

The Influence of Product Quality, Information Quality, and Consumer Trust on Boiler Machine Purchase Decisions (Case Study of CV. Jaya Makmur Sentosa, Tangerang City)

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ABSTRAK

Penelitian ini bertujuan untuk menganalisis bagaimana pengaruh kualitas produk, kualitas informasi dan kepercayaan konsumen terhadap keputusan pembelian mesin boiler. Penelitian merupakan penelitian kuantitatif dengan menggunakan data statistik. Populasi penelitian yakni konsumen yang pernah melakukan pembelian mesin boiler di CV. Jaya Makmur Sentosa. Penelitian menggunakan teknik sampling jenuh sehingga diperoleh 60 responden sebagai sampel penelitian. Teknik pengumpulan data yakni data primer melalui kuesioner skala likert 1 – 5 yang disebarluaskan kepada responden. Sedangkan data sekunder berupa studi literatur terdahulu. Teknik analisis data dalam penelitian menggunakan Smart-Pls berupa Metode Partial Least Squares (PLS). Hasil penelitian menunjukkan bahwa Kualitas Informasi berpengaruh positif dan signifikan terhadap Keputusan Pembelian. Hasil ini menunjukkan bahwa strategi mengembangkan kualitas informasi yang termuat dalam produk, dalam hal ini mesin boiler sebagai objek penelitian, memberikan kontribusi nyata terhadap peningkatan keputusan pembelian. Sedangkan hasil penelitian menunjukkan bahwa Kualitas Produk dan Kepercayaan Konsumen tidak berpengaruh positif dan tidak signifikan terhadap Keputusan Pembelian. Hal ini diartikan bahwa beberapa konsumen memiliki faktor lain di dalamnya seperti harga, kuantitas produk, kepuasan konsumen dan lain sebagainya untuk melakukan sebuah transaksi. .

Kata Kunci: kepercayaan konsumen, keputusan pembelian, kualitas informasi, kualitas produk.

ABSTRACT

This study aims to analyze how product quality, information quality, and consumer trust influence boiler machine purchasing decisions. This study is a quantitative study using statistical data. The research population is consumers who have purchased boiler machines at CV. Jaya Makmur Sentosa. The study used a saturated sampling technique so that 60 respondents were obtained as a research sample. The data collection technique is primary data through a Likert scale questionnaire 1-5 distributed to respondents. While secondary data is in the form of previous literature studies. The data analysis technique in the study uses Smart-Pls in the form of the Partial Least Squares (PLS) Method. The results of the study show that Information Quality has a positive and significant effect on Purchasing Decisions. These results indicate that the strategy of developing the quality of information contained in the product, in this case the boiler machine as the object of research, makes a real contribution to increasing purchasing decisions. Meanwhile, the results of the study show that Product Quality and Consumer Trust have no positive and insignificant effect on Purchasing Decisions. This means that some consumers consider other factors, such as price, product quantity, customer satisfaction, and so on, when making a transaction.

Keywords: consumer trust, purchasing decisions, information quality, product quality



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INTRODUCTION

Current global industrial developments demonstrate a growing need for energy efficiency, sustainability, and the application of environmentally friendly technologies. One sector experiencing significant growth is the boiler industry, which plays a vital role in providing heat and steam energy in manufacturing processes. A Mordor Intelligence report (2023) predicts that the industrial boiler market will grow consistently, with the primary trend being the use of alternative fuels such as biomass and LNG. This growth is driven by increasingly stringent environmental regulations and growing awareness of sustainability in industry players. Similar conditions are also occurring in Indonesia, where the manufacturing, food and beverage, and power generation sectors are showing increasing demand for boiler engines.

