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The Effectiveness of Using Polishing Technology in Creating Premium Quality Rice (Case Study of UD. Barokah Parepare)

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ABSTRACT

Rice is a strategic food commodity whose quality is increasingly becoming a concern for consumers, especially in the premium segment. Polishing technology is one of the important innovations in improving the visual and physical quality of rice. This study aims to analyze the effectiveness of the use of polishing technology in creating quality premium rice in UD. A new pair of shoes. This study uses a qualitative descriptive approach with data collection techniques in the form of in-depth interviews, field observations, and documentation, and is supported by consumer questionnaires as complementary data. Informants consist of owners, machine operators, and workers who understand the production process firsthand. The data were analyzed through the Miles and Huberman model with three stages: reduction, presentation, and conclusion drawn. The results showed that the effectiveness of polishing was greatly influenced by the quality of raw materials, moisture management, and tool maintenance. Product quality evaluation is carried out visually based on experience, with a maximum tolerance limit of 15% for broken rice. Consumers give positive ratings of physical, taste, and packaging attributes, and show a willingness to pay more for consistent premium quality. This research emphasizes the importance of integration between technical control of production and understanding of consumer preferences in maintaining the quality of premium rice in the local market.

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INTRODUCTION

Food is a basic human need, and rice plays a strategic role as the main food source in Indonesia. Rice is not only a daily consumption commodity, but also has high economic and political value. (1) The Government of Indonesia has established various policies such as grain purchases, basic pricing, and price controls, in order to maintain the stability of rice supply and prices which have a direct impact on national food security. (2)

In recent years, market demand for premium rice has increased along with consumer awareness of product quality, cleanliness, and safety. Rice polishing technology is one of the important innovations in meeting this demand. (3) This technology has been proven to improve the visual appearance, taste, texture, and safety of rice food, while reducing the content of toxic elements such as arsenic. (4) However, the effectiveness of the use of polishing technology in small and medium industry (IKM) practices still needs to be studied more deeply, especially in the context of MSMEs such as UD. Barokah in Parepare which produces premium rice with local market segmentation.

Several factors such as rice varieties, moisture content, and local consumer preferences also determine the success of the polishing process. (5) On the other hand, business actors' technical understanding of the

factors that affect the success of polishing technology still varies, while consumer knowledge about the quality of polished premium rice is also uneven. This inequality creates two main challenges: first, how to accurately identify the technical factors that determine the success of the polishing process; and second, how to understand consumer preferences for the final product, especially in the context of local businesses such as UD. A new pair of shoes.

Both aspects are important to be studied simultaneously so that the production process is not only technically efficient, but also relevant to market tastes. Therefore, this study is directed to identify the factors that affect the effectiveness of polishing technology in creating quality premium rice, as well as analyze consumer preferences for UD polished rice products. Barokah. The findings of this study are expected to make a practical contribution to the development of small and medium enterprises in the food sector, as well as enrich scientific studies on the adoption of post-harvest technology based on market preferences.

LITERATURE REVIEW

Rice quality is a concept that includes various aspects that play an important role in determining market value and consumer acceptance. In general, the quality of rice involves physical, chemical, sensory, and nutritional attributes. Understanding these factors is crucial because rice is one of the main food ingredients that is widely consumed, especially in Asia. In addition, rice quality is heavily influenced by cultural and regional preferences, which makes standardizing the definition of quality a challenge for global industry and research (6). Physically, the main attributes that determine the quality of rice are the size, shape, and color of the seeds. Consumers generally prefer rice grains that are uniform in size and shape. (7).

