

# Product Quality of Rice and the Consumer Preference Level: An Approach Analysis of Product Attribute

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**Abstract**—Research about product quality and consumer preference level has been done by some researchers, but there is still few of them who talked about the effect of product quality attribute to consumer preference level. This research aims to review product quality attribute and consumer preference level of rice product in Indonesia. There are 100 Indonesian people involved as respondents which are the consumer of rice. This research uses the attribute approach to analyze the level of consumer preferences. There are some hypothesis submitted on this research and tested through paired sample test to analyze product quality attributes from different consumer preference level. Result shows that some of the product quality attribute is not significant to consumer preference level from the three types of rice used in this research (DekorCisadane, IR64, and Pandan Wangi). However, there is an interesting finding that product quality attribute of IR64 rice type determine a buying frequency level.

**Keywords**—product quality, consumer preference level, product attributes, rice.

## I. INTRODUCTION

There are many attributes that are considered by consumers in choosing a product; one of them is the product quality. Consumers are definitely looking for a product with the best quality. Product quality is a whole feature and characteristic of product or service that can satisfy the needs in visible or implied [1]. Therefore, producers have to maintain their best product quality, so that customers do not change their preference to another product, or even better making them become a loyal consumer. Because a good product quality influence consumer to repeat buying the same product, even make the consumer loyal to a product [2].

As people know, rice is something that can not be separated from the human life. Rice is a staple food especially for Indonesian people. Even there is a famous term among Indonesian people that says “it is not eating if we have not eaten rice yet”. Based on that, many business industries engaged in staple food especially rice, can keep their existence in the business world because the demand of rice will never stop.

There are various kinds of paddy used as a raw material in Indonesia to produce rice, they are Ciherang, Bestari, Sentanur, IR64, Cibogo, Cisadane, PadiPeta, PadiPulen, Sticky Rice(PadiKetan), and Aromatic Rice (Pandan Wangi) [3]. The price of rice at the wholesale markets are varies, start from Rp

6.800/kg for DekorCisadane rice, Rp8.000/kg for IR 64 rice, and for the most expensive rice is Pandan Wangi (PW) rice which has already above Rp 10.000/kg.

The rice traders always try to maintain the product quality of their product. One of the ways is by choosing the raw material (which is rice) through some characteristics it has, which is by giving more attention to the attributes like the fluffiness level, durability, shape or texture, and aroma. Those things are aimed to make consumer have a willingness to make a repeat purchasing, recommend to another consumer, and reject another same product. Therefore, consumer preference levels of rice product become important. This paper examine about society perception of the product quality of rice and consumer preference level of the rice product. Product attribute analysis is used as an analysis approach to map each of the rice type based on the rice attributes.

## II. CONCEPTUAL FRAMEWORK

Product quality is the ability of a product to perform its functions. Those capabilities are including durability, reliability, precision produced, ease to operate and repaired, and other attributes that valuable to the whole products [4]. According to Oliver [5], the preference level is mentined as the level preference of the loyal customers to re-subscribe or re-purchase selected products or services consistently in the future, although the influence of the situation and marketing business have potential effect to make behavioral change.

This research also uses the approach of product attribute to analyze quality of the product on the level of consumer preferences. The preference of some people over the goods or services they purchased are not actually located on the goods itself but from the characteristics or attributes attached on the corresponding goods. In other words, when someone buy a goods, they do not actually buy the goods but they buy the attributes on the product itself. The attributes of a goods does not only one, but there are some [2]. There are five product attributes that are used in this study, namely the fluffiness level (tingkat kepulenan), rice durability, form/texture of rice, scents and many rice assortments. The level of consumer preferences also measured using five indicators namely the frequency level of purchasing the rice products, willingness to recommend product to other people, refused to use another similar product, affordable cost, and will not be attracted to other products.

