



Research Article

Level of Consumer Satisfaction Towards Brown Rice in Malang District: A Customer Satisfaction Index (CSI) Analysis

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ARTICLE INFO

Article history

Received July 31, 2024

Revised October 7, 2024

Accepted October 30, 2024

Published October 31, 2024

Keywords

Brown Rice

Consumer Satisfaction

Level of Importance

Performance level

ABSTRACT

In general, the current demand for brown rice does not receive the same attention from the public as white rice. So, it is important to further understand consumer behavior related to consuming brown rice because this has an impact on consumer satisfaction and has an impact on the strategies formulated by producers. Thus, this study aims to assess the level of consumer satisfaction with brown rice and evaluate the performance and importance of certain attributes. The variables analyzed include product quality, price, and benefits. This study applied a quantitative approach with Accidental Sampling technique, involving 100 respondents who were analyzed using the Customers Satisfaction Index (CSI) technique. The results of these findings indicate that the product quality variable (Taste) has the highest level of importance and performance, with values of 4.56 and 4.49, respectively. The level of satisfaction of brown rice consumers in Pakis District, Malang Regency, reached 74.53%, which is classified as satisfied (range 60.1% - 80.0%). The suggestions given are that producers need to improve the quality of brown rice in terms of taste, color, and texture, while marketers are advised to utilize social media and creative campaigns to attract young consumers and offer discounts for large purchases to increase customer satisfaction.

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INTRODUCTION

Rice is a common type of food consumed by Indonesians. According to Rizal et al. (2020) stated that rice is the main staple food that is often consumed by the population in Indonesia and is now a very important food ingredient. Meanwhile, Federici et al. (2021) explained that white rice is more in demand by consumers than brown rice because brown rice requires a longer cooking time, has a chewier texture, and an attractive appearance. Based on a report by the Badan Pusat Statistik (2024), the average rice consumption of Indonesians increased to 1.45 kg per week in 2021. However, brown rice is also very good for health as it contains anthocyanins in addition to carbohydrates, fat, protein, fiber, and minerals. According to Hernawan & Meylani, (2016) anthocyanins are red pigments contained in the rice skin layer that function as antioxidants. This explains that brown rice has a higher nutritional content than white rice, which makes it better. In addition, brown rice is also a healthy food for weight loss and diabetes (Agung et al., 2023). In general, people consume brown rice the same as consuming white rice. Meanwhile, according to Kabeakan, (2019) based on respondents in East Java province stated that the introduced

brown rice is better than white rice, generally respondents like brown rice because it tastes different from white rice.

However, when compared to rice in general, the demand for brown rice is not currently a top priority. In contrast, some areas in Malang Regency produce as much as 800 kg of brown rice every quarter, with a land area of 0.1 (Dewi & Hayati, 2021). One of the brown rice agents in Malang Regency is “the Indonesian Organic Rice Wholesaler” located at Jl. Subali XIII 12A No. 2 Pakis District, Malang Regency. Apart from marketing brown rice, this agent also distributes various kinds of organic rice, one of which is brown rice to various cities. In addition, brown rice is also marketed in various modern markets, namely Transmart, Superindo, Indomaret and Alfa Mart. Thus, it is important to understand consumer behavior.

Understanding the consumers is very important for producers or marketers, because the goal is to increase customer satisfaction. According to Surti & Anggraeni, (2020) explains that customer satisfaction is the level of a person's feelings after comparing the perceived performance with his expectations. The main target of every company in marketing management is to increase customer satisfaction and customer value. Rizal et al. (2020) explain that the price, quality, and benefits of brown rice are some of the factors that influence the level of consumer satisfaction with brown rice. Therefore, this explanation aims to analyze the level of consumer satisfaction with brown rice in Malang Regency.

Previous studies have shown that customer satisfaction with organic rice products is influenced by its service quality, product quality, and price (Riyandani et al., 2021) pandanwangi organic rice satisfaction level (Ahmad & Mohammad, 2020). However, there are still few who conduct research related to the level of brown rice satisfaction. So that the differences in this study with the previous one are in the research object, variables, and analysis methods. Where in previous studies the analytical method used was multiple linear regression and the research site was conducted in Cianjur. While this research uses the CSI method and is in Malang Regency. Based on the description above, it is necessary to conduct research on the level of consumer satisfaction with brown rice in Malang Regency.