Chemically, components such as amylose content, protein, and mineral content greatly determine the quality of rice. The amylose level affects the texture of the rice after cooking; Rice with low amylose content is usually stickier, while high amylose content results in fluffier rice. In addition, the protein and mineral components of the bran layer have important nutritional value but are often reduced during the grinding process (8). Sensory qualities, such as the taste, aroma, and texture of rice, also play a central role in consumer preferences. Aromatic rices such as basmati or jasmine are prized for their distinctive fragrance caused by chemical compounds such as 2-acetyl-1-pyrroline. The texture of rice after cooking, including softness and elasticity, is strongly influenced by the chemical properties of starches such as gel consistency and gelatinization temperature (9).

Rice quality evaluation is currently developing using modern technology. The use of methods such as the Rapid Visco Analyzer (RVA) to analyze the physico-chemical properties of rice and artificial intelligence-based sensor approaches allow for faster and more accurate evaluations. This is very helpful in the selection of high-quality rice varieties in the early stages of breeding (10). The sustainability of rice quality in the future requires the development of varieties that not only excel in agronomic aspects but also have good culinary and nutritional quality. The integration of molecular approaches such as marker-assisted breeding can accelerate the development of new varieties with a combination of high quality and optimal yields (11).

Improving the quality of rice must also take into account the different consumer preferences in each region. For example, consumers in Japan tend to prefer rice with a soft and sticky texture, while in India, the preference is more inclined towards rice that is not sticky and fluffy. Therefore, a deep understanding of these preferences serves as a guide for variety developers to adapt their products to the needs of the local market (6).

Consumer preferences for premium rice itself vary greatly based on attributes that are considered important, such as taste, texture, cleanliness, and aroma. Research in Uganda and Kenya shows that consumers are willing to pay more for rice with a high proportion of whole grains and low turbidity. On the contrary, the high amylose content is actually a less preferred attribute (12) In China, consumers prioritize taste as the most important attribute, followed by nutritional quality, food safety labels, and brand. The combination of organic labels with well-known brands provides significant added value, especially in increasing consumer trust (13). In Southeast Asia, attributes such as softness, aroma, and physical appearance, including clean and uniform white, are key indicators of premium quality. This preference is similar to the industry's view that suggests the adjustment of rice varieties to local market segments (6).

Research in Vietnam revealed that consumers prefer organic rice or those produced using integrated pest management (HDI) methods despite the higher price. Health and sustainability factors are the main attractions for this type of rice (14). In Togo, the attributes of cleanliness and pure white color are the most appreciated, with consumers willing to pay a premium of up to 53% for local rice that meets these standards (15). In Indonesia, the difference in preferences between urban and rural consumers shows that physical qualities, such as bright colors and uniformity, are the main criteria in urban areas. Rural consumers are more focused on price and quantity factors (16).

In addition to intrinsic attributes such as taste and texture, extrinsic attributes such as information on packaging and organic certification labels also play an important role in purchasing decisions. In Thailand, this combination of attributes is able to increase the added value of premium rice products (17). Consumer

preferences also show a link with social factors and sustainability awareness. Consumers who are more aware of their environmental impact are more likely to choose sustainably produced rice (18).

The results of the conjoint analysis in the Philippines show that consumers prefer local rice with good taste, distinctive aroma, and affordable prices. This reflects the importance of meeting local preferences to increase product competitiveness (19). In conclusion, consumer preferences for premium rice rely heavily on a combination of intrinsic and extrinsic attributes, including taste, texture, cleanliness, certification, and sustainability.

One way to produce rice with premium quality is to use polished rice technology. This process removes the bran layer, improves the appearance, and increases the selling value of the rice. Modern technology in rice polishing now integrates the principles of abrasive, friction, and automated systems to improve the efficiency and quality of the finish (20).

One of the innovations is the use of a pneumatic system, in which rice is polished in horizontal abrasive pipes without the use of moving components. This method reduces the amount of broken rice by 8.52%, compared to the traditional method which reaches 20% of the fracture. These results show that the pneumatic system can produce rice with a smoother surface without losing the rice head (21). In addition, the redesign of the polishing chamber also affects the results. Vertical polishers with abrasive composite rotors are preferred to reduce fractures. Adjustment of the cylinder speed and moisture of the rice before the polishing process is essential to maintain the physical and chemical quality of the rice (22).

