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The Effect Of Product Quality And Price Perception On Customer Satisfaction On E-Commerce Platforms In Indonesia

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ABSTRACT

This study aims to analyze and explain the partial and simultaneous effects of product quality and price perception on customer satisfaction across e-commerce platforms in Indonesia, while identifying the most dominant predictor. Grounded in the Expectation-Confirmation Theory (ECT), this quantitative research employs a causal-associative design targeting active e-commerce users in Indonesia. Utilizing a non-probability sampling technique with a purposive sampling approach, data were gathered from 400 valid respondents via an online Likert-scale questionnaire. The primary data were analyzed using multiple linear regression analysis after fulfilling all instrument tests (validity and reliability) and classical assumption requirements. The empirical findings reveal that product quality has a positive and significant partial effect on customer satisfaction, confirming that the alignment between a physical product's attributes and its digital description triggers a positive confirmation of expectations. Similarly, price perception exerts a positive and significant partial impact on customer satisfaction, highlighting the critical role of price fairness and radical information transparency for digital consumers. Simultaneously, product quality and price perception collectively account for 58.4% ($R^{2}=0.584$) of the variance in customer satisfaction. Crucially, this study resolves the ongoing research gap in existing literature by establishing that product quality is the most dominant determinant influencing satisfaction. This proves that modern digital consumers in Indonesia prioritize physical performance, specifications, and product authenticity over mere low-price comparisons. Consequently, e-commerce platform operators are strongly advised to tighten their curation systems and seller standardization to mitigate digital information asymmetry.

Keywords: Customer Satisfaction, E-Commerce, Expectation Confirmation Theory, Product Quality, Price Perception.

INTRODUCTION

The integration of digital technology into economic activities has fundamentally restructured consumer shopping behavior, particularly through the adoption of e-commerce platforms (Laudon & Traver, 2021). As one of the largest digital economy epicenters in Southeast Asia, Indonesia has recorded a massive acceleration in e-commerce transaction volume. This growth is driven by the expansion of internet networks, inclusive device penetration, and shifting consumer preferences prioritizing operational efficiency and transaction convenience (Google et al., 2024). Consequently, the competitive landscape among e-commerce platforms has become increasingly competitive, forcing industry players to formulate customer retention strategies based on continuous customer satisfaction excellence (Kotler & Keller, 2021).

In marketing management, customer satisfaction is a crucial metric for measuring a corporation's effectiveness in mapping and meeting market expectations. According to Expectation-Confirmation Theory (ECT), satisfaction is formed through a cognitive evaluation process when the actual performance of a product or service matches or

exceeds the buyer's initial expectations (Bhattacherjee, 2001; Oliver, 2010). In the digital marketplace, the spectrum of expectations is multidimensional; it relies not only on the physical characteristics of the purchased commodity but also encompasses aspects of price fairness and transparency of the digital transaction flow (Zeithaml et al., 2020).

Product quality plays a fundamental role in influencing satisfaction, given that e-commerce transactions are characterized by limited physical interaction between consumers and the commodity before purchase. Consequently, quality assessments rely heavily on visual representation, the accuracy of text descriptions, and social validation through digital consumer reviews (Kim & Krishnan, 2015). In parallel, price perception also plays a crucial role. Internet accessibility allows digital consumers to compare prices between sellers in real time (Schiffman & Wisenblit, 2019). The presence of marketing stimuli such as flash sales, discount coupons, and algorithm-based pricing schemes further heightens consumer price sensitivity in cyberspace (Ancarani et al., 2019).

However, this market digitalization leaves behind a gap of information asymmetry that triggers conflicting expectations. The widespread mismatch between product specifications displayed on app displays and the actual product received by buyers, as well as the inconsistency of price relative to product benefits, are key determinants of consumer disappointment (Chua et al., 2020). This high level of information asymmetry has the potential to degrade buyer satisfaction and undermine the long-term reliability of a platform (Pavlou et al., 2007).

Previous research has examined the impact of product quality and price on satisfaction, but the majority focuses on conventional business landscapes or has not yet deeply integrated behavioral variables typical of digital consumers (Rita et al., 2019). Furthermore, the digital marketing literature still shows a research gap regarding which variables act as the most dominant predictors. Some studies emphasize the critical role of online customer reviews and digital recommendation features (Filieri et al., 2021), while others note that price sensitivity remains a key driver of satisfaction in developing countries.

Based on these conditions, more contextual and comprehensive research is needed to analyze

[1] Does product quality have a partial and significant effect on customer satisfaction on e-commerce platforms in Indonesia?, [2] To what extent does price perception have a partial and significant effect on customer satisfaction amidst real-time price information transparency? and

[3] Do product quality and price perception simultaneously have a significant effect on e-commerce customer satisfaction in Indonesia?