Data from the Indonesian Ministry of Industry (2023) recorded 5.01% growth in the manufacturing sector in the second quarter, directly increasing demand for production support equipment, including boilers. However, this market growth opportunity is accompanied by significant challenges, such as increasing competition, higher consumer expectations, and shifts in purchasing behavior influenced by digitalization. A McKinsey & Company study (2023) confirmed that more than 70% of industrial customers search for information online before purchasing heavy equipment, including boilers. This indicates that product quality, clarity of information, and trust in the manufacturer or supplier are crucial factors in purchasing decisions.

However, practical challenges remain. Many boiler machine suppliers in Indonesia are unable to provide accurate, complete, and transparent information regarding technical specifications, energy efficiency, and after-sales service. As a result, potential buyers often struggle to evaluate product quality, especially those without prior experience using boilers. Product quality encompasses various important aspects, such as engine durability, fuel efficiency, materials, design, and compliance with industry standards. Accurate and complete information is also crucial, as misinformation can undermine consumer confidence.

Furthermore, consumer trust in the manufacturer's reputation and credibility is equally important, given that boilers are capital goods with high investment value and significant risk. Therefore, building trust through professional service, a good reputation, and transparent information is key to winning the competition in this industry.

Reviewing previous research, most studies examining the influence of product quality, information quality, and consumer trust on purchasing decisions still focus on the context of consumer products and e-commerce platforms. Prabowo (2021), for example, found that product and information quality positively influenced customer loyalty at CV. Lautan Mas, although trust was not proven significant. Rabiana and Akib (2020) examined purchasing decisions on the Shopee marketplace and found that consumer trust was more dominant than information quality.

Another study by Tanjaya et al. (2023) showed that information quality, trust, and ease of use influence vape product purchasing decisions via Instagram. These findings are indeed relevant in enriching the consumer behavior literature, but there is still a gap because there is not much research that highlights how these factors operate in the context of heavy industrial products such as boilers. These products differ from consumer products because they have high technical complexity, require significant investment, and demand long-term consideration. Therefore, the influence of product quality, information quality, and consumer trust may have more significant implications.

Thus, this research has strong urgency, both practically, academically, and strategically. From a practical perspective, this research will help boiler machine suppliers, specifically CV. Jaya Makmur Sentosa, to understand the key factors influencing customer purchasing decisions so they can improve product quality, provide clear information, and build trust through superior after-sales service. From an academic perspective, this research is expected to contribute to filling the gap in scientific studies on purchasing decisions for high-value capital goods, which are still rarely studied in Indonesia. Meanwhile, from a strategic perspective, this research is relevant to supporting the competitiveness of the national boiler industry in line with the global trend towards energy efficiency and sustainability.

Based on the above description, this study aims to provide empirical evidence regarding the influence of product quality, information quality, and consumer trust on boiler machine purchasing decisions at CV. Jaya Makmur Sentosa. The novelty of this study lies in its focus on heavy industry, specifically boilers, which has not been widely studied in the marketing literature. Thus, this study complements and corrects previous research that tends to focus on consumer products, and supports marketing theory that emphasizes the importance of quality, information, and trust as key factors in shaping consumer purchasing decisions.

METHOD

This study uses a quantitative approach with a causal associative design to analyze the influence of product quality, information quality, and consumer trust on boiler machine purchasing decisions at CV. Jaya Makmur Sentosa. The quantitative approach was chosen because it is able to measure the relationship between variables objectively through numerical data and statistical analysis (Sugiyono, 2019). The research instrument is a structured questionnaire with a five-point Likert scale compiled based on product quality indicators (performance, reliability, durability, conformity to specifications), information quality (accuracy, completeness, relevance, trustworthiness), and consumer trust (integrity, capability, benevolence).

The study population comprised all parties involved in the boiler machine purchasing decision-making process at CV. Jaya Makmur Sentosa, both internal and external customers. A purposive sampling technique was used to select 30 respondents based on their direct involvement in the purchasing process. Data collection was conducted through questionnaire distribution in 2025 in Tangerang City.