The polishing process affects not only the physical aspect, but also the nutritional content. Research shows that the higher the polishing level, the lower the content of proteins, fats, and minerals such as manganese. However, this is offset by an increase in amylose levels that make the texture of the rice fluffier (23). IoT-based sensing technology has also been applied in the rice polishing process to ensure a uniform whiteness level. Real-time color sensor enables more precise quality control and consistency of results as per standards (24).

Research has also shown that the level of polishing of rice affects the properties of the paste and the rheology of starch, which has an impact on the texture of cooked rice. Polishing at high speed and longer duration can improve the final viscosity of starch in rice with high amylose content, while waxy rice shows minimal changes (25)

In the context of sustainability, more energy-efficient polishing technology is now being developed. This technology optimizes tool design, such as the use of composite materials in rotors, to reduce energy consumption without sacrificing rice quality (26). Overall, innovations in rice polishing technology not only improve the physical and sensory quality of rice, but also ensure the sustainability and safety of the product. With the integration of advanced technology, this process can meet the demands of modern consumers for high-quality and healthy premium rice.

Although polishing technology has proven to be effective in improving the quality of rice, there are still challenges in its implementation, especially at the small and medium enterprise (SME) scale. Limitations of tools, technical mastery, and understanding of consumer preferences are real obstacles that need to be studied further. Most of the literature highlights the importance of polishing technology and consumer preferences in a global context or large industry. However, there have not been many studies that have specifically evaluated the effectiveness of polishing technology on the MSME scale in Indonesia and linked it to specific consumer preferences, as UD did. A new pair of shoes. This is the main basis of this research.

METHODOLOGY

This study uses a qualitative descriptive approach that aims to describe phenomena in depth based on individual and group views, experiences, and behaviors. The main focus in this approach is the collection of non-numerical data related to the processing process of premium rice and consumer preferences in UD. A new pair of shoes.

The research was carried out at UD. Barokah, which is located at Jalan Bukit Madani (Tegal), Parepare City. This location was chosen because it is the center of polished rice production that is the focus of the study. The research lasted for two months to enable the collection of in-depth and comprehensive data related to the production process and consumer responses to the polished rice products produced.

The type of data used in this study is qualitative data, which includes primary and secondary data. Primary data was obtained through direct interviews with UD owners. Barokah, employees involved in the production process, regular consumers, and the results of questionnaires distributed to consumers as a form of triangulation of methods. Meanwhile, secondary data is obtained from relevant documentation such as production reports, sales records, and other archives that support an understanding of the effectiveness of polishing technology and consumer preferences.

The collection of informants was carried out using the purposive sampling technique, which is deliberately selecting research subjects based on certain criteria that are in accordance with the research objectives. The informants in this study consisted of UD owners. Barokah, employees who have direct experience in the rice processing process, as well as regular consumers who have used UD polished rice

products. Barokah in a sustainable manner. This technique was chosen to ensure that the data obtained is relevant and in-depth.

Data collection techniques are carried out through in-depth interviews, observations, documentation, and questionnaire dissemination. In-depth interviews are used to explore the factors that affect the effectiveness of the rice processing process and find out consumer preferences for the product. This technique is carried out to business owners, employees, and consumers to gain a thorough understanding of their perspectives. Observation was carried out by directly observing the production process of polished rice at the research site, to understand the workflow, use of technology, and obstacles faced in the production process. Documentation involves collecting documents such as production reports, sales data, and consumer reviews, to reinforce and confirm findings from interviews and observations. The questionnaire was distributed to consumers to obtain supporting data related to their assessment of various aspects of UD polished rice. Barokah, such as physical quality, taste, packaging, and price, so that it can enrich qualitative findings through quantitative descriptive data.