There are some researches that focus on product quality

and the level of consumer preferences, one of them is done by Sutanty [6] who examine the influence of product quality on the D'LOOPS Clothing Company against customer loyalty. The result shows that there is the influence between product quality and the customer loyalty. Indicators that are used for product quality are durability, comfort, shape and design. While the indicators for the level of consumer preferences that are used including the frequency of purchase, recommending to other people and refused to use another similar products. Another research was done by Marisa [7] who has examined the influence of product quality on the Sentra Sepatu (shoes) and bags with the brand of "Diana" against customer loyalty with the indicator of product quality and customer loyalty is almost the same with the research done by Sutanty [6]. Its findings indicate that there is a positive relationship between product quality and customer loyalty. Based on the results of the earlier research, it can be concluded that the level of consumer preferences for a specific products are caused by the good product quality and capability to fulfill customer satisfaction.

Product quality is a whole features and characteristics of a product or service that can satisfy customer needs whether it is visible or implied [1]. The level of consumer preferences is the situation where consumers are thinking positive toward a product or a manufacturer and followed by a consistent re-purchase pattern [8]. Of course, the products searched by consumers are products that have a high quality. If any five of the product attributes and any five indicator level of the consumer preferences get a good and positive response from respondents, then it can be said that the product attribute has the influence of the consumer preferences level. With the good quality of the rice products, the consumers are willing to do the repurchase, even make the consumer loyal with the rice product.

### III. RESEARCH METHOD

There are 100 people involved as a respondent in this research. The data collection in this research are based on primary data and secondary data. While the data collection technique used is interview, which is a process to obtain information for research purposes through debriefing in face to face with the rice consumers of a certain rice types. Based on the data collected from the results of the distributed questionnaire, those data then processed and analyzed through SPSS computer program. In addition, this research also uses the attribute approach to analyze product quality attributes from different consumer preference level.

### IV. RESULTS

#### A. The characteristics of respondents

In this research, there are 100 respondents of rice consumers have been participated. The questionnaire consists of two parts, the first part is about the attributes of products and the second part is about the level of consumer preferences. To be able to

describe about the consumers who become the object of this research, the following will be elaborated under the grouping of respondents by gender, work, and monthly expenses of respondents. This is done with the purpose that can actually generate a response which can represent the number of respondents who will be examined. The following is the classification of respondents based on some grouping criteria.

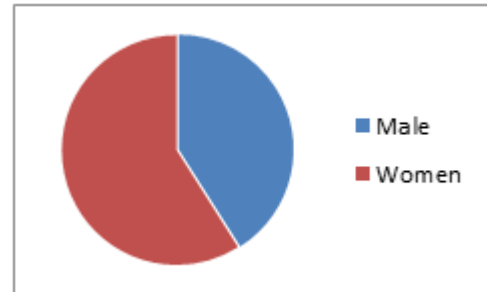


Fig. 1: The characteristics of respondents based on Gender

Based on Figure 1, there are 41 % of male and another 59 % of female, with the total number of the respondents are 100.

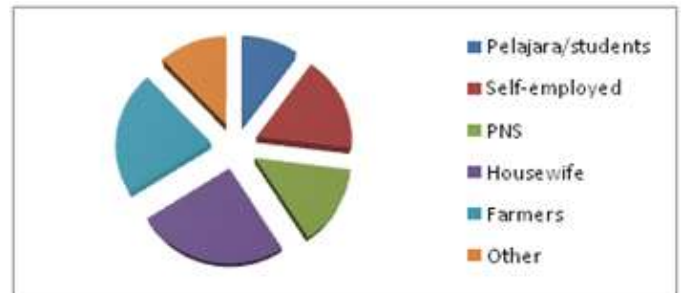


Fig. 2: The characteristics of respondents based on Occupations

Figure 2 shows that there are 10% of respondents are students, 17% of respondents are entrepreneur, 14% of respondents are blue collar workers (PNS), 25% of respondents are housewife, 22% of respondents are farmers and the remaining 12% are having another work. It can be seen that the housewife is the most respondents to be analyzed.

