays L.*) is increasing in Indonesia. This is because these commodities are very important food commodities. In accordance with its position which ranks second after rice, corn is in great demand by the public for consumption both on a household and industrial scale. What's more, corn is also used as poultry feed which requires corn as raw material around 50% of the total raw material needed. From this increasing need, the demand for corn continues to increase every year (Sarasutha, 2002).

The demand for corn commodity always increases every year. The demand for corn in 2006 for the household scale for public consumption was around 3.5 million tons. The demand for this corn commodity is expected to increase in the following year to reach 4.1 million tonnes. This situation indicates that the demand for corn commodity has increased by around 14% from the household scale alone. Meanwhile, from an industrial scale, demand for corn in 2007 reached 2.9 million tons and demand from the feed mill sector was around 5.6 million tons. So that the total demand for corn from household and industrial scale in that year was around 13 million tons (Indra, 2007).

Increasing demand for corn from year to year is not matched by sufficient supply. It was recorded from the survey results that the development of corn production in Indonesia was



still not sufficient to meet demand. Approximately 2 million tons of corn are needed to meet the demand from both households and industry.

The supply of corn that is still not sufficient for this demand indicates that the government is always trying to make appropriate steps for countermeasures. One of the steps taken by the Ministry of Agriculture to overcome the shortage of corn supply is to socialize the use of hybrid corn seeds to farmers in their corn farming. This step is intended to increase corn production with optimal quality and quantity, which is currently determined by the procurement of quality/certified hybrid corn seeds (Anonymous, 2007).

Hybrid corn is created from genetic engineering due to current technological advances. The creation of hybrid corn is done by crossing two or more elders. Hybrid corn was created with the aim of obtaining superior properties from the two parents crossed. The superior characteristics of the two parents crossed include high yield, optimal productivity, tolerance to plant diseases and good tree performance (sturdy and able to absorb maximum sunlight). Hybrid maize derivatives (F2) cannot be replanted for the next growing season because this will cause a decrease in production. This fact indicates that hybrid corn seeds can only be used once for planting.

The marketing mix is a combination of the core elements of the company's marketing system attached to the product consisting of the product mix, price mix, distribution mix and promotion mix. The elements of the marketing mix were made by the company which were previously adjusted to the needs and desires of consumers so that henceforth it is hoped that they will generate interest in buying their products (Kotler, 1997).

So far PT BISI International Tbk's marketing mix strategy has also been applied to BISI-2 hybrid corn seeds. The strategy consists of product mix, price mix, distribution mix or marketing channels, and promotion mix. The marketing mix strategy was formulated as carefully as possible so that it looks creative and innovative which previously referred to the needs and desires of consumers, in this case farmers, so that they are expected to be able to always foster buying interest. In the end, with product acceptance by consumers, business continuity is maintained.

Meanwhile, the many alternative product choices on the market make consumers faced with various alternative brands. Therefore, they will need and seek information regarding products that suit their needs and desires. The way consumers can find the information they need is to search internally or externally. Internal search is nothing more than memory scanning to see decision-relevant knowledge stored in long-term memory. Meanwhile, external search is a consumer's attempt to find information, where the information is a stimulus or stimulus from the environment, in this case the marketer. As for the form of stimulus from marketers that can be used as information material by consumers, namely in the form of information related to products that have been determined by marketers as a series of product marketing strategy activities in the form of a marketing mix. From the information obtained, consumers know which brand of product can meet their needs and then it will be determined as the brand of choice to buy (Engel et al., 1995).

2. Methods

2.1 Location Determination Method

The research location is in Pelem Village, Pare District, Kediri Regency. Determining the location of this research was done purposively with the consideration that Pare District

is a center for corn production in Kediri Regency. This research is a descriptive research that captures phenomena that occur in society so that it is possible for the writer who is also domiciled in the research area to know the situation and conditions of the research area as a whole. While the time of implementation of the research was carried out in February - March 2009.

2.2 Method of collecting data

The data used in this study are primary and secondary data. Primary data collection obtained from research respondents related to the discussion of this study. Primary data can be obtained from: Interviews, Observations, Documentation. Secondary data collection was carried out with the aim of obtaining data that is related to the problems encountered in this study and has been further processed and presented by certain parties where the data is obtained from references, reports and literature related to the object of research. This data was obtained from reports from the Central Bureau of Statistics, Ministry of Agriculture, DITJEN BPTP, Literature Studies, as well as annual reports from the research area villages.

2.3 Population and Sample Determination Methods

The population in this study were all farmers in Pelem Village, Pare District, Kediri Regency who used BISI-2 hybrid corn seeds in corn farming. Thus, the population in this study is not fixed or the number varies. Because of this population, the sample in this study was determined by probability sampling with simple random sampling method.

2.4 Validity Test and Reliability Test

In this validity test using internal validity, where an instrument has internal validity if there is a match between the parts of the instrument with the instrument as a whole. The instrument attributes tested were brand, packaging variety, resistance to pests and diseases, resistance to seasonal changes, stem strength, productivity, expiration date, moisture content, crop yield, yield, price level, price variation, discount, sales location, product availability. , the convenience of buying places, the number of sellers, advertisements, door prices, and sales promotions conducted by 105 respondents who consume or use BISI-2 hybrid corn seeds. This validity test uses item analysis which is done by correlating the score on the item with the total score of the item. If the item scores have a significant positive correlation, means that these items can be used as indicators to measure these variables. In this study using the SPSS program to calculate it.

In this study using the method of internal reliability approach. Internal reliability test is obtained by analyzing data from more than one test. To measure social phenomena such as attitudes, opinions and perceptions, consistent measurements are rather difficult to achieve, so the Alpha Cronbach formula is used.

2.5 Data analysis method

Data analysis used in this study was descriptive analysis, Quantitative Analysis, Spearman Rank Correlation Analysis, Logit Model Regression Analysis, G Test, "Log Likelihood" Test, Goodness of Fit (R²), Significance Test for Each Parameter.

3. Results and Discussion

3.1 BISI-2 Hybrid Corn Seed Marketing Mix

The marketing mix of BISI-2 hybrid corn seed company produced by PT BISI International Tbk consists of product mix, price mix, distribution mix or marketing channel, and promotion mix. The entire marketing mix is expected to be a stimulus that can shape consumer buying behavior. But previously the stimulus can be used to identify consumer

wants and needs for a product. The marketing mix of Bisi-2 hybrid corn seeds is described as follows:

a. Product Mix

Products are objects that are sought after and needed by society as consumers where products have accompanying characteristics so that they have value to be offered to buyers. These characteristics include brand, variety of packaging, level of tolerance to pests and diseases, level of tolerance to changes in weather and season, stem strength, productivity, seed expiration, moisture content, degree of seed maturity on cobs, and yield.

b. Price Mix

The amount of money that must be paid to obtain BISI-2 hybrid corn seeds is often a problem for some consumers. The price level given by the company can be considered cheap but also considered expensive, this is adjusted by the ability of each consumer but for the company the price strategy has been set at Rp. 31,000, -/kg for 1 kg packaging, while for 5 kg packaging, the price is Rp. 30.000,-/kg. For 20 kg packaging priced at Rp. 29.500,-/kg. With these price variations, it is expected that they will be in accordance with the capabilities of consumers. The company also provides discounts for purchases of certain volumes, price variations are also given according to the weight and land needs of consumers. The form of discount given by the company besides being in the form of a discount is also in the form of merchandise, namely t-shirts.

c. Distribution Mix

Distribution by PT. BISI International goes through several stages before finally reaching the farmers as end consumers or users, namely farmers. The BISI-2 hybrid corn seed distribution channel starts from the company to the distributor, then the distributor distributes it to the dealer with a smaller volume compared to the distributor. From dealers, it is then distributed to retailers which are divided into retailers 1, 2 and 3 depending on the volume of purchases. Retailer 1 usually has the capacity to purchase dealers and sell to farmers in larger quantities than retailers 2 and 3 because retailers 2 and 3 are retailers that have a smaller sales capacity than retailer 1, these activities support the availability of seeds in a certain area that have the potential for corn crops.

The description above explains how the distribution process of BISI-2 hybrid corn seed products reaches the end consumers, namely farmers. Meanwhile, retailers who are the final liaison between the company's products and the end consumers are the right partners for companies to work together to distribute goods such as BISI-2 hybrid corn seed products.

d. Promotion Mix

Promotional activities that have been carried out by PT. BISI International Tbk. for BISI-2 hybrid corn seed products including activities for farmers. Activities for farmers include: Advertising: leaflets, billboards; Door price; Direct Sales Promotion consists of: Product demonstration (demplot), FFD (Farm Field Day), FM (Farmer Meeting).

3.2 Validity and Reliability Test

a. Validity test

The results of testing the validity of the marketing mix instrument on consumer decisions in buying back BISI-2 hybrid corn seeds or not for the next corn planting season. The test results are presented in the tables below:

Table 1. Product Factor Instrument Validity Test Results

	MarkCorrelation	Information
Brand	0.562**	Valid

Packaging Variations	0.532**	Valid
Tolerant To HPT	0.707**	Valid
Season Tolerance	0.664**	Valid
Stem Strength	0.549**	Valid
Productivity	0.688**	Valid
<i>Expired</i>	0.351**	Valid
Water content	0.367**	Valid
Muput	0.338**	Valid
yield	0.496**	Valid

Note : ** > 0.199 ($\alpha:0.05$)

Source: processed from primary data, 2009

The magnitude of the correlation value of each indicator is all greater than the r-table, namely 0.199 so that it can be concluded that the constituent indicators can collect data appropriately and in accordance with the variables studied.

The results of the validity test on the price factor in this study are presented in Table 2 below. Based on the table of the results of the validity test of the price factor instrument above, it shows that all the indicator instruments making up the price factor are valid. This is shown from the large correlation value of each constituent indicator, all of which are greater than the r-table, namely 0.199 so that it can be said that the constituent indicators can collect data correctly and in accordance with the variables studied.

Table 2. Price Factor Instrument Validity Test Results

Indicator	Correlation Value	Information
Price Level	0.734**	Valid
Discount	0.729**	Valid
Price Variation	0.805**	Valid

Note : ** > 0.199 ($\alpha:0.05$)

Source: processed from primary data, 2009

The results of the validity test on the distribution factors in this study are presented in Table 3 below. The table shows all the indicators that make up the valid factor distribution. This can be seen from the large correlation values of each indicator, all of which are greater than the r-table, namely 0.199 so that it can be said that the constituent indicators can collect data correctly and in accordance with the variables studied.

Table 3. Results of Instrument Validity Test Distribution Factors

Indicator	Correlation Value	Information
Product availability	0.689**	Valid
Sales Locations	0.820**	Valid
Lots of Retails	0.879**	Valid
Comfort Place	0.846**	Valid

Note : ** > 0.199 ($\alpha:0.05$)

Source: processed from primary data, 2009

The results of the validity test for promotion factors in this study are presented in Table 4 below. Based on the results of the validity test table for the promotion factor instrument below, it shows that all the indicator instruments making up the promotion factor are valid.

This is shown by the large correlation value of each indicator which is all greater than 0.199 so that it can be said that the constituent indicators can collect data correctly and in accordance with the variables studied.

Table 4. Results of Promotional Factor Instrument Validity Test

Indicator	Correlation Value	Information
Advertisement	0.841**	Valid
Door price	0.632**	Valid
Sales promotion	0.820**	Valid

Note : ** > 0.199 ($\alpha:0.05$)

Source: processed from primary data, 2009

b. Reliability Test

The instrument can be said to be reliable if it has a Chronbach Alpha value greater than 0.5. The results of the reliability analysis of the research instrument are shown in Table 16 below. From the table it can be seen that all the indicators that make up the reliable variable where the Chronbach Alpha value is greater than 0.5 so that if the questions on the instrument are tried on the same group will give relatively the same results.