The data analysis in this study uses the Miles and Huberman model, which includes three main stages: data reduction, data presentation, and conclusion/verification. The data reduction stage is carried out by filtering and simplifying raw data from interviews, observations, documentation, and questionnaires to focus on aspects relevant to the research objectives. The summarized data is then presented in the form of narrative text, tables, or graphs to make it easier for researchers to recognize patterns and relationships between data. The final stage is conclusion drawing and verification, which is carried out by looking for themes, patterns, and relationships between the data that has been presented. The validity of the conclusions is tested through a process of reflection and triangulation to ensure that the results of the research truly reflect the data collected.

To ensure the validity of the data, this study uses source and method triangulation techniques. Source triangulation is carried out by comparing information obtained from interviews, observations, documentation, and questionnaires. Meanwhile, the triangulation method is carried out by combining several data collection techniques to increase the consistency of the information obtained. The use of this technique aims to strengthen the credibility and validity of the research results, as well as provide a complete picture of the effectiveness of polishing technology and consumer preferences for premium rice products produced by UD. Barokah.

RESULTS

Factors Affecting the Effectiveness of Polishing in Creating Quality Premium Rice

The polishing process at UD. Barokah begins with the management of medium rice from factories that still contain dirt. The machine used functions as a polisher as well as a sorter. The business owner explained, "Rice is made from a medium rice factory that still has dirt and then managed here to be made into beautiful or premium rice." The operator added, "The rice from the warehouse we received was managed in the machine, uncovered with mixed skin or stone and polished in this machine."

From the observations, the machine works in stages: separation of foreign materials, smoothing the surface of the rice with a friction system, and the use of a small amount of water to help the bran peeling process. The workers also confirmed that the "rice sorting and polishing process" is the main function of the machine.

Raw materials are the most crucial factor that affects the success of the polishing process. The owner said, "If the raw material is submerged in water for a long time, is slow to be lifted from the rice field, or is stored for a long time so that the sack becomes hot, it can affect the success of the polishing." The operator confirmed the same thing, and the workers stated, "Mainly the raw materials, the grain that has been dried and not too late is lifted in the rice fields."

Water also plays an important role in the effectiveness of polishing. The operator said, "Water not only makes it slippery, but also makes the rice a little moist so that the bran does not return to the surface of the rice and is easier to stick to the machine." The worker said, "Water is used to lubricate it so that it can easily escape from the bran."

Regarding the maintenance of the appliance, the owner explains that "the blower is cleaned 2-3 times a month and the sink is cleaned every time it is filled." The operator added that the machine is routinely checked before use. In observation, the cleaning process of the warehouse and machinery is indeed carried out periodically, with different schedules for the top, bottom, and engine components.

Indicators of polishing success do not rely on advanced measuring tools, but rather on experience. The owner says, "We only use experience in seeing the quality produced." The machine is set so that the final result does not have a broken rice content of more than 15%. "Polished rice with broken rice is less than 15 percent," said the operator. The worker added that the owner always checks the final result before it is marketed: "The boss always pays attention to the results after it is polished into rice that is distributed with good polished rice, ready for consumption."

Consumer Preferences for UD Polished Rice Products. Barokah Consumer preference for UD products. Barokah is depicted indirectly through the attention of operators and owners to the physical

appearance of rice. The operator said that "experience using visual indicators, comparing colors and remaining bran" was used to measure whether the polish results met market expectations. The owner confirmed that "our rice products have been inspected at food security, have entered the laboratory, and have been given a shipping permit or delivery registration number, which means that our products are fit for consumption."

In observation, it can be seen that the results of UD. Barokah has a pure white appearance, with a low fracture rate and no bran left on the surface. Based on monitoring in the packaging area, the physical appearance is the main concern before the product is packaged and marketed.

Although no direct interviews were conducted with consumers, information from the operator and owner showed that consumers had certain visual standards, especially in terms of color, level of cleanliness, and the lack of broken rice. Workers also stated that "good polished rice is ready for consumption," indicating an awareness of the market's preference for the high physical quality of rice.

