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MANAGEMENT

Examining the Impact of Gamification and Customer Experience on Customer Loyalty in E-commerce: Mediating Role of Customer Satisfaction

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ABSTRACT

Purpose: This study investigates the impact of gamification and customer experience on customer loyalty with customer satisfaction acting as an intervening variable.

Method: This study adopts a quantitative research approach, employing a sample of 174 respondents who are users of the Shopee platform in the Cirebon region. The sampling technique utilized is non-probability sampling, chosen to ensure the representativeness of the sample. Data were analyzed using Structural Equation Modeling-Partial Least Squares (SEM-PLS) to examine the relationships between the variables.

Result: The findings indicate a strong and statistically significant influence of gamification and user experience (UX) on customer loyalty. This relationship occurs both directly and indirectly through the mediating role of customer satisfaction. The study highlights the crucial role of customer satisfaction in establishing a connection between gamification, user experience, and customer loyalty.

Practical Implications for Economic Growth and Development: The implementation of gamification and UX strategies contributes to economic growth by enhancing customer satisfaction and loyalty. Mechanisms such as rewards and challenge-based interactions foster greater customer engagement and retention, thereby increasing business competitiveness. High customer loyalty not only encourages repeat transactions but also generates positive word-of-mouth, ultimately promoting sustainable growth within the digital economy.

Keywords: *Gamification, User Experience, Customer Satisfaction, Customer Loyalty, E-commerce*

INTRODUCTION

During the global pandemic caused by the SARS-CoV-2 virus, commonly known as COVID-19, significant technological advancements have led to profound transformations across various industries, including e-commerce. According to data from the Indonesian Internet Service Providers Association (APPJI), the number of internet users in Indonesia reached 221,563,479, marking a 1.4% increase from the previous census in 2020. This figure corresponds to an internet penetration rate of 79.5%. In line with the growing number of internet users, Indonesia ranks ninth among the top ten countries with the highest percentage of internet users who frequently engage in online shopping, with approximately 59.3% of Indonesian internet users making online purchases weekly.

Shopee, one of the largest e-commerce platforms in Southeast Asia, has played a pivotal role in facilitating online shopping in Indonesia. According to a report from Webretailer, Shopee's website recorded 124.9 million monthly visits from Indonesia in 2023, accounting for 27% of total global monthly visits. Furthermore, consumer interest in online shopping through e-commerce platforms in Indonesia has shown a continuous upward trend from 2020 to 2023, with the number of users reaching 58.63 million. This figure is projected to increase further, reaching 99.1 million users by 2029.

Data from the second quarter of 2022 indicate that Tokopedia and Shopee were the two dominant e-commerce platforms in Indonesia, with Tokopedia recording 158.35 million accesses and Shopee achieving 131.3 million accesses. The intense competition within the e-commerce sector has compelled companies to adopt innovative strategies to attract consumers and maintain their competitive edge. One of the primary strategies employed by Shopee to sustain competitiveness and bolster customer loyalty is the implementation of gamification, accompanied by an enhanced user experience (UX).

The global e-commerce gamification market is projected to experience substantial growth, increasing by 40.4% from USD 5.5 billion in 2021 to USD 30.7 billion by 2026. According to Behl et al. (2020), incorporating gamification elements in e-commerce platforms can elevate user engagement by 60%, thereby driving increased sales and fostering customer loyalty. Gamification entails the integration of game-like elements into non-gaming contexts to evoke positive emotions, stimulate creativity, and encourage greater interaction between customers and e-commerce platforms. Apart from gamification, UX also plays a critical role in attracting and retaining customers. UX encompasses users' perceptions and reactions to their interactions with a product or service. Factors such as features, design, product structure, and usability contribute to creating a pleasant and satisfying experience, ultimately enhancing customer satisfaction and loyalty to the platform (Tjiptodjojo et al., 2023).

Previous research has demonstrated a positive relationship between gamification and UX with various variables, including customer satisfaction. A study conducted by Sitthipon et al. (2022) revealed that gamification can motivate customers to undertake desired actions, such as purchasing products or services. Meanwhile, other research has emphasized that a positive user experience significantly contributes to customer satisfaction and the continued use of the service (Chiara et al., 2022). Despite the wealth of literature exploring gamification and user experience in the context of e-commerce, there remains a gap concerning the simultaneous influence of these two factors on customer loyalty while considering the mediating role of customer satisfaction. Therefore, this study aims to address this gap by investigating the relationship between gamification, user experience, customer satisfaction, and customer loyalty in e-commerce platform.

