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PRODUCT PERFORMANCE ANALYSIS OF "PRIMA" RICE SEED IN MALANG

Sony Prihandono[1)], Any Suryantini[1)]

[1)] Lecturer and researcher at Department of Agribusiness, Faculty of Agriculture, University of Gadjah Mada, Yogyakarta.
Email: sony.prihandono86@gmail.com

ABSTRACT

The purpose of this study was to determine "Prima" seed product performance based on the perception of Malang farmers. This research was conducted in Malang during February to March 2015. The data usedin this study were primary data and secondary data. The number of respondents selected was 50 farmers who have used Ciherang "Prima" seed products. Importance and Performance Analysis (IPA) was applied in the analysis in this research. Product attributes of "Prima" seed is considered to have high performance and satisfy consumers are availability and productivity. Meanwhile, attributes that have lower performance and less satisfying consumers are price, cleanliness, volume and packaging.

Key Words: Perception, performance, product analysis.

INTRODUCTION

Agricultural development particularly rice production activitesis closely related to production facility aspect such as seed provision and distribution. In rice system production, the seed provision of high yield and good quality variety is essentially needed in order to meet either private consumption or comercial orientation. The high quality performance and guaranted quality generally belong to superior varieties. The production and distribution of the superior varieties have been lately dominated by PT. Sang Hyang Seri (SHS) dan PT. Pertani while local private and foreign seed breeders only produce a small portion.

Perception of consumers on a product quality is often based on a set of varied criteria due to different importance level and involvement of the consumers. The consumers tend to value the quality of a product based on factors associated with the product. Those factors can have intrinsic characteristics such as size, color, taste and arome and extrinsic characteristics including price, shop image, brand image and promotion message delivered through advertisement in printed and electronic media (Fandy, 1997).

Good performance of a product will satisfy consumers. The consumers will feel satisfied when their chosen product meets their perception. Level of the consumers' satisfaction is also reflected from their decision to buy the product and their repetitive purchase of the product. If the product atributes suit consumers' aspiration then it will triger the consumers' desire to purchase it (Schiffman and Kanuk, 1997). The satisfaction of consumers to a product will increase the volume of the product sales and eventually affect the benefit of its company. Therefore, the satisfaction of consumers' perception is a very important matter and need to be addresed by a company.

"Prima" seed is the superior product produced by Sang Hyang Seri Company. The product quality can be assessed from its several attributes such as price, packaging, volume, productivity, availability and cleaness. Toanalysis on the product performance, samples are required as the source of information. One potential region in Indonesia for rice seed demand is Malang Regency located in East Java Province.

RESEARCH METHODS

Location and Research Period. The research site was purposively determined in Malang Regency with considerations that the regency is the second largest area in East Java Province. Data collected in the research area was carried out from February to March 2015.

Population and Samples. Population of this research was rice farmers in Malang Regency who have ever used seed product of Ciherang variety. Samples of this research were farmers in Malang Regency who has used seed product of Ciherang variety with trade marks of "Prima" and "Dua Kuda". The samples were selected using simple random sampling technique by referring to a list of farmers provided by agriculture kiosks and smaller kiosks.

Data Types and Sources. This research use two types of data i.e. primary and secondary. The primary data were obtained through interview by using questionaire filled by the respondents and field observation. The secondary data was gathered from Sang Hyang Seri Company of Regional Office 3 and from outside the company such as Stastitic Center Office (BPS) of East Java, BPS of Malang Regency, Agricultural and Plantation Office of Malang Regency.

Data Collection Methods. The primary data in this research was collected using such instruments as questioniares which were directly presented to the respondents on location. The number of the respondents were 50 farmers spread over Malang Regency. The secondary data was obtained by compiling various information from several agencies such as Sang Hyang Seri Company of Regional Office 3, BPS of East Java, BPS of Malang Regency, and Agricultural and Plantation Office of Malang Regency.

Based on the results of some literature reviews, variables selected to be analyzed were those attributes attached to the seed product of "Prima" including price, packaging, volume, productivity, availability and cleanness. In this research, measurements were aimed to establish the fundamental of developing better indicators to generate results that have valid and reliable function. Furthermore, the answers of the respondents were weighted using the Likert scale based on the model of semantic differential of 5 number rowed. Analysis of the instruments in this research was done using validity and reliability tests. The tests was conducted on the 50 respondents.

