

Analysis of the Impact of Gamification, User Experience, and Service Quality on Customer Engagement Levels on the Indonesia E-Commerce Platform

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Abstract

This study aims to analyse the effect of gamification implementation, user experience (UX), and service quality on customer engagement on the Shopee e-commerce platform among teenagers. The increasing use of e-commerce platforms by the younger generation requires strategies that can build sustainable customer engagement through interactive features and superior service quality. This study uses a quantitative approach with a survey method, with a total of 94 respondents selected through purposive sampling. Data analysis was performed using multiple linear regression with the help of SPSS software. The results showed that gamification, UX, and service quality had a positive and significant effect on customer engagement. These findings indicate that game-based features, easy, enjoyable user experiences, and reliable, efficient services can simultaneously increase customer engagement on e-commerce platforms. This study provides practical implications for e-commerce players for designing interactive, high-quality strategies to maintain consumer loyalty, especially among the youth segment. The limitations of this study lie in the use of cross-sectional data and the limited scope of the sample, so the generalization of the research results still needs to be further examined.

Keyword: customer engagement; e-commerce; gamification; service quality; user experience

INTRODUCTION

The development of digital technology has driven rapid growth in e-commerce in Indonesia. Shopee has become one of the most popular e-commerce platforms, with cumulative visits reaching 4,768 million in 2023, as described in Figure 1 (Ahdiat, 2023). However, a high number of users does not always reflect strong customer engagement. Many users are only active during major promotions and do not show consistent engagement with the platform (Rizqullah et al., 2022).

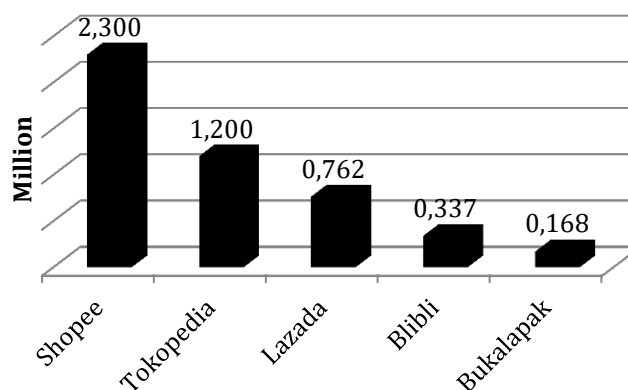


Figure 1. Total of E-commerce Visits Cumulative in 2023

Source: databoks.katadata.co.id

Customer engagement is now a key indicator in measuring the success of digital platforms. Strong engagement can increase customer loyalty and retention, which ultimately impacts profitability. In the digital context, customer engagement is influenced by various factors, such as gamification elements, user experience, and service quality.

Gamification is the application of game elements, such as points, badges, and leader boards, in a non-game context to encourage more active user interaction (Behl et al., 2020). In e-commerce, this feature can trigger users' intrinsic motivation to continue using the application repeatedly. Meanwhile, UX plays a role in creating an intuitive, efficient, and enjoyable experience for users, from the interface display to the transaction flow. Good UX has been proven to encourage user comfort and trust in the platform (Astuti et al., 2023).

Service quality also plays an important role. Fast, responsive, and expectation-meeting service increases customer satisfaction and strengthens long-term relationships with the brand (Vun et al., 2013). Thus, it is important for e-commerce platforms to integrate these three aspects in order to build sustainable engagement.

This study focuses on teenagers in Ngempon Village, Semarang Regency, who are active Shopee users and susceptible to digital trends and technological innovations. Teenagers in this context tend to seek shopping experiences that are fast, practical, and enjoyable. The study aims to analyse the effect of gamification implementation, user experience (UX), and service quality on customer engagement on the Shopee e-commerce platform among teenagers.

LITERATURE REVIEW

Unified Digital Customer Engagement Theory

Hollebeek et al. (2022) developed a theory of digital customer engagement which states that engagement is formed from the synergy between user experience, interactive elements, and service quality. These three elements strengthen user loyalty and emotional connection to the platform.

Customer Engagement

Customer engagement is the level of emotional, cognitive, and behavioural involvement of customers with a platform or brand. In e-commerce, engagement is characterized by routine interaction, active participation, and loyalty to the application (Rasool et al., 2020).

Gamification

Gamification is the use of game elements (points, badges, leaderboards) in a non-game context to encourage user motivation (Behl et al., 2020). In e-commerce, gamification increases fun, challenge, and users' desire to remain active.