This research is expected to provide theoretical contributions to the digital marketing management literature, while also providing tactical recommendations for platform management to formulate a sustainable customer satisfaction architecture (Tandon et al., 2018).

THEORETICAL BASIS

A. *Customer Satisfaction Theory*

Customer satisfaction is defined as the degree of affection or emotional response a consumer experiences resulting from a comparison between a product's perceived

actual performance and pre-purchase expectations (Kotler & Keller, 2021). The Expectation-Confirmation Theory (ECT) framework asserts that satisfaction is a direct function of positive confirmation; that is, the condition in which the actual utility of a product matches or exceeds a consumer's initial expectations (Bhattacherjee, 2001; Oliver, 2010). In the digital realm, satisfaction is instantaneous and dynamic because customer interactions directly impact application system functionality and logistics quality (Rita et al., 2019). Negative disconfirmation, such as delayed delivery or physical defects, will immediately trigger a radical decline in satisfaction (Chua et al., 2020).

B. Product Quality

Product quality represents the accumulation of features, performance, and inherent characteristics of a commodity that determine its capacity to meet consumer needs (Kotler & Keller, 2021). In offline transactions, quality is measured through physical durability and immediate aesthetics. However, in the e-commerce ecosystem, spatial limitations shift the quality evaluation method to an assessment of digital stimuli presented on the platform (Zeithaml et al., 2020). Consumers rely on the accuracy of descriptive text, the honesty of visual materials, and digital reviews (online customer reviews) as a substitute for physical inspection of goods (Filieri et al., 2021; Kim & Krishnan, 2015).

C. Price Perception Theory

Price perception refers to consumers' cognitive assessment of the fairness and equity of the monetary value spent compared to the utility or quality of the product received (Schiffman & Wisenblit, 2019). In the digital commerce ecosystem, price management is highly volatile due to the adoption of dynamic pricing and the intensity of flash promotions (Ancarani et al., 2019). The openness of internet information reduces search costs, giving consumers the ability to compare prices across digital stores in real time, which in turn stimulates consumer price sensitivity (Widodo & Santoso, 2024).

D. Relationship between Product Quality and Customer Satisfaction

Empirically, a positive and unidirectional correlation has been found between product quality and customer satisfaction. When the mechanical and aesthetic functions of a physical product align with the merchant's digital claims, consumers experience expectation confirmation, leading to satisfaction (Hanaysha, 2022). Superior-quality physical products serve as a manifestation of the platform's digital promise, reducing return rates and strengthening post-purchase loyalty (Chua et al., 2020).

E. Relationship between Price Perception and Customer Satisfaction

Price evaluation is crucial for shaping satisfaction because it is directly related to consumer monetary sacrifice (Schiffman & Wisenblit, 2019). Prices perceived as fair, rational, and competitive distribute perceived value, which is a catalyst for increased

satisfaction (Rita et al., 2019). Conversely, unreasonable pricing structures or the imposition of hidden fees during checkout in apps are major triggers for conversion failure and customer dissatisfaction (Tandon et al., 2018).

F. Relationship between Product Quality and Price Perception on Customer Satisfaction

Simultaneously, product quality and price aspects act as two main determinants of digital satisfaction (Hanaysha, 2022). However, there is a scientific debate (research gap) regarding the dominance of these two variables. Certain studies suggest that physical quality is the most important element because digital consumers are increasingly educated by rating systems (Filieri et al., 2021). On the other hand, research in emerging markets argues that price perception continues to outweigh quality due to promo-hunting behavior (Widodo & Santoso, 2024).

RESEARCH METHODS

A. *Research Design*

This research adopted a quantitative approach with an associative causal design to test the significance of the causal relationship between variables (Creswell & Creswell, 2018). The model was statistically analyzed to prove the influence of the independent variables, namely Product Quality (X1) and Price Perception (X2), on the dependent variable, namely Customer Satisfaction (Y).

B. Population and Sample

1. Population

The population in this study is categorized as an infinite population, including all active consumers in Indonesia who have transacted physical products through major e-commerce platforms (Shopee, Tokopedia, Lazada, TikTok Shop) at least once in the last 6 months.

2. Samples and Sampling Techniques

Since the population parameters are not known with certainty, the minimum sample size is calculated using the Lemeshow formula for unknown population:

$$n = \frac{Z^2 \cdot P \cdot (1 - P)}{d^2}$$

Where Z = 1.96 (95% confidence level), P = 0.5$ (maximum estimated proportion), and d = 0.05 (tolerance of error). The mathematical calculation yields:

$$n = \frac{(1,96)^2 \cdot 0,5 \cdot (1 - 0,5)}{(0,05)^2} = 384,16$$

To anticipate the non-response rate of incomplete or unreturned questionnaires, the sample was rounded to 400 respondents. Sampling was conducted using a non-probability sampling technique with a purposive sampling approach, referring to the following criteria (Hair et al., 2019):

a. Indonesian citizens (WNI) aged at least 17 years.

b. Have an active account and have made a physical product transaction on e-commerce within the last 6 months.
Actively read online customer reviews before making a purchase.