Data Analysis Methods. The methods used to analyze the data were descriptive and quantitative analyses which were based on the tabulation of the data generated from the respondent questionaiere answers. The data and information were processed and presented in the forms of simple tables and grouped based on similar answers. The results obtained were then converted into percentage based on the number of the respondents. The highest percentage from every result indicated that it was the dominant factor from each variable analysed. The result of analysis was used to analyze the general characteristics of the respondents.

Importance-Performance analysis were applied to determine the performance of rice seed attributes (Umar, 2000). Martilla dan James (1977) developed direct measurement technique called Importance-Performance Analysis (IPA). It is a tool analysis which can indicate the performance of a given brandassessed by consumer importance on the brand's performance using a cartesius diagram. IPA uses coordinate points to depict the performance of a given product.

In this research two variables represented by X and Y letters are used where X is the score of the performance level of each Ciherang "Prima" seed attribute which could give satisfaction to consumers whereas Y is the score of the importance level of each product attribute for consumers. The horizontal line ($\overline{X}$) is filled by the average score of the performance level of each product attribute. The vertical line ($\overline{Y}$) is filled by the average score of the importance level of each product attribute. The following equation is used to determine the scores:

$$\overline{X} = \frac{\sum X_i}{n} \quad \overline{Y} = \frac{\sum Y_i}{n}$$

Where:

X = The score of the performance level based on such attributes as price, volume, cleanness, productivity and availability.

Y = The score of the importance level based on such attributes as price, volume, cleanness, productivity and availability.

N = The number of respondents.

i = The i^{th} attribute.

Cartesian diagram is a coordinate system divided into four planes seperated by two fixed perpendicular directed lines (X`,Y) where X is theaverage score of performance level or customer satisfaction on all factors or attributes and Y is the average score of importance level of all factors affecting customer satisfaction. All factors then substitute infurther equation as followed:

$$\overline{\overline{X}} = \frac{\sum_{i-1}^{n} \overline{X}}{k} \quad \overline{\overline{Y}} = \frac{\sum_{i-1}^{n} \overline{Y}}{k}$$

Where:

K = Attributes that can affect customer satisfaction.

According to Umar (2000), the attributes are distributed into four quadrants such as in the following Cartesian diagram:

a. Quadrant I indicates factors or attributes of product considered to affect customer satisfaction but the product cannot meet the customer satisfaction so the customer is unsatisfied.
b. Quadrant II indicates factors or esential atributesof product that have to be maintained and considered very important and satisfied.
c. Quadrant III indicates factors or attributes that are less important in affecting customers, and their presence are considered less satisfied.
d. Quadrant IV indicates factors or attributes that are less important in affecting customersso their implementation is redundant. Although less important, they areconsidered satisfied.

RESULTS AND DISCUSSION

Characteristics of Farmer Respondents. The respondents were those farmers who had ever purchased and planted *"Prima"* and "*Dua Kuda"* rice seeds in Malang Regency. The farmer characteristics were identified based on age, education level, duration as farmer, land area size, land status and number of household members.

The farmers' age were mostly older than 35 years old whose education predominantly high school graduates and had become farmer for more than 10 years. In general, they had been cultivating in their own land with area size larger than 0.6 ha and supporting 2 – 5 househol members.

Education level influence the farmers' ability in adopting technology and farming skills to manage their agricultural land. It is expected that the higher the education level of the farmers the more rationale the farmers in accepting new knowledge useful for increasing agricultural production. According to Supartha (2005), education level disparityaffect personal innovation, personal adoption to innovation and personal behaviour. Data related to the farmers' characteristic is depicted in Table 1.

Importance and Performance Analysis. The consumers' assessment on the performance of the Ciherang "Prima" rice seeds is determined by processing the primary data using a tool analysis of IPA. Using this method, it can be known which attribute demonstrate satisfying performance or not and importance to customers.

The score average for Ciherang "Prima" seeds based on importance and performance levels is presented in Table 2. Figures in Table 2 are also depicts the score averages for all importance and performance attributes. The scores are then plotted into the Cartesian diagram where X and Y values are 3.96 and 3.84, respectively. The score of each attribute depicted in Table 2 then are mapped into the same Cartesian diagram of IPA as shown in Figure 2.