To deepen the results of the research related to consumer preferences for UD polished rice products. Barokah, then the following is presented a chart related to consumer preferences in buying rice at UD Barokah which is reviewed from various aspects.

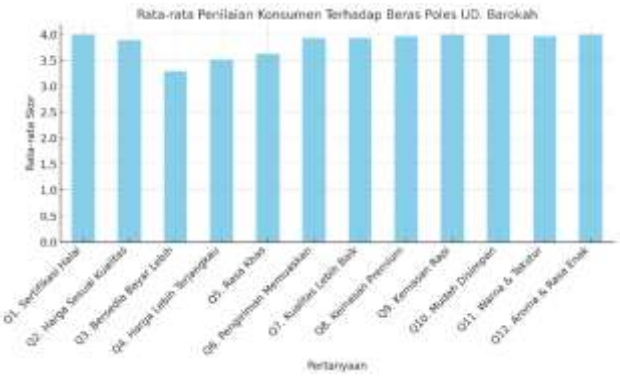

Figure 1. Consumer Assessment of UD Polished Rice. Barokah

Based on the data above, the average consumer assessment of various aspects of UD polished rice. Barokah shows a very positive tendency. Overall, most respondents gave a score of 4, which means "agree" or "good" on most questions related to the quality of polished rice products.

Regarding product halalness, in the first question (Q1) regarding Halal Certification, most respondents gave the highest score, showing that consumers pay close attention to the halalness of the products they consume. This indicates the importance of the halal factor as one of the elements underlying the decision to purchase UD polished rice. Barokah.

The next question, Price According to Quality (Q2), also received a high score, which indicates that consumers feel that the price of the polished rice products offered is proportional to the quality received. This shows that consumers perceive these products as value for money, where the price offered is considered reasonable for the quality provided.

In the third question (Q3), which asked about the willingness to pay more, a relatively high score in some respondents indicated that consumers were more willing to pay more for rice products that have premium quality. Although some consumers gave it a lower rating, overall, these results confirm that consumers are willing to pay higher prices for better quality.

Questions related to taste and quality (Q5 and Q12) showed that the distinctive taste and aroma of UD polished rice. Barokah received special attention. With values close to the maximum, this shows that consumers value taste and aroma as one of the most important factors in choosing premium rice. In this case, UD. Barokah has succeeded in creating a product that is not only visually appealing but also satisfying in terms of taste and texture.

UD polished rice packaging. Barokah, which was measured through questions about neat packaging and premium packaging (Q8, Q9), also scored highly. This shows that consumers pay close attention to the physical appearance of the product, and attractive packaging is an important added value in increasing the attractiveness of premium rice products in the market.

The results of the questions regarding ease of storage (Q10) and color & texture (Q11) showed that consumers also rated the practicality and aesthetic aspects of rice, with a fairly high average score. UD polished rice products. Barokah is considered easy to store and has colors and textures that suit market preferences.

Overall, the graphs and data obtained from this questionnaire show that consumers give positive assessments of various aspects of the quality of UD polished rice products. Barokah, with halal factors, prices that match quality, taste and aroma, and attractive packaging are the main indicators that influence purchase decisions. This assessment supports previous findings that show that physical quality, taste, and packaging are crucial factors in attracting consumer interest in premium rice products.

DISCUSSION

Factors Affecting the Effectiveness of Polishing in Creating Quality Premium Rice

The results of the study show that the polishing process at UD. Barokah is highly dependent on the quality of raw materials, water use during the polishing process, regular maintenance of the tool, and the operator's experience in evaluating the final product. In general, these findings are in line with studies that say that the quality of rice is determined by various physical, chemical, sensory, and nutritional attributes. (6) The physical quality of the rice obtained after the polishing process, such as size, shape, and level of surface cleanliness, is the main indicator that determines the success rate of premium rice production.

