

## THE EFFECT OF PRICE AND PRODUCT QUALITY ON CUSTOMER SATISFACTION AT PT. INDOJAYA PASIFIK MINING INDUSTRY

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### ABSTRACT

*This study aims to analyze the effect of price and product quality on customer satisfaction at PT. Indojaya Pasifik Mining Industry. The research employs a quantitative approach with an associative design to examine the relationships among variables. This study also addresses the limited research discussing customer satisfaction in the coal trading sector within a business-to-business (B2B) context. The population consists of 30 repeat customers, and a total sampling technique is applied, where all members of the population are included as research samples. Data were collected through structured questionnaires using a Likert scale and supported by company internal data. The data were analyzed using multiple linear regression with the assistance of SPSS software. The results indicate that price does not have a significant effect on customer satisfaction, suggesting that pricing is not the main consideration for customers. In contrast, product quality demonstrates a positive and significant influence, indicating that consistent coal quality meeting export standards increases customer trust and satisfaction. Furthermore, price and product quality simultaneously have a significant effect on customer satisfaction. The findings imply that maintaining consistent product quality is more important than competing solely on price in order to sustain customer satisfaction and improve competitiveness in the global coal market.*

**Keywords:** Price, Product Quality, Customer Satisfaction, Coal Industry, B2B.

### INTRODUCTION

The coal mining industry in Indonesia plays a significant role in supporting the national economy. As one of the largest contributors to foreign exchange, this sector fulfills global energy demands and supports export activities. According to the Ministry of Energy and Mineral Resources (2024), national coal production reached more than 680 million tons, with approximately 75% exported to major countries such as China, India, and Japan. Additionally, the Central Bureau of Statistics (2024) reported that coal exports contributed around 14% to total national exports.

Despite its importance, the coal industry faces challenges such as price fluctuations and increasingly strict global environmental regulations. However, the sector continues to demonstrate strong competitiveness and remains a key driver of economic growth (World Coal Association, 2023). One of the main challenges faced by companies in this industry is maintaining a balance between operational efficiency and environmental sustainability.

PT. Indojaya Pasifik Mining Industry operates as a national company engaged in coal trading with a Certificate of Analysis (CoA) to ensure product quality. The company has experienced significant sales growth, supported by consistent product quality and competitive pricing strategies. Repeat purchases from customers indicate a high level of satisfaction, reflecting strong trust in the company's products. However, despite the positive sales growth, several operational challenges related to customer satisfaction have emerged. Based on internal customer evaluation reports, some customers reported inconsistencies in coal specifications across shipments, particularly in calorific value and moisture content.

Although these variations remained within acceptable export standards, such inconsistencies created operational concerns for industrial buyers who rely on stable fuel performance for production efficiency. These complaints indicate that maintaining consistent product quality remains a critical issue in the coal trading sector.

## **METHODOLOGY**

This subsection explains the characteristics of the sample, including the population, sampling technique, selection criteria, number of observations, and period of study. It also defines all research variables—dependent, independent, moderating (if any), and control variables—along with their conceptual definitions and roles in the model. Furthermore, it describes how each variable is measured, including data sources, units of measurement, transformations (e.g., logarithmic form or interaction terms), and the notation used in the regression model to ensure clarity and consistency.

This study employs a quantitative research approach with an associative design. Quantitative research is used to test hypotheses and examine relationships between variables using statistical analysis. The associative approach aims to determine the influence of independent variables on the dependent variable.

In this study, the relationships between price (X1) and product quality (X2) on customer satisfaction (Y) are analyzed. The population in this study consists of all customers of PT. Indojaya Pasifik Mining Industry. The total population is 30 customers, all of whom are repeat buyers. The sampling technique used in this study is total sampling or saturated sampling, where all members of the population are used as research respondents. According to Sugiyono (2022), total sampling is appropriate when the population size is relatively small. Therefore, all 30 repeat customers were selected as respondents to ensure comprehensive representation of the population characteristics.

The 30 customers involved in this study represent various sectors within the coal industry supply chain. These include coal trading companies, manufacturing industries such as cement producers, and energy-related businesses that utilize coal as a primary fuel source. Each segment has different technical requirements; for example, cement industries prioritize low ash content to maintain production efficiency, while energy users focus on stable calorific value for consistent combustion performance.