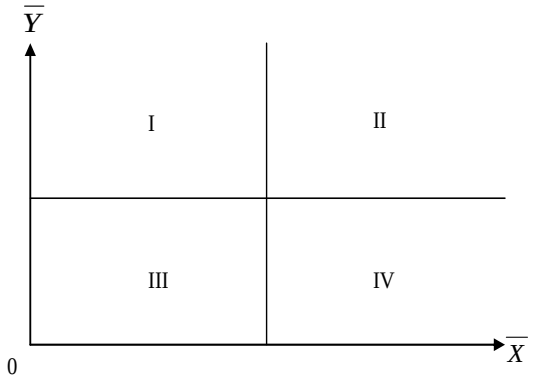

Figure1.
Cartesian Diagram of Importance and Performance Analysis (Umar, 2000)

Table 1. Respondents Characteristics

No	Age	Jumlah	Prosentase (%)
1	≤ 20 years	0	0
2	21 - 25 years	0	0
3	26 - 30 years	4	8
4	31 - 35 years	20	40
5	≥ 36 years	26	52
No	Education level	Number	Percent (%)
1	Uneducated	0	0
2	"prima"ry School	5	10
3	Secondary school	22	44
4	High School	23	46
5	Diplome	0	0
6	Bachelor	0	0
No	Period of farming experience	Number	Percent (%)
1	≤ 10 tahun	12	24
2	11 - 15 Tahun	11	22
3	16 - 20 Tahun	18	36
4	21 - 25 Tahun	6	12
5	≥ 26 Tahun	3	6
No	Land area size	Number	Percent (%)
1	≤ 0,2 ha	3	6
2	0.3 - 0,4 ha	17	34
3	0.5 ha	12	24
4	≥ 0.6 Hektar	18	36
No	Land Status	Number	Percent (%)
1	Self owning	42	84
2	Rent	8	16
No	Household member	Number	Percent (%)
1	1 person	1	2
2	2 - 3 people	29	58
3	4 - 5 people	19	38
4	≥ 6 people	1	2

Table 2. The Score Average of Product Attributes of Ciherang "Prima" Based on Importance and Performance Level

No	Attribute	Importance Level ($\overline{Y}$)	Performance Level ($\overline{X}$)
1	Price	4.02	3.80
2	Packaging	3.50	3.84
3	Volume	3.88	3.84
4	Productivity	3.98	4.18
5	Availability	3.90	4.10
6	Cleannes	3.94	3.82
	Average	3.84	3.96

Position of each attribute in every quadrant might be elaborated as follows:

a) Quadrant I

This quadrant within which product attributes considered important by consumers is in reality those attributes not yet meet the customer expectation (very low). The assessment of the consumers of Ciherang "Prima" Seed suggests that the price of the product is not meet their expectation as it is not affordable to the farmers. The range of price between IDR 52,000 – IDR 53,000 per 5 kg package is affordable for most farmers in Malang Regency whilst the price of Ciherang "Prima" seed in the market is tagged between IDR 55,000 – IDR 57,500. To improve the price attribute performance, the company need to suppres its production cost in order to lower the sale price of the seed thus it is within farmers' budget. The price suppression certainly must not compromise the product quality.

The cleannes of the seeds is one attribute considered important for the farmers. This attribute was valued as less satisfied by the farmers and did not meet their expectation. It is due to some dirtsuch as rice husk, sand, soil particles, rice straw, branches and leaves, and other varieties found in the package of Ciherang "Prima". The dirt influence the physical performance of the seed reducing its attractiveness

and the volume of the pure seed within the package. The other varietes mixed with the seed can cause uneven rice plant growth although the land productivity is not significantly affected. However, for the farmers it causes nuisance. To overcome this problem, the company should improve the performance by being more careful and thorough in the seed production process so dirt and other mixed varieties present in the seed package can be largely reduced.