METHOD

This study uses quantitative methods. Sugiyono (2016) explains that the quantitative approach measures, analyzes, and describes social phenomena with numerical data. In addition, this research was determined intentionally, namely at one of the Indonesian Organic Rice Wholesalers Jl Subali XXII, No. 2, RT 01 / RW 18, Keduyo Mangliawan, Pakis District, Malang Regency, in May-June 2023. The data used in this study is primary data. Primary data sources were obtained from consumers who consume brown rice at the Indonesian Organic Rice Wholesaler, Keduyo Mangliawan, Pakis District, Malang Regency.

Sampling Method

The sampling method in this study uses an *Accidental Sampling*. This is a sampling technique by chance or whoever the brown rice consumer happens to meet with the researcher (Nasution et al., 2019). The number of samples in this study were 100 respondents. The sample criteria in this study are consumers who consume brown rice as another staple food.

Data Analysis

The analysis technique used is Customer Satisfaction Index analysis, because this method is able to measure the level of customer satisfaction comprehensively by considering all factors related to satisfaction (Novita et al., 2020). CSI analysis evaluates customer satisfaction based on four stages.

- a. Determine The Means Important Score (MIS) and The Mean Satisfaction Score (MSS).

$$MIS = \frac{\sum_{i=1}^n y_i}{n}$$
$$MSS = \frac{\sum_{i=1}^n X_i}{n}$$

It's known that:

n = Number of Brown Rice Consumers

$\sum_{i=1}^n y_i$ = sum of attribute importance values Y to-i

$\sum_{i=1}^n X_i$ = sum of attribute importance values X to-i

b. Determining the Weight Factors (WF) value. Third,

$$WF = \frac{MIS_i}{\sum_{i=1}^p MIS_i} \times 100\%$$

It's known that:

MIS_i = Average value for i

$\sum_{i=1}^p MIS_i$ = Average Total Importance from i to p

c. Calculate the Weight Score value (WS).

$$WS_i = WF_i \times MSS$$

It's known that:

Wfi = Consideration Factors to- i

d. Calculate The Costumers Satisfaction Index (CSI).

$$CSI = \frac{\sum_{i=1}^p WS_i}{HS} \times 100\%$$

It's known that:

CSI = Customer satisfaction Index (%)

$\sum_{i=1}^p WS_i$ = The average total importance from i to p

HS = The highest scale used.

The measurement of variables in this study is designed through a linear scale, where the level of customer satisfaction is obtained through a numerical linear scale in the table below.

Table 1. Linear Scale Measurement

00,00%	Very Unsatisfied
20,01%	Not Satisfied
40,01%	Normal or Neutral
60,01%	Satisfied
80,01%	Very Satisfied

Source: Primary Data, processed 2023

RESULTS AND DISCUSSION

Consumer's Characteristics

Based on the results of interviews in the study using available questionnaires, there were 100 respondents who purchased brown rice at the Indonesian Organic Rice Wholesale Keduyo Mangliawan, Pakis District Malang. The following are the characteristics of consumers in this study.

Table 2. Consumer's Characteristics

No	Consumer's Characteristics	Total	%
1	Gender		
	Male	27	27
	Female	73	73
2	Ages		
	20-29	9	9
	30-39	22	22
	40-49	50	50
	50-60	19	19

No	Consumer's Characteristics	Total	%
3	Occupations		
	Civil Servants	8	8
	Private Employee	41	41
	Self-Employed	37	37
	Others	14	14

Source: Primary Data, Processed 2023

Table 2 outlines the characteristics of respondents based on gender, age, and occupation. This study noted that there were 27 male respondents and 73 female respondents. In terms of age, the majority of respondents were in the 40–49-year range, with a total of 50 people. For the occupation category, private employees were the most numerous, with 41 respondents. Therefore, it can be concluded that most research respondents are women aged 40-49 who work in the private sector.

The Importance and Performance of Brown Rice

Consumer satisfaction serves to measure how much difference there is between the level of performance and interest in an attribute. The level of performance and expectations in brown rice can be seen in the table of customer satisfaction attributes, which are assessed according to the average score of performance and importance levels.