This study specifically found that raw materials, namely the initial condition of the grain before processing, were the most dominant factors that affected the effectiveness of polishing. Research informants, both owners, operators and workers, consistently assert that grain that is dried immediately after harvest will produce better quality of polished rice compared to grain that has been submerged for a long time or is transported late from the rice field. The management of raw materials from harvest to the processing process is indeed very important to maintain the consistency of the physical and chemical attributes of rice.(7)

In addition to raw materials, the results of the study also show that the use of water in the polishing process has a crucial role. Water functions not only as a smoother but also helps the bran to release optimally without re-adhering to the surface of the rice. The use of water in small but effective amounts shows that the polishing process carried out by UD. Barokah is quite effective and can maintain the moisture of the rice so that it is optimal during the polishing process. This is in accordance with studies that state that good processing technology is a technology that is able to maintain the physico-chemical properties of food during processing so that the final result meets the expected quality. (10)

Routine maintenance of the polishing machine, as found in this study, shows a high awareness of UD. Barokah in maintaining the performance of production equipment. Regular cleaning of the blower and sump and checking the engine before operation is a good practice that ensures consistency of product quality. The optimal condition of the machine has a direct effect on the polishing results, especially in maintaining the size of the rice grains so that they remain uniform and have minimal fractures. This is relevant to the statement about the importance of maintaining physical attributes such as grain shape and size as key quality indicators of premium rice. (6)

Interestingly, the indicators of the success of polishing at UD. Barokah does not use modern measuring instruments or instruments, but is based on the visual experience of operators and owners. Although this method is classified as traditional, the final result in rice with a fracture of less than 15 percent has been able to meet adequate quality standards. However, if referring to the development of rice evaluation technology that is increasingly advanced, such as the use of Rapid Visco Analyzer (RVA) or artificial intelligence-based sensor approach (10), then the integration of modern technology in the process of evaluating rice quality in the future can increase the effectiveness and accuracy of polishing results at UD. Barokah.

On the other hand, good results without advanced evaluation technology also confirm the importance of practical experience of operators who have been mainstay in ensuring product quality. However, for the long-term sustainability of premium rice product quality, the development of more objective and measurable evaluation methods through the integration of modern technology should be considered. As other studies suggest, the use of molecular and technological approaches in the rice quality evaluation process can consistently accelerate the production of high-quality rice varieties. (18) or more energy-efficient polishing technology with optimization of tool design, such as the use of composite materials in rotors, to reduce energy consumption without sacrificing rice quality (26).

Overall, the findings of this study strengthen the understanding that the effectiveness of polishing technology in creating premium rice does not only depend on the machine used, but is also strongly influenced by raw material management, optimal water use, regular equipment maintenance, and operator skills. The integration of field experience with the potential application of modern evaluation technology in the future can be a strategy for optimizing the quality of premium rice products in UD. Barokah.

Consumer Preferences for UD Polished Rice Products Barokah

The results of the study show that consumer preferences for UD polished rice products. Barokah is greatly influenced by the visual and sensory aspects of rice, such as the pure white color, low fracture rate, and distinctive aroma and taste. This is identified through the operator's statement that the polish results are assessed based on "experience using visual indicators, comparing the remaining colors and bran," as well as

the owner's statement that the product meets food safety standards and is fit for consumption.

