

Analysis of eco-friendly preference and consumer satisfaction on the attributes of rice in Toboali Bangka Selatan

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Received December 10th, 2023; revised February 2nd, 2024; accepted February 14th, 2024

ABSTRACT

Rice serves as the main dietary staple for most Indonesians. The preference of environmentally conscious consumers reflects their liking or disliking of the different types of rice available. Satisfaction, in this context, refers to consumers' evaluations of their expectations when purchasing and consuming rice. It involves comparing their level of satisfaction with the actual performance of the rice after consumption. The study aims to analyze the eco-friendly preference and consumer satisfaction with the attributes of rice in Toboali Bangka Selatan. Convenience sampling was applied to collect the respondents of the study. Convenience Sampling was the technique where the sampling was conducted on consumers who were currently at home and willing to fill out the provided questionnaire. Surveys conducted through direct personal interaction, observation, and focus group discussion were employed as the data collection technique. Importance-performance analysis (IPA) and customer satisfaction index (CSI) were used in processing the data. The study revealed that the eco-friendly preference and the quality of the eco-friendly rice had a positive impact on total consumer satisfaction which was fulfilled by the attributes of rice with 69 %. The rest such as price, taste, and ease of access were not satisfied as the important attributes were not well performed. Furthermore, the CSI score illustrated that the satisfaction of eco-friendly consumers in all classes was at the "satisfied" status.

Keywords:

Eco-friendly, Rice, Satisfaction

1. Introduction

Rice is the primary staple food commodity consumed by the majority of the people in Indonesia. The eco-friendly consumers' preference preferences indicate the liking or disliking of various rice product choices by individuals, while satisfaction is the environmentally friendly consumer's assessment or understanding of what is expected when purchasing and consuming rice products, where those expectations are then compared to the performance they receive after consuming the rice product [1].

Rice is consumed by individuals, households, and service businesses. Consumption income lines indicate that differences in income lead to variations in consumption patterns among consumers [2]. Consumption income lines refers to graphical representations or statistical models that depict the relationship between consumption and income. These lines illustrate how changes in income levels impact an individual's or household's consumption patterns, providing insights into spending behavior based on varying income levels. Income disparity is one of the indicators of social class differences [3]. This results in differences in consumer behaviour in rice consumption among different social classes.

Advancements in various fields have influenced the patterns of food demand, including the demand for rice as one of the staple foods. The challenges in future food



demand include i) population growth and increased income of the society; ii) demographic structural changes; and iii) globalization of consumer preferences [4].

Consumer behaviour in purchasing food, including rice, has evolved with the progress of time [5]. Increased income of the society has led to higher demands for quality [6,7]. On the other hand, demographic changes such as education level, urbanization rate, and female labour force participation, along with advancements in transportation and communication at present, influence consumer preferences [8]. Consumers prioritize a balance of quality, nutrition, and aesthetics. Furthermore, the increased participation of women in the workforce, particularly in urban areas, encourages consumers to choose food items that are packaged in a way that provides convenience in shopping, easy cooking, and preparation.

Studying consumer preferences for eco-friendly products is important because it provides insights into the reasons why consumers have a greater preference for eco-friendly products compared to non-eco-friendly ones [9]. Some underlying reasons for consumer preference for eco-friendly products include consumer knowledge of environmentally friendly products, consumer purchasing behaviour, and consumer interest in eco-friendly products.

Consumer preferences describe how consumers rationally rank or compare the desirability of two baskets of goods or services and choose the package that provides the highest level of satisfaction [10]. Consumer preferences are also described as likes or dislikes towards specific goods or services to be consumed [11]. In relation to brands, consumers' preferences is the result from long-term relationships between the brand and consumers [12]. There are many internal and external factors that underlie consumer preferences in selecting goods or services, or in choosing a specific brand. Some internal factors include knowledge, purchasing behaviour, and purchase intention. Preferences for eco-friendly products are not detached from consumer knowledge of eco-friendly products and the environmental impact of consumption, purchasing behaviour, and consumer interest in purchasing and consuming eco-friendly products.

Understanding the preference of eco-friendly product needs to be conducted to ensure that every decision made is in line with consumer expectations, considering that all consumption decisions are in the hands of consumers [13]. Meanwhile, knowledge about eco-friendly consumer's satisfaction needs to be known in order to improve the performance of products that are perceived as unsatisfactory by consumers. Toboali District, as the capital of South Bangka Regency, is a developing district and a marketing destination for locally produced rice towards eco-friendly rice consumption from various rice production centres in the South Bangka Regency. Toboali City also has a diverse community structure. With the diversity of community structures in Toboali District, this can impact the decision-making process in consuming a product, including rice consumption. The people in Toboali District also have diversity in their social status backgrounds, including the classification of social classes into upper, middle, and lower classes.