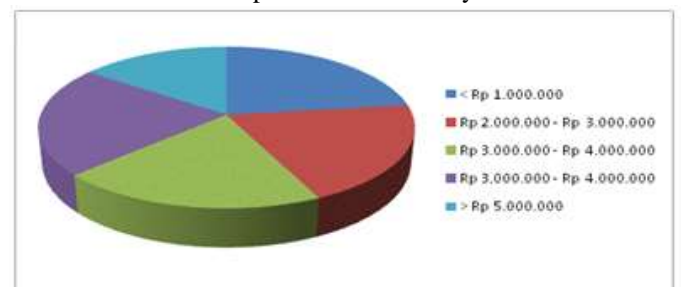


Fig. 3: The characteristics of respondents based on Monthly Expenditure

Figure 3 show that all categories have almost same percentage in the differences of the level of monthly expenditure.

#### B. Reliability tests

The following (table 1) are the results of reliability tests by using SPSS program. Based on the results of the reliability tests

conducted on all variables in this research, it shows that all of research items are reliable because the coefficient reliability of CronbachAlpha’s value is more than 0.60, so it can be concluded that all items are stated reliable.

*C. Analysis of Consumer Response to The Rice Product Quality*

To find out the respondents perception about the product quality of rice, this research combined various product attributes among the three types of rice that is analyzed (DekorCisadane, IR64, Pandan Wangi/PW). In this case, there are five product attributes for each type of rice the fluffiness level (tingkatkepuenan), rice durability, form/texture of rice, scents and many rice assortments. For more details about the results from combining those attributes, it can be seen in the table 2:

TABLE I: THE RESULT OF RELIABILITY TEST

The variables	Cronbach's Alpha
The quality of DekorCisadane Rice	0.74
The quality of IR64Rice	0.70
The quality of Pandan Wangi (PW) Rice	0.62
The level of consumer preferences	0.90

TABLE II: RESPONDENTS PERCEPTION OF THE FLUFFINESS LEVEL AND THE RICE DURABILITY OF THREE TYPES OF RICE

Type of Rice	Attribute Rating		The Price Per Unit (Rp)	Total (Kg)	Efficiency frontier	
	The level of Fluffiness	The durability of Rice			The level of Fluffiness	The durability of Rice
DekorCisadane	551	573	6.800	294,12	162.060,12	168.530,76
IR64	623	632	7.500,00	266,67	166.135,41	168.535,44
Pandan Wangi (PW)	685	756	8,000	250	171.250,00	189.000,00

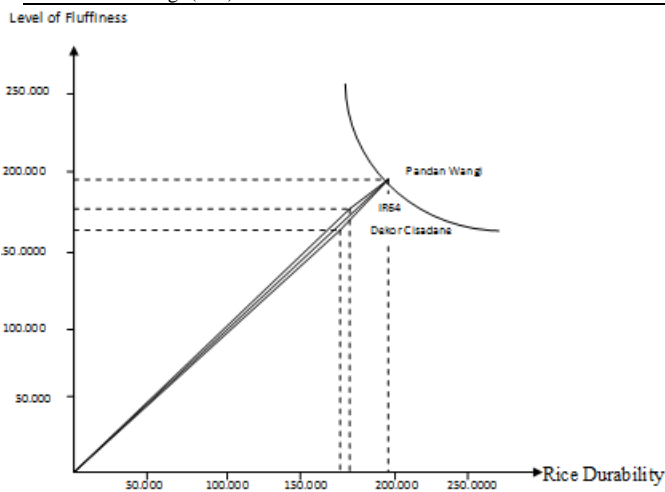


Fig. 4: Respondents Perception between the Level of Fluffiness and Rice Durability

of rice, it can be noted that the Pandan Wangi rice (PW) have the best value of fluffiness level and rice durability, it has the highest rating attribute of 685 for the fluffiness level and 756 for the durability of rice. While the DekorCisadane rice has the lowest rating attribute, they are 551 for the fluffiness level and 573 for the rice durability, which can be concluded that DekorCisadane rice has the lowest fluffiness level and rice durability among the other three types of rice.

