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Consumer Preferences for Attribute Selection of White Organic Rice Products in Pontianak City

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Abstract

Rice is a staple food for the majority of the Indonesian population. The extremely high dependency of Indonesian society on rice will become a problem if its availability can no longer be met. The high consumer demand for organic rice in Indonesia is a critical point, making it necessary to understand consumer preferences for purchasing organic rice to inform traders and producers. The objective of this research is to analyze consumer preferences for the selection of attributes of organic rice products in the city of Pontianak. This study utilized primary data obtained from interviews with 50 consumers of organic rice in Pontianak City. The data were analyzed using the conjoint analysis in SPSS. The results indicate that the combination of attributes most preferred by consumers for organic rice in Pontianak City is: organic rice type utility value 0.92; clear white color utility value 0.60; vacum packaging utility value 0.19; with claims of being soft sticky and soft texture and possessing Indonesian organic certification utility value 0.36); Recommendations are provided for business actors and researchers in the food commodity sector to support the development of organic rice in Pontianak City versi indonesia.

Keywords*: organic certificate; soft; vacuum packaging; white color*

Preferensi Konsumen Terhadap Pemilihan Atribut Pada Produk Beras Organik Putih di Kota Pontianak

Abstrak

Beras termasuk makanan pokok bagi sebagian besar masyarakat Indonesia. Ketergantungan masyarakat Indonesia yang sangat tinggi terhadap beras akan menjadi masalah jika ketersediaan beras tidak lagi dapat memenuhi kebutuhan. Tingginya permintaan konsumen terhadap beras organik di Indonesia menjadi salah satu poin penting, sehingga perlu diketahui preferensi konsumen terhadap pembelian beras organik agar menjadi informasi bagi pedagang ataupun produsen beras organik. Tujuan penelitian ini untuk mengetahui preferensi konsumen terhadap pemilihan atribut produk beras organik di Kota Pontianak. Penelitian ini menggunakan data primer berdasarkan hasil wawancara 50 konsumen beras organik di Kota Pontianak. Data dianalisis menggunakan metode conjoint dengan SPSS. Hasil penelitian menunjukkan kombinasi atribut yang sesuai dengan preferensi konsumen terhadap beras organik di Kota Pontianak adalah beras organik dengan nilai utilitas 0,92 yaitu berwarna putih bening, nilai utilitas 0,60 yaitu kemasan vakum, nilai utilitas 0,19 yaitu klaim pulen dan bersertifikat organik Indonesia dengan nilai utilitas 0,36. Saran kedepannya diberikan kepada

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pelaku usaha dan para peneliti di bidang komoditi pangan untuk mengembangkan beras organik di Kota Pontianak.

Kata kunci: kemasan vakum; pulen; sertifikat organik; warna putih

INTRODUCTION

Organic agriculture has developed significantly at both international and domestic levels. The growth of the organic agriculture sector in developing countries is driven by consumers who increasingly prefer healthier food choices (Nafisah et al., 2024). Food security is a crucial aspect of Indonesia's development. In this regard, the agricultural sector plays a vital role in national development and the economy. As a major commodity, rice plays an important role as the staple food for Indonesian society and as a key component in maintaining food security. To meet food needs, most of the population's calories come from rice, which accounts for approximately 40–80%. In addition, two-thirds of agricultural land in Asia is allocated to rice cultivation as a source of income for farmers (Kharismawati & Dwi Karjati, 2021).

Rice is an important commodity in achieving national food security. Changes in production and consumption patterns have led to several issues in Indonesia's rice industry (Eka terina et al., 2020). Rice is a staple food for many Indonesians. If rice supply cannot meet demand, society's heavy dependence on rice may create serious problems. In general, various types of rice are available in Indonesia, including organic rice. Organic rice is produced through organic farming methods, meaning to synthetic pesticides are used from seed selection to processing. The demand for organic rice has increased along with growing public awareness of choosing food with minimal chemical residues, as part of the trend toward a healthier lifestyle and a return to nature (Kartikasari et al., 2019).

In general, individuals with higher incomes tend to adopt healthier lifestyles by choosing nutritious, vitamin-rich, and safe foods (Kartikasari et al., 2024). In organic farming, chemical pesticides and fertilizers are replaced with organic alternatives, so the system relies not only on chemical inputs but also on natural pest control. Rice made from organic paddy generally has a softer, chewier texture, a longer shelf life, and a brighter appearance after cooking. These qualities and advantages are among the factors that make organic rice more expensive than non-organic rice (Habib & Kuntadi, 2020). The high level of consumer interest in organic rice in Indonesia is an important factor, driven by increasing public awareness of consuming food that is free from or contains minimal chemical inputs.