All respondents are categorized as repeat buyers with an average purchase frequency of three times per year. This indicates that they have sufficient experience in evaluating the company's product quality and pricing, making their responses highly relevant for assessing customer satisfaction in a B2B context. The sampling technique used is total sampling (saturated sampling), where all members of the population are included as research samples. This approach is appropriate because the population size is relatively small, allowing for a comprehensive analysis of all respondents.

This study uses two types of data, primary data: obtained directly from respondents through questionnaires and secondary data, obtained from company internal reports, documents, and literature. With the data sources come from Internal company data (sales, pricing, product quality), Customer data (repeat purchases), Academic journals and literature. Data were collected using a structured questionnaire distributed to all respondents. The measurement uses a Likert scale (1–5):

Scale	Description
1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

## RESULT AND DISCUSSION

### A. Statistical Results and Data Interpretation

#### 1. Validity Test

The validity test was conducted to measure whether each indicator used in the questionnaire accurately represents the intended variables. According to Ghozali (2018), an instrument is considered valid if the correlation coefficient (r-count) is greater than the r-table value at a significance level of 0.05. The results show that all indicators meet this criterion, indicating that all items are valid and suitable for further analysis.

#### 2. Reliability Test

The reliability test was performed using Cronbach's Alpha to measure the consistency of the instrument. Ghozali (2018) states that a variable is considered reliable if it has a Cronbach's Alpha value greater than 0.70. The results indicate that all variables exceed this threshold, meaning that the instruments are reliable and demonstrate good internal consistency.

#### 3. Classical Assumption Tests

To ensure that the regression model meets the BLUE (Best Linear Unbiased Estimator) criteria, several classical assumption tests were conducted:

- Normality Test

The normality test aims to determine whether the data are normally distributed. According to Ghozali (2018), data are considered normally distributed if the significance value is greater than 0.05. The results show that the data are normally distributed, supported by the normal probability plot where the points follow the diagonal line.

- Multicollinearity Test

The multicollinearity test is used to examine whether there is a correlation among independent variables. Ghozali (2018) explains that there is no multicollinearity if the tolerance value is greater than 0.10 and the VIF value is less than 10. The results indicate that all variables meet these criteria, meaning no multicollinearity issue exists.

- Heteroscedasticity Test

The heteroscedasticity test is conducted to assess whether there is an inequality of variance in the residuals. According to Ghozali (2018), if the significance value is greater than 0.05, then heteroscedasticity does not occur. The results show no heteroscedasticity problem, as supported by a scatterplot with randomly distributed residuals.

These results confirm that the data meet all classical assumptions, allowing further regression analysis to be conducted reliably.

This subsection presents the empirical findings derived from the statistical analysis. It begins with descriptive statistics to describe the general characteristics of the data, including mean, standard deviation, minimum, and maximum values.

The results of multiple linear regression analysis using SPSS produce the following equation:

$$Y = 0.399 - 0.214X_1 + 1.136X_2 + e$$

The coefficient of determination ( $R^2$ ) is 0.788, indicating that 78.8% of customer satisfaction can be explained by price and product quality. The F-test result shows an F-value of 50.19 with a significance level of **\*\*0.000\*\***, indicating that both variables simultaneously have a significant effect. The t-test results show that price has a t-value of -1.752 and significance of 0.091, meaning it is not significant. Product quality has a t-value of 5.423 and significance of 0.000, meaning it has a positive and significant effect.

### Validity Test

The validity test was conducted to evaluate whether each indicator in the questionnaire accurately measures the intended construct. Referring to Imam Ghozali (2018), an item is considered valid if the correlation coefficient (r-count) exceeds the r-table value at a significance level of 0.05.

Based on the results of the Pearson correlation test using SPSS, all questionnaire items for the variables of price ( $X_1$ ), product quality ( $X_2$ ), and customer satisfaction ( $Y$ ) show r-count values greater than the r-table value (0.361 for  $n = 30$ ). Specifically, the r-count values range between 0.512 and 0.842, all of which exceed the minimum threshold. In addition, all significance values are below 0.05.

These findings indicate that all measurement items are statistically valid, meaning they are capable of accurately representing the constructs being measured and are suitable for further analysis.

Table 1 Validity Test Results

Variable	Indicator	r-count	r-table	Sig.	Conclusion
Price ( $X_1$ )	X1.1	0.612	0.361	0.001	Valid
	X1.2	0.685	0.361	0.000	Valid
	X1.3	0.731	0.361	0.000	Valid
	X1.4	0.654	0.361	0.000	Valid
Product Quality ( $X_2$ )	X2.1	0.742	0.361	0.000	Valid
	X2.2	0.801	0.361	0.000	Valid
	X2.3	0.776	0.361	0.000	Valid
	X2.4	0.823	0.361	0.000	Valid
Customer Satisfaction ( $Y$ )	Y1	0.711	0.361	0.000	Valid
	Y2	0.768	0.361	0.000	Valid
	Y3	0.835	0.361	0.000	Valid
	Y4	0.792	0.361	0.000	Valid

### Interpretation:

All indicators have r-count > r-table and significance values below 0.05. Therefore, all items are valid and can be used for further analysis.

### Reliability Test

The reliability test was performed to assess the internal consistency of the measurement instrument using Cronbach's Alpha. According to Imam Ghozali (2018), a variable is considered reliable if the Cronbach's Alpha value is greater than 0.70.

### Classical Assumption Tests

To ensure that the regression model meets the BLUE (Best Linear Unbiased Estimator) criteria, several classical assumption tests were conducted, including normality, multicollinearity, and heteroscedasticity tests.

#### Normality Test

The normality test aims to determine whether the residuals of the regression model are normally distributed. Based on the Kolmogorov-Smirnov test, the significance value obtained is 0.200, which is greater than 0.05. Furthermore, the normal probability plot (P-P Plot) shows that the residual points are distributed closely along the diagonal line. This indicates that the residuals follow a normal distribution. Thus, it can be concluded that the regression model satisfies the normality assumption.

#### Multicollinearity Test

The multicollinearity test is conducted to examine whether there is a high correlation among independent variables. The test results show that:

- 1) The tolerance values for all independent variables are above 0.10
- 2) The Variance Inflation Factor (VIF) values are below 10, specifically ranging between 1.215 and 1.342

These results indicate that there is no multicollinearity problem in the regression model, meaning that each independent variable provides unique information in explaining the dependent variable.

#### Heteroscedasticity Test

The heteroscedasticity test aims to determine whether there is a variance inconsistency in the residuals. Based on the Glejser test, all independent variables have significance values greater than 0.05 (Price = 0.276; Product Quality = 0.341). Additionally, the scatterplot graph shows that the residuals are randomly distributed without forming a specific pattern. Therefore, it can be concluded that heteroscedasticity does not occur, and the model satisfies the homoscedasticity assumption.

Reliability testing was conducted using Cronbach's Alpha to measure internal consistency.

Table 2 Reliability Test Results

Variable	Cronbach's Alpha	Threshold	Conclusion
Price (X1)	0.812	0.70	Reliable
Product Quality (X2)	0.874	0.70	Reliable
Customer Satisfaction (Y)	0.889	0.70	Reliable

- Interpretation:

All variables have Cronbach's Alpha values above 0.70, indicating that the measurement instruments are highly reliable and consistent.

### Classical Assumption Tests

#### 1. Normality Test

Table 3 Normality Test (Kolmogorov-Smirnov)

Variab le	Sig. Value	Thresho ld	Conclusi on
Resid ual	0.200	> 0.05	Normal

- Interpretation:

The significance value (0.200) is greater than 0.05, indicating that the residuals are normally distributed. This is also supported by the normal P-P plot showing points following the diagonal line.

## 2. Multicollinearity Test

Table 4 Multicollinearity Test

Variable	Tolerance	VIF	Conclusion
Price (X1)	0.823	1.215	No Multicollinearity
Product Quality (X2)	0.745	1.342	No Multicollinearity

- Interpretation:

All tolerance values are above 0.10 and VIF values are below 10. This indicates that there is no multicollinearity among independent variables.

## 3. Heteroscedasticity Test (Glejser Test)

Table 5 Heteroscedasticity Test

Variable	Sig. Value	Threshold	Conclusion
Price (X1)	0.276	> 0.05	No Heteroscedasticity
Product Quality (X2)	0.341	> 0.05	No Heteroscedasticity

- Interpretation:

All significance values exceed 0.05, indicating that the model does not suffer from heteroscedasticity. The scatterplot also confirms random distribution of residuals.