Hypotheses Development

Gamification and Customer Loyalty

Gamification has become a widely adopted strategy for enhancing customer loyalty, particularly in mobile applications and digital loyalty programs. The theoretical foundation for gamification's impact on loyalty is rooted in Self-Determination Theory (Ryan & Deci, 2000), which posits that individuals are more engaged when their intrinsic psychological needs—competence, autonomy, and relatedness—are fulfilled. Gamification addresses these needs by incorporating elements such as points, levels, and challenges, which stimulate motivation and create rewarding user experiences. Additionally, Consumer Engagement Theory (Brodie et al., 2011) suggests that gamification enhances customer engagement by fostering interactive and immersive experiences, leading to increased brand attachment and loyalty.

From a technology adoption perspective, the Technology Acceptance Model (TAM) (Davis, 1989) explains that perceived enjoyment and ease of use influence continued user engagement, which contributes to loyalty. Gamification increases perceived usefulness by making the shopping experience more interactive and enjoyable, thereby encouraging repeated interactions. Moreover, Commitment-Trust Theory (Morgan & Hunt, 1994) indicates that gamification strengthens the emotional bonds between customers and brands, enhancing trust and long-term commitment.

Empirical research supports these theoretical claims. Nugraha and Gunawan (2024) found that gamification significantly enhances customer satisfaction, engagement, and loyalty by providing fun and rewarding experiences. Similarly, Perkasa and Emanuel (2020) emphasized that gamification fosters long-term customer relationships by increasing

participation and emotional attachment. Additionally, Nichora and Sondari (2023) demonstrated that integrating gamification into marketing strategies helps attract new customers while maintaining the loyalty of existing ones by creating a more engaging shopping experience. Based on these theoretical and empirical foundations, this study proposes the following hypothesis:

H1: Gamification has a positive and significant effect on customer loyalty.

User Experience and Customer Loyalty

User experience (UX) plays a pivotal role in shaping customer loyalty, particularly in digital environments. The Expectation-Confirmation Theory (ECT) explains that users develop expectations before interacting with a platform, and if their experience meets or exceeds these expectations, satisfaction and loyalty increase. Similarly, the Stimulus-Organism-Response (S-O-R) model (Mehrabian & Russell, 1974) suggests that positive stimuli in digital interfaces enhance users' emotional and behavioral responses, reinforcing loyalty.

According to Tjiptodjojo et al. (2023), a good user experience can drive customer satisfaction, which subsequently builds sustainable relationships and fosters customer loyalty. Additionally, Saputra et al. (2021) found that user experience exerts a considerable influence on customer loyalty and satisfaction, where satisfaction acts as a mediator in this relationship. Thus, businesses must prioritize UX enhancements to improve customer interactions and long-term engagement.

H2: User experience has a positive and significant effect on customer loyalty.

Gamification and Customer Satisfaction

Gamification has been shown to enhance customer satisfaction across digital platforms. The Hedonic Motivation System Adoption Model (HMSAM) (Van Der Heijden, 2004) states that user enjoyment and perceived playfulness significantly influence satisfaction. Gamification fosters these elements by incorporating game mechanics that make digital interactions more rewarding and enjoyable.

Research demonstrates that gamification elements, such as challenges and rewards, generate a fun experience, thereby increasing satisfaction. Nugraha and Gunawan (2024) stated that effective gamification increases customer satisfaction by providing a fun and rewarding experience. Similarly, a study by Hamari et al. (2014) found that gamification can enhance user engagement and satisfaction by incorporating game-like elements that motivate users to participate actively. Therefore, integrating gamification into marketing strategies fosters both customer acquisition and retention through satisfying experiences.

H3: Gamification has a positive and significant effect on customer satisfaction.

User Experience and Customer Satisfaction

User experience (UX) significantly influences customer satisfaction, particularly in digital environments. The Cognitive-Affective Model (Bagozzi, 1992) suggests that cognitive evaluations of a product or service, such as usability and efficiency, shape emotional responses, which subsequently determine satisfaction levels.

