

## CONSUMER SATISFACTION INDEX (CSI) OF SUBSIDIZED CERTIFIED RICE SEEDS ATTRIBUTES AT MALANG REGENCY, EAST JAVA, INDONESIA

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### *Abstract*

*The aims of this research are to analyze subsidized certified rice seeds attributes, and measure the satisfaction level of certified subsidized rice seeds. 150 sample of farmers from 15 villages are used to answer the research questions. This research use methods of Importance Performance Analyses (IPA) to analyze the attributes of subsidized certified rice seeds and Consumer Satisfaction Index (CSI) to measure the level of satisfaction of the product (rice seed). The results indicate 8 attributes that fall into the category of attributes that are primarily prioritized for improvement, among others, seeds can be obtained easily and affordable, the availability of seeds can be ascertained, the purity of the seeds reaches more than 95%. The accuracy of seed quality, accuracy of seed quantity with land area, timeliness of seed distribution, and synchronization at nursery, and synchronized growth at 1 month. While the index of consumer satisfaction is in the range of 0.60 to 0.79 which means the average consumer has been satisfied but the consumer's satisfaction has not been maximized.*

**Keywords:** *consumer satisfaction index, subsidized, certified, rice seed*

### 1. INTRODUCTION

Farming subsidies have become progressively vilified in agricultural policy discussions, but the characteristic of subsidies are a disturbance from deeper political, economic, and ecological issues in agriculture (Graddy-Lovelace & Diamond, 2017). Meanwhile, the defiance faced by farming households in decision making trade the staple food crops when the priority of farming households for producing such plants or crops is subsistence. Planning the programmers to fit in climatic terms of specific territories may be more advantageous than a standard programmer for all territories. Therefore, programmers centralizing on other interventions and types of plants might produce more positive influences on income of household (Sibande, Bailey, Davidova, & others, 2017). The grain subsidy program increased farming households' grain cropping areas in liquidity-constrained households. The direct subsidy was anticipated to improve grain income of farmers. The extensive input subsidy would compensate high production costs, such as fuel and fertilizer price rises. High quality of seed subsidy and agricultural machinery subsidy were

created to drive grain producers to apply better seeds' varieties and to promote production efficiency, successively. (Yi, Sun, & Zhou, 2015). Then, it is human nature to desire to search for maximum rewards for all the attempts and actions. Accordingly, it is normal for consumers to search the best products from their budget (Khan & Mohsin, 2017).

Consumers are more distinctly possible to select the promoted label or brand if it is promoted with both price discount and bonus premium, compared to the brand when only promoted with just a price discount (Minnema, Bijmolt, & Non, 2014). Consumer preference is helpful in positioning products positively in the market and assists in product matching (Walisinghe & Gunaratne, 2012). Preferences therefore allows the consumer to classify these bundles of goods correspond to satisfaction or utility levels. While, satisfaction level derived from purchasing or consuming the product. Knowledge of consumer preferences for rice attributes make possible actors such as farmers, researchers, processors, and traders to design the proper strategies for combining or keeping such attributes during breeding, production, processing and marketing rice (Mgendi, 2014).

Theoretically, satisfaction is a function of performance and expectation impression (Kotler, 2002), which describes all feelings or attitudes toward the product of post consumption or purchase (Solomon, 2003), as the results of the evaluation meet or exceed expectations on the choice of alternative consumer or purchasing decisions (Engel et al., 1994). The level of satisfaction with the product is related to the identifiable product attributes of the concept of means-end-chain (Peter and Olson, 1996). Thus, it allows exploration of farmers' level of satisfaction with rice seed based on farmers' knowledge of characteristics, consequences and values.

The study of Rahman et.al (2004) generated that: (1) rice farmers using labelled seeds about 30-40 percent, The rest is the seed of his own production selected from the previous harvest, (2) PT SHS and PT Pertani as main seed producers only able to produce about 40-60 percent, (3) many farmers are complaining and questioning the assurance of growing power and labelled seed productivity, (4) farmers are less responsive to seeds labelled ES - Extension Seed (reflected in the number of farmers who use their own seeds, especially in the dry season) and enough response to use rice seedlings labelled SS (stock seed) or staple seed. Then, seed certification increases the quality of seed and has the potential to enhance the yield of rice and increase the income of farmer (Awotide, Awoyemi, Diagne, & Ojehomon, 2011). Therefore, the objectives of this research are to analyze the attributes of subsidized certified rice seeds and measures the level of satisfaction of certified subsidized rice seeds.

