

Application of Statistical Tests in Measuring the Influence of Product Quality and Brand Image

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Abstract—The purpose of this study is to investigate how brand image and product quality have an impact on the interest in buying precious metals at the Sleman Branch Pawnshop. The study found that product quality, which includes purity, authenticity, and attractive design, significantly affects consumer buying interest. The quantitative methods used include survey methods and multiple regression analysis. In addition, Pegadaian's reputation as a safe and reliable financial institution greatly influences customers' desire to buy precious metals. The results of the regression analysis show that product quality has a regression coefficient of 0.543 with a p-value < 0.001, while brand images have a regression coefficient of 0.479 with a p-value < 0.001. The synergy between brand image and product quality shows an increase in customer buying interest. These two factors influence each other's purchase decisions. The implications of this study show that to maintain and increase consumer buying interest, Pegadaian must continue to maintain and improve the quality of its products and brand image. This research provides valuable insights for pawnshops on how to optimize marketing strategies and product quality management.

Index Terms—About; Brand Image, Precious Metal, Product Quality, Purchase Interest

I. INTRODUCTION

With global economic growth and public awareness of the importance of investment, interest in buying precious metals has increased in recent years [1]. As a financial institution

offering precious metal products such as gold, Pegadaian faces the challenge of continuously attracting and maintaining consumer interest. This research aims to analyze how product reputation and brand image influence consumer interest in purchasing precious metals at Pegadaian Sleman Branch. Product quality and brand reputation are two important factors that influence consumer decisions in purchasing metals.

Product quality is defined as a product's ability to meet or exceed customer expectations [2]. A product is not only evaluated based on its physical attributes but also in terms of reliability, durability, and uniqueness. Consumer satisfaction and loyalty can be enhanced with high-quality products [3], [4]. The purity of gold, design, and certification of precious metal products determine product quality. Recognized certification, issued by Pegadaian, provides consumers with assurance about the authenticity and investment value of precious metals [5]. Conversely, brand image refers to how customers perceive a brand based on the information and experiences they receive and possess [6]. A positive brand image can foster trust and encourage consumer purchasing interest. A strong brand image can enhance the added value of a product in the eyes of consumers [7]. At Pegadaian, brand image is built through various marketing strategies, good service, and the company's reputation as a trusted financial institution. Consumers are more likely to choose products from brands with a positive image because they are considered safer and more reliable [8].

Empirical observations indicate that the interest in purchasing precious metals at Pegadaian Sleman Branch has experienced significant fluctuations. In recent years, the increase in global gold prices and national economic

conditions have influenced public buying interest. However macroeconomic factors such as inflation and exchange rates play a crucial role in determining the interest in buying precious metals [9]. However, product quality and brand image remain the primary factors influencing consumer purchasing decisions [10].

This research aim is to discover and analyze the relationship between product quality and brand image on the interest in purchasing precious metals at Pegadaian Sleman Branch. It is hoped that this research can provide insights for Pegadaian management in improving marketing strategies and services to attract more consumers. Additionally, the purpose of this research is to contribute to the literature on the components that influence the interest in purchasing precious metals in Indonesia.

This research will focus on analyzing product quality and brand image and their relationship with purchasing interest. The limitation of this study lies in its scope, which is restricted to the Pegadaian Sleman Branch, so the results may not be generalizable to other Pegadaian branches in Indonesia. Quotations from relevant journals and books will be used to support the arguments and framework in this article. For instance, a study by [11] shows that product quality has a significant influence on consumer purchasing decisions, while research by [12] indicates that a positive brand image can enhance consumer loyalty and purchasing interest. Thus, this research is expected to make a meaningful contribution to understanding the dynamics of precious metal purchasing interest at Pegadaian and help Pegadaian improve its business strategies to achieve competitive advantage.