According to Atthala et al. (2024), all indicators of the User Experience variable have a constructive impact on Customer Satisfaction, with the dimension of Perspicuity or Customer Convenience having the highest influence. This finding aligns with Wiwesa (2021), who noted that a positive user experience not only affects satisfaction but also builds customer loyalty. Therefore, companies that prioritize UX improvements can enhance customer satisfaction and strengthen long-term relationships.

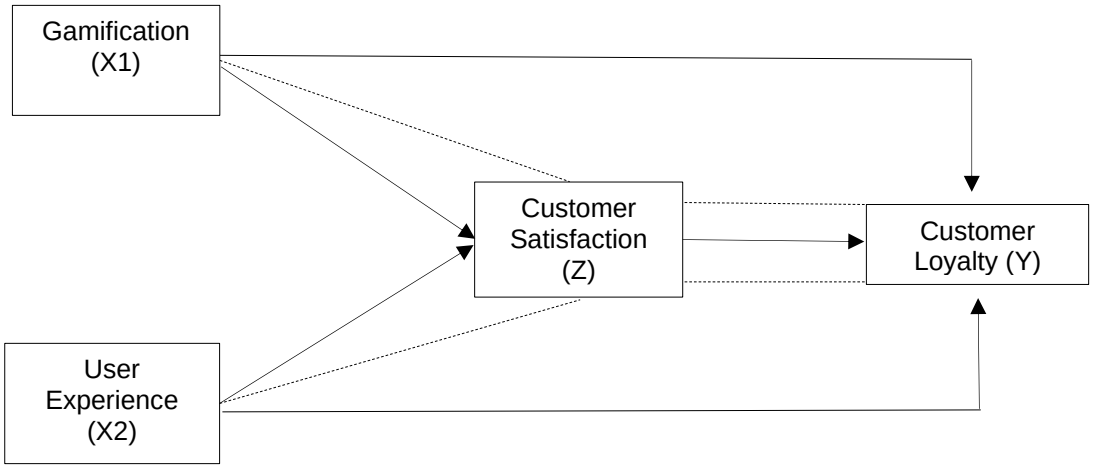
H4: User experience has a positive and significant effect on customer satisfaction.

Customer Satisfaction and Customer Loyalty

Customer satisfaction is a key determinant of customer loyalty, as explained by the Expectation-Confirmation Theory. When customers are satisfied with a product or service, they are more likely to continue using it and recommend it to others, thereby reinforcing brand loyalty. According to Nugraha and Gunawan (2024), customer satisfaction is a significant mediating factor in building customer loyalty, especially when elements of user experience and incentives are effectively implemented. Similarly, Thakur (2016) found that customer satisfaction has a significant impact on loyalty. Therefore, companies that focus on enhancing satisfaction through high-quality services and positive experiences can cultivate a loyal customer base.

H5: Customer satisfaction has a positive and significant effect on customer loyalty.

Figure 1. Research Framework



Source: Developed by the author (2025)

Mediating Role of Customer Satisfaction

User experience and gamification strategies are essential in the digital era. The Service-Dominant Logic (SDL) framework suggests that value is co-created through interactive and experiential engagement, indicating that satisfaction mediates the effect of gamification and user experience (UX) on loyalty. Gamification, which includes elements such as points, badges, and challenges, has been shown to increase user engagement with digital services (Andika et al., 2023). However, without customer satisfaction as an intermediary, the direct impact of gamification on customer loyalty may be limited. Andika et al. (2023) state that utilitarian, hedonic, and social gamification values can increase the level of customer satisfaction, which in turn increases customer loyalty.

Similarly, the Cognitive-Affective Model (Bagozzi, 1992) posits that a positive user experience enhances emotional satisfaction, fostering customer loyalty. A study on digital banking applications found that a pleasant user experience significantly increases satisfaction, leading to stronger loyalty (Ramadhani & Kusumawardhani, 2024). Thus, customer satisfaction serves as a mediating factor between UX and loyalty.

H6: Customer satisfaction mediates the relationship between gamification and customer loyalty.

H7: Customer satisfaction mediates the relationship between user experience and customer loyalty.

METHOD

This study employs a quantitative research approach to examine the relationships among gamification, user experience, customer satisfaction, and customer loyalty within the Shopee platform. A survey method was utilized to collect data from Shopee users in the Cirebon area, facilitating the measurement of specific variables and the testing of hypotheses through statistical analysis. The quantitative approach ensures objectivity and reliability in evaluating the proposed research model.

The population for this study comprises Shopee users in the Cirebon area. According to Sugiono (2017), a population does not solely consist of individuals but also includes the characteristics that define a particular group. To obtain a representative sample, this study employs a non-probability sampling method, in which participants are selected based on predetermined criteria rather than random selection.

The eligibility criteria for respondents include: (1) visiting the Shopee website at least once a month, (2) making at least one purchase on the platform, (3) residing in Cirebon, and (4) being between the ages of 18 and 30. These criteria ensure that the selected sample consists of active Shopee users who can provide relevant insights into the research variables.

Sugiono (2017) suggests that an appropriate sample size for Structural Equation Modeling - Partial Least Squares (SEM-PLS) ranges between 30 and 500 respondents. Hair et al. (2014) further indicate that the minimum required sample size for SEM-PLS, with a 0.050 significance level and a 0.200 path coefficient, is 154.505 respondents, which is rounded to 155 respondents. In this study, data were collected from 206 respondents through an online questionnaire. However, 32 responses did not meet the eligibility criteria based on the screening questions, resulting in a final sample size of 174 respondents. This number surpasses the minimum requirement of 155 respondents, ensuring adequate statistical power for data analysis.

The study employed an online questionnaire as the primary data collection instrument. The questionnaire was designed to assess respondents' engagement with Shopee, their perceptions of gamification and user experience, as well as their levels of satisfaction and loyalty. Screening questions were included to verify respondents' eligibility before proceeding with the main survey. The data collection process was conducted within a specified timeframe to ensure a sufficient number of responses.

The collected data were analyzed using Structural Equation Modeling - Partial Least Squares (SEM-PLS), a widely used method for evaluating complex relationships among multiple variables. SEM-PLS is particularly suitable for exploratory research and models involving mediating variables, making it an appropriate choice for this study. The analysis was conducted using specialized statistical software to assess the reliability and validity of the measurement model, test the hypothesized relationships, and evaluate the significance of direct and indirect effects.

Table 1. Variables Measurement

Variables	Codes	Statements
Gamification (Setiawan & Kartikawangi, 2022)	G.1	I feel entertained when using the Shopee coin feature.
	G.2	I enjoy the challenge of collecting Shopee coins.

Variables	Codes	Statements
	G.3	The Shopee coin feature makes me feel more active and connected to the app.
	G.4	I believe that the Shopee coin provides an interesting new experience.
	G.5	Shopee coin rewards enhance my shopping experience.
User Experience (Chiara et al., 2022)	UX.1	Shopee coins offer convenience in my shopping.
	UX.2	I can easily use the Shopee coin feature.
	UX.3	I can quickly adapt to the Shopee coin feature.
	UX.4	I find the Shopee coin feature easily.
Customer Loyalty (Andika et al., 2023)	CL.1	I am satisfied with purchasing products through Shopee.
	CL.2	I want to continue shopping through Shopee after my pleasant shopping experiences.
	CL.3	Shopee offers marketing content that makes me feel at home within the app.
	CL.4	Shopee helps me fulfill my shopping needs effortlessly.
Customer Satisfaction (Andika et al., 2023)	CS.1	I make Shopee my first choice for shopping.
	CS.2	I share my Shopee shopping experiences with others.
	C2.3	I am confident that Shopee will continue to provide excellent services in the future.
	CS.4	I am not tempted to switch to another app.

Source: Compiled by the authors (2025)

RESULT AND DISCUSSION

Descriptive Statistics

The sample size for this study was determined based on survey results, comprising 174 individuals who utilized the Shopee and Shopee Coin applications within the Cirebon City area. Respondents were categorized according to age, gender, occupation, and education. Descriptive statistics indicate that the majority of respondents were female (82.8%), while males constituted only 6.9%. Regarding age distribution, the largest group was in the 18–24-year range (83.9%), followed by the 25–30-year range (10.3%) and those under 18 years (6.9%), indicating a predominance of young respondents. In terms of occupation, the majority of respondents were university students (82.2%), followed by employees (10.3%) and school students (18.3%), reflecting a significant proportion of students among the participants. Concerning educational attainment, the majority of respondents (79.3%) had pursued higher education, while 18.3% were enrolled in secondary school, and 2.3% had undertaken alternative academic pathways. These data indicate that the sample predominantly consists of female students aged 18–24 with higher educational backgrounds.

Table 2. Respondents' Profile

Category		Number of Respondents	Percentage
Gender	Male	53	6.9%
	Female	121	82.8%
Age	<18 Years	12	6.9
	18-24 Years	146	83.9%

Category		Number of Respondents	Percentage
	25-30 Years	16	10.3%
Profession	Students	12	18.3%
	College Students	144	82.2%
	Employee	18	10.3%
Education	Senior High School	32	18.3%
	Academic	4	2.3%
	College	138	79.3%

Source: Processed data (2025)

Convergent Validity

The following table presents the factor loadings for each indicator associated with the latent constructs examined in this study. These latent constructs include Gamification (G), User Experience (UX), Customer Satisfaction (CS), and Customer Loyalty (CL). The factor loading values indicate the strength of the relationship between each indicator and its corresponding construct. A higher factor loading signifies a stronger contribution of the indicator to the latent variable. As shown in the table, all factor loadings exceed the acceptable threshold of 0.70, thereby confirming the adequate construct reliability.

Table 3. Factor Loading

Latent Variables	Codes	Factor Loading
Gamification (G)	G.1	0.824
	G.2	0.817
	G.3	0.767
	G.4	0.727
	G.5	0.827
User Experience (UX)	UX.1	0.741
	UX.2	0.831
	UX.3	0.775
	UX.4	0.761
Customer Satisfaction (CL)	CL.1	0.767
	CL.2	0.735
	CL.3	0.723
	CL.4	0.700
Customer Loyalty (CS)	CS.1	0.722
	CS.2	0.892
	CS.3	0.711
	CS.4	0.831

Source: Processed data (2025)

Composite Reliability and Cronbach's Alpha

Table 4 presents the results of the validity and reliability analysis of the measurement model, including Cronbach's alpha, Average Variance Extracted (AVE), Composite Reliability, and R Square values for each latent construct. The latent constructs evaluated in this study are Gamification (G), User Experience (UX), Customer Satisfaction (CS), and Customer Loyalty (CL). Cronbach's alpha values for all constructs exceed the minimum threshold of 0.70, indicating acceptable internal consistency. Additionally, the AVE values for each construct are above 0.50, demonstrating adequate convergent validity. Composite reliability values also surpass the recommended threshold of 0.70, confirming the reliability of the constructs. The R Square values indicate the proportion of variance explained by the independent variables. Customer Satisfaction (CS) has an R Square value of 0.309, suggesting that 30.9% of its

variance is explained by the model, while Customer Loyalty (CL) has an R Square value of 0.464, indicating that 46.4% of its variance is accounted for by the model.

Table 4. Validity and Reliability Test

Latent Construct	Cronbach's Alpha	Average Variance Extracted	Composite Reliability	R Square
G	0.863	0.646	0.901	
UX	0.782	0.605	0.859	
CS	0.711	0.535	0.822	0.309
CL	0.798	0.628	0.870	0.464

Source: Processed data (2025)

Hypotheses Testing

Direct Effect

Direct effect ttesting is conducted to evaluate the relationships between variables within the conceptual model. Statistical analysis methods are employed to determine the extent to which the relationships between latent constructs—namely, gamification (G), user experience (UX), customer satisfaction (CL), and customer loyalty (CS)—can be empirically substantiated. The t-statistic and p-value are used as metrics to determine the statistical significance of the relationships between variables. An effect is considered significant if the t-statistic exceeds a predetermined threshold (e.g., 1.96 for a 5% significance level) and the p-value is less than 0.05. Furthermore, the path coefficient value is examined to assess the magnitude and direction of the influence between variables in the model.