Based on the description and issues to be examined, the study focuses on analysing eco-friendly consumer's preference and consumer satisfaction towards rice attributes in Toboali District, South Bangka Regency.

2. Methods

The study was conducted in Toboali District, South Bangka Regency. The selection of this location was done purposively, considering that Toboali District was one of the rice productions centres in South Bangka Regency, Bangka Belitung Islands Province. Data collection was carried out from May to June 2022.

The primary data collection technique was conducted through interviews. Interviews may take the form of structured or unstructured formats and can occur in person. In this research, the interviews were conducted in an unstructured manner through face-to-face interactions. The distribution of questionnaires was conducted by the researcher in interviewing the respondents in answering the questions. The questionnaire was presented in a mixed format of open-ended and closed-ended questions, aiming to gain a deeper understanding of the respondents' answers to the question variables.

Structured observations were conducted to obtain a detailed overview of eco-friendly consumer's preferences towards rice products and the level of consumer satisfaction with the appropriate rice based on consumer behavior studies. The number of participants in the focus group discussion (FGD) was 20 people, conducted under the guidance of a moderator. The qualitative nature of the FGD method is exploratory or in-depth in addressing a specific issue and cannot be generalized [14].

The descriptive analysis method was used to obtain an overview of the overall identity and background of eco-friendly consumers and to understand the consumer decision-making process [15]. The initial step in descriptive analysis was creating a simple frequency table based on the data and information obtained from the questionnaire. The data was then categorized based on similar responses, tabulated, and presented in percentages. The next step involved interpreting the data from the tabulation.

2.1 Customer Satisfaction Index (CSI)

The Customer Satisfaction Index was used to determine the overall level of customer satisfaction by considering the importance levels of measured service quality attributes. The overall level of satisfaction of eco-friendly consumer can be seen from the criteria of satisfaction levels. The highest satisfaction was achieved when the CSI indicates 100%. The satisfaction range ranges from 0 to 100%. According to Wahyuni et al. [16], to create a numerical linear scale, it first found the Scale Range (SR) using the following formula:

$$SR = \frac{m-n}{b} \quad (1)$$

Where: m = highest score

n = lowest score

b = number of classes or categories

Based on the SR (1) above, the satisfaction criteria were as follows: $0\% < \text{CSI} \leq 20\%$ = very dissatisfied; $21\% < \text{CSI} \leq 40\%$ = dissatisfied; $41\% < \text{CSI} \leq 60\%$ = neutral; $61\% < \text{CSI} \leq 80\%$ = satisfied; and $81\% < \text{CSI} \leq 100\%$ = very satisfied.

2.2 Importance and Performance Analysis (IPA)

Another analysis tool used was the importance and performance analysis (IPA). The level of importance referred to how important an attribute was to customers [17]. On the other hand, performance level represented the actual performance of attributes as perceived by eco-friendly consumers. This performance level was closely related to the assessment of eco-friendly rice products by consumers.

The level of importance and performance used a 5-point Likert scale. According to Imami [18], the importance level was assessed as follows: very important was assigned a value of 5, important was assigned a value of 4, neutral was assigned a value of 3, not important was assigned a value of 2, and very unimportant was assigned a value of 1. Similarly, for performance assessment, a 5-point scale was used, ranging from very poor performance with a value of 1, poor performance with a value of 2, neutral performance with a value of 3, good performance with a value of 4, to very good performance with a value of 5.

3. Results and Discussion

Consuming rice is a common activity among the population of Indonesia. However, recently, the rice purchasing decision-making process has been evolving. One of the reasons was the increasing level of education and income among the Indonesian population, which influenced rice consumption in terms of understanding the need for rice, the information obtained by consumers, the expanding range of alternative choices, various purchasing methods, and the level of consumer satisfaction in consuming rice, as well as their response to satisfaction or dissatisfaction after consuming rice [19]. Several reasons underlie consumer preferences for choosing environmentally friendly products included consumer knowledge of environmentally friendly products, consumer purchasing behaviour, and consumer interest in eco-friendly products. Comprehensive consumer knowledge of the characteristics and benefits of eco-friendly products became crucial information for consumers in making purchasing decisions. In addition to consumer knowledge of eco-friendly products, consumer purchasing behaviour also played a role in the decision-making process for purchasing eco-friendly products [20]. Consumer buying behaviour in purchasing eco-friendly products reflected consumer actions, including the processes preceding the purchase of eco-friendly products, including rice.

3.1 Eco-Friendly Preferences and Consumer Satisfaction Towards Rice Attributes

Consumer preferences indicated an individual's liking or disliking towards various rice options, while satisfaction was the consumer's assessment of what is expected when buying and consuming rice, where those expectations were then compared to the performance experienced after consuming the rice [21].