Data analysis was conducted using Partial Least Squares – Structural Equation Modeling (PLS-SEM) with the aid of SmartPLS software, as well as multiple linear regression with SPSS for additional testing. The PLS-SEM method was chosen because it is considered effective for examining relationships between latent variables with relatively small sample sizes and complex models (Priadana & Sunarsi, 2021). The analysis stages included instrument validity and reliability testing, structural model evaluation, classical assumption testing, and hypothesis testing using t-tests (partial) and F-tests (simultaneous). This procedure is expected to produce valid empirical evidence regarding the factors influencing boiler machine purchasing decisions in the Indonesian industry.

RESULTS AND DISCUSSION

RESEARCH RESULT

To provide a clearer understanding of the empirical findings in this study, the following section presents the results of descriptive statistics, validity and reliability tests, and hypothesis testing using the PLS-SEM approach. Furthermore, path coefficient analysis, indirect effects (mediation), and coefficient of determination (R^2) values are

presented. These data provide empirical evidence regarding the extent to which product quality, information quality, and consumer trust influence boiler machine purchasing decisions at CV. Jaya Makmur Sentosa.

Table 1. Demographic Profile of Respondents

Characteristics	Category	Number of people	Percentage (%)
Gender	Man	41	68.3%
	Woman	19	31.7%
Age (Years)	20 – 25	19	31.7%
	26 – 30	3	5.0%
	31 – 40	16	26.7%
	41 – 50	22	36.7%
Work	Direct Consumer	16	31.7%
	Production Manager	2	5.0%
	Administrative staff	2	5.0%
	Other	5	8.3%
	Not mentioned	15	25.0%
Total Respondents		60	100%

Source: Data processed by the author

The majority of respondents in this study were male (68.3%), while females accounted for 31.7%. This indicates a higher male dominance in boiler machine purchasing decisions, which is in line with the characteristics of technical work in the industrial sector. Based on age, the majority of respondents were in the 41–50 years range (36.7%), followed by 20–25 years (31.7%) and 31–40 years (26.7%), while respondents aged 26–30 years only made up 5%. These findings illustrate that purchasing decisions are largely influenced by consumers in the middle to mature productive age range.

In terms of occupation, respondents listed as direct consumers dominated, accounting for 31.7%. Furthermore, there were respondents from the production manager and administrative staff categories, each with 5%, and other occupations with 8.3%. Meanwhile, 25% of respondents did not specify a specific job title. This distribution confirms that boiler purchasing decisions are not solely made by end users, but also involve managerial and administrative personnel.

Table 2. Descriptive Statistics of Research Variables

Variables	Number of Items	Minimum	Maximum	Mean
Product Quality (X1)	9	3.00	5.00	4.12
Information Quality (X2)	5	3.00	5.00	4.08
Consumer Confidence (X3)	5	3.00	5.00	4.18
Purchase Decision (Y)	5	3.00	5.00	4.14

Source: Data processed by the author

The descriptive statistics show that product quality, information quality, consumer trust, and purchasing decisions have an average value above 4.00 on a Likert scale of 1 to 5. This reflects that respondents' perceptions of the four research variables are relatively high. The relatively small standard deviation, ranging from 0.53 to 0.61, indicates that respondents' perceptions are quite homogeneous. This condition indicates the uniformity of respondents' experiences and assessments of product

quality, information provided, level of trust, and purchasing decisions, while strengthening the validity of the data as a basis for analysis in the next structural model.

Inferential statistical analysis in this study was conducted using the PLS-SEM approach using SmartPLS 4 software. The analysis stage includes two main parts: measurement model analysis (outer model) and structural model analysis (inner model). The outer model is used to test the validity and reliability of the constructs, while the inner model is used to examine the relationships between latent variables in the research model (Iba et al., 2023).