Table 5. Hypotheses Test

Direction	Original Sample (O)	Sample Mean	Standard Deviniation (STDEV)	T Statistics (O/STDEV)	P Values	Conclusion
G → CL	0.223	0.218	0.083	2.674	0.008	Significant
G → CS	0.323	0.319	0.090	3.573	0.000	Significant
UX → CL	0.173	0.182	0.086	2.007	0.045	Significant
UX → CS	0.283	0.291	0.086	3.304	0.001	Significant
CS → CL	0.408	0.404	0.073	5.621	0.000	Significant

Source: Processed data (2025)

The hypothesis testing results demonstrate that all hypothesized relationships are statistically significant, as indicated by p-values below 0.05 and t-statistics exceeding the critical value of 1.96. Gamification positively influences both customer loyalty (G → CL) and customer satisfaction (G → CS), with path coefficients of 0.223 and 0.323, respectively. User experience also positively impacts customer loyalty (UX → CL) and customer satisfaction (UX → CS), with path coefficients of 0.173 and 0.283, respectively. Furthermore, customer satisfaction significantly affects customer loyalty (CS → CL), with a path coefficient of 0.408. These findings indicate that both gamification and user experience contribute positively to enhancing customer satisfaction and loyalty.

Indirect Effect

The indirect effect refers to the relationship between independent and dependent variables that occurs through the influence of a mediating variable. This analysis aims to examine the

extent to which mediating variables enhance or explain the relationships between key constructs within the research model. By incorporating indirect effects, the study provides a more comprehensive understanding of the complex interactions beyond direct effect analysis. To assess the indirect effect, the bootstrapping method is employed to estimate the significance of the mediation effect. In statistical analysis, the t-statistic serves as a crucial indicator, where surpassing a specific threshold signifies a significant deviation from the data mean. This threshold is determined by the p-value, which quantifies the probability of observing a given dataset under the null hypothesis. An effect is considered statistically significant when the t-statistic exceeds the critical threshold (e.g., 1.96 for a 5% significance level) and the p-value is below 0.05. Establishing this significance is essential to determining the presence of an indirect effect.

Table 6. Indirect Effect

Direction	Original Sample (O)	Sample Mean	Standard Deviniation (STDEV)	T Statistics (O/STDEV)	P Values	Conclusion
G → CS → CL	0.123	0.129	0.045	2.940	0.003	Mediate
UX → CS → CL	0.151	0.118	0.040	2.863	0.004	Mediate

Source: Processed data (2025)

The results of the indirect effect analysis indicate that both mediated relationships are statistically significant, as evidenced by p-values below 0.05 and t-statistics exceeding the critical value of 1.96. The indirect effect of gamification on customer loyalty through customer satisfaction (G → CS → CL) has a path coefficient of 0.123, a t-statistic of 2.940, and a p-value of 0.003, indicating a significant mediation effect. Similarly, the indirect effect of user experience on customer loyalty through customer satisfaction (UX → CS → CL) shows a path coefficient of 0.151, a t-statistic of 2.863, and a p-value of 0.004, also demonstrating a significant mediation effect. These results highlight the important mediating role of customer satisfaction in strengthening the relationship between gamification, user experience, and customer loyalty.

Discussion

The findings indicate that gamification has a significant positive effect on customer loyalty. This suggests that incorporating gamification elements enhances customer engagement and retention, as evidenced by statistical significance. The results align with the Self-Determination Theory (Ryan & Deci, 2000), which posits that gamification fosters intrinsic motivation by satisfying psychological needs such as competence, autonomy, and relatedness. Additionally, the Technology Acceptance Model (TAM) highlights that perceived enjoyment and ease of use are critical factors influencing continued engagement. Empirical studies, such as those by Nugraha & Gunawan (2024) and Perkasa & Emanuel (2020), also support this conclusion, demonstrating that gamification effectively strengthens customer loyalty by providing engaging and rewarding experiences.

Furthermore, the results reveal that user experience (UX) positively and significantly impacts customer loyalty. A well-designed UX enhances usability, convenience, and emotional satisfaction, fostering a deeper connection with the brand. This finding aligns with the Cognitive-Affective Model (Bagozzi, 1992), which posits that positive cognitive evaluations shape emotional responses, ultimately influencing loyalty. The results are consistent with previous studies, including those by Tjiptodjojo et al. (2023) and Wiwesa (2021), which indicate that improved UX contributes to higher customer satisfaction and loyalty.