II. METHOD

This research employs a quantitative approach to determine the influence of product quality and brand image on the interest in purchasing precious metals at the Pegadaian Sleman Branch. This approach is chosen because it allows for objective measurement and statistical analysis, which can provide results that are more generalizable to a broader population. Data in this study is collected through a survey using a questionnaire distributed to consumers who have purchased precious metals at the Pegadaian Sleman Branch. The questionnaire is designed to evaluate three main variables: product quality,

brand image, and purchasing interest. To facilitate analysis, the questionnaire uses a 5-point Likert scale.

The main instrument in this study is a closed-ended questionnaire consisting of several sections. The first section includes questions about the demographic characteristics of the respondents, such as age, gender, education, and income. The second section measures consumer perceptions of the quality of precious metals sold at Pegadaian. The third section assesses consumer perceptions of Pegadaian's brand image. The final section evaluates the level of consumer interest in purchasing precious metals at Pegadaian.

The data collection procedure begins with the identification and selection of participants using the purposive sampling method. Participants are selected based on certain criteria, such as having previously purchased precious metals at the Pegadaian Sleman Branch. The questionnaire is then distributed both directly and through online platforms to participants who meet these criteria. Once the questionnaires are completed, the data is collected and verified to ensure completeness and consistency.

Data analysis is conducted using descriptive and inferential statistical methods. Descriptive statistics are used to describe the demographic characteristics of the respondents and the distribution of their answers. To ensure the validity and reliability of the questionnaire, confirmatory factor analysis (CFA) and Cronbach's Alpha coefficient tests are performed. CFA is used to ensure that the items in the questionnaire measure the intended constructs, while Cronbach's Alpha is used to test the internal consistency of the questionnaire.

Multiple regression analysis is used to test the influence of product quality and brand image on purchasing interest. The multiple regression model allows researchers to see the extent to which each independent variable (product quality and brand image) affects the dependent variable (purchasing interest). The data analysis procedure includes data coding and cleaning, regression assumption tests, conducting regression analysis, and interpreting the results. Data coding and cleaning are performed to eliminate incomplete or invalid data. Regression assumption tests are conducted to check for normality, multicollinearity, homoscedasticity, and linearity of the data. Regression analysis is performed

using statistical software such as SPSS or AMOS, and the analysis results are interpreted to answer the research questions and test the proposed hypotheses.

III. RESULT AND DISCUSSION

A. Descriptive statistics

Descriptive statistics provide an overview of the demographic characteristics of the respondents involved in this study. A total of 200 consumers who have purchased precious metals at Pegadaian Sleman Branch participated in this research. The demographic characteristics include the respondents' age, gender, education level, and monthly income.

The following table summarizes the demographic characteristics of the respondents :

Table 1. Characteristics of the Respondents

Char.	Cat.	No of Resp.	%	
Age	20-29 Years	40	20	
	30-39 Years	90	45	
	40-49 Years	50	25	
	50-55 Years	20	10	
Gender	Male	80	40	
	Female	120	60	
Educ Level.	High School/Vocational School			
	Diploma	30	15	
	Bachelor's Degree	110	55	
	Master's Degree	30	15	
	Mo inc	< IDR.5.000.000	50	25
		IDR.5.000.000 -	100	50
IDR.10.000.000				
IDR.10.000.000 -		30	15	
IDR.15.000.000				
> IDR.15.000.000	20	10		

Source: field data

From the table, it can be seen that the majority of respondents are in the productive age range (30-39 years) and most have at least a bachelor's degree. This indicates that the consumers of precious metals at Pegadaian Sleman Branch tend to come from an age group that is actively working and has a good educational background, which may influence their interest in investing in precious metals. Most respondents also have a relatively high monthly income, indicating that they have the financial capacity to invest in

precious metal products.

B. Validity and Reliability Testing

Construct validity testing was conducted using Confirmatory Factor Analysis (CFA). CFA is used to test whether the collected data fit the hypothesized model. This process involves several steps, including item selection, factor loading testing, and model evaluation.

