

## Willingness to Pay Analysis of Sekar Arum Organic Rice Products (Case Study of Gapoktan Damarwulan Ungkal Jaya: Kediri Regency)

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### ABSTRACT

The growing trend of healthy lifestyles around the world is driving an increase in demand for organic products, including rice, which is one of the staple foods. In Indonesia, the majority of farmers still grow rice conventionally, producing non-organic rice. However, the increase in organic rice farming land in Madiun City has not been matched by an effective marketing system or special pricing rules. This study uses a quantitative approach with the contingent valuation method and logistic regression analysis to measure consumers' willingness to pay more for organic rice. The results show that 93% of respondents are willing to pay more, with an average willingness to pay of IDR 23,310, an increase of 16.55% from the initial price. The most influential variable is access to organic rice.

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## INTRODUCTION

Lifestyle is closely related to things that are "back to nature". The existence of this trend makes people more selective in consuming food, especially those wrapped in "organic". This is because it cannot be separated from consumer perceptions about everything that comes purely from nature, so it is safe to consume (Suprpto & Wijaya, 2012). The public is aware that excessive use of chemicals will certainly have a negative impact on the environment and human health. Along with human awareness of a healthy lifestyle, as a result, products containing the least chemical contamination have become popular.

Products that contain the least chemical contamination or commonly called organic products have a fairly high content of vitamins, enzymes and minerals compared to non-organic products. Organic products theoretically contain a lot of nutrients and are good for human health. Seeing the various benefits, there has been an increase in demand for organic products, especially during the COVID-19 pandemic (AOI, 2019). This is because people will be more selective in choosing safe food. In particular, organic farming is able to produce high-quality and nutritious food products and is able to support human maintenance and welfare (Zamrodah et al., 2019).

One of the organic products that has an increasing demand trend is organic rice. This is supported by data from the Indonesian Organic Alliance, which shows that on average organic rice searches are 1,900 times more than organic vegetables (Bakrie Wahyudi David et al., 2019). Indonesia's rice production is quite a lot labeled organic. The mechanism for cultivating organic rice using conventional methods still uses a mixture of chemical fertilizers and pesticides, although at very low doses. The use of high levels of pesticides and chemical fertilizers can reduce soil quality, pollute the environment, leave chemical residues on agricultural products, and endanger human health. Consumers are now more aware and choose organic products to maintain their health. Consumers prefer organic products to products containing chemicals. Consumers most often buy organic rice after other organic products.

Damarwulan Village is located in Kepung District and is one of the areas in Kediri Regency that contributes the largest organic rice production in East Java Province. Based on BPS data (2024), the people in Damarwulan Village work as farmers. This is the main source of livelihood for the people there. Of course, this data is also supported by BPS (2023), which states that Damarwulan Village is the village with the largest rice field in Kepung District. The supporting data can be seen in the following table:

Table 1. Agricultural Land Area of Kepung District in 2023

Village/Sub-District	Non-Rice Field Agricultural Land (Ha)	Paddy Field Agricultural Land (Ha)
The city of Kebonrejo	-	288.50
Besowo	-	420.90
new village	-	607.50
Siman	130	413.60
The Bunker	319.99	328.99

Surround	424.60	1066.10
The Clink	289	291.10
The squeak	270	270
<b>Damarwulan</b>	<b>454.97</b>	<b>1132.43</b>
Rivet	401.92	401.93
<b>Total Kepung District</b>	<b>2,290.48</b>	<b>5,221.05</b>

Source: BPS (2024)

The leading agricultural product of Damarwulan Village is Sekar Arum brand organic rice produced by GAPOKTAN (Farmer Group Association) Damarwulan Ungkal Jaya. Since 2017, Sekar Arum organic rice has received an organic certificate from LeSOS (Selolima Organic Certification Institute). GAPOKTAN Damarwulan Ungkal Jaya has problems with how to market its products. One of its products is organic white rice which is sold at a price of IDR 20,000/kg. This is due to the fact that GAPOKTAN's marketing strategy is still limited to the chairman's website and Instagram social media accounts. This shows that information about Sekar Arum organic rice has not been widely disseminated. Consumers can change the way they view a product if they do not have enough information.