Moreover, the analysis confirms that gamification significantly enhances customer satisfaction by creating engaging and enjoyable digital experiences. This result aligns with the Hedonic Motivation System Adoption Model (HMSAM) (Van Der Heijden, 2004), which posits that

perceived enjoyment and playfulness directly contribute to customer satisfaction. Empirical evidence from studies by Nugraha & Gunawan (2024) and Hamari et al. (2014) further supports this finding, emphasizing that incorporating game-like features positively influences customer satisfaction by fostering fun and rewarding interactions.

In addition, the findings demonstrate that user experience (UX) significantly influences customer satisfaction. A seamless and intuitive UX enhances ease of use, reduces cognitive effort, and fosters positive emotional responses. This relationship is theoretically grounded in the Cognitive-Affective Model (Bagozzi, 1992), which posits that user perceptions of usability shape their satisfaction levels. Empirical studies, such as those by Athalla et al. (2024) and Tjiptodjojo et al. (2023), support this relationship by highlighting that well-designed UX components significantly improve customer satisfaction and strengthen long-term loyalty.

Furthermore, the findings confirm that customer satisfaction significantly influences customer loyalty, indicating that satisfied customers are more likely to continue using a product or service and recommend it to others. This relationship is theoretically supported by the Expectation-Confirmation Theory (Oliver, 1980) and the Service-Dominant Logic (Vargo et al., 2008), both of which emphasize that fulfilling customer expectations fosters loyalty. Empirical evidence from studies by Nugraha & Gunawan (2024), Thakur (2016), and Tjiptodjojo et al. (2023) further validates this connection, demonstrating that high satisfaction levels lead to increased retention, trust, and advocacy.

The findings also indicate that customer satisfaction mediates the relationship between gamification and customer loyalty, strengthening the positive impact of gamification on loyalty when satisfaction is achieved. This mediation effect is supported by the Service-Dominant Logic (Vargo et al., 2008), which highlights the value co-creation process through positive interactions. Empirical studies by Andika et al. (2023) validate this mediation effect by demonstrating that gamification's impact on loyalty is significantly enhanced when users feel satisfied with the experience.

Finally, the results show that customer satisfaction serves as a crucial mediator in the relationship between user experience (UX) and customer loyalty. While UX directly impacts loyalty, its effect is significantly strengthened when users experience satisfaction from their interactions. This finding aligns with the Cognitive-Affective Model (Bagozzi, 1992) and the Stimulus-Organism-Response (S-O-R) Model (Mehrabian & Russell, 1974), which suggest that positive cognitive evaluations and emotional responses enhance loyalty. Empirical studies by Ramadhani & Kusumawardhani (2024), Saputra et al. (2021), and Tjiptodjojo et al. (2023) further confirm that customer satisfaction acts as a vital mediator, transforming positive UX experiences into long-term commitment and brand advocacy.

CONCLUSION

This study aimed to investigate the impact of gamification and user experience on customer loyalty within the e-commerce sector, with customer satisfaction serving as a mediating variable. The findings reveal a strong and statistically significant relationship between gamification, user experience, and customer loyalty, both directly and indirectly through customer satisfaction. Gamification enhances customer engagement and satisfaction by incorporating reward systems, while a positive user experience fosters usability and enjoyment, leading to sustained customer loyalty. The mediation analysis highlights customer satisfaction as a crucial factor in strengthening the relationship between gamification, user experience, and loyalty.

The results offer valuable insights for e-commerce businesses, particularly in designing customer engagement strategies. Incorporating gamification elements such as challenges and rewards can significantly boost customer involvement and retention. Similarly, improving user experience through seamless navigation and intuitive interfaces can enhance customer satisfaction and foster brand loyalty. These strategies are essential in the digital marketplace, as they support business growth, customer retention, and competitiveness.

Future research could explore additional mediating or moderating factors, such as trust, corporate image, or cultural influences, to provide a more comprehensive understanding of customer loyalty in e-commerce. Expanding the study to other platforms and geographical contexts could yield comparative insights, while qualitative research may deepen our understanding of customer perceptions regarding gamification and user experience.

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