



Improving Sea Cucumber Consumer Satisfaction in the Tanimbar Islands through the Role of Product Quality and Price

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ABSTRACT

This study aims to analyze the effect of product quality and price on consumer satisfaction in the Tanimbar Islands. The research method used is quantitative with a correlational approach to 107 respondents who are consumers of sea cucumbers. Data were analyzed using multiple linear regression analysis with the help of the JASP application. The results of the study indicate that the two variables studied, namely product quality and price, have a significant effect on consumer satisfaction. Product quality is the dominant factor that influences consumer satisfaction. This finding emphasizes the importance of maintaining product quality and setting appropriate prices to increase consumer satisfaction. So that research suggestions underline the importance of improving product quality and evaluating prices periodically so that consumers remain satisfied.

INTRODUCTION

The fisheries industry in Indonesia plays an important role in the economy, especially in the high-value marine product sector (Report, 2021). One of the commodities that has increasing global demand is sea cucumber. "Sea cucumber" or known as sea cucumber, not only has high economic value but is also known for its health benefits, especially in the pharmaceutical and traditional medicine fields in Asian countries such as China, South Korea, and Japan (Adam et al., 2022). Indonesia as one of the main producing countries of sea cucumber has a great opportunity to meet this demand, especially in the abundance of marine resources spread across various coastal areas including the Tanimbar Islands, Maluku Province.

In the seafood industry, product quality is the main factor that determines competitiveness in both domestic and international markets (Luhur et al., 2019; Uzmanoğlu & Arslan, 2020). High-quality products have certain characteristics, such as large size, chewy texture, and bright color, all of which contribute to higher selling prices (Pérez-Lloréns & Mouritsen, 2024). However, the problem also faced by the sea cucumber industry is significant price fluctuations influenced by factors such as market demand, environmental conditions, and fishing practices that are not yet fully sustainable. On Seira Island, Seira District, Tanimbar Islands, sea cucumbers are one of the main sources of income for the community.

However, the challenge of maintaining product quality and competitive prices is still an obstacle for local fisheries business actors. This is related to the important role of sea cucumbers in the local economy and export potential, so research is very substantial to be carried out in order to provide a deeper understanding of the interaction between product quality and price on consumer satisfaction in the sea cucumber industry. Because customer satisfaction is very important to ensure stable business continuity, encourage repeat purchases, and create positive market conditions and ultimately attract new consumers (Brunner et al., 2025).

Previous studies have examined the relationship between product quality and price on consumer satisfaction in various industries. Research (Mulkan Ritonga, 2023) states that product quality is the overall characteristics that determine the product's ability to meet consumer needs. Meanwhile, (Margareta Evy da Silva, 2021) emphasizes that price can significantly affect consumer satisfaction. However, there is still a research gap related to how these two factors interact in the context of the sea cucumber industry in coastal areas such as the Tanimbar Islands, especially on Seira Island.

This study aims to analyse how product quality and price can affect consumer satisfaction of sea cucumbers on Seira Island, Seira District, Tanimbar Islands. Practically, this study is also expected to provide recommendations for sea cucumber business actors in developing marketing strategies in the form of improving product quality and setting sea cucumber prices, in order to increase consumer satisfaction.

LITERATURE REVIEW

The Relationship between Product Quality and Consumer Satisfaction

Product quality is one of the important elements in determining the level of consumer satisfaction in any industry (Naini et al., 2022). Product quality can be defined as a series of characteristics or attributes that can meet or exceed consumer expectations (Ahmad & Ahmad, 2023). In general, product quality does not only refer to durability or physical design, but also includes various aspects, such as functionality, performance, and emotional impact created on consumers (Agus Khoironi et al., 2018). When consumers buy a product, they have certain expectations related to the performance, durability, and features offered. Consumers tend to compare the products they buy with previously formed expectations and are influenced by past experiences, promotions, and recommendations from other consumers.

Product quality consists of several dimensions, namely performance, durability, reliability, features, aesthetics which collectively determine how well the product can meet consumer needs (Hoe & Mansori, 2018). Meanwhile, consumer satisfaction is an evaluation of product performance after comparing product perceptions with consumer expectations (Uzir et al., 2020). If the product offered meets or even exceeds these expectations, consumers will feel satisfied, and vice versa if the product does not meet expectations, consumer satisfaction will decrease (Mazhar et al., 2022). The statement above is supported by several previous studies, such as by (Rohmah et al., 2023), which statistically confirms that product quality is a predictor of consumer satisfaction. (Abigail et al., 2024) further emphasizes this argument by stating that product quality is a determinant of consumer satisfaction for users of local skin care products. The descriptions above are the basis for the formation of the first hypothesis of this study, namely:

H1: Product quality has a significant impact on consumer satisfaction.