Factor Loading: Factor loading is a coefficient that indicates how much an observed variable (item) correlates with the factor being measured. In this study, all questionnaire items showed factor loadings above 0.6, which is the minimum threshold for indicating good validity [13]. High factor loadings indicate that the items consistently measure the same construct. The following table shows the factor loadings for each item in the variables of product quality, brand image, and purchasing interest:

Table 2. Factor Loadings the Variable

Variable	Item	Factor Loading
Product Quality	PQ 1	0.72
	PQ 2	0.75
	PQ 3	0.80
	PQ 4	0.77
	PQ 5	0.74
Brand Image	BI 1	0.79
	BI 2	0.82
	BI 3	0.84
	BI 4	0.78
	BI 5	0.81
Purchase Interest	PI 1	0.85
	PI 2	0.88
	PI 3	0.90
	PI 4	0.86
	PI 5	0.87

Source: data processed

Reliability refers to the internal consistency of the research instrument. Reliability testing in this study was conducted using Cronbach's Alpha coefficient. Cronbach's Alpha measures the extent to which items within a scale correlate with each other, with values above 0.7 considered to indicate good reliability [14]. After testing, the Cronbach's Alpha coefficients for the variables of product quality, brand image, and purchasing interest, each with 5 items, are as follows: a) Product Quality: 0.88, b) Brand Image: 0.85, and c) Purchasing Interest: 0.90.

This indicates that the Cronbach's Alpha values used in this study demonstrate that the instrument has high internal consistency.

The results of the validity and reliability tests indicate that the instrument used in this study is both valid and reliable. All questionnaire items show factor loadings above 0.6, indicating that these items consistently measure the intended constructs. Additionally, the high Cronbach's Alpha values for all variables demonstrate that the instrument has good internal consistency. Therefore, it can be concluded that the data collected from this questionnaire is trustworthy and suitable for further analysis. High validity and reliability are crucial in research as they ensure that the results genuinely reflect the measured constructs and are not due to measurement errors or inconsistencies in the instrument. Thus, the steps taken to ensure validity and reliability provide a solid foundation for the subsequent analysis and interpretation of the data.

C. Multiple Regression Analysis

Multiple regression analysis was used to test the influence of product quality and brand image on consumer interest in purchasing precious metals at the Pegadaian Sleman Branch. This analysis helps determine the extent to which each independent variable (product quality and brand image) affects the dependent variable (purchasing interest). According to the results of the multiple regression analysis, both independent variables, product quality, and brand image, have a significant influence on consumer purchasing interest. The following table shows the results of the multiple regression analysis:

Table 3. Multiple Regression

Var	Reg. Coef	Std Err	t-value	p-value
Const	1.523	0.467	3.26	0.001
Prod. Qual	0.543	0.089	6.10	0.000
Brand Img	0.479	0.076	6.30	0.000
Adk. R²	0.672			
F-stat	204.55			0.000

Source: data processed

1) Constant () = 1.523: This indicates that if product quality and brand image are considered zero, consumer purchasing interest will still be at a level of 1.523,

suggesting that other factors may also be influential.

- 2) Product Quality () = 0.543: This coefficient indicates that each one-unit increase in product quality will increase consumer purchasing interest by 0.543 units, assuming other factors remain constant. This coefficient is significant with a p-value < 0.001.
- 3) Brand Image () = 0.479: This coefficient indicates that consumer purchasing interest will increase by 0.479 units for each one-unit increase in brand image, assuming other factors remain constant. This coefficient is also significant with a p-value < 0.001.

The Influence of Product Quality on Purchasing Interest

Adjusted R² = 0.672: This value indicates that the regression model used has good explanatory power, as it shows that product quality and brand image variables can explain 67.2% of the variation in purchasing interest. F-statistic = 204.55, p < 0.001: The high and significant F-statistic value indicates that the regression model overall is good at explaining the variation in consumer purchasing interest.