## 2. RESEARCH METHOD

The method of determining the location of the research was conducted multistage based on the varieties of subsidized rice seeds in 2013 & 2014, and obtained 15 villages from 9 districts in Malang Regency, East Java Province, Indonesia with 6 varieties of rice seeds such as *Ciherang*, *IR-64*, *Cibogo*, *Situbagendit*, *Mekongga*, *Way Apo Buru*. While respondent in this research that is consumer of rice seed subsidy from government which determined by random. The determination of the number of respondents adjusted to the field conditions, because there is a large diversity of members in each farmer group at the study site. In each sample village location, 10 respondents were assigned to the

consumers of certified subsidized rice seeds. Thus, the total respondents in the study of consumer satisfaction on the quality of rice seed products as much as 150 respondents.

The method of analysis to be implemented in consumer behavior study is the analysis of Importance Performance Analysis (IPA) and Consumer Satisfaction Index (CSI). Importance and Performance Analysis (IPA) is a simple and effective technique that can be implemented base on the determination of quality-based marketing strategy; and can assist practitioners in setting priority attributes in order to improve customer service and satisfaction (Ying-Feng Kuo and Chen, 2004). Meanwhile, Rangkuti (2003) stated that by using the concept of this level of importance, the institution can capture a clearer perception of the importance of a variable in the eyes of the customer.

Meanwhile, CSI (Customer Satisfaction Index) is a method of using index to measure the overall level of customer satisfaction on a product type. Implementation of this method is based on attributes attached to the product and will produce data in the form of scale. This scale data has some range between the numbers of 0.00 to 1.00 which in each range have unequal interpretations, ranging from not satisfied to very satisfy.

## 3. RESULTS AND DISCUSSION

### 3.1. Importance Performance Analysis

Lamongan regency consists of 27 districts. Data shows that Lamongan's food security potential includes rice, corn and soybeans. The success of the realization of food security in Lamongan is evidenced by the percentage of planting and harvesting achievement of the three main commodities. The percentage of planting and harvesting is at 100% or higher, therefore it can be said that the planting and harvesting target has been reached.

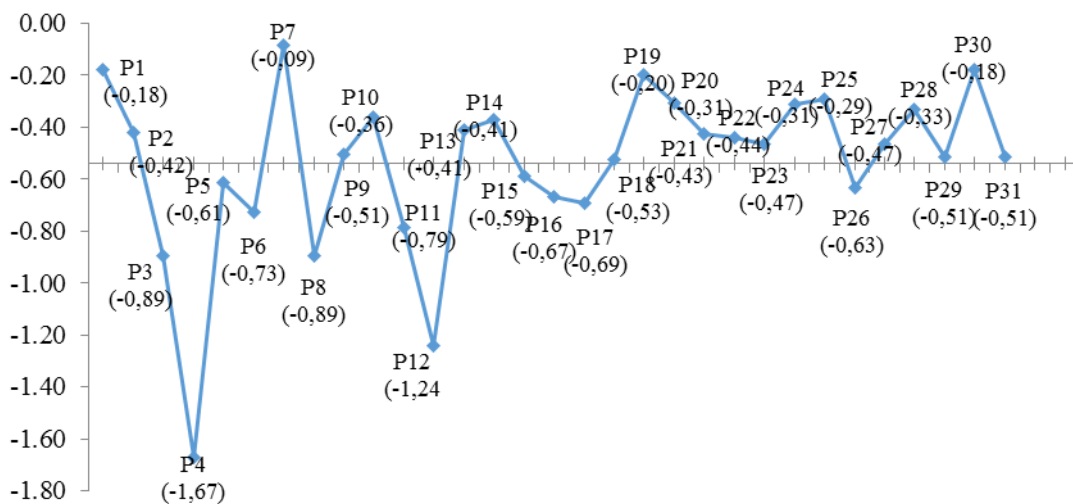
IPA analysis is done by comparing the performance of product quality perceived by respondent significantly with the importance of the respondent about each attribute attached to the related product. In this case, the quality of the rice seed product under study is represented by the attributes attached to the product. The attributes are stated in the statement item confirmed to the farmer during the interview. Scores of performance and importance values are obtained based on respondents' answers to