User Experience (UX)

UX refers to the quality of user interaction with digital systems, including interface design, navigation, and security. Good UX provides comfort, efficiency, and satisfaction that contribute to user engagement (Garrett, 2011).

Service Quality

Service quality includes response speed, reliability of information, and solutions to customer problems. This quality determines the extent to which users feel valued and trusted by the digital platform (Tri et al., 2021).

Conceptual Framework

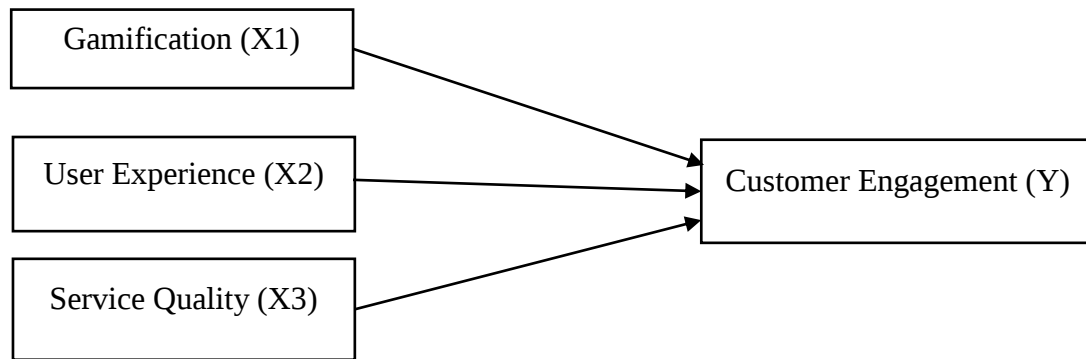


Figure 2. Theoretical Framework

The conceptual framework in the Figure 2 describes the causal relationship between the implementation of gamification (X1), user experience (X2), and service quality (X3) as independent variables on customer engagement (Y) as a dependent variable. Gamification implementation is represented through interactive game-based features designed to increase user participation and engagement, while user experience reflects users' perceptions of the ease, convenience, and enjoyment of using the platform. Service quality describes the platform's ability to provide reliable, responsive, and consistent service to users. These three variables are assumed to directly influence the level of customer engagement, as reflected in the intensity of interaction, active participation, and user attachment to the e-commerce platform. The relationship between variables in this conceptual framework is further tested empirically by formulating research hypotheses that posit a positive influence of each independent variable on customer engagement.

Research Hypotheses

H1: Gamification has a positive effect on customer engagement.

H2: User experience positively affects customer engagement.

H3: Service quality positively affects customer engagement.

RESEARCH METHOD

This study employs a quantitative approach with a descriptive and associative research design to examine the effects of gamification (X₁), user experience (X₂), and service quality (X₃) on customer engagement (Y). Data were collected through a survey using a structured questionnaire measured on a five-point Likert scale. The research population consisted of 673 adolescents in Ngempon Village, Bergas District, Semarang Regency. A purposive sampling technique was used to select 94 respondents, based on the Slovin formula with a 10% margin of error. Primary data were analysed quantitatively using SPSS.

RESULT AND DISCUSSION

Multiple Linear Regression Analysis Test

Multiple linear regression is performed to determine the effective relationship between several variables. Multiple linear regression consists of one dependent variable (Y) and more than one independent variable (X). Data processing is performed using SPSS software with the following multiple linear regression equation:

Table 1. Multiple Linear Regression Test Results

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Gamification	.348	.040	.380	8.683	.000
UX	-.217	.058	-.216	-3.720	.000
Service Quality	.830	.058	.838	14.370	.000

Source: SPSS data processing results

Based on Table 1, the regression equation obtained from the Unstandardized Coefficients values is:

$$Y = -0,585 + 0,348X_1 - 0,217X_2 + 0,830X_3 \dots\dots\dots(1)$$

Explanation:

- Y = Customer Engagement
- X₁ = Gamification Implementation
- X₂ = User Experience
- X₃ = Service Quality

From the equation, the following conclusions can be drawn that the constant of -0.585 indicates the base value of Customer Engagement when the three independent variables are zero. Although it has no direct practical meaning, this value is used to form a statistically predictive model. Gamification (X₁) has a coefficient of 0.348 with a significance of 0.000. This means that Gamification has a positive and significant effect on Customer Engagement, so that the higher the implementation of gamification features, the higher the customer engagement. User Experience (X₂) has a coefficient of -0.217 with a significance value of 0.000. This indicates that User Experience has a significant negative effect on Customer Engagement. This means that, in the context of this study, an increase in UX tends to decrease Customer Engagement. This is most likely due to users' perceptions of UX that are not yet optimal or do not meet expectations. Service Quality (X₃) has the highest coefficient, 0.830, with a significance value of 0.000. This shows that Service Quality is the most dominant and significant factor in increasing Customer Engagement.