Rice is a highly important staple food for Indonesian society. It serves as the main source of energy, particularly through carbohydrates that provide calories for the human body. The recent decline in public interest in organic rice has prompted many rice distributors to continually improve their marketing systems and expand their distribution networks through ongoing promotional strategies to increase sales and strengthen relationships with consumers. Consumers are a crucial element in agricultural businesses, and understanding their preferences and behavior provides valuable market information for the agribusiness sector. This information can serve as a basis for more effective product

design, development, and promotion. Consumers tend to choose products with higher quality but lower prices (Hasan et al., 2022).

Preferences for product attributes, especially the quality of organic rice, need to be understood because they serve as a basis for consumers to evaluate and consider rice attributes according to their needs, ultimately contributing to consumer satisfaction. Understanding the level of consumer satisfaction is important to determine whether the rice available in the market meets consumer expectations. With current technological developments, it is possible to produce artificial rice or rice containing chlorine as a whitening agent, which may pose health risks (Nafiah et al., 2022). There are three categories of organic rice: white, black, and red. However, this study only focuses on white organic rice in Pontianak City. This focus is relevant to Hanifah et al. (2020) those who stated that white rice is the most commonly consumed type of rice among Indonesians, who usually purchase it from stores or supermarkets because of its consistent availability.

Consumer information on preferences and satisfaction benefits organic rice producers and traders by helping them deliver rice that aligns with consumer expectations. This can improve consumer satisfaction by enhancing product quality attributes. Based on these issues, particularly in Pontianak City, consumer preferences and consumer behavior form the main foundation of this study. Therefore, this research focuses on consumer preferences for selecting attributes of organic rice products in Pontianak City.

RESEARCH METHOD

This study adopted an attribute combination approach based on consumer preferences for organic rice. The research was conducted in Pontianak City, as it represents organic rice consumers. The study was carried out from June to July 2025. The data used in this study were primary data. Primary data were obtained through interviews with respondents, namely consumers of organic rice products, using an online questionnaire as the research instrument and direct observation in the study area. The sample was determined using purposive sampling, which involves selecting respondents based on specific criteria. The criteria for respondents were individuals aged at least 17 years who had consumed and purchased organic rice at least once (Hanifah et al., 2020).

This study involved 50 respondents. This number is consistent with Hair's 2013 opinion, which states that conjoint analysis requires at least 50 respondents to identify consumer preferences. Purposive sampling was used to obtain a representative sample so that the observed phenomena could be captured and the purpose of using a particular technology could be explained more clearly. Data processing was carried out using Microsoft Excel 2021 and SPSS. Primary data were collected through a questionnaire that measured consumers' level of preference for combinations of organic rice attributes using a 1–5 Likert scale (Kojcic & Kuzmanovic, 2022):

a. Score 1: Strongly dislike
b. Score 2: Dislike

c. Score 3: Neutral
d. Score 4: Like
e. Score 5: Strongly like

The data were analyzed using descriptive analysis to examine respondent characteristics, including gender, age, occupation, and income. Meanwhile, conjoint analysis was used to identify consumer preferences in purchasing decisions (Kojcic & Kuzmanovic, 2022). This analysis was applied to determine the combination of attributes preferred by consumers for organic rice, including color, stickiness, packaging, and organic rice certification.

Prosedur Conjoint Analysis

Conjoint analysis is one of the most widely used methods in marketing research to evaluate consumer preferences (Ranasingha et al., 2019). It is a decomposition technique that breaks down a product or service into smaller elements, known as attributes. This method analyzes the overall effect of these attributes on consumer choice. Consumers evaluate the overall utility of a product by summing the partial utilities, each reflecting their preference for a particular attribute level (Kojcic & Kuzmanovic, 2022). This method shows that when buyers face competing products, they refer to the attributes and levels of organic rice presented in Table 1 to assess the importance of each attribute in the decision-making process (Chung et al., 2022).

The conjoint analysis in this study was conducted to assess consumer perceptions of various characteristics of organic rice products. Through this analysis, the importance of each attribute and the utility value of each attribute level were identified using IBM SPSS.