According to Hadi Priambodo et al. (2014), there is no effective marketing system to follow the potential of organic rice production in Indonesia. This is due to the higher cost of organic rice compared to conventional rice, which can affect buyer interest. In order for Sekar Arum organic rice to be accepted by the community, producers must know the attitude of customers. Consumers have more choices because of the many competitors of other organic rice products. To ensure that Sekar Arum organic rice can continue to grow and grow consumer trust, it is important to conduct customer assessments to find out what features are considered good by customers.

The amount of organic rice consumption is negatively correlated with the phenomena that occur in the field. Because the price of organic rice is higher than non-organic rice, consumers tend not to want to pay for organic rice. However, positive perceptions about organic products remain (Damayanti, 2018). In addition, there are no rules or regulations governing prices for organic agricultural products. As a result, there are no rules for the highest or lowest retail prices for this organic rice product, so the prices prevailing in the market are determined by the producers. Therefore, to create market balance and find out consumer assessments of Sekar Arum organic rice, it can be done by analyzing consumer willingness to pay and consumer attitudes towards organic rice. The results of this study are expected to be able to help producers in determining market segmentation and the right price according to consumer capabilities.

## LITERATURE REVIEW

### *Willingness to Pay*

Willingness to pay is how much buyers are willing to spend more money, on the one hand, to enjoy the benefits of a particular product and on the other

hand provides an idea of how much consumers value the product or service. This concept protects buyers from seller fraud which includes increasing the purchase price of goods as well as decreasing the quality of goods. In this study there are other variables such as gender, age, education level and weekly or monthly income that are related to the willingness to pay more for organic rice (Shrestha, 2019). For example, those with higher education tend to be more willing to spend extra money on organic food because they understand it better. The concept of health consciousness is also important because people who care about healthy eating are willing to spend more money on organic products. Product price also influences purchasing decisions, but consumers are still willing to pay a premium price for organic rice given its higher quality (Setiyadi et al., 2017). Therefore, health awareness, price, education, age and monthly or annual income are some of the factors that greatly influence consumers' willingness to pay above their normal range when purchasing organic rice.

## **METHODOLOGY**

This study was conducted in Damarwulan Village from May-June 2024. Analysis of consumer attitudes who have never bought Sekar Putih organic rice was conducted on a population aged over 19 years and living in East Java. The selection of respondents was carried out by chance, where these respondents were accidentally met during the study. Sampling of consumers who had purchased Sekar Arum organic rice in this study used the Lemeshow formula and a sample of 43 respondents was obtained. This study uses primary and secondary data. Primary data was obtained from direct interviews with 43 respondents, which were conducted through questionnaires. Secondary data was obtained through the East Kolaka Plantation and the Central Statistics Agency. This study uses documentation, interviews, and observations to collect data. Factors influencing WTP (age, education, income and consumer attitudes, attributes of Sekar Arum organic rice (aroma, color, shape, packaging, brand, label, price and availability). Quantitative descriptive analysis was used in this study for willingness to pay (WTP), which is the maximum amount of money someone will pay to get a good or service.

## **RESEARCH RESULT AND DISCUSSION**

### ***Willingness to Pay Analysis***

The extent to which a person is willing to spend money to improve environmental conditions or increase the quality of natural resources and ecosystem services is called willingness to pay. This concept is measured to measure the financial capacity of a person or group to make additional contributions to improve the environment until the desired standard is achieved. For example, the willingness to spend money more easily determines how much economic commitment a community can make to support better environmental initiatives (Hidayati, 2013).

The Contingent Valuation Method (VVM) is used to assess customers' willingness to pay for organic rice. The purpose of this method is to determine the value they are willing to pay for the product. To begin this process, one creates a hypothetical market, which serves to predict how conditions may

change in the future. In preparation for the future, this model depicts a long-term perspective on the importance of health, the role of lifestyle, and places that support healthy living. This hypothetical market is intended to make buyers think about the value of organic rice and its health benefits. In doing so, they want to encourage them to use organic rice.

Table 2. Willingness to Spend More on Organic Rice

No	Willingness to pay	Frequency	Percentage (%)
1	Willing to pay	93	93
2	Not willing to pay	7	7

Source: Primary Data, 2024 (Processed)

In this study, a hypothetical market was designed to influence respondents' views on their disposition to pay a higher price for organic rice. Data from table 13 revealed that out of the total respondents, 93 were willing to spend extra money for organic rice, while 7 others were not willing to pay more. This finding is in line with the increasing awareness of the importance of health, which significantly influences consumer decisions. The higher the public's awareness of health, the more likely they are to abandon a consumptive lifestyle and switch to healthier products. The willingness to pay a higher price reflects consumers' decisions influenced by health considerations to still choose organic rice even though it is more expensive (Hidayati, 2013).