Partial Test (t-test)

The partial test (t-test) is used to determine partially or individually whether the independent variable (X) has an effect on the dependent variable (Y) by comparing the t-value with the t-table using the formula ($df = n - k - 1$) with the calculation ($df = 94 - 3 - 1 = 90$), so that the t-table value can be determined to be 1.66140 with a significance level of 5% (0.05). If the t-count > t-table or the Sig value < 0.05, then it can be said that there is an effect of the independent variable (X) on the dependent variable (Y).

Interpretation of results is Gamification (X₁) shows a positive and significant effect on customer engagement with t count = 8.683 > t table = 1.66140 and sig = 0.000. This means that gamification features such as point systems, challenges, and rewards on Shopee can encourage user engagement, increase participation, and foster loyalty. User Experience (X₂) has a statistically significant effect (sig = 0.000) but in the negative direction, because the t-value = -3.720 < -t table. This indicates that respondents' perception of UX actually reduces customer engagement. The possible cause is a suboptimal user experience, such as interface

design, ease of navigation, or features that do not meet teenagers' expectations in Ngempon Village. Service Quality (X_3) shows a positive and significant effect with t count = 14.370 > t table and sig = 0.000. This means that the higher the users' perceived quality of service (efficiency, reliability, responsiveness, and privacy), the higher their engagement with the Shopee platform.

Determination Coefficient Test (R^2)

The coefficient of determination (R^2) is a statistical measure used to assess the extent to which independent variables explain variation in the dependent variable in a regression model. The coefficient of determination test measures the extent to which independent variables (X) simultaneously affect dependent variables by examining the Adjusted R^2 value, with the remainder explained by other variables outside the model.

The results of the coefficient of determination (R^2) test in the Table 2 show that the variables of gamification (X_1), user experience (X_2), and service quality (X_3) have a value of 0.902 or 90.2%, meaning that the variables of gamification (X_1), user experience (X_2), and service quality (X_3) are able to influence customer engagement (Y) among teenagers in Ngempon Village by 90.2%, while the remaining 9.8% is influenced by other variables not used in this study.

The Effect of Gamification on Customer Engagement

The results show that gamification features such as points, badges, and leader boards successfully increase user engagement. These findings support Hollebeek et al.'s (2022) theory, which posits that game elements can increase intrinsic motivation and user participation.

The Effect of User Experience on Customer Engagement

The results reveal that User Experience (UX) has a significant but negative effect on customer engagement. This finding contrasts with general expectations, suggesting a gap between what the platform offers and what teenage users in Ngempon Village actually expect. As noted by Zaki et al. (2021), UX quality is a key element in shaping digital loyalty; however, when UX does not meet user expectations, such as interface design that feels unfamiliar, navigation that is less intuitive, or features not aligned with youth preferences, it may instead reduce engagement. This underscores the need for continuous UX evaluation tailored to specific user demographics.

The Influence of Service Quality on Customer Engagement

Service quality is the factor with the most dominant influence. Service speed, information clarity, and responsive customer service build trust and emotional attachment. These findings are in line with Sripawatakul et al. (2023), who emphasize the importance of digital services in driving loyalty.

Table 2. Coefficient of Determination Analysis Results

R	R Square	Adjusted R-Square	Std. Error of the Estimate
0.950 ^a	0.902	0.899	2.624

Source: SPSS data processing results

CONCLUSION

This study analyses the effect of gamification implementation, user experience (UX), and service quality on customer engagement on the Shopee Indonesia e-commerce platform using a quantitative survey-based approach involving 94 teenage respondents. The results of the analysis show that gamification and service quality have a positive and significant effect on customer engagement, with service quality being the dominant determinant, while UX shows a significant negative effect, indicating a gap between user expectations and the actual experience of using the application.

Although it contributes empirically to the development of the customer engagement literature in the context of digital platforms, this study has limitations, including its relatively narrow sample coverage and limited use of variables. Therefore, further research is recommended to broaden the range of respondent characteristics, include relevant behavioural and technological variables, and employ a longitudinal design. Meanwhile, e-commerce practitioners are advised to optimize gamification innovation, maintain consistent service quality, and conduct continuous UX evaluations to enhance user engagement and loyalty, particularly among the younger age segment.

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