

THE INFLUENCE OF GAMIFICATION ON BRAND LOYALTY: A STUDY OF A DIGITAL BANK IN INDONESIA WITH CUSTOMER ENGAGEMENT AS MEDIATION

Abram Myhero Yancristofel Tampubolon ¹⁾, Diana Sari ²⁾

^{1,2)} Universitas Padjadjaran, Sumedang, West Java

Corresponding author: abram21001@mail.unpad.ac.id

Abstract

This research examines how gamification affects brand loyalty, emphasizing the mediating function of customer engagement within the context of a digital banking application. Utilizing data from 323 respondents and employing Partial Least Squares Structural Equation Modeling (PLS-SEM), the study demonstrates that gamification positively influences both customer engagement and brand loyalty. Additionally, customer engagement serves as a partial mediator, indicating that users who are engaged cognitively, emotionally, and behaviorally tend to exhibit stronger brand loyalty. These findings underscore the strategic importance of gamification in enhancing engagement and cultivating lasting customer relationships in the digital banking sector.

Keywords: Gamification, Customer Engagement, Brand Loyalty, Digital Banking

Introduction

The banking industry in Indonesia is continuously experiencing rapid development and innovation, marked by the emergence of digital banks. Driven by consumer demand for fast and flexible banking services and supported by a high internet penetration rate reaching 215 million users in 2023 (APJII., 2023), digital banks have grown into a new phenomenon in the national financial landscape. As of early 2024, as many as 15 digital banks were recorded operating in Indonesia (CNBC Indonesia, 2024). However, their presence is met with the challenge of intense competition. In addition to competing among themselves, they must also contend with large conventional banks that are now aggressively digitalizing their services and controlling over 60% of the banking industry's total assets. This environment compels digital banks to formulate unique differentiation strategies to survive and build long-term customer loyalty.

One innovative strategy being increasingly adopted is gamification, which is the application of game concepts and mechanics in non-game contexts to stