

## The Influence of E-Service Quality, Interactive Features and E-Satisfaction on Shopee E-Commerce Customer Loyalty among Students of Sumbawa University of Technology

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**Abstract:** *The increasing competition in the e-commerce industry requires platforms to strengthen customer loyalty. This study examines the effect of e-service quality, interactive features, and e-satisfaction on customer loyalty toward Shopee e-commerce among students of Sumbawa University of Technology. This research uses a quantitative approach with a survey method. Data were collected from 170 Shopee users selected through purposive sampling and analyzed using multiple linear regression analysis. The results show that e-service quality, interactive features, and e-satisfaction have a positive and significant effect on customer loyalty, both partially and simultaneously. These findings indicate that improvements in electronic service performance, engaging interactive features, and higher customer satisfaction significantly increase customer loyalty toward Shopee. This study provides empirical evidence for e-commerce platforms in designing strategies to enhance customer loyalty, particularly among university students.*

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### Introduction

The rapid advancement of internet-based information technology has transformed the business landscape in Indonesia, positioning e-commerce as a dominant force with non-face-

to-face transactions offering easy access, diverse products, and competitive pricing [Silaban & Soerjanto, 2022][Statista, 2024]. E-commerce users surged from 70.8 million in 2017 to 189.6 million in 2024, while transaction values escalated from IDR 205.5 trillion in 2019 to IDR 487.01 trillion in 2024 [Kontan Data Center, 2025] [Momentum Works, 2025]. Shopee leads with 98.3 million monthly visits in February 2025, surpassing Tokopedia (32.9 million) and Lazada (6 million), yet faces threats from TikTok Shop amid complaints on slow delivery, product inconsistencies, and excessive ads [Similarweb, 2025] [Databoks Katadata, 2025].

Shopee integrates interactive elements like Shopee Live, Shopee Games (gamification), and Shopee Video to boost engagement via real-time interactions, rewards, and content, though customer satisfaction fluctuates due to suboptimal e-service quality and low switching costs [Arisman & Salehudin, 2022] [Putri & Masnita, 2024] [Xu et al., 2022]. Negative feedback persists on product discrepancies, delayed service, and post-pandemic transaction dips of 4.7% in 2023 before 2024 recovery (Rintasari & Farida, 2020; Bank Indonesia, 2025). Students at Sumbawa University of Technology (UTS), with high digital literacy, exemplify sensitive users whose experiences highlight these platform dynamics [Alim et al., 2025].

Intense e-commerce competition underscores customer loyalty as vital for sustainability, given low switching barriers, yet Shopee risks market share erosion without addressing service issues and enhancing interactive features for e-satisfaction [Oktaviani & Sukati, 2025][ Sarhan, 2024]. UTS students, a tech-savvy demographic reliant on Shopee for personal and academic needs, amplify this vulnerability, potentially mirroring the 2023 transaction decline without targeted strategies [Pambudi & Widyaningrum, 2023]. Key problems include: how e-service quality affects Shopee customer loyalty; how interactive features influence it; how e-satisfaction impacts it; and how these factors jointly shape loyalty among UTS students [Yani & Sugiyanto, 2022].

Prior studies often limit scope to pairs like satisfaction-service quality or e-service on satisfaction, overlooking interactive features (gamification, live streaming) as direct loyalty drivers in post-pandemic contexts, with no integrated analysis on UTS students This gap ignores holistic effects amid Shopee fluctuations, excluding regional digital youth perspectives.

This study aims to analyze the partial and simultaneous effects of e-service quality, interactive features, and e-satisfaction on Shopee loyalty among UTS students, urgently informing strategies to sustain IDR 487 trillion growth against competitors [Statista, 2024]. Its novelty integrates these three variables with UTS as a unique sample from a developing region, advancing beyond dyadic models for comprehensive regional insights.

## Research Methods

This study employs a quantitative approach utilizing a survey method to investigate the influence of e-service quality, interactive features, and e-satisfaction on Shopee customer loyalty among students at Sumbawa University of Technology. Quantitative research, grounded in positivism, focuses on testing hypotheses through structured data collection from a specific population or sample, employing statistical analysis for objective results, as outlined by Sugiyono (2019) who emphasizes its systematic nature for hypothesis verification. This aligns with Sudaryono's (2021) framework for quantitative methods, which prioritizes measurable variables and replicable procedures to ensure reliability in social science inquiries like e-commerce loyalty studies.