Table 5. Instrument Reliability Test Results

Indicator	Correlation Value	Information
Product	0.6931**	Reliable
Price	0.6214**	Reliable
Distribution	0.8215**	Reliable
Promotion	0.6554**	Reliable

Note : ** > 0.199 ($\alpha:0.05$)

Source: processed from primary data, 2009

All marketing mix factors consisting of product factors, price factors, distribution factors, and promotion factors are reliable. The results of the instrument reliability test calculation for the product factor (X1) show a number of 0.6931, this figure is greater than 0.6 ($0.6931 > 0.5$) so that it can be interpreted that the price factor instrument can be trusted and relied upon. For the calculation results of the instrument reliability test for the price factor (X2) shows a number of 0.6214, this figure is greater than 0.6 ($0.6214 > 0.6$) so that it can be interpreted that the price factor instrument can be trusted and relied upon. The calculation of the instrument reliability test for the distribution factor (X3) shows the number 0.8215, this figure is greater than 0.6 ($0.8215 > 0.6$) so that it can be interpreted that the distribution factor instrument can be trusted and relied upon. For the last calculation, the instrument reliability test calculation for the promotion factor (X4) shows a number of 0.6554, this figure is greater than 0.6 ($0.6554 > 0.6$) so that it can be interpreted that the promotion factor instrument can be trusted and dependable. Calculation results for the reliability test can be seen in the appendix. Based on this description, it can be concluded that the questionnaire used in this study with regard to research variables is consistent in measuring the same symptoms. this figure is greater than 0.6 ($0.8215 > 0.6$) so that it can be interpreted that the promotion factor instrument can be trusted and relied upon. Calculation results for the reliability test can be seen in the appendix. Based on this description, it can be concluded that the questionnaire used in this study with regard to research variables is consistent in measuring the same symptoms. this figure is greater than 0.6 ($0.8215 > 0.6$) so

that it can be interpreted that the promotion factor instrument can be trusted and relied upon. Calculation results for the reliability test can be seen in the appendix. Based on this description, it can be concluded that the questionnaire used in this study with regard to research variables is consistent in measuring the same symptoms.

3.3 Description Analysis

The frequency distribution of the respondents' answers based on the distributed questionnaires can be determined by descriptive analysis, namely to see the marketing mix variables consisting of factors: product (X1), price (X2), distribution (X3), and promotion (X4). The results of the frequency distribution of the 105 respondents who were used as the sample for this study can be seen in full in Appendix 11. The following is a descriptive explanation of the questionnaire items from the research variables based on the respondents' answers.

Table 6. Product Factor Frequency Distribution (X1)

Items	Strongly Disagree (1)		Disagree (2)		Neutral		Agree		Agree (5)		Σ
	F	%	F	%	F	%	F	%	F	%	
	X1.1			1	1	2	2	84	80	18	
X1.2			1	1	3	3	91	87	10	9,5	105
X1.3			6	5,7	4	4	87	83	8	7,6	105
X1.4			26	24,8	10	10	66	63	3	2,9	105
X1.5					1	1	70	67	34	32	105
X1.6			3	2,9	3	3	81	77	18	17	105
X1.7			21	20	54	51	30	29			105
X1.8					10	10	92	88	3	2,9	105
X1.9					4	4	97	92	4	3,8	105
X1.10					1	1	89	85	15	14	105

Source: processed from primary data, 2009

The table above shows that most of the respondent farmers answered agree and strongly agree on all the questions except for expired question items, the farmers answered neutrally. the respondent farmers are not really concerned about the expiration date because every time they buy BISI-2 hybrid corn seeds they always adjust it first to the needs of the land so that leftovers do not occur, even if it does not exceed 50 grams.