Consumer preferences can be determined by measuring the average rating comparison of the importance level for various rice attributes. Attributes with the highest values significantly influenced consumers in their rice selection [22]. Conversely, attributes with the lowest values were less considered by consumers in their rice choices. The average rating of the performance level of rice attributes reflected consumer satisfaction [23]. Attributes with the highest values were deemed most satisfying by consumers, while attributes with the lowest values were considered the least satisfying [24,25]. In this study, consumer preferences and satisfaction towards rice were examined based on the importance level and performance level of 14 rice attributes [26].

Based on the calculation of the customer satisfaction index (CSI) in Table 1, the overall satisfaction of consumers fulfilled by the rice attributes included in this study was 69 percent. The remaining percentage indicated that the satisfaction of consumers had not been completely met by the performance of the rice attributes consumed thus far.

Table 1. CSI Calculation

Attribute	Yi	WF	Xi	WS
A. Freshness	2.19	0.06	2.88	0.04
B. Aroma	2.78	0.07	2.49	0.20
C. Colour	3.02	0.06	2.69	0.02
D. Cleanliness	3.36	0.06	2.65	0.04
E. Brand	2.45	0.07	2.36	0.22
F. Advertisement	1.21	0.08	2.10	0.10
G. Price	3.82	0.05	2.01	0.27
H. Seller's location	2.76	0.06	2.81	0.41
I. Varietal diversity	2.10	0.08	2.52	0.16
J. Price diversity	1.31	0.06	2.49	0.37
K. Purchase convenience	2.28	0.07	2.32	0.36
L. Information provided by the seller	3.43	0.06	2.56	0.28
M. Service at the point of purchase	2.34	0.07	2.24	0.36
N. Ease of obtaining	2.97	0.07	2.88	0.63
Total	36.02	1	35	3.46

$$\text{CSI} = (3.46/5) \times 100\% = 69\%$$

Based on the calculation, it was found that the CSI was 69 percent. This meant that the rice attributes had satisfied consumers by 69 percent, while the remaining percentage indicated that the performance of the rice attributes had not fully met consumers' expectations, suggesting a need for continuous improvement. The value felt within the range of $60\% < \text{CSI} \leq 80\%$, indicating that the overall consumer satisfaction index for the tested rice attributes was considered satisfactory. The research findings were supported by Isaskar et al. [27], who stated that the Consumer Satisfaction Index for rice in Malang was 72%.

To identify attributes that were considered important but had unsatisfactory performance, the questionnaires were analysed using the important and performance analysis (IPA) method, which measured the level of importance and performance of rice attributes. The results obtained were as seen in the Table 2.

Table 2. Level of importance and performance

Attribute	Level of Importance			Level of Performance		
	Xi	n	\bar{Y}	Yi	n	\bar{X}
A	519	100	5.19	288	100	2.88
B	478	100	4.78	249	100	2.49
C	302	100	3.02	269	100	2.69
D	336	100	3.36	265	100	2.65
E	269	100	2.69	253	100	2.53
F	256	100	2.56	240	100	2.4
G	396	100	3.96	248	100	2.48
H	272	100	2.72	234	100	2.34
I	383	100	3.83	238	100	2.38
J	345	100	3.45	236	100	2.36
K	321	100	3.21	413	100	4.13
L	282	100	2.82	404	100	4.04
M	276	100	2.76	484	100	4.84
N	210	100	2.10	452	100	4.42
	Total		44.5	Total		42.63
	Total of attribute		14	Total of attribute		14
	Y		3.17	X		3.045

Based on Table 2, the values of Y and X were within the range of 3 (neutral), indicating that consumer dissatisfaction was mainly caused by attributes considered important by consumers, such as rice advertising (F), rice seller's location (H), and rice price diversity (J), as their overall performance was unsatisfactory. This study was supported by Isaskar et al. [27], who stated that these attributes are dissatisfactory. Meanwhile, for consumers, rice was a normal good, meaning that its consumption decreases as consumer income decreases. Additionally, there were differences in attributes considered important and the corresponding satisfaction levels associated with those attributes [28].

4. Conclusion

The study concludes that rice consumption in Toboali District can influence consumer behaviour, such as considering the quality due to the influence of advertisements, rice availability, seller's services, and rice prices. Rice quality should be continuously improved. Continuity and service at rice sales locations are important, as well as providing affordable rice for consumers. Promotions should be done through rice sellers, banners, and supermarket price catalogues.

Consumers pay close attention to rice prices in the rice purchasing decision-making process in IPA analysis. This means that consumers consider rice prices as an important attribute, but its performance is often perceived as average due to being considered expensive. It is advisable to distribute rice that is more affordable for consumers. The government should support the creation of rice quality that meets consumer expectations by providing high-quality production inputs.

Acknowledgements

The authors would like to thank the Institute of Research and Community Service Universitas Bangka Belitung for their administrative and financial support during the study.

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