Relationship Between Price and Consumer Satisfaction

Price has a significant influence on the level of consumer satisfaction, which is influenced by how consumers perceive the value and fairness of the price paid (Zhao et al., 2021). Price can also be said to be a tool for consumers to exchange goods and services (Reken et al., 2024). Consumers often evaluate a product by comparing the price paid with the quality received which affects consumer satisfaction. When the price is too high even though the quality is good, consumers will feel dissatisfied (Amelia et al., 2025), while a low price may reduce the perception of product quality, also affecting satisfaction (Wang et al., 2023). Consumer satisfaction is more influenced by whether the price paid is felt to be fair and in accordance with the benefits obtained.

Overall, the relationship between price and consumer satisfaction can be confirmed by (Chaerudin & Syafarudin, 2021) which shows that price has been shown to have a positive and significant impact on consumer satisfaction of the company's medical devices. The above argument is further justified by (Wati Simanullang et al., 2024), who through the results of their hypothesis testing prove that one of the factors that influences consumer satisfaction is price. Based on these studies, the second hypothesis proposed in this study is:

H2: Price has a significant impact on consumer satisfaction.

Based on the various explanations above, the framework of thought in research can be described as follows:

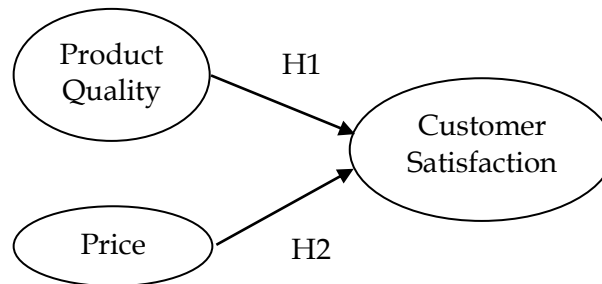


Figure 1. Framework of thought in Research

METHODOLOGY

This study uses a quantitative approach with a correlational research type, with the main objective being to test the relationship between two independent variables, namely product quality and price, to the dependent variable, namely consumer satisfaction of sea cucumbers in Seira District, Tanimbar Islands. In this study, numerical data is used to analyze the relationship between variables using statistics.

The population taken in this study were consumers who purchased sea cucumber products in Seira District in the last six months. The sampling technique used was purposive sampling with criteria determined by the researcher. The G-Power application was used to determine the number of samples so that a total of 107 consumers were obtained.

There are two independent variables studied, namely product quality with 3 indicators quoted from journals (Tabelessy, 2023), and price with 6 indicators quoted from journals (Violani, Vania; Albari, 2023), and consumer satisfaction with 3 indicators quoted from journals (Rita et al., 2019). Then the data was collected through a closed questionnaire using a Likert scale of 1-5.

Data analysis in this study used multiple linear regression with the help of the JASP application to test the effect of product quality and price on consumer satisfaction.

RESULT AND DISCUSSION

Based on the results of the study involving 107 consumers, it can be concluded that the majority of consumers are female (53%) with the largest age group coming from the age range of less than 35 years (39%), and the majority of consumers have a final education of high school level (40%).

Table 1. Validity Test

Statement Items	Item-rest correlation	Inf.
QUPR1	0,712	Valid
QUPR2	0,733	
QUPR3	0,450	
PRI1	0,710	Valid
PRI2	0,653	
PRI3	0,571	

PRI4	0,626	Valid
PRI5	0,525	
PRI6	0,460	
CUST1	0,585	
CUST2	0,646	
CUST3	0,491	

Source: JASP Data Processing, 2025

Table 1 as a whole show that all tested items are declared valid because their values are greater than 0.190. This means that these items can be used to measure the intended variables, namely product quality, price, and consumer satisfaction.

Table 2. Reliability Test

Variable	Estimate	McDonald's ω	Inf.
QUPR	Point estimate	0,815	Reliable
	95% CI lower bound	0,756	
	95% CI upper bound	0,874	
PRI	Point estimate	0,791	Reliable
	95% CI lower bound	0,730	
	95% CI upper bound	0,852	
CUST	Point estimate	0,739	Reliable
	95% CI lower bound	0,654	
	95% CI upper bound	0,823	

Source: JASP Data Processing, 2025

Table 2 shows the results of the reliability test for each variable measured in this study. In the analysis using the JASP application, the McDonald's ω value is used to measure reliability with criteria that are considered good if the value is greater than 0.7 (Mokhtaryan-Gilani et al., 2021). Based on the test results, all variables studied showed good reliability, because the McDonald's ω value was greater than 0.7.