Table 1. Attributes and Levels of Organic Rice

Attribute	Description	Level
Color	Describes the color of white organic rice	Clear white Not clear white
Packaging	Describes the packaging system of organic rice	Vacuum Non-vacuum
Stickiness	Describes the sticky texture claim on the packaging and rice grains	Soft and sticky Dry and less sticky
Certifikcation	Label organik yang tertera dalam kemasan Bersertifikat Organik	Bersertifikat organic Indonesia Tidak bersertifikat

Source: Data processed by the authors (2025)

The attributes and levels of organic rice used in this study were presented using an orthogonal design generated through IBM SPSS, as shown in Table 2. This design limited the number of possible combinations, making it more efficient to obtain respondents' answers. The orthogonal design from SPSS was used to facilitate the development of stimulus variations, which were then represented in nine combinations of organic rice attributes and levels available in the market.

Table 2. Orthogonal Design: Stimuli and Attribute Combinations of Organic Rice in Pontianak City

Stimulus	Combination
K1	Organic rice with a clear white color, vacuum packaging, soft and sticky texture, and Indonesian organic certification
K2	Organic rice with a non-clear white color, non-vacuum packaging, dry and less sticky texture, and no Indonesian organic certification
K3	Organic rice with a non-clear white color, vacuum packaging, dry and less sticky texture, and Indonesian organic certification
K4	Organic rice with a clear white color, non-vacuum packaging, soft and sticky texture, and no Indonesian organic certification
K5	Organic rice with a clear white color, vacuum packaging, dry and less sticky texture, and no Indonesian organic certification
K6	Organic rice with a non-clear white color, vacuum packaging, soft and sticky texture, and Indonesian organic certification
K7	Organic rice with a non-clear white color, non-vacuum packaging, soft and sticky texture, and no Indonesian organic certification
K8	Organic rice with a clear white color, vacuum packaging, dry and less sticky texture, and Indonesian organic certification
K9	Organic rice with a clear white color, non-vacuum packaging, dry and less sticky texture, and no Indonesian organic certification

Source: Data processed by the authors (2025)

Respondents' opinions were ranked using a Likert scale consisting of 1 for strongly dislike, 2 for dislike, 3 for neutral, 4 for like, and 5 for strongly like. Each consumer evaluation was treated as a utility score ranging from 1 to 5 and was used as the basis for conjoint calculations to determine preferences. The respondents' assessment results were then processed using syntax in IBM SPSS to obtain the conjoint analysis output. The data were interpreted by identifying the attribute-level combinations most preferred by consumers based on utility values and the importance of organic rice products. The significance values of Pearson's R and Kendall's Tau were used to indicate the relationship among the variables in the data.

RESULTS AND DISCUSSION

Respondent Characteristics

Individual characteristics refer to a set of internal factors that influence a person's tendency in the decision-making process. These factors are reflected in the way individuals think, behave, and respond to the social and economic environment around them (Mandang et al., 2020). Consumers play a strategic role in business sustainability, particularly in businesses operating in the food sector. Food consumption behavior continues to change along with advances in science and technology. The increasing intensity of competition among business actors makes consumer satisfaction a key factor in maintaining loyalty to the products offered. The demographic characteristics of the respondents in this study are presented as a basis for understanding variations in consumption behavior, as shown in Table 3.

Table 3. Demographic Characteristics of Organic Rice Respondents

Individual Characteristic	Category	Number of Respondents	Percentage (%)
Age	17-25 Years	10	20
	26-30 Years	33	66
	35-40 Years	7	14
Gender	Female	43	86
	Male	7	14
Occupation	Civil servant Private	46	92
	employee	3	6
	Housewife	1	2
Monthly income	< IDR 1,000,000	1	2
	IDR 1,000,000–3,000,000	19	38
	IDR 3,000,000–7,000,000	30	60

Source: Data processed by the authors (2025)

Table 3 shows that the respondents in this study were aged between 17 and 40 years, consisting of 20% aged 17–25 years, 66% aged 26–30 years, and 14% aged 35–40 years. The average age of respondents ranged from 25 to 30 years, which falls within the productive age group. Male respondents accounted for 7 people (14%), while female respondents accounted for 43 people (86%). This indicates that women play a more dominant role in fulfilling household needs, particularly in household shopping decisions. Based on occupation, most respondents were civil servants, accounting for 92%, followed by private employees at 6% and housewives at 2%. The average income of respondents exceeded IDR 3,000,000 per month. This finding is consistent with Shalihin et al. (2020) who stated that organic rice is generally purchased by middle- to upper-income consumers.