Primary data were gathered via structured questionnaires distributed to respondents, complemented by secondary data from literature, scientific journals on e-commerce (e.g., Shopee-related studies), books on customer satisfaction and loyalty theories, and online sources such as Shopee's official website, news articles, and annual reports. Questionnaires served as the key instrument to quantify perceptions of e-service quality, interactive features, e-satisfaction, and loyalty, following Emzir's (2013, cited in recent editions) guidelines for valid, reliable tools in quantitative surveys that capture interval-scale responses for regression modeling. Data analysis involved classical assumption tests (normality via Kolmogorov-Smirnov, heteroscedasticity via Glejser, multicollinearity via VIF and tolerance), multiple linear regression, t-tests for partial effects, F-tests for simultaneous impacts, and coefficient of determination using SPSS software, consistent with Creswell and Creswell's (2023) recommendations for rigorous statistical validation in quantitative designs.

The population comprised all 3,911 active students at Sumbawa University of Technology during the 2025/2026 academic year, targeting Shopee users with relevant usage experience. A non-probability purposive sampling technique selected 170 respondents meeting criteria such as active Shopee usage and enrollment status, justified by Sugiyono (2022) for accessible, representative subsets in survey-based e-commerce research where probability sampling proves impractical. This sample size supports statistical power for regression analysis, echoing Sudaryono (2021) on purposive methods for focused, criterion-based selection in student populations.

The study was conducted from September 2025 to January 2026 at Sumbawa University of Technology, beginning with instrument development and validity checks, followed by questionnaire distribution, data collection, cleaning, and SPSS-based analysis including hypothesis testing. Procedures adhered to a logical sequence: preparatory literature review and pilot testing, ethical respondent consent, data entry, assumption validations, regression modeling ( $Y = 1.130 + 0.295X_1 + 0.234X_2 + 0.406X_3 + e$ ), and interpretation, as per Emzir's structured quantitative workflow for causal inference. Creswell and Creswell (2023) reinforce this phased approach, ensuring procedural integrity from design to reporting for credible findings on loyalty drivers.

## Results and Discussion

### Classical Assumption Test

#### 1. Normality Test

**Table 1. Normality Test Results**

One-Sample Kolmogorov-Smirnov Test		
Unstandardized Residual		
N		170
Normal	Mean	.0000000
Parameters a, b	Standard Deviation	2.06213914
Most Extreme Differences	Absolute	.100
	Positive	.100
	Negative	-.079
Test Statistics		.100
Asymp. Sig. (2-tailed)		.000c
Exact Sig. (2-tailed)		.060
Point Probability		.000

Based on the normality test results table, the exact Kolmogorov-Smirnov significance value is 0.060. This value is greater than the established significance level ( $\alpha = 0.05$ ). Statistically, these results indicate that the residual data is normally distributed. If the data is normally distributed, it will form a symmetrical bell curve.

#### 2. Heteroscedasticity Test

**Table 2. Heteroscedasticity Test Results**

Variables	Signification	Information
<i>E-service quality</i>	0.802	No Heteroscedasticity
Interactive Features	0.145	No Heteroscedasticity
<i>E-satisfaction</i>	0.566	No Heteroscedasticity

Based on the results of the Glejser Test above, it can be seen that the significant value of the independent variables, namely e-service quality (X1) is  $0.802 > 0.05$ , interactive features (X2) is  $0.145 > 0.05$ , and e-satisfaction (X3) is  $0.566 > 0.05$ . So it can be concluded that the independent variables X1, X2, and X3 do not experience heteroscedasticity.