To determine how much respondents are willing to pay for organic rice, this study's contingent valuation method uses an auction game. In this process, a closed value is offered, with the lowest value as the basis. Using this technique, the researcher then evaluates the financial disposition of respondents towards organic rice products. Table 14 shows the results of the willing-to-pay price (EWTP) analysis of organic rice, indicating that consumers are willing to pay an average of IDR 23,240.00 for this product, an increase of 16.20% compared to its standard price. Table 14 provides further details on the average estimate for organic rice.

Table 3. Average and Magnitude of Change in Organic Rice Prices

Estimated Willingness to Pay (Rp)	Initial Product Price (Rp)	Percentage Change In Price (%)
Rp. 23,240	Rp. 20,000	16.20

Source: Primary Data, 2024 (Processed)

### ***Analysis of Factors Influencing Consumer Desire to Buy Organic Rice***

Logistic regression analysis is used to analyze factors that can influence consumer willingness to buy organic rice. These factors include gender, age, education level, occupation, income, level of attention, trust, price perception, accessibility of organic rice, and so on. These factors, in this analysis, act as independent variables while, willingness to pay is taken as the dependent variable. The results of the logistic regression analysis conducted are presented here.

Table 4. Results of Logistic Regression Model Analysis

<i>Omnibus test of Model Coefficient</i>		
<i>Chi-square</i>	<i>Df</i>	<i>Sig.</i>
20,849	9	0.01
<i>Model Summary</i>		
<i>-2 log Likelihood</i>	<i>Cox &amp; Snell Square</i>	<i>Nails R Square</i>
12,376a	0.255	0.554
<i>Hosmer and Lemeshow Test</i>		
<i>Chi-square</i>	<i>Df</i>	<i>Sig.</i>
1,351	8	0.995
<i>Classification Table</i>		
<i>Overall Percentage</i>		93%

Source: Primary Data, 2024 (Processed)

Detailed results are presented in Appendix 4 through logistic regression analysis. According to Table 4, the Omnibus Model Coefficient test shows a calculated chi-square value of 20.849 with a significance level of 0.01. With a degree of freedom (Df) of 9 and a margin of error of 5% (0.05), the table chi-square value is 13.288, which is greater than the calculated chi-square value. This shows clear significance at the 0.01 level, indicating that at least one independent variable significantly affects the dependent variable.

The table above shows that 55.4% of the model can be explained by the independent variables, according to the Nagelkerke R Square value of 0.554 from the Model Summary. Other factors not included in the model affect the remaining 44.6%. The calculated chi-square value of 1.351 (smaller than the table chi-square value of 12.027) and the significance level of 0.995 (greater), indicate that the model is good enough to explain the existing data. Finally, the Classification Table shows a total percentage of 93%. This indicates that the regression model successfully explains 93% of the observed conditions.

Table 5. Results of Logistic Regression Variable Analysis

<b>Variables</b>	<b>B</b>	<b>Exp (B)</b>	<b>Sig</b>	<b>Information</b>
Gender (x1)	-3,485	0,000	0.542	Not Significant
Age (x2)	0.194	1,214	0.279	Not Significant
Education level (x3)	0.897	2,452	0.524	Not Significant
Jobs (x4)	1,851	0.168	0.637	Not Significant
Income (x5)	0.356	1,428	0.723	Not Significant
Concern (x6)	-0.640	0.548	0.616	Not Significant
Confidence (x7)	- 1,336	0,000	0.827	Not Significant
Price (x8)	2,960	2,607	0.741	Not Significant
Access (x9)	- 4,305	0.036	0.043*	Significant
Constant	19,936	1,677	0.982	

Source: Primary Data, 2024 (Processed))

The influence of independent variables on the dependent variable, willingness to spend more, is depicted in Table 5. According to the analysis conducted, the profession factor appears to have a significant influence on the

willingness to spend more, with a significance value of 0.04, indicating significant results at a 5% error rate. Other variables, such as concern, gender, age, education level, beliefs, income, and concern, have no significant influence.