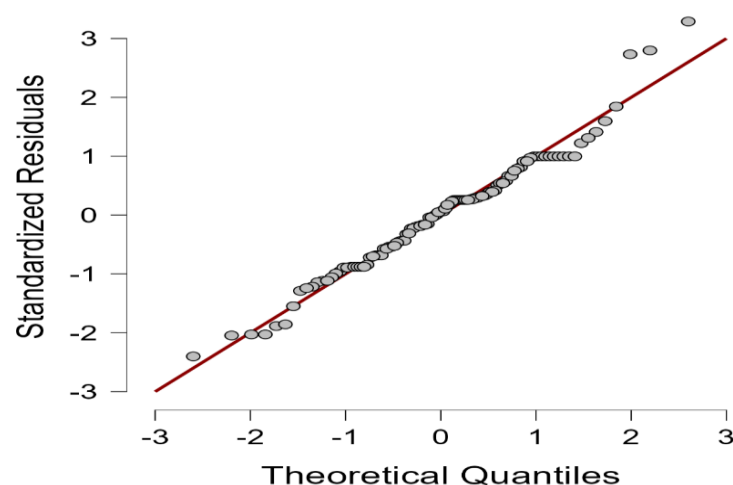


Figure 2. Data Normality Test

Source: JASP Data Processing, 2025

Figure 2 shows the results of the residual normality test using the Q-Q Plot Standardized Residuals. Data is considered normally distributed if the

points on the plot are along the diagonal line (Goss-Sampson, 2020). Thus, because the distribution of data points follows the diagonal line, it can be concluded that the data in this study is normally distributed.

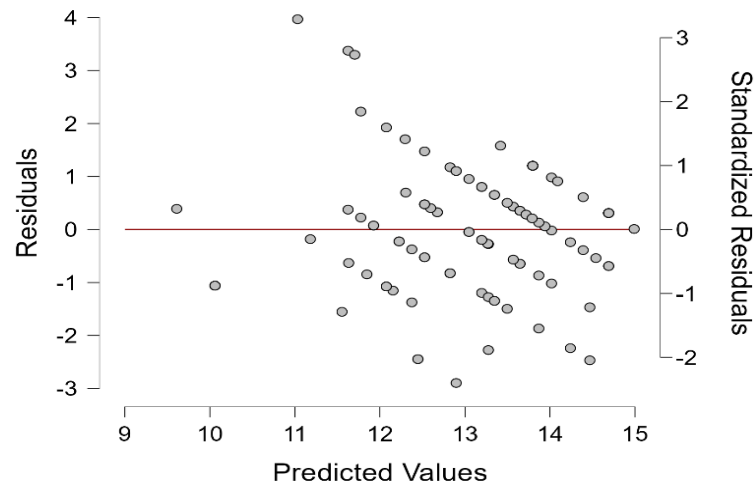


Figure 3. Heteroscedasticity Test Results

Source: JASP Data Processing, 2025

Figure 3 illustrates the results of heteroscedasticity testing using the Residuals vs Predicted graph. Data is considered free from heteroscedasticity if the residual distribution looks random and is evenly distributed around the 0 line (Goss-Sampson, 2020). Therefore, because the data distribution does not form a particular pattern and is spread both above and below the 0 line, it can be concluded that the residual variance shows homoscedasticity.

Table 3. Multicollinearity Test

Collinearity Statistics		
	Tolerance	VIF
QUPR	0,683	1,464
PRI	0,683	1,464

Source: JASP Data Processing, 2025

Table 3 presents the results of the multicollinearity test, which includes the Tolerance and VIF values. Data is considered not to contain multicollinearity if the Tolerance value is greater than 0.1 and the VIF is less than 10 (Goss-Sampson, 2020). Based on the results obtained, the Tolerance value is 0.683 (greater than 0.1) and the VIF value is 1.464 (less than 10), which indicates that there is no multicollinearity problem in this study.