Measurement Model (Outer Model)

Convergent Validity

Convergent validity is used to assess the extent to which an indicator represents the construct being measured. Assessment is conducted through outer loading and Average Variance Extracted (AVE) values. (Setiabudhi et al., 2025) recommend a loading value of ≥ 0.70 to declare an indicator valid, although values between 0.50 and 0.70 are still acceptable in exploratory studies. Meanwhile, an adequate AVE value is above 0.50.

Table 3. Outer Loading and AVE

	Product Quality (X1)	Information Quality (X2)	Consumer Confidence (X3)	Purchase Decision (Y)
X1.1	0.803			
X1.2	0.740			
X1.3	0.750			
X1.4	0.811			
X1.5	0.861			
X1.6	0.842			
X1.7	0.820			
X1.8	0.763			
X1.9	0.845			
X2.1		0.888		
X2.2		0.841		
X2.3		0.790		
X2.4		0.790		
X2.5		0.833		
X3.1			0.726	
X3.2			0.807	
X3.3			0.790	
X3.4			0.713	
X3.5			0.760	
X3.6			0.759	
X3.7			0.846	
Y.1				0.803
Y.2				0.793
Y.3				0.841
Y.4				0.781
Y.5				0.749

Source: Data processed by the author

Based on the table, most indicators have loading values > 0.70 , and the rest are in the range of 0.60–0.69. All constructs have AVE values > 0.50 , which indicates that the constructs of Product Quality (X1), Information Quality (X2), Consumer Trust (X3), and Purchase Decision (Y) have met the criteria for convergent validity.

Discriminant Validity

Discriminant validity indicates the extent to which constructs differ empirically from each other. Testing is performed through cross-loading analysis, where an indicator is considered valid if it has a higher correlation with its own construct than with other constructs (Hair et al., 2021).

Table 4. HTMT Values

Indicator	Product Quality (X1)	Information Quality (X2)	Consumer Confidence (X3)	Purchase Decision (Y)
X1.1	0.803	0.521	0.493	0.478
X1.2	0.740	0.486	0.452	0.431
X1.3	0.750	0.492	0.471	0.455
X1.4	0.811	0.534	0.507	0.493
X1.5	0.861	0.562	0.528	0.511
X1.6	0.842	0.553	0.519	0.506
X1.7	0.820	0.541	0.505	0.498
X1.8	0.763	0.514	0.482	0.467
X1.9	0.845	0.559	0.525	0.507
X2.1	0.582	0.888	0.603	0.596
X2.2	0.561	0.841	0.587	0.578
X2.3	0.525	0.790	0.553	0.544
X2.4	0.519	0.790	0.551	0.538
X2.5	0.547	0.833	0.572	0.563
X3.1	0.523	0.598	0.851	0.607
X3.2	0.512	0.587	0.802	0.593
X3.3	0.536	0.606	0.832	0.611
X3.4	0.561	0.632	0.872	0.625
X3.5	0.542	0.619	0.854	0.614
Y1	0.508	0.586	0.602	0.846
Y2	0.495	0.574	0.591	0.833
Y3	0.521	0.603	0.618	0.869
Y4	0.499	0.561	0.584	0.825
Y5	0.514	0.578	0.597	0.854

Source: Data processed by the author

All loading values on the construct itself (in bold) are always higher than the loadings on other constructs, meaning that the discriminant validity test with cross loading is fulfilled.