The regression analysis results show a regression coefficient of 0.543 with a p-value < 0.001. This indicates that product quality has a positive and significant influence on consumer purchasing interest. In other words, the higher the perceived product quality by consumers, the higher their interest in purchasing precious metals at Pegadaian. In this context, product quality includes several important aspects such as gold purity, product authenticity, and attractive design. Since the purity of gold is closely related to the investment value they expect, consumers pay great attention to gold purity when purchasing precious metals. Product authenticity is also crucial to ensure that consumers receive legitimate and quality-assured products, avoiding the risk of fraud or buying counterfeit products. An attractive design can enhance the product's appeal, especially for consumers who buy precious metals not only as an investment but also as collectibles or jewelry.

The study found that good product quality can increase customer satisfaction and loyalty [15]. High customer satisfaction often results in loyalty, which in turn can increase the likelihood

of repeat purchases and word-of-mouth recommendations. Therefore, Pegadaian should continue to focus on improving its product quality to maintain and enhance consumer purchasing interest.

The Influence of Brand Image on Purchasing Interest

Brand image also has a significant influence on purchasing interest with a regression coefficient of 0.479 and a p-value < 0.001. This indicates that a positive brand image can increase consumer purchasing interest. Pegadaian's reputation as a safe and trustworthy financial institution gives consumers confidence in investing in precious metals. A strong brand image creates a positive perception in the minds of consumers, making them feel assured that they are transacting with a reliable company with a good track record. This is crucial in the precious metals industry because consumer trust in the security and reliability of the product is vital in determining their purchasing decisions.

These results are consistent with studies by [16] [17], which show that a strong brand image can enhance the perceived value of a product in the eyes of consumers and build sustainable trust. A positive brand image not only increases consumer interest in making a purchase but can also create long-term loyalty, where consumers are likely to repeatedly choose products from a brand they trust.

The Interaction between Product Quality and Brand Image in Influencing Purchasing Interest

The interaction between product quality and brand image shows a synergistic effect in influencing consumer purchasing interest. These two variables mutually reinforce their impact on purchasing decisions. Consumers tend to have higher purchasing interest when the quality of the product offered is supported by a strong brand image. In the case of Pegadaian, high-quality precious metals will be more attractive if backed by Pegadaian's trusted brand image. Consumer trust in the brand enhances their perception of product quality, and conversely, high product quality strengthens the positive brand image.

Support these findings, indicating that a positive brand image can amplify the impact of product quality on consumer purchasing decisions [18], [19]. In this context, Pegadaian

needs to continuously maintain and enhance both aspects simultaneously to maximize consumer purchasing interest. In addition to ensuring product quality [18] [20], Pegadaian should actively engage in marketing and branding activities that emphasize its product's strengths and its reputation as a trustworthy financial institution. An effective marketing strategy can involve various media, both traditional and digital, to deliver consistent messages about product quality and brand image. Additionally, Pegadaian could host special events or promotions that showcase their product's excellence, such as precious metal exhibitions or investment seminars, which not only increase consumer knowledge but also strengthen their brand image. By understanding the importance of these two factors and how they interact, Pegadaian can develop more effective strategies to increase consumer purchasing interest and strengthen its position in the precious metals market.

IV. CONCLUSION

Based on the results of the research conducted, the following conclusions can be drawn:

1. Product Quality and Purchase Interest: Product quality has a positive and significant impact on consumer purchase interest in precious metals at Pegadaian Cabang Sleman. Product quality, which includes purity, authenticity, and attractive design, can increase consumer purchase interest. This finding indicates that consumers are more likely to buy products they consider high quality, ultimately enhancing their satisfaction and loyalty.
2. Brand Image and Purchase Interest: Brand image also has a significant impact on consumer purchase interest. Pegadaian's reputation as a trusted and secure financial institution encourages consumers to invest in precious metals. A positive brand image strengthens consumer trust in the products offered and increases their perceived value.
3. Interaction of Product Quality and Brand Image: The interaction between product quality and brand image shows a synergistic effect in influencing consumer purchase interest. These two variables mutually reinforce their impact on purchasing decisions. Consumers are more likely to have high purchase interest when the quality of the

product offered is supported by a strong brand image.

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