Based on the Table 2, after combining the product attribute between the fluffiness level and rice durability of the three types

TABLE III: RESPONDENTS PERCEPTION OF THE FLUFFINESS LEVEL AND THE SHAPE OR TEXTURE OF THREE TYPES OF RICE

Type of Rice	Attribute Rating		Price Per Unit (Rp)	Total (Kg)	Efficiency frontier	
	The level of Fluffiness	The Shape or Texture of Rice			The level of Fluffiness	The Shape or Texture of Rice
DekorCisadane	551	572	6.800	294,12	162.060,12	168.236,64
IR64	623	625	7.500,00	266,67	166.135,41	166.668,75
Pandan Wangi (PW)	685	824	8,000	250	171.250,00	206.000,00

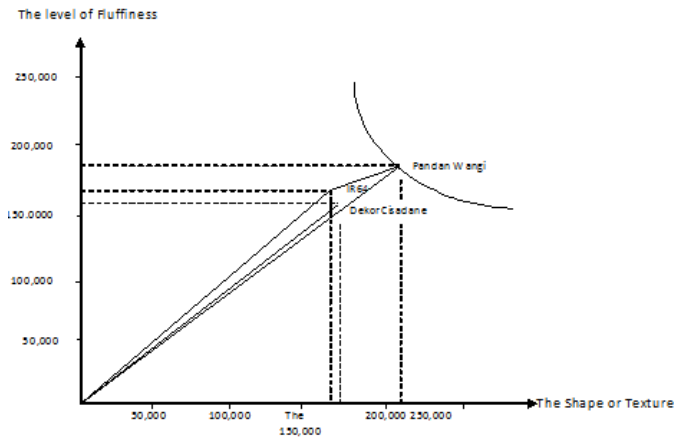


Fig. 5: Respondents Perception between The Fluffiness Level and The Shape or Texture of rice

TABLE IV: RESPONDENT PERCEPTION OF THE FLUFFINESS LEVEL AND AROMA OF THREE TYPES OF RICE

Type of Rice	Attribute Rating		Price Per Unit (Rp)	Total (Kg)	Efficiency frontier	
	The level of Fluffiness	The scent			The level of Fluffiness	The Rice Scent
DekorCisadane	551	632	6.800	294,12	162.060,12	185.883,84
IR64	623	734	7.500,00	266,67	166.135,41	195.735,78
Pandan Wangi (PW)	685	734	8,000	250	171.250,00	183.500,00

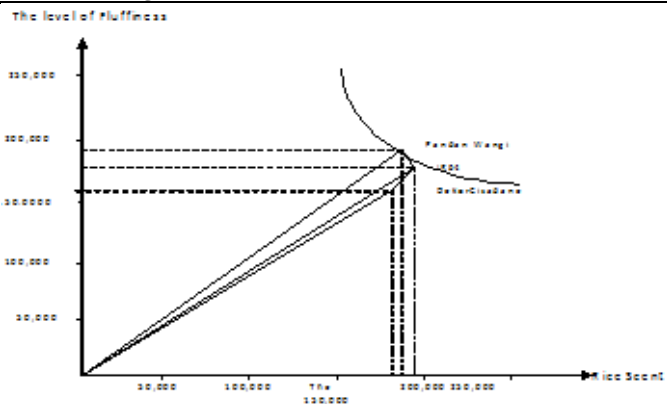


Fig. 6: Respondents Perception of The Fluffiness Level and The Rice Scent

After combining the product attribute between the fluffiness level and the rice scent of the three types of rice, as seen in table 4, it is known that Pandan Wangi (PW) rice is the fluffiness rice among other three rice types, because it has the highest attribute ratings with the value of 685. While for product attribute scent, IR64 rice and Pandan Wangi (PW) rice have the same attribute rating with the value of 1018. Therefore, DekorCisadane rice has the lowest attribute ratings with the value of 632, which means that DekorCisadane have the least aroma of all three types of rice.