Table 5 shows that the occupation factor affects the consumer's tendency to spend more money on organic rice, according to the regression coefficient (B) associated with the independent variable. In other words, more people who have jobs who buy organic rice in Madiun City will increase their willingness to pay more by 1.851. On the other hand, the limited access factor shows that the more difficult it is for consumers to get organic rice, the lower their willingness to pay, with a decrease of 0.305.

The results of the odds ratio analysis (Exp (B)) show the extent to which customers are willing to pay more for organic rice. The odds ratio for the employment factor is 1.851, indicating that customers who have jobs tend to pay less for organic rice about 1.851 times more than customers who do not have jobs. On the other hand, the odds ratio for the product access factor is 0.043, indicating that customers who have product access tend to pay more.

The gender variable did not show a significant effect in this study, with a significance value of 0.99. This result is contrary to previous research (Celona, 2015), which found that gender plays a significant role in willingness to pay, with women tending to spend more money than men. However, other studies have found that consumer gender does not have a significant effect on their willingness to pay (Setiyadi, 2017). According to field observations in Madiun City, organic rice consumers consist of both genders. Both men and women still choose organic rice because of its health benefits and better product quality, but research shows that the majority of buyers are women.

The effect of age on consumers' willingness to pay more for organic rice is not significant, with a significance value of 0.27. This result is in line with other studies (Rahmadhani, 2017), which also found that age does not affect the reluctance to buy organic products. Organic rice consumers in Madiun City come from various ages. The insignificant age factor may be due to the fact that buyers of all ages still pay more for organic rice because they believe it will have greater health benefits than conventional rice.

The occupation factor does not appear to have a significant effect on the tendency to pay more for organic rice, with a significance level of 0.98. However, the regression coefficient (B) shows that the occupation variable has a positive effect on the willingness to pay. This suggests that the more consumers work, the more likely they are to be willing to pay more for organic rice products.

Consumer income indicates the amount of money they have each month to meet their needs. Monthly expenditure should be greater than income. However, the significance value of the income variable of 0.72 indicates that the component does not really affect the desire to spend more money on organic rice. This result is contrary to previous research by (Febrita, 2017), which found a significant relationship between income and the desire to buy organic products. According to Febrita, customers with higher incomes tend to be more willing to pay a high price for premium products. Field studies show that

customers in Madiun City pay more attention to product benefits than price. Consumers still choose organic rice, even though it is a premium product.

The tendency to spend more money on organic rice is not influenced by how much consumers care and trust. This result is contrary to previous research (Priambodo, 2014), which found that attitudinal elements such as belief, concern, and views on product features have a significant influence on customers' willingness to pay a higher price.

With a value of 0.99, price does not have a significant impact on the willingness of Madiun City to invest more money in organic rice. This shows that organic rice buyers in the area are very loyal. In other words, their desire to continue buying organic rice is not affected by price changes, whether it goes down or up. Field studies show that customers continue to buy goods even though prices have increased for some time. This finding is in line with that of (Febrita, 2017), which also investigated price that did not affect willingness to pay. On the contrary, because organic products usually have higher prices than conventional products, price is very important in determining willingness to pay (Priambodo, 2014).

Customer willingness to pay more is significantly influenced by the product affordability factor, with a significance level of 0.043. Contrary to previous findings (Priambodo, 2014), ease of access does not really affect the willingness to spend more money. However, although significant, the regression coefficient analysis (B) shows that difficult access has a negative correlation with willingness to pay, with a value of -4.305. This shows that the more difficult it is for customers to gain access to the product, the more likely they are to spend more money. This suggests that customers' reluctance to pay more can have an impact on their decision to spend more money.

## **CONCLUSIONS AND RECOMMENDATIONS**

The product accessibility factor is the main factor that influences the willingness of buyers in Madiun City to pay more for organic rice. The accessibility of this product has a negative impact on the willingness to pay. In other words, the organic rice market will gain greater benefits if the product is easily accessible to consumers. In other words, customers may find that the location of organic rice sales that is not strategic and difficult to reach is a major obstacle to making a purchase.

## **ADVANCED RESEARCH**

The results of this study on the average price of willingness to spend more for organic rice provide important guidelines for organic rice producers in Madiun City to set their prices. This analysis shows the upper limit of the price that consumers are willing to pay. Therefore, if producers want to increase prices, it is recommended that the increase does not exceed the specified willingness to spend more.

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