Table 4. Model Summary Cust

Model	R	R ²	Adjusted R ²	RMSE
H ₀	0,000	0,000	0,000	1,690
H ₁	0,700	0,490	0,480	1,218

Source: JASP Data Processing, 2025

Table 4 presents a summary of the model or coefficient of determination. The R value of 0.700 indicates a strong positive relationship between product quality, price, and consumer satisfaction. Meanwhile, the adjusted R² value of 0.480 indicates that 48% of the variation in consumer satisfaction can be explained by product quality and price factors. The lower RMSE value of 1.218 indicates that this model has an accurate level of prediction. In general, this

model shows good performance, with a significant relationship between the variables analyzed.

Table 5. ANOVA

Model		Sum of Squares	df	Mean Square	F	p
H ₁	Regression	148,440	2	74,220	50,017	<,001
	Residual	154,326	104	1,484		
	Total	302,766	106			

Source: JASP Data Processing, 2025

Table 5 shows the results of the ANOVA test, with an F count value of 50.017 and a significance probability of less than 0.05 (<,001 < 0.05). This indicates that the overall regression model is able to provide very significant predictions.

Table 6. Hypothesis Testing

Model		Unstandardized	Standard Error	Standardized	T	p
H ₀	(Intercept)	13,047	0,163		79,853	<,001
H ₁	(Intercept)	2,655	1,048		2,544	0,012
	QUPR	0,522	0,094	0,472	5,569	<,001
	PRI	0,150	0,040	0,316	3,370	<,001

Source: JASP Data Processing, 2025

Table 6 contains the results of the hypothesis test for this study, which can be interpreted as follows:

1. The t_{count} for the product quality variable is 5.569, and the probability of significance is <,001 (<,001 < 0.05). This result supports the first hypothesis (H1) that product quality has a significant impact on consumer satisfaction.
2. The t_{count} for the price variable is 3.337, and the probability of significance is <,001 (<,001 < 0.05). This result supports the second hypothesis (H2) that price has a significant impact on consumer satisfaction.

The Influence of Product Quality on Consumer Satisfaction

Product quality has an influence on consumer satisfaction, especially in sea cucumber products, which are assessed based on texture, aroma, and overall quality. A chewy texture that is not too hard or soft, as well as a fresh and natural aroma, without a disturbing fishy smell will increase consumer satisfaction. In addition, the overall product quality includes taste, texture, and aroma in an integrated manner to form a positive consumer perception of sea cucumber products. Conversely, inconsistencies in one of these aspects can cause consumer dissatisfaction. The results of the first hypothesis test accepted in this study are in accordance with previous studies by (Rohmah et al., 2023) and (Abigail et al., 2024).

The Influence of Price on Consumer Satisfaction

Price has an influence on consumer satisfaction, especially for sea cucumber products, which can be seen from several reasons. Consumers who are satisfied with the price because the price paid is in accordance with the quality of the product felt and received by consumers. Thus, pricing must be adjusted to the quality of the product because if not, it will reduce the level of consumer satisfaction. In addition, the good texture of sea cucumber products

will make consumers dare to pay more even though the price is high. Competitive prices compared to competitors will also provide added value so that consumers will increase consumer satisfaction. Furthermore, when sea cucumber products are offered at prices that match the quality of the product, consumers will feel satisfied. The results of the second hypothesis test accepted in this study are in accordance with previous studies by (Chaerudin & Syafarudin, 2021) and (Wati Simanullang et al., 2024).

CONCLUSIONS AND RECOMMENDATIONS

This study proves that product quality and price have a significant influence on consumer satisfaction in Seira Island, Tanimbar Islands. Consumers tend to feel satisfied if sea cucumbers have good quality, especially in terms of texture and aroma. In addition, reasonable prices that are comparable to the quality of sea cucumber products also contribute to the level of consumer satisfaction. The results of the hypothesis test provide an illustration that these two variables are able to explain almost half of the variation in consumer satisfaction, so that both can be considered as important aspects in the marketing strategy of sea cucumber products.

Based on the findings above, it is recommended that sea cucumber business actors continue to improve product quality through improvements in processing and storage processes. Pricing also needs to be adjusted to the value obtained by consumers so as not to cause dissatisfaction. It is also hoped that the contribution of local governments and related agencies can play an active role in providing training and assistance so that they can produce quality and competitive sea cucumbers in the market.

Although this study involved 107 consumers, which is quite sufficient for a local survey scale, there are still limitations that need to be noted. This study only analysed two main variables, namely product quality and price, so it is recommended for further research to add other variables such as consumer trust and distribution channels.

FURTHER STUDY

This research still has limitations so further research is still needed on this topic.

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