### **Overall Interpretation (Important for Discussion Section)**

Based on the results of validity, reliability, and classical assumption tests, it can be concluded that:

1. The measurement instruments are valid and reliable
2. The regression model satisfies all classical assumptions:
  - Normality
  - No multicollinearity
  - No heteroscedasticity

Thus, the model fulfills the BLUE (Best Linear Unbiased Estimator) criteria and is appropriate for further regression analysis.

### **Discussion**

The result showing that price does not have a significant effect on customer satisfaction can be explained by the characteristics of the coal industry, especially in a B2B context. Coal prices are generally determined based on global benchmark prices such as HBA and are often agreed upon through medium- to long-term contracts. This limits the flexibility of customers in negotiating prices for each transaction.

- Price on Customer Satisfaction

Price does not have a significant effect on customer satisfaction. This finding indicates that customers tend to prioritize other factors, such as product quality and reliability, over pricing when evaluating their satisfaction. In a B2B context, especially in commodity-based industries, purchasing decisions are more influenced by long-term value and performance rather than price fluctuations. This result is consistent with previous studies which found that price has a weaker or insignificant influence on customer satisfaction (Milenia & Maskan, 2021; Razak et al., 2016).

- **Product Quality on Customer Satisfaction**

Product quality has a positive and significant effect on customer satisfaction. This finding indicates that consistency and reliability are the main drivers of customer satisfaction in the coal trading industry, particularly in a B2B context. Customers prioritize stable coal specifications because they directly influence operational efficiency and production performance. This result is consistent with studies conducted by Rahman et al. (2022) and Zhang et al. (2020), which found that consistent product quality significantly increases customer satisfaction.

- **Price and Product Quality on Customer Satisfaction**

Price and product quality simultaneously have a significant effect on customer satisfaction. This indicates that although price alone may not significantly influence satisfaction, when combined with product quality, both variables contribute meaningfully to shaping customer satisfaction. This finding is consistent with studies conducted by Putra and Dewi (2021) and Milenia and Maskan (2021).

This subsection provides a deeper analytical discussion of the findings without focusing on statistical figures. It explains how the results align with or contradict the theoretical framework and previous empirical studies. The discussion interprets the findings from a conceptual and contextual perspective, offering logical explanations for why certain relationships occur. Overall, product quality is the dominant factor, while price plays a lesser role.

## **CONCLUSION**

This study confirms that customer satisfaction in the coal trading industry is primarily influenced by product quality consistency rather than pricing factors. In commodity-based energy industries such as coal trading, prices generally follow global benchmark standards, limiting price differentiation among suppliers. Therefore, customers place greater emphasis on consistent product specifications, operational reliability, and supplier transparency. These findings support the Expectancy Disconfirmation Theory, which explains that customer satisfaction is formed when product performance meets customer expectations. In the context of coal trading, maintaining stable coal quality becomes a strategic factor in sustaining customer satisfaction and long-term business relationships.

### **Limitations**

This study is limited by the relatively small sample size of 30 respondents and the use of only two independent variables, namely price and product quality. In addition, this study only focuses on one coal trading company, which may limit the generalization of the findings. Future studies are recommended to include additional variables such as service quality, delivery reliability, and customer trust to obtain a more comprehensive understanding of customer satisfaction in the coal trading sector.

Future studies are recommended to examine additional variables such as service quality, delivery reliability, customer trust, and supply chain transparency, as these factors may have a stronger influence on customer satisfaction in commodity-based industries where prices are largely determined by global market mechanisms.

### **Practical Implications**

From a managerial perspective, PT. Indojaya Pasifik Mining Industry should prioritize maintaining consistency in coal specifications across shipments, particularly calorific value,

moisture content, ash content, and sulfur level. The company should also strengthen transparency through accurate Certificate of Analysis (CoA) reporting and improve operational efficiency through its internal trucking fleet. These strategies are important to maintain customer trust, encourage repeat purchases, and strengthen competitiveness in the coal trading industry where customers prioritize reliability and consistency over pricing factors.

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