Table 2. the Importance and Performance of Brown Rice

Attributes	Importance Level	Performance Level
Product Quality		
Taste	4,56	4,49
Color	4,36	4,08
Texture	4,49	4,31
Product Price		
Price according to the quality of brown rice	3,18	3,27
There is a discount on the price of brown rice	3,14	3,45
Affordable Brown Rice Price	2,91	3,26
Product Benefit		
Lower Cholesterol	4,07	3,4
Lower Blood Glucose	4,29	3,5
Lose Weight	4,18	3,33

Source: Primary Data, Processed 2023

Based on Table 2 shows the Mean Importance Score (MIS) and Mean Satisfaction Score (MSS) values. Attributes with the highest level of importance and performance are found in the product quality variable (Taste) obtaining a value of 4.56 and 4.49. While the value < 4 is obtained by the price variable (Affordable Brown Rice Price) with a value of 2.91 and 3.26.

1. Product Quality

The results of the MIS and MSS calculations for the product quality variable on the taste indicator obtained an average score of 4.56 and 4.49. Consumers consider that taste is very important in brown rice and has good performance when consumed. Based on interviews with the respondents, it is stated that consumers are satisfied with the taste of brown rice because it tends not to be too sweet. According to Wahyuni et al., (2021) stated that the taste of rice from brown rice is better than the taste of rice that is usually consumed. The second attribute is color, obtaining an average score of 4.36 and 4.08. This means that consumers consider the color of brown rice to be very important and has good performance. Rice is bright red due to its high Anthocyanin (red dye) content. Anthocyanin, a red pigment in the rice skin layer, acts as an antioxidant for human health, so there is a relationship between the color of rice and the benefits of brown rice (Suliantini et al., 2017; Sumartini, 2018). However, if stored brown rice is more prone to discoloration because it is not protected by rice husks, which can affect its quality and appearance (Qu et al., 2023). Finally, the texture attribute obtained an average score of 4.49 importance and 4.31. This result is the same as the average score of the previous attribute, namely, consumers consider the texture of brown rice to be very important and the performance of the texture attribute is very good for consumers. Based on the results of interviews with respondents, it is stated that consumers are satisfied with the texture of brown rice because after cooking brown rice has a fluffy rice texture. Most of the Indonesian population likes the fluffy texture of rice so that it gives satisfaction to those who consume it (Koesrini et al., 2020; Putri, 2019).

2. Product Price

The results of the calculation of the average score of the importance and performance of the price variable can be seen in each variable attribute. The first attribute is the price according to quality with an average score of 3.18 and 3.27. The second attribute is Discount prices with an average score of 3.14 and 3.45. Finally, the affordable price attribute is 2.91 and 3.26. Based on these scores, it shows that the brown rice price attribute is not very important, and the performance level is not good. Based on interviews with the respondents, it is known that brown rice is more expensive than white rice. According to Rizal et al., (2020) explained that brown rice not only receives less government attention, but also its production is limited and more expensive than white rice. However, this study is not in line with Ahmad & Mohammad, (2020) explaining that price has a direct influence on consumer satisfaction of pandanwangi brown rice. Poor perceptions of brown rice are usually caused by its high price and limited availability (Gyawali et al., 2022).

3. Product Benefits

In the benefit variable, the MIS and MSS calculation scores for each attribute show a good level of importance and performance. The first attribute, which lowers cholesterol, obtained an average score of 4.07 and 3.4. This score indicates that consumers consider brown rice as a very important cholesterol benefit, but the performance of this attribute is not good. Based on the results of interviews with respondents, it is stated that consumers consume brown rice one or two days a week so that the performance provided is less effective. This is in accordance with the statement of Br Kabeakan (2020) stating that effective brown rice consumption patterns can reduce cholesterol levels. In addition, brown rice is known for its high antioxidant content. In addition, it contains flavonoids that have antioxidant, anti-inflammatory, and potential anticancer properties (Feng et al., 2023). The second attribute of brown rice as lowering blood glucose with mean values of 4.29 and 3.5. This means that respondents consider brown rice to be very important in lowering sugar levels and very suitable for diabetics. Brown rice consumption is associated with improved metabolic function, gluten-free, hypoallergenic properties, low fat, easy digestibility, as well as reduced risk of several health conditions such as sugar levels (Lim et al., 2024). In addition, brown rice is low in carbohydrates, high in protein, minerals, and does not raise blood sugar quickly (Hernawan & Meylani, 2016; Kuzairi, 2018). Finally, brown rice attributes as losing weight with an average of 4.18 and 3.33. Based on these results, it shows that respondents consider brown rice very important as losing weight. This is in accordance with the results of interviews with respondents who stated that their goal is to consume brown rice to lose weight. Ramon Syahrial (2021) stated that brown rice consumption is currently mostly carried out by young people, along with the trend of the times. They consume brown rice with the aim of losing weight.