#### 3. Multicollinearity Test

**Table 3. Multicollinearity Test Results**

Variables	Collinearity Statistics		Information
	Tolerance	VIF	
<i>E-service quality</i>	0.310	3,230	No Multicollinearity
Interactive Features	0.389	2,568	No Multicollinearity
<i>E-satisfaction</i>	0.368	2,715	No Multicollinearity

Based on the calculation results in the table above, it can be concluded that the VIF values for all independent variables in this study are less than 10, and the tolerance is greater than 0.1. Therefore, there is no multicollinearity. The calculation process is as follows:

- E-service quality*= VIF 3.230 < 10 and Tolerance 0.310 > 0.1, so it is stated that there is no multicollinearity
- Interactive features = VIF 2.568 < 10 and Tolerance 0.389 > 0.1, so it is stated that there is no multicollinearity.
- E-satisfaction*= VIF 2.715 < 10 and Tolerance 0.368 > 0.1, so it is stated that there is no multicollinearity

#### Results of Multiple Linear Regression Analysis

**Table 4. Results of Multiple Linear Regression Analysis**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1,130	1,398		.808	.420
<i>E-service quality</i>	.295	.075	.319	3,918	.000
Interactive Features	.234	.060	.280	3,862	.000
<i>E-satisfaction</i>	.406	.104	.291	3,895	.000

Based on the table above, the regression model for this study is as follows:  $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$ . Customer loyalty = 1.130 + 0.295 e-service quality + 0.234 interactive features + 0.406 e-satisfaction. So the conclusion of the regression results above is as follows:

- The constant value ( $\alpha$ ) of 1.130 shows that, when the values of the e-service quality variables ( $X_1$ ), interactive features ( $X_2$ ), e-satisfaction ( $X_3$ ) are combined, then it is assumed that they are constant or there is no change, then customer loyalty ( $Y$ ) is 1.130.
- The regression coefficient value of the e-service quality variable ( $X_1$ ) is 0.295, which means that if the value of the e-service quality variable ( $X_1$ ) increases by one unit, then the customer loyalty result ( $Y$ ) will also increase by 0.295.



3. The regression coefficient value of the interactive feature variable (X2) is 0.234, which means that if the value of the interactive feature variable (X2) increases by one unit, the customer loyalty result (Y) will also increase by 0.268.
4. The regression coefficient value of the e-satisfaction variable (X3) is 0.406, which means that if the value of the e-satisfaction variable (X3) increases by one unit, then the customer loyalty result (Y) will also increase by 0.406.

### Hypothesis Test Results

1. t-test (Partial)

**Table 5. t-Test Results**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1,130	1,398		.808	.420
<i>E-service quality</i>	.295	.075	.319	3,918	.000
Interactive Features	.234	.060	.280	3,862	.000
<i>E-satisfaction</i>	.406	.104	.291	3,895	.000

Based on the table above, the results of the t-test between the independent variable and the dependent variable can be seen that:

- a. The e-service quality variable obtained a calculated t value of 3.918 > t table 1.974 and had a significance of 0.000 < 0.05, meaning that H0 was rejected and Ha was accepted. It can be concluded that the e-service quality variable (X1) has a significant influence on customer loyalty (Y).
- b. The interactive feature variable obtained a calculated t value of 3.862 > t table 1.974 and had a significance of 0.000 < 0.05, meaning that H0 was rejected and Ha was accepted. It can be concluded that the interactive feature variable (X2) has a significant effect on customer loyalty (Y).
- c. The e-satisfaction variable obtained a calculated t value of 3.895 > t table 1.977 and had a significance of 0.000 < 0.05, meaning that H0 was rejected and Ha was accepted. It can be concluded that the e-satisfaction variable (X3) has a significant effect on customer loyalty (Y).

## 2. F Test (Simultaneous)

**Table 6. F Test Results**

		ANOVA				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1390,494	3	463,498	107,062	.000 <sup>b</sup>
	Residual	718,659	166	4,329		
	Total	2109.153	169			

Based on the results of the F test above, it shows that the calculated F value of 107.062 is greater than the F table value of 2.66 and has a significant value of  $0.000 < 0.05$ . Therefore, it can be concluded that  $H_0$  is rejected, meaning that the data shows that all independent variables simultaneously or together have a strong influence on the dependent variable significantly.

**Coefficient of Determination Test****Table 7. Results of the Determination Coefficient Test**

Model Summary				
Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.812a	.659	.653	2,081

Based on the results in the table above, it is known that the coefficient of determination is found in the Adjusted R Square value of 0.653. This indicates that the ability of the dependent variable, namely customer loyalty, to explain the independent variables, namely e-service quality, interactive features, and e-satisfaction by 65.3%, and the remaining 34.7% is explained by other factors outside the variables used in this study.