Consumer Preferences for Organic Rice

Table 4. Consumer Preferences for Organic Rice Attributes in Pontianak City

Attribute	Importance Value	Attribute Level	Utility Value	Preference
Color	29.18	Clear white	0.92	Organic rice with a clear white color
		Not clear white	-0.92	
Packaging	22.95	Vacuum	0.60	Organic rice with vacuum packaging
		Non-vacuum	-0.60	
Stickiness	28.18	Soft and sticky	0.19	Soft and sticky organic rice
		Dry and less sticky	-0.19	
Certification	18.66	Indonesian organic certified	0.36	Indonesian organic certified
		Not certified	-0.36	
Pearson’s R=0.95 Kendall’s tau=0.90 Konstanta=2.90		Signifikan=0.00 Signifikan=0.00		

Sumber: Data diolah IBM SPSS (2025)

Consumer preference refers to consumers' taste or liking for organic rice based on the attributes associated with the product. Consumer preferences were analyzed using descriptive analysis. The data obtained show the categories of organic rice attributes most frequently selected by consumers.

Respondents' preferences for purchasing organic rice in Pontianak City are evident in the attributes they selected, including rice color, stickiness, packaging, and certification, as presented in Table 4. Consumer preference for rice commodities reflects individual differences in taste. These variations are reflected in the product attributes considered during the purchasing decision-making process. The rice attributes examined in this study include rice color, packaging or brand, level of stickiness, and product labeling (Hasan et al., 2022).

Table 4 provides information on the level of consumer preference for various combinations of product attributes. The preference assessment was based on the highest utility value for each combination of attributes analyzed. Based on the conjoint analysis, the most preferred combination of organic rice attributes among consumers in Pontianak City consisted of clear white color with a utility value of 0.92, vacuum packaging with a utility value of 0.60, soft and sticky texture with a utility value of 0.19, and Indonesian organic certification with a utility value of 0.36. All these attributes had positive utility values, indicating that these attribute levels provided the highest level of satisfaction for consumers. These results indicate that physical appearance and quality assurance are key considerations in purchasing decisions. This finding is in line with Kusno et al. (2021) who stated that stickiness and white color are crucial attributes of organic rice that need to be maintained and improved in quality to continuously meet consumer preferences.

The application of vacuum packaging technology has been proven to extend product shelf life by three to five times longer than non-vacuum packaging, thereby increasing product competitiveness in the market (Octovanny et al., 2024). This finding shows that vacuum packaging effectively maintains product quality over a longer period and directly improves product competitiveness in the market.

The level of stickiness and the presence of organic certification are crucial factors that determine consumer choices for organic rice in Pontianak City, with utility values of 0.19 and 0.36, respectively. This finding indicates that consumers tend to choose rice with a soft and sticky texture because this characteristic closely aligns with their preferences and daily rice consumption habits. This is consistent with Shalihin et al. (2020) who stated that consumers tend to prefer rice with a soft and sticky texture because this attribute is related to their everyday rice consumption preferences and habits. Consumers generally prefer rice that produces soft and sticky cooked rice, making this characteristic important in shaping perceptions of product quality. From the perspective of physical attributes and legal assurance, quality certification provides added value that significantly strengthens consumer trust compared with products without labels (Katz et al., 2019). The use of an organic logo or label on packaging serves as a visual signal of quality and guarantees safe consumption. The presence of certification effectively validates organic claims and increases consumer loyalty to the product (Situmorang et al., 2021).

Table 4 also shows that rice color was the most important factor for consumers in purchasing organic rice, with an importance value of 29.18, the highest among all attributes. This finding is consistent with Antriyandarti et al. (2023), who found that rice color is one of the main indicators of consumer preferences for organic rice products. Rice color is also related to nutritional content and

health considerations after processing and consumption. The significance value of Pearson's R was 0.00 < 0.05, and the significance value of Kendall's Tau was also 0.00 < 0.05, indicating that the analysis results were significant at the 95% confidence level. These findings indicate a strong relationship among the attributes analyzed in shaping consumer preferences for organic rice.

CONCLUSION

The results of the consumer preference analysis of nine combinations of organic rice attributes in Pontianak City showed that the attribute combination most preferred by consumers was rice with a clear white color, vacuum packaging, a soft and sticky texture, and organic certification. Among all the attributes analyzed, rice color was identified as the most influential factor in determining consumer preferences for organic rice products.

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