C. *Operationalization of Variables*

Variable measurement was carried out using a 5-point Likert Scale instrument (1 = Strongly Disagree, 5 = Strongly Agree). The indicator framework is presented in Table 1.

Table 1 Operationalization of Research Variables

Variable	Conceptual Definition	Main Indicator	Measurement Scale
Product Quality (X1	igital consumers' subjective evaluation of the alignment of the physical product characteristics received with the specifications on the platform.	1. Conformance: Accuracy of the actual item versus the description. 2. Performance: Functionality of the product's mai n features. 3. eliability: Consistency of quality from the seller.	Interval (Likert scale 1-5)
Price Perception (X2)	he cognitive process of consumers assessing the fairness of financial sacrifices amidst the transparency of digital market information.	1. Affordability: Suitability to purchasing power. 2. Price-Quality Ratio: Equivalence of value for money and quality. 3. Competitiveness: Reasonableness of price compared to competitors.	Interval (Likert scale 1-5)
Customer Satisfaction (Y)	Post-purchase emotional responses that confirm or disconfirm an e-commerce user's initial expectations.	1. Overall Satisfaction: Feeling satisfied with the transaction. 2. Fulfillment of Expectations: Product performance meets expectations. 3. Willingness to Recommend: Willingness to engage in e-WOM.	Interval (Likert scale 1-5)

D. Data Collection Methods

Primary data was obtained directly from target respondents using a Google Form-based electronic questionnaire distributed via social media. Secondary data was collected from literature searches, reputable scientific journals, management textbooks, and digital industry newsletters such as e-Conomy SEA (Google et al., 2024).

E. Data Analysis Techniques

Data analysis was completed using SPSS software through the following linear stages:

1. Instrument Test
   a. **Validity Test:** Assess the validity of questionnaire items through Pearson Product Moment correlation ($r_{hitung} > r_{tabel}$ at $\alpha = 5\%$).
   b. **b. Reliability Test:** : Testing the internal consistency of the instrument through the Cronbach's Alpha coefficient with a threshold criterion of > 0.60 (Hair et al., 2019).

2. Classical Assumption Test

The regression prerequisites are met through: Normality Test (Kolmogorov Smirnov > 0.05$), Multicollinearity Test (Tolerance > 0.10 and VIF < 10$), and Heteroscedasticity Test using scatterplot graph and Glejser test.

3. Multiple Linear Regression Analysis

The mathematical formulation to test the direction of the influence of variables is formulated as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$$

4. Hypothesis Testing

Testing using Partial Test (t Test) and Simultaneous Test (F Test) at a significance level of $p < 0.05$, as well as analysis of the Determination Coefficient (R^2)

RESULTS AND DISCUSSION

Data Analysis Results

The results of the questionnaire distribution to 400 respondents showed that all questions were valid (r count > r table) and reliable (Alpha > 0.60). Classical assumption testing confirmed that the regression model was normally distributed, free from multicollinearity symptoms (VIF < 10), and did not contain heteroscedasticity. The multiple linear regression model produced the following equation:

$$Y = 2,415 + 0,482X_1 + 0,314X_2 + e$$

A summary of partial and simultaneous hypothesis tests is summarized in Table 2.

Table 2 Summary of Hypothesis Testing Results

Hypothesis Testing	Regression Coefficient (β)	Mark t_{hitung} / f_{hitung}	Significance Value (Sig.)	Conclusion
Product Quality (X1) on Satisfaction (Y)	0,482	8,412	0,000	H_1 Accepted (Significance)

Price Perception (X2) on Satisfaction (Y)	0,314	5,203	0,000	H_2 Accepted (Significance)
Simultaneous (X1 and X2) on Satisfaction (Y)	-	142,518	0,000	H_3 Accepted (Significance)
R-Square Value (R^2)	0,584			

RESULTS AND DISCUSSION

1. The Influence of Product Quality on Customer Satisfaction (H_1)

Based on the t-test statistical estimation, the Product Quality variable (X1) was proven to have a positive and partially significant contribution to Customer Satisfaction
(Y) with a value of $\boldsymbol{\beta}$ = 0.482; p < 0.05. This empirical result means that any optimization of the quality of the physical product delivered by the seller partner that aligns with the promises of its digital description linearly strengthens customer satisfaction.