**Discussion****The Influence of E-service Quality (X1) on Customer Loyalty (Y)**

Based on the results of a partial test (t-test), the e-service quality variable was proven to have a positive and significant effect on Shopee e-commerce customer loyalty. These results indicate that the e-service quality perceived by students at the University of Technology Sumbawa, such as application efficiency, system reliability, service speed, and transaction security and privacy, plays a significant role in shaping customer loyalty. When customers experience consistent service that meets their expectations, trust and commitment to continue using the Shopee platform are fostered.

The findings of this study align with the Theory of Customer Loyalty, which states that service quality is a key factor in creating customer loyalty. Good service quality will increase perceived value and customer satisfaction, which in turn encourages loyal behaviors such as repeat purchases and a reluctance to switch to other platforms. These results also support previous research conducted by (Yani & Sugiyanto, 2022) which states that e-service





quality through the dimensions of efficiency, fulfillment, privacy, and responsiveness influences e-commerce customer loyalty. In addition, research (Devita & Mahyuni, 2024) proves that e-service quality has a significant impact on customer satisfaction and customer trust, which ultimately increases customer loyalty among Shopee users. Similar findings were also expressed by (Alim et al., 2025) as well as (Rintasari & Farida, 2018) which states that e-service quality has a positive and significant influence on e-loyalty. Thus, the results of this study empirically confirm that e-service quality is a significant determinant in increasing Shopee e-commerce customer loyalty.

### **The Influence of Interactive Features (X2) on Customer Loyalty (Y)**

The results of the partial t-test indicate that interactive features have a positive and significant effect on Shopee e-commerce customer loyalty. This indicates that the presence of interactive features such as Shopee Games, rewards, daily missions, and interactive promotional activities can increase user engagement in using the Shopee application. This engagement creates a pleasant shopping experience and encourages users to continue using the platform repeatedly. The results of this study align with the concept of customer loyalty, which states that emotional engagement and positive user experiences can strengthen long-term relationships between customers and service providers. Interactive features serve as a stimulus that increases engagement and strengthens customers' emotional bonds with the platform.

These findings support research [Sarhan, 2024] which states that gamification, as part of interactive features, has a positive and significant impact on Shopee customer loyalty. Furthermore, research by Putri and Nugrahani explains that gamification features can create emotional experiences that further engage customers with e-commerce applications. Thus, the results of this study confirm that interactive features play a strategic role in maintaining and increasing Shopee customer loyalty.

### **The Influence of E-satisfaction (X3) on Customer Loyalty (Y)**

Based on the results of a partial t-test, the e-satisfaction variable was proven to have a positive and significant effect on Shopee e-commerce customer loyalty. This indicates that the level of satisfaction of Sumbawa University of Technology students with the service, ease of transactions, and security of using the Shopee application fosters customer loyalty. Satisfied customers are more likely to make repeat purchases and make Shopee their primary choice for online shopping.

This finding aligns with the theory of customer satisfaction and loyalty, which states that satisfaction is the primary emotional factor driving long-term loyalty. High levels of satisfaction will strengthen customers' intention to continue using the platform and recommend it to others.

The results of this study are consistent with the research of Taqdirul et al. (2025) which stated that e-satisfaction has a significant effect on e-loyalty of e-commerce users. In addition, the study [Devita & Mahyuni, 2024] And [Yani & Sugiyanto, 2022] Research also shows that customer satisfaction has a strong relationship with customer loyalty. Thus, e-