*A. Consumer Response Analysis of the Level of Consumer Preferences on the Rice Products*

To determine the level of consumer preference on the rice product, the data collection has been conducting through questionnaire technique. This has done by distributing the questionnaire to 100 people respondents. Where the level of consumer preferences are measured using five indicators, which are the purchase frequency of the rice product, willingness to recommend the product to other people, refused

Table 3.is shown as the combining result of product attribute between the fluffiness level and the shape or texture of rice. From those, it can be seen that Pandan Wangi (PW) rice is the fluffiest rice among other types of rice, because it has the highest attribute rating with the value of 685. Pandan Wangi (PW) also has the best shape or texture on the rice types with the value of 824, which is the highest attribute rating among other rice types. DekorCisadane rice is the opposite of Pandan Wangi rice, because it has the lowest attribute rating among other type of rice, with the value of 551 for the fluffiness level and the value of 572 for the shape or texture of rice.

to use another similar product, affordable prices and will not be interested to other products. The following table (Table 5) is the response of the consumers about the level of consumer preferences of the rice products:

TABLE V: THE LEVEL OF CONSUMER PREFERENCES ON THE RICE PRODUCTS

Consumer Preferences indicator	The answer that says "Yes"	The answer that says "No"
The purchase frequency of rice product	67 (67%)	33 (33%)
Will recommend to others	60 (60%)	40 (40%)
Refused To use similar product	58 (58%)	42 (42%)
Affordable Prices	59 (59%)	41 (41%)
Will not interested to other products	55 (55%)	45 (45%)

In Table 5, it can be seen that from 5 measured indicator used, the respondents who give the “yes” answer are more dominant compared to respondents with the “No” answer in overall. Where in the first indicator, as many as 67 people or 67 percent of respondents stated that they often buy the rice product and the remaining 33 people or 33 percent of respondents expressed that they do not often buy rice products. For the second question indicator, as many as 60 people or 60 percent of respondents said that they would recommend the rice product to other people and the remaining 40 people or 40 percent of respondents expressed will not recommend the rice product to other people. From the third indicator, as many as 58 people or 58 percent of respondents will refuse to use similar product and the remaining 42 people or a 42 percent of respondents will not refuse to use similar product. For the fourth indicator, as many as 59 people or about 59 percent of respondents said that the price of rice is affordable and the remaining 41 people or 41 percent of respondents said that the price of rice is not affordable. And to the last indicator, as many as 55 people or 55 percent of respondents expressed that they will not interested to other products while the remaining 45 people or by 45 percent of respondents expressed that they will interested to other products.

## V. DISCUSSION

From the three types of rice examined in this paper, DekorCisadane, IR64 and Pandan Wangi (PW), it can be inferred that the Pandan Wangi rice has the best product quality. It is based on the response of the respondents about product quality of the three types of rice. The product quality of rice that is measured by five indicators, which are the rice fluffiness level, rice durability, rice shape or texture, aroma and many rice assortments, resulting that Pandan Wangi (PW) rice has the highest attribute rating from each of indicators used. It indicates that Pandan Wangi (PW) rice has the best quality among the three types of rice. However, this does not mean that DekorCisadane rice and IR64 rice have not a good quality rice. DekorCisadane rice and IR64 rice also have a good quality with a good attribute ratings, it is just the attribute rating that those two type of rice is not as high as the attribute rating of Pandan Wangi (PW) rice. In other words, the quality of DekorCisadane rice and IR64 rice is lower than that of the quality of Pandan Wangi (PW) rice.