respondents' perceptions and actual experience of consuming or using the product. To see the level of satisfaction on each attribute in each type of consumer respondent rice seed using gap analysis. The magnitude of the gap value needs to be known in order to perform the graphic depiction that becomes one of the stages in the IPA analysis. The gap value is known by looking at the difference between the average performance value of the quality and the average

value of consumer interest of the attribute in question. The average value of interest and performance are gained by dividing the value of performance and importance value by the number of respondents.

In order to analyze consumer satisfaction using Importance Performance Analysis (IPA), there are 31 considered attributes can be seen in Graph 1.

Graph 1. Gap value between importance and performance attributes for Subsidized Certified Rice Seeds



Explanation of considered attributes:

- P1. Seed packs contain of right information
- P2. Seed packs are made of strong material, according to seed type and weight
- P3. Seeds can be obtained easily and affordably
- P4. Seed availability can be ensured
- P5. Seed price are affordable
- P6. Purity seeds are more than 95%
- P7. Seeds are from evident producers
- P8. There are bonuses/presents/discounts
- P9. Accuracy of given quality seeds
- P10. Accuracy of given variety seeds
- P11. Accuracy of seeds quantity with land area
- P12. Accuracy of seeds distribution time
- P13. Accuracy of seed distribution location
- P14. Be able to grow in any type of land (irrigated and non-irrigated)

- P15. Ability level of germinate
- P16. Growth synchronicity in the seedbed
- P17. Growth synchronicity at 1 month
- P18. Growth synchronicity flowering time
- P19. Green leaf color
- P20. Large and strong stems
- P21. Age of plant
- P22. Height of plant
- P23. Unmilled rice quantity > 120 grains per panicle
- P24. Seedling productive > 20 seedlings
- P25. High resistance of falling
- P26. Plant resistant to pest and disease
- P27. Returns rate from unmilled rice to rice is 60-70%
- P28. Broken rice < 30%
- P29. Rice color is calcareous white
- P30. Unmilled rice water content is 9-13%
- P31. Rice has good texture rice and special fragrance

Whole attributes have negative gap value. It is in line with the value of compliance level in which none of them does not reach 100%. In order to know which attributes that should be improved, those are the attributes which have the largest gap value which is under mean value.

According to the following graph, 11 of 31 attributes are under importance value of farmers as consumers. It is shown by the position of attributes points are under gap line which is -0,54. Those 11 attributes are seeds can be

obtained easily and affordably, seed availability can be ensured, seed price are affordable, purity seeds are more than 95%, there are bonuses/presents/discounts, accuracy of seeds quantity with land area, accuracy of seeds distribution time, ability level of germinate, growth synchronicity in the seedbed, growth synchronicity at 1 month, and plant resistant to pest and disease. It indicates that product quality improvements need to be considered.

Furthermore among 20 attributes in which

their positions are above gap line, attribute which reaches the top position is seeds are from evident. Subsidized seed has been recommended by the government. That is why seed suppliers are agroindustry firms which have fulfilled government standards.

Consumer satisfaction is fulfilled its importance value is 100%. In general, the value of performance mean is -0,54 while importance mean is 87,15%. Those value is still under 100%. Thus it is shown that product performance does not equal to consumer importance level.

### 3.2. Consumer Satisfaction Index

Consumer Satisfaction Index (CSI) is method using index to measure consumer satisfaction level in consuming a product. This method is conducted based on considered attributes and will result the data in scale measurement. This scale lies on 0 to 1 in which for each scale has different interpretation starting from not satisfied to very satisfy. CSI calculation is shown by Table 1.

Table 1. CSI Calculation for Subsidized Certified Rice Seeds

No.	Attributes	Mean Important Score (Total Yi / N)	Weight Factors (MISi / Total MIS)	Mean Satisfaction Score (Total Xi / N)	Weighted Score (MSSi x WFi)
1.	Seed packs contain of right information	4,11	0,03	3,93	0,12
2.	Seed packs contain of right information	4,27	0,03	3,85	0,13
3.	Seeds can be obtained easily and affordably	4,36	0,03	3,47	0,12
4.	Seed availability can be ensured	4,48	0,03	2,81	0,10
5.	Seed price are affordable	4,36	0,03	3,75	0,13
6.	Purity seeds are more than 95%	4,19	0,03	3,46	0,11
7.	Seeds come from righth producer	3,74	0,03	3,65	0,11
8.	There are bonuses/presents/discounts	3,53	0,03	2,63	0,07
9.	Accuracy of given quality seeds	4,23	0,03	3,72	0,12
10.	Accuracy of given variety seeds	4,21	0,03	3,85	0,13
11.	Accuracy of seeds quantity with land area	4,39	0,03	3,61	0,12
12.	Accuracy of seeds distribution time	4,36	0,03	3,12	0,09
13.	Accuracy of seed distribution location	4,16	0,03	3,75	0,10
<b>Agronomic Characteristic</b>					
14.	Be able to grow in any type of land (irrigated and non-irrigated)	3,83	0,03	3,45	0,11
15.	Ability level of germinate	4,27	0,03	3,69	0,14
16.	Growth synchronicity in the seedbed	4,22	0,03	3,55	0,14
17.	Growth synchronicity at 1 month	4,25	0,03	3,55	0,14
18.	Growth synchronicity flowering time	4,14	0,03	3,61	0,13
19.	Green leaf color	4,09	0,03	3,89	0,13
20.	Large and strong stems	4,17	0,03	3,87	0,13
21.	Age of plant	4,22	0,03	3,79	0,14
22.	Height of plant	4,06	0,03	3,62	0,13
23.	Unmilled rice quantity > 120 grains per panicle	4,39	0,03	3,92	0,15
24.	Seedling productive > 20 seedlings	4,39	0,03	4,07	0,15
25.	High resistance of falling	4,27	0,03	3,98	0,14
26.	Plant resistant to pest and disease	4,28	0,03	3,64	0,12
<b>Physical Quality Characteristic</b>					
27.	Returns rate from unmilled rice to rice is 60-70%	4,24	0,03	3,77	0,12
28.	Broken rice < 30%	4,09	0,03	3,76	0,12
29.	Rice colour is calcareous white	3,91	0,03	3,39	0,10
30.	Unmilled rice water content is 9-13%	4,09	0,03	3,91	0,12
<b>Organoleptic Characteristic</b>					
31.	Rice has good texture rice and special fragrance	4,07	0,03	3,55	0,11
TOTAL		129,37	1,00	112,61	WAT= 3,64
$CSI = (WAT / 5) \times 100\%$ $CSI = (3,64/5) \times 100\% = 72,74\% (0,73)$					

According to the Table 1, the CSI score is 0.73 (72.74%) which indicates that farmers at the study site were satisfied with the performance of the subsidized seeds received during the planting season. The level of satisfaction felt by subsidized seed farmers is not yet optimal because there are still 13% of the subsidized seeded rice attributes that are not as expected (on a scale of 1 and 2: very dissatisfied and dissatisfied), namely attributes of seed availability, bonus attributes / gift or discount, the ability to grow on various types of land, and the attribute rice color is calcareous white. Besides that, 68% of the other attributes are on scale 3, which is neutral, and there are no attributes that farmers respond to on a scale of 5 (very satisfied). But if averaged as a whole, the index found is on a scale of 4 (satisfied) so that in the future it can be an evaluation for the government in providing certified subsidized rice.

#### 4. CONCLUSION

In improving attributes, there are 8 attributes that should be taken into account. Those are: Seeds can be obtained easily and affordably, seed availability can be ensured, seed price are affordable, purity seeds are more than 95%, accuracy of given quality seeds, accuracy of seeds quantity with land area, accuracy of seeds distribution time, growth synchronicity in the seedbed, and growth synchronicity at 1 month. According to CSI result, farmer as consumers has been satisfy but they have not reached maximal condition in which its index varies between 0,8 to 1.

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