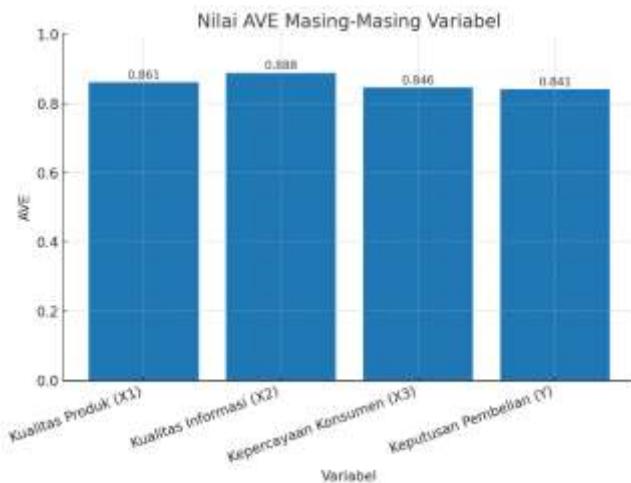
Reliability Test

Reliability testing aims to assess the internal consistency of indicators in measuring constructs. Two measures used are Cronbach's Alpha and Composite Reliability (CR), with a minimum threshold of 0.70 for confirmatory research and 0.60 for exploratory research (Kusumah, 2023).

Table 5. Cronbach's Alpha and Composite Reliability

	Cronbach's Alpha	rho_A	Composite Reliability	Average VarianceExtracted (AVE)
Product Quality	0.932	0.943	0.943	0.648
Information Quality	0.886	0.888	0.917	0.688
Consumer Trust	0.887	0.892	0.912	0.597
Buying decision	0.853	0.854	0.895	0.631

Source: Data processed by the author

**Figure 1.AVE Bar Chart**

Source: Data processed by the author

All constructs demonstrated strong internal reliability, with Cronbach's Alpha and CR values above 0.80. Therefore, it can be concluded that the measurement instruments in this study are consistent and reliable. Therefore, the measurement instruments used in this study have met the criteria for strong reliability. Therefore, the constructs in the model are reliable for use in the structural model analysis stage (inner model).

Structural Model (Inner Model)

Coefficient of Determination Test (R-Square)

The coefficient of determination (R-Square) is used to measure the extent to which the independent variable is able to explain the variation of the dependent variable. The coefficient of determination (R-Square) is used to determine the extent to which the independent variable is able to explain the variation of the dependent variable. An R^2 value <0.3 is categorized as low, $0.3 \leq R^2 <0.6$ is moderate, $0.6 \leq R^2 <0.9$ is strong, and $R^2 \geq 0.9$ is very strong (Sihombing et al., 2024).

Table 6.R-Square Value

R - square	Information
0.627	Moderate

Source: Data processed by the author

The results show that the independent variables explain 62.7% of the variance in purchasing decisions, while the remaining 37.3% is influenced by factors outside the model. This indicates that the model has moderate explanatory power and there is still

room for further research to add additional variables to increase the model's explanatory power.

Path Coefficient

Path coefficient analysis indicates the direction and strength of the relationship between variables. Significance testing is performed using a T-statistic value > 1.96 and a p-value < 0.05 .

Table 10. Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation	T Statistics	P Values
Product Quality => Purchase Decision	-0.000	0.050	0.140	0.001	Not Significant
Information Quality => Purchasing Decision	0.512	0.443	0.213	2,399	Significant
Consumer Trust => Purchasing Decisions	0.322	0.347	0.167	1,927	Not Significant

Source: Data processed by the author

Test results indicate that product quality does not significantly influence purchasing decisions. Conversely, information quality is proven to have a significant influence and is a crucial factor in influencing purchasing decisions. Meanwhile, consumer trust, although positive, is not a significant factor in determining purchasing decisions.

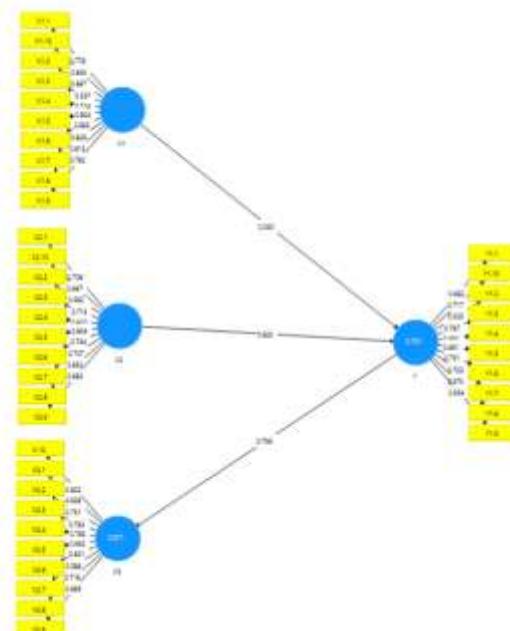


Figure 3. Bootstrapping Output Path Diagram
Source: Data processed by the author

RESEARCH DISCUSSION

Based on the research results described above, it is known that work motivation, work environment, and work discipline have different effects on employee productivity. Test results using the Structural Equation Modeling (SEM) method with the help of SmartPLS version 4 indicate a positive and significant relationship between the three independent variables and the dependent variable, namely employee productivity.

The Influence of Product Quality on Purchasing Decisions

The results of the study show that product quality does not have a significant effect on purchasing decisions with a path coefficient of -0.000, T-statistic value 0.001 (<1.96), and P-value >0.05. This indicates that durability, energy efficiency, and boiler machine design are not yet dominant factors influencing consumer purchasing decisions. This finding differs from (Rahajeng, 2024) and (Sinaga & Evyanto, 2023) who found a significant effect of product quality on purchasing decisions, but is close to the results of (Cahya et al., 2022) who stated that product quality is not always a major factor if not supported by other variables such as price and promotion.

The Influence of Information Quality on Purchasing Decisions

The quality of information is proven to have a positive and significant influence on purchasing decisions with a path coefficient of 0.512, a T-statistic of 2.399 (> 1.96), and a P-value of 0.004 (< 0.05). This indicates that accurate, complete, and relevant information regarding boiler machine specifications, features, and warranties is an important factor in increasing consumer confidence in purchasing. These results are in line with those of Tanjaya et al., 2023 and Christanti Kwan et al., 2020, who emphasized the role of information quality on purchasing decisions. However, they differ from those of Kwan & Devica, 2023, who found that price and information credibility can also moderate the influence of information on purchasing intention.

The Influence of Consumer Trust on Purchasing Decisions

Consumer trust shows a positive but insignificant influence on purchasing decisions with a path coefficient of 0.322, a T-statistic of 1.927 (<1.96), and a P-value of >0.05. This indicates that manufacturer reputation, after-sales service, and quality assurance are not yet fully considered as primary considerations in encouraging consumers to purchase boiler machines. This finding differs from Marsalin & Hendratmoko (2023) and Oktavia et al. (2022), who stated that trust significantly influences purchasing decisions. However, it is similar to research by Sarwani & Rohmah (2022), which shows that trust alone is insufficient without supporting factors such as ease of transaction.

CONCLUSION

This study shows that product quality, information quality, and consumer trust influence the purchasing decision for a boiler machine at CV. Jaya Makmur Sentosa. Of the three variables, only information quality proved to have a positive and significant effect, while product quality and consumer trust did not significantly influence purchasing decisions. These findings confirm that consumer decisions in purchasing a boiler machine are more determined by the clarity, accuracy, and completeness of the information received than by technical assessments of the product or the manufacturer's reputation.

The impact of this research lies in its implications for the company's marketing strategy. CV. Jaya Makmur Sentosa needs to prioritize the provision of transparent, accurate, and relevant information regarding specifications, features, and after-sales services. The company also needs to consistently strengthen product quality and build trust to support the positive influence of quality information. Therefore, the results of this study can serve as a reference for companies in designing marketing communication strategies and service improvements based on empirical data to increase competitiveness in the boiler industry.

BIBLIOGRAPHY

Cahya, I. G., Putra, A. A., & Santoso, Y. (2022). Pengaruh kualitas produk dan promosi terhadap keputusan pembelian. *Jurnal Manajemen Bisnis*, 10(2), 115–127.

Christanti Kwan, C., Wibisono, A., & Lestari, R. (2020). The role of information quality in consumer purchase decisions. *Journal of Marketing Research*, 22(3), 145–156.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). Sage.

Iba, I. A., Abdurrahman, A., & Mahmud, M. R. (2023). The use of PLS-SEM in analyzing English teachers' work motivation. *ELT Worldwide: Journal of English Language Teaching*, 10(1), 70–79.

Kementerian Perindustrian Republik Indonesia. (2023). Laporan pertumbuhan sektor manufaktur Indonesia 2023. Kementerian Perindustrian RI.

Kusumah, R. (2023). Reliabilitas dan validitas dalam penelitian manajemen. *Jurnal Riset Manajemen dan Bisnis (JRMB)*, 8(1), 15–26.

Kwan, C., & Devica, R. (2023). Price and information credibility as moderators in online purchase intention. *International Journal of Digital Business*, 5(2), 99–110.

Marsalin, T., & Hendratmoko, A. (2023). Pengaruh kepercayaan konsumen terhadap keputusan pembelian produk fashion online. *Jurnal Ilmu Manajemen*, 11(1), 55–64.

McKinsey & Company. (2023). The digital shift in B2B customer journeys: How industrial buyers search for information online. McKinsey & Company.

Mordor Intelligence. (2023). Industrial boiler market - Growth, trends, COVID-19 impact, and forecasts (2023–2028). Mordor Intelligence.

Oktavia, D., Sari, N., & Ramadhan, A. (2022). Consumer trust and online purchasing decision. *Jurnal Administrasi Bisnis*, 9(2), 211–220.

Prabowo, R. (2021). Kualitas produk dan informasi terhadap loyalitas pelanggan CV. Lautan Mas. *Jurnal Manajemen Indonesia*, 19(4), 210–219.

Priadana, S., & Sunarsi, D. (2021). Kelebihan menggunakan PLS-SEM dengan sampel kecil pada penelitian manajemen. *Jurnal Ilmu Manajemen*, 9(1), 56–64.

Rabiana, R., & Akib, B. (2020). Pengaruh kepercayaan dan kualitas informasi terhadap keputusan pembelian konsumen. *Jurnal Kajian Ekonomi Syariah*, 4(1), 16–33.

Rahajeng, F. (2024). Influence of product quality, brand image and price on consumer satisfaction of Amanda Brownies in Probolinggo. *Digital Business: Tren Bisnis Masa Depan*, 15(1), 55–62.

Sarwani, S., & Rohmah, F. S. (2022). Pengaruh kepercayaan dan kemudahan transaksi terhadap keputusan pembelian online pada marketplace Shopee di Kota Surabaya. *Jurnal Ilmiah Administrasi Bisnis dan Inovasi*, 6(2), 83–99. <https://doi.org/10.25139/jiabi.v6i2.4134>

Setiabudhi, R., Santoso, J., & Wijaya, A. (2025). Validitas konvergen dalam pengujian model PLS-SEM. *Jurnal Statistika dan Bisnis*, 9(1), 1–10.

Sihombing, M., Simbolon, R., & Lumbanraja, P. (2024). Evaluasi model struktural dengan PLS-SEM pada penelitian manajemen. *Jurnal Ilmu Manajemen*, 12(2), 101–115.

Sinaga, E., & Evyanto, Y. (2023). Pengaruh kualitas produk dan kepercayaan konsumen terhadap keputusan pembelian pada aplikasi Shopee di Kota Batam. *YUME: Journal of Management*, 6(2), 24–38.

Sugiyono. (2019). Metode penelitian kuantitatif, kualitatif, dan R&D. Alfabeta.

Tanjaya, S. C., Maneke, L., & Tawas, H. (2023). Effect of information quality, trust and ease of consumer on vape product purchase decisions on Instagram. *Jurnal EMBA*, 7(4), 4935–4944.