Consumer Satisfaction Level with Brown Rice

The level of customer satisfaction is a function of the difference between performance and expectations felt by a person. Total customer satisfaction can be measured through the Customers Satisfaction Index (CSI) analysis. The following is a table of total customer satisfaction as follows.

Table 3. Consumer Satisfaction Level with Brown Rice

No	Variable	Attributes	MIS	MSS	WF	WS
1	Product Quality	Taste	4,56	4,49	12,96	58,20
		Color	4,36	4,08	12,39	50,57
		Texture	4,49	4,31	12,76	55,01
2	Price	Price based on the quality	3,18	3,27	9,04	29,56
		Discounted Price	3,14	3,45	8,93	30,79
		Affordable Brown Rice Price	2,91	3,26	8,27	26,97
3	Benefits	Lowers Cholesterol	4,07	3,4	11,57	39,33
		Lower Blood Glucose	4,29	3,5	12,19	42,68
		Lose Weight	4,18	3,33	11,88	39,57
Total Weight Average					372,67	
Total CSI					74,53	

Source: Primary Data, Processed 2023

Table 3 shows that the level of consumer satisfaction with brown rice is 74.53%, this satisfaction index is in the range (60.1% - 80.0%). This means that consumers are satisfied in consuming brown rice. These results are in line with Safitri et al. (2017) found that the level of customer satisfaction was 76.6% when they bought organic rice in Surakarta City, meaning that customers were satisfied with the product. Another study in line with this research was conducted by Rasyid et al., (2022) found that the level of consumer satisfaction was 74.3% or brown rice farmers were satisfied with the partnership pattern in Bulukumba Regency. Meanwhile, the results of interviews with respondents stated that consumers were satisfied with brown rice due to the quality and benefits of brown rice

that could meet consumer needs. According to Wahyuni et al., (2021) stated that brown rice is a food ingredient used to make brown rice flour, which is a healthy food product. Thus, brown rice serves as a solution to overcome food and nutritional deficiencies. In addition, brown rice has a very high quality, this is because consumers feel that the consumption of brown rice is better than white rice.

Overall satisfaction levels generally vary depending on individual preferences and how brown rice is consumed. This study shows that consumers are satisfied with brown rice due to the quality of the brown rice itself as it has a distinctive flavor. The processing of brown rice, such as soaking it before cooking, can affect its taste, aroma and color. Soaking brown rice for two hours before cooking can increase its volume and organoleptic qualities, including its flavor (Sumartini, 2018).

Based on the results of the CSI analysis, the implications obtained indicate that marketers or business actors need to improve product quality standards to meet consumer satisfaction. This can be measured through the taste, color, and texture of brown rice, so that consumers feel satisfied with the products they consume. In addition, marketers are also advised to promote brown rice by emphasizing its benefits, because many consumers choose brown rice because of this benefit factor. Furthermore, the government or related institutions can prioritize effective price regulation policies to ensure that the price of brown rice remains affordable for the community.

CONCLUSION

Based on the results of the calculation of the MIS value and the MSS level, it shows that the elements with the highest level of importance and performance are in the product quality variable (Taste) obtaining a value of 4.56 and 4.49. While the smallest value < 4 is obtained by the price variable (Affordable Brown Rice Price) with a value of 2.91 and 3.26. In addition, the calculation of the level of satisfaction of brown rice consumers in Pakis District, Malang Regency shows 74.53%, this satisfaction index is in the range (60.1% - 80.0%). This means that consumers are satisfied consuming brown rice. Therefore, it is hoped that the government will pay more attention to effective price regulation policies, to ensure that the price of brown rice can be affordable for the community.

Brown rice producers should continue to improve their product quality standards, especially in terms of taste, color and texture, to meet consumer expectations. Marketers can also leverage social media and creative marketing campaigns can help emphasize the benefits of brown rice, appealing to young people who are the main target market. In addition, offering discounts or promotions for bulk purchases can help consumers get more value and feel more satisfied with their investment.

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