Observations of the packaging process show that the visual quality of the product is the main concern before rice is marketed. The level of cleanliness, bright colors, and the slightest residual bran are indicators of quality. These findings corroborate the statement that in the Southeast Asian region, the physical appearance of rice such as softness, cleanliness, and pure white color are the main attributes that premium rice consumers value. (6)

The questionnaire data used to support these findings also showed that consumers gave very positive assessments of various aspects of the quality of polished rice products. Halal certification, distinctive taste, and quality-appropriate prices are the three main aspects that are highly rated by respondents. In this case, trust in the product is not only built on the physical side, but also on extrinsic values such as halal assurance and laboratory testing labels. This is in line with findings in China that show that food labels provide significant added value to consumer confidence. (13)

In addition, the packaging aspect also received consumer attention. The average respondent gave a positive assessment of neat and premium packaging. This shows that the external appearance of the product also affects the perception of quality, even before the consumer tests the taste. As previous research has shown, extrinsic attributes such as packaging and label information are able to increase the attractiveness of premium rice products in the Asian market. (17)

One interesting finding is that most consumers are willing to pay more for better quality rice products. This shows that there is a segment of consumers who value quality more than just low prices. A similar phenomenon occurred in East Africa, where consumers were willing to pay more for rice with a high proportion of whole grains and low turbidity. (12) In the local context of UD. Barokah, this is a strategic opportunity to maintain premium market segmentation that not only seeks quantity but also prioritizes product quality and image.

In Indonesia itself, consumer preferences for premium rice are quite diverse depending on the regional context. Previous research has noted that urban consumers tend to prioritize physical aspects such as color and cleanliness, compared to rural consumers who focus more on price and quantity. (16) This is important for UD. Barokah to continue to maintain the visual quality of rice, considering that this product is most likely to target the urban segment that is more sensitive to aesthetics and product image.

Furthermore, the consumer preferences revealed in this study show that consumers are not only paying attention to physical attributes such as texture and color, but also added value related to safety, taste, and practicality. In the context of UD polished rice. Barokah, these aspects have become advantages that are able to build consumer loyalty.

Thus, these findings confirm that consumer preferences for premium rice products are not singular, but rather a combination of various intrinsic (taste, aroma, texture) and extrinsic (packaging, certification, manufacturer's reputation) attributes. Therefore, maintaining quality from various sides and reading the dynamics of the local market is an important key in maintaining and expanding the market share of premium rice products such as those produced by UD. Barokah.

CONCLUSIONS

This study concludes that the effectiveness of the use of polishing technology in creating quality premium rice in UD. Barokah Parepare is greatly influenced by several key factors, namely the quality of raw materials, moisture management through the use of water, regular maintenance of tools, and the operator's experience in visually evaluating the final results. UD. Barokah has not yet used modern evaluation instruments, but consistent practice and field experience have been able to produce products with high quality standards, especially in terms of physical appearance and not too much rice fracture rate.

Consumer preference for UD polished rice products. Barokah is determined by a combination of intrinsic and extrinsic attributes, such as taste, aroma, color, packaging, and halal certification. This can be seen from the positive assessment of consumers and the willingness of consumers to pay more for rice with premium quality. A good product image is built from physical quality such as halal packaging and labels, which are an important factor in maintaining market loyalty.

However, this study has several limitations that need to be critically examined. First, this study did not involve direct interviews with consumers, so consumer preferences were only analyzed indirectly through questionnaire data and statements of business actors. This can limit the depth of understanding of consumer motives and behaviors holistically. Second, rice quality evaluation is still carried out based on manual observation and experience, without the support of laboratory instruments or advanced technology that allows for objective and standardized measurements.

These limitations are not methodological errors, but are a consequence of the design of a qualitative descriptive study based on case studies. Therefore, the validity of the findings is more contextual and cannot be generalized extensively. The implication of this is the need for caution in interpreting the results, as well as opening up space for more systematic and measurable follow-up research, for example through a mixed methods approach or by involving comprehensive rice quality laboratory tests.

For future researchers, it is recommended to dig deeper into the psychographic dimension of consumers and develop a preference model based on market segmentation. In addition, exploration of the application of digital-based quality evaluation technology such as color sensors, machine vision, or IoT in the polishing process is also an opportunity for relevant research development. Meanwhile, for business actors, the results of this research can be a foundation to strengthen internal production standards and build a branding strategy for premium rice products based on trust and added value that consumers want.

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