The volume of seed is also an important attribute for consumers. The performance of the seed volume was valued as less satisfied by the farmers. The farmers' unsatisfaction on the volume of the Ciherang "Prima" is due to its real volume was less than that mentioned in its label. This incorrectness in the seed volume might be due to the tool that has been used for weighing the seed was no longer accurate. To overcome this problem, the company should repeatedly callibrate the tool either the automatic seed packaging machines or the manual machines.

b) Quadrant II

Quadrant II includes attributes that the consumers considered important. These attributes have high importance and performance levels and have met the consumer expectation thus the consumerr satisfaction are relatively high. Therefore, the attribute in this quadrant should be maintained by the producer. The attributes of the "Prima" seed include in this quadrant are productivity and availabiltiy.

Productivity is the attribute that become the prime consideration for the farmers in choosing the rice seed. The farmers valued the level of importance and performance as high for the productivity attribute of the Ciherang "Prima" seed. Although the facts of rice variety productivity description is generally issued by *Balai Besar Tanaman Padi* Office, the presence of good production process and sertification of rice seed will maintain high seed purity so the rice seed productivity can be maximized. In this case, the commitment of Sang Hyang Seri Company is needed to maintain the good seed production process and sertification so the performance of productivity attribute is still high.

The availability attribute is related to the availability of the seed distributed in market so far. The farmers valued the levels of the importance and performance of the availability attribute of Ciherang "Prima" seed relatively high. This is due to its easy acces and finding through agricultural shop/distributors in Malang District.

c) Quadrant III

Quadrant III includes attributes considered less important by consumers and low performance. The attributes in this quadrant have less influence on the farmers' satisfaction on the Ciherang "Prima" rice seeds. Therefore the company should reconsider to improve the performance of these attributes. The attribute including in this quadrant was seed packaging.

The seed packaging influence the consumer attractiveness on the product. Attractive package could drive candidate consumer to buy a product. It is very often that the the decision to buy a product is prompt by an interesting package design. However, it is not the case with the farmer consumers of Ciherang "Prima" seed. The consumers tend to value the packaging as less importance for their consideration in deciding to purchase the product because it does not have any effect on the quality of the seeds. To face this reality, the company do not necessarily improve the performance of this attribute, instead the company should redesign the packaging in order to increase cost efficiency as the packaging is one component determining the production cost of Ciherang "Prima" seed. Redesigning the packaging can reduce the sale price of the product thus become more purchasable for the farmers.

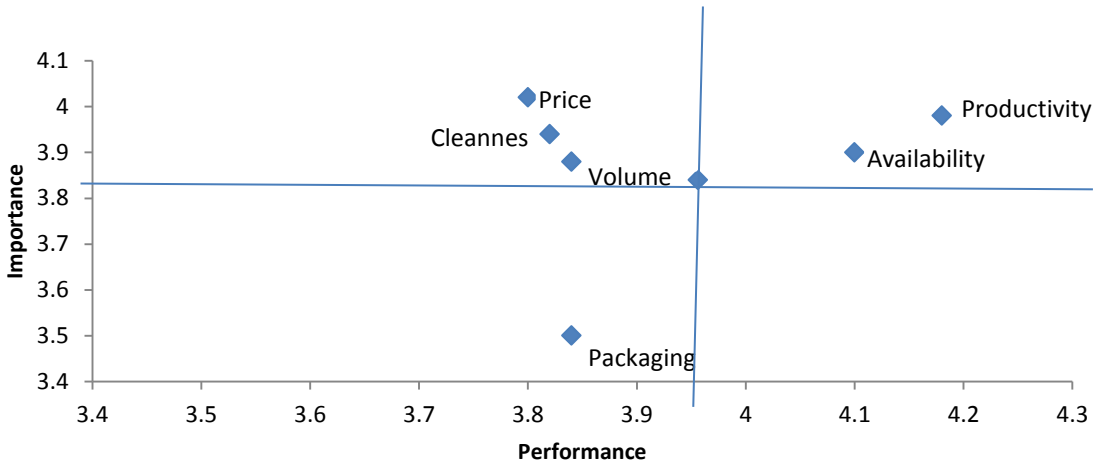

Figure 2.
The Cartesian Diagram of Importance and Performance Analysis of Ciherang "Prima" Product

CONCLUSION

The assessment of the attributes of Ciherang "Prima" seed product showed that they have high performance and satisfy consumers for availability and productivity attributes whereas the attributes with low performance and less satisfaction for consumers are price, cleanness, volume and packaging. Meanwhile, seed producers should reconsider the affordable price to farmers.

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