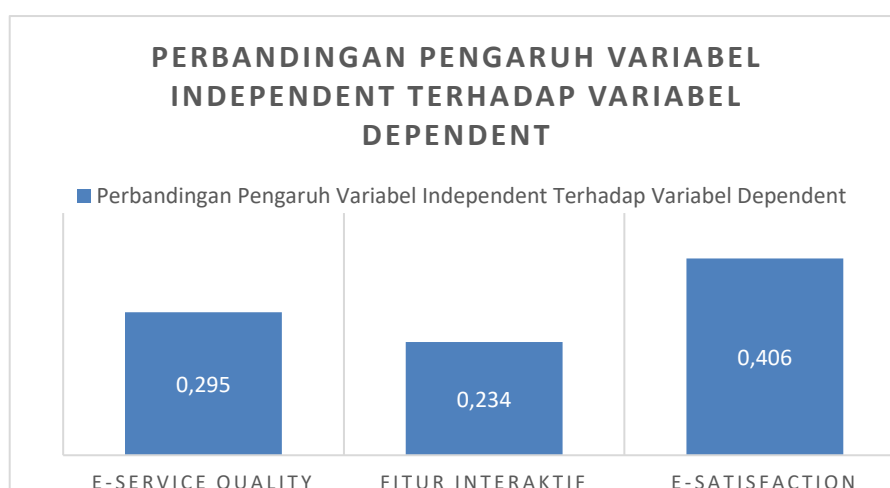
satisfaction has been shown to be a crucial factor in increasing customer loyalty on Shopee e-commerce platforms.

### The Influence of E-service Quality (X1), Interactive Features (X2), E-satisfaction (X3) on Customer Loyalty (Y)

Based on the results of the F-test (simultaneous test), it was found that e-service quality, interactive features, and e-satisfaction simultaneously or together significantly influence Shopee e-commerce customer loyalty among students at the University of Technology Sumbawa. This indicates that customer loyalty is not formed by a single factor, but rather the result of a combination of service experience, user engagement, and perceived customer satisfaction.

The results of this study align with Devita Sulastina's (2024) research, which states that service quality, application design, and fulfillment simultaneously influence customer satisfaction, customer trust, and customer loyalty.(Devita & Mahyuni, 2024)also demonstrated that service quality and customer satisfaction simultaneously have a significant influence on e-commerce customer loyalty. Furthermore, Sarhan (2024) emphasized that interactive features such as gamification can strengthen customer loyalty models when integrated with service quality and customer satisfaction. The results of this study confirm that e-service quality, interactive features, and e-satisfaction complement each other and work simultaneously in shaping Shopee e-commerce customer loyalty among students at the University of Technology Sumbawa.

In order to clarify the differences in the level of influence of each variable on the loyalty of Shopee e-commerce customers among students of Sumbawa University of Technology, the following is a comparative graph of the standardized coefficients (beta) values of each research variable.



**Graph 1. Comparison of the Influence of Independent Variables on Dependent Variables**

Based on the comparison graph of standardized coefficients (beta), the e-satisfaction variable has the highest beta value compared to other variables, indicating that e-satisfaction is the most dominant factor influencing Shopee e-commerce customer loyalty among students at the University of Technology Sumbawa. Meanwhile, e-service quality and interactive features have a smaller influence, but still contribute to building customer loyalty.

## Conclusion and Recommendation

Research on the influence of e-service quality, interactive features, and e-satisfaction on Shopee e-commerce customer loyalty among students at the University of Technology Sumbawa concluded that the three variables have a positive and significant effect, both partially and simultaneously. E-service quality builds trust through ease, security, and reliability of transactions, while interactive features such as Shopee Live and gamification create emotional bonds and enjoyable shopping experiences that encourage long-term commitment. E-satisfaction emerged as the most dominant factor, becoming the main prerequisite for repeat purchases and recommendations, as reinforced by the Theory of Customer Loyalty which emphasizes the synergy of positive experiences, satisfaction, and customer value in forming loyalty holistically.

Based on the research results of the influence of e-service quality, interactive features, and e-satisfaction on Shopee customer loyalty among students of Universitas Teknologi Sumbawa, the main suggestions include: for Shopee, improve e-satisfaction through application stability, fast response, transaction security, and optimization of interactive features for meaningful experiences to strengthen emotional bonds; for other e-commerce platforms, integrate retailtainment with a focus on interaction and satisfaction for competitiveness; for students, be critical consumers who utilize features optimally for a responsible experience; for future researchers, add variables such as trust, price, or brand image, expand the sample evenly, and use mixed methods for in-depth analysis; and for readers, use these findings as an academic-practical reference to understand digital consumer behavior.

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