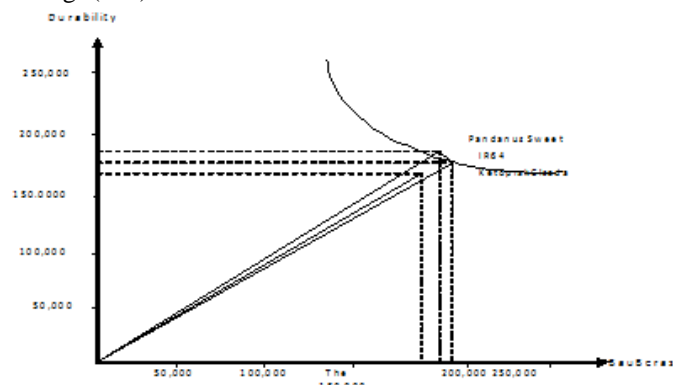


Fig. 7: Respondent Response of Rice Durability and Rice Aroma

The level of consumer preferences for the rice products is well said. It is inferred from the measurement of five indicators, which are the purchase frequency of the rice product, willingness to recommend the product to other people, refused to use another similar product, affordable prices and will not be interested to other products, that generally respondents who give the "yes" answer are more dominant compared to respondents with the "No" answer. Where the "Yes" answer means that respondents often buy the rice product, respondents will recommend the rice product to others, respondents refused to use other similar products, agreed that the price is affordable and will not interested to other products. While the "No" answer has the opposite meaning with the "Yes" answer.

Most of the product attribute does not affect the level of consumer preferences. But there is some interesting findings on the type of rice IR64, that there is an influence between product quality attribute and the purchase frequency. The purchase frequency is one of the indicators of the consumer preference level. It indicates that with the good product quality, the purchase frequency of consumers will increase/often, so that the level of consumer preferences can be maintained. Based on that, the rice producers should maintain the quality of

their products, even improved their product, so that consumers will remain loyal on the rice product. In addition to the findings of the hypothesis, there are other interesting findings, namely the ability of IR64 rice to compete with product quality of Pandan Wangi (PW) rice in the case of product attribute aroma. For more details, it can be seen in the Figure 7.

From the Figure 7, it can be seen that Pandan Wangi (PW) rice is not superior at all of product attribute that consists of five quality indicators, namely fluffiness level, durability, shape/texture, aroma and many rice assortments. IR64 rice able to compete Pandan Wangi (PW) rice through product attribute aroma. From these findings, the rice producers are expected to maintain the quality of their products continuously, or even make some improvement, especially the improvement of the DekorCisadane and IR64 rice quality. So that those two types of rice have a high competitiveness and no gap of long differences with Pandan Wangi (PW) rice in various product quality attribute.

## REFERENCES

- [1] N.J. Setiadi, *Perilaku Konsumen: Perspektif kontemporer pada motif, tujuan dan keinginan konsumen*, rev. ed. Jakarta.: Kencana Prenada Media, 2010, ch. 2, pp. 45-47
- [2] N.J. Setiadi, *Business Economics and Managerial Decision Making: Aplikasi Teori Ekonomi dan Pengambilan Keputusan Manajerial dalam Dunia Bisnis*, Jakarta.: Kencana Prenada Media, 2008, ch. 4, pp. 64-67
- [3] Kasamogo. (November, 2011). *Jenis Padi di Indonesia Yang Ada Di Pasaran*. Available: <http://kasamago.wordpress.com/2011/10/21/jenis-padi-di-indonesia-yang-ada-dipasaran/>
- [4] P. Kotler and N. Armstrong, *The Principles of Marketing*, 8th ed. Chichester, U.K.: Wiley, 2011, ch. 1, pp. 15-17.
- [5] R. Hurriyati, *Bauran Pemasaran dan Loyalitas Konsumen*, Bandung: Alfabeta, 2005, ch. 5, pp. 87-88.
- [6] N. N. Sutanty, "Pengaruh Kualitas Produk Terhadap Loyalitas Konsumen Pada D'LOOPS Clothing Company," Bachelor. thesis, Dept. Business and Management., Widyatama Univ., Bandung, Indonesia, 2008.
- [7] N. Marissa, "Pengaruh Kualitas Produk Terhadap Loyalitas Konsumen Pada Sentra Sepatu dan Tas Diana," Bachelor. thesis, Dept. Business and Management., Widyatama Univ., Bandung, Indonesia, 2009.
- [8] F. Tjiptono, *Pemasaran Jasa*, 1st ed. Malang-Jawa Timur; Bayu Media Publishing, 2006, ch. 3, pp. 57-58.