The price factor examined in this study has question items making up attributes including price levels, discounts, and price variations. The results of the recapitulation collected from the questionnaires given to the respondent farmers can be seen in Table 7 below:

Table 7. Frequency Distribution of Factor Prices (X2)

Items	Strongly Disagree (1)		Disagree (2)		Neutral		Agree		Agree (5)		Σ
	F	%	F	%	F	%	F	%	F	%	
	X2.1			4	3,8	42	40	55	52	4	
X2.2			20	19	76	72	9	9			105

X2.3 17 16,2 64 61 24 23 105

Source: processed from primary data, 2009

Most of the respondent farmers answered neutrally to every question item except price. There is an average of 61 respondent farmers who answered neutrally to each of these questions. For the price question, more than 50 respondent farmers agreed with the question items given, this is because the respondent farmers feel that the price of BISI-2 hybrid corn seeds really suits their abilities.

The distribution factors examined in this study have question items making up attributes including product availability, sales locations, many retailers, and convenience of place. The following is a presentation of the recapitulation of the results of the respondent farmers' answers as outlined in Table 8.

Table 8. Distribution of Factor Frequency Distribution (X3)

Items	Strongly Disagree (1)		Disagree (2)		Neutral		Agree		Agree (5)		Σ
	F	%	F	%	F	%	F	%	F	%	
X3.1					4	4	90	86	11	11	105
X3.2			2	1,9	5	5	90	86	8	7,6	105
X3.3			2	1,9	5	5	92	88	6	5,7	105
X3.4			3	2,9	9	9	83	79	10	9,5	105

Source: processed from primary data, 2009

On average, nearly 89 farmer respondents responded in agreement to the questions that had been given. This value indicates that the respondent farmers really consider the elements of availability, location, number of retailers and friendliness in buying BISI-2 hybrid corn seeds.

Promotional factors which are research attributes in this study have constituent items including advertising, Door Prices, and sales promotions. The recapitulation results collected from the respondent's questionnaire about promotion variables can be seen in Table 9 below:

Table 9. Frequency Distribution of Promotion Factors (X4)

Items	Strongly Disagree (1)		Disagree (2)		Neutral		Agree		Agree (5)		Σ
	F	%	F	%	F	%	F	%	F	%	
X4.1			13	12,4	34	32,4	57	54,3	1	1,0	105
X4.2			32	30,5	62	59,0	11	10,5			105
X4.3			14	13,3	42	40,0	49	46,7			105

Source: processed from primary data, 2009

Of the 105 respondent farmers, an average of 46 respondent farmers answered neutral, an average of 39 respondent farmers agreed, and an average of 20 respondent farmers answered disagree for each question item. This situation was caused by the respondent farmers expressing different opinions. Respondent farmers who answered neutrally argued that they did not know at all about the promotional mix activities formulated by the company, while their decision to keep buying BISI-2 hybrid corn seeds was due to references from

their family, friends or neighbors. While the respondent farmers who agreed agreed that the promotional mix activities formulated by the company influenced them in purchasing decisions for BISI-2 hybrid corn seeds. Respondent farmers who answered disagree were two groups with different reasons. The first group believes that the promotion mix activities formulated by the company are less attractive, so they have not been able to influence them to buy BISI-2 hybrid corn seeds. For the second group, the content of the promotional message has not been able to hit their minds.

4. Conclusion

Marketing mix factors influencing farmers' decision making whether or not to buy back BISI-2 hybrid corn seeds in the next maize planting season are worthy of analysis and discussion. In this case the marketing mix factor variables that influence farmers' decision making are product factors (X1), price factors (X2), distribution factors (X3), and promotion factors (X4). Of the four marketing mix factors used as variables in this study, it is the product factor that has the greatest influence because it has the highest Wald value. Meanwhile, the marketing mix factor that has the greatest influence on consumers (farmers) buying back BISI-2 hybrid corn seed products for the next corn planting season is the price factor as seen from the calculation of the probability of an event.

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