This finding theoretically strengthens the postulates of Expectation-Confirmation Theory (ECT). Consumers construct pre-purchase expectations through textual and visual representations on their devices. When the product is received and evaluated, the conformance of the physical dimensions positively confirms initial expectations, which crystallizes into emotional satisfaction (Bhattacherjee, 2001; Oliver, 2010). In Indonesia's digital market, this dynamic is reinforced by increasingly critical consumer behavior; they utilize the user-generated content ecosystem in the form of store ratings and video reviews from previous buyers to validate product performance before making a transaction (Kim & Krishnan, 2015).

2. The Influence of Price Perception on Customer Satisfaction (H_2)

The statistical analysis results show that the Price Perception variable (X2) has a positive and significant partial effect on Customer Satisfaction (Y) on e-commerce platforms in Indonesia ($\boldsymbol{\beta}$ = 0.314; p < 0.05). The positive coefficient value indicates that perceived price fairness, affordability, and competitiveness by consumers can have a strengthening impact on their satisfaction levels.

From a marketing psychological perspective, price represents the monetary sacrifice consumers must make to obtain a product's utility. When an e-commerce platform or sales partner is able to offer competitive and fair prices, especially when linked to the quality obtained (price-to-quality ratio), consumers will experience high perceived value. This sense of gain stimulates post-purchase satisfaction.

The characteristics of Indonesia's digital ecosystem also reinforce this price sensitivity. By utilizing real-time, instant cross-store price comparison features, consumers have more balanced control over information asymmetry. Targeted promotions like flash sales, free shipping coupons, and daily algorithm-based discounts

create the perception that shopping on digital platforms is far more efficient than traditional retail. Therefore, the transparent implementation of Indonesian pricing strategies has proven effective in securing customer satisfaction amidst intense price wars between platforms.

3. Simultaneous Influence and Dominant Variable Analysis (*Research Gap*)

Simultaneous testing (F-test) yielded a calculated F-value of 142.518 with a significance level of 0.000 < 0.05, indicating that Product Quality (X1) and Price Perception (X2) simultaneously significantly influence Customer Satisfaction (Y). The coefficient of determination (R2) of 0.584 indicates that the combined influence of these two independent variables contributes 58.4% to the fluctuations in customer satisfaction, while the remaining 41.6% is influenced by variables outside the research model (such as courier service quality or transaction data security).

Another interesting aspect is that the results of this study successfully resolve the inconsistency (research gap) debated in previous studies by comparing the beta coefficient values of each variable. With a regression coefficient of product quality (α = 0.482) that is greater than that of price perception (α = 0.314), it is evident that product quality is the most dominant determinant in dictating e-commerce customer satisfaction in Indonesia.

This finding of quality dominance provides a new direction for digital marketing management. Although the Indonesian market is often categorized as a highly price-sensitive market, when faced with the realities of online shopping, protection of the physical quality of goods trumps the motive of bargain hunting. The widespread presence of online customer review systems has educated local consumers to avoid products with very low prices but poor ratings. Modern Indonesian digital consumers are willing to pay a slightly higher nominal price as long as the product's authenticity, specifications, and functionality are guaranteed. The integration of these two elements comprehensively underpins consumer loyalty within the national digital commerce ecosystem.

CONCLUSION

a) Kualitas Produk berpengaruh positif dan signifikan secara parsial terhadap Kepuasan Pelanggan (H_1 diterima). Penyelarasan spesifikasi komoditas riil dengan deskripsi digital mengonfirmasi ekspektasi prapembelian konsumen sesuai prinsip ECT, memicu kepuasan emosional yang tinggi. a) Product quality has a positive and significant partial effect on customer satisfaction (H1 is accepted). Alignment of real commodity specifications with digital descriptions confirms consumers' pre-purchase expectations according to the ECT principle, triggering high emotional satisfaction.
b) b) Price perception has a positive and significant partial effect on customer satisfaction (H2 is accepted). The reasonableness of the pricing structure and the presence of tactical promotional programs minimize the psychological burden of financial sacrifice, increasing the perceived value of buyers.
c) Product Quality and Price Perception have a significant simultaneous influence on

Customer Satisfaction (H3 is accepted), with a contribution of 58.4%. Product quality was found to act as the most dominant determinant factor in Indonesia's digital ecosystem.

SUGGESTION

a) a) For E-Commerce Platform Operators: It is recommended to tighten merchant curation governance, standardize sellers, and optimize review verification algorithms to mitigate fake reviews and reduce the rate of returns in order to maintain platform reliability.

b) b) For MSMEs / Selling Partners: It is expected to prioritize transparency of visual information and text descriptions, and avoid extreme price wars that risk damaging the quality of physical products in order to maintain long-term loyalty.
c) Methodological Diversification: Applying mixed-methods and focusing sampling clusters on specific generational cohorts (such as Gen Z or Alpha) to obtain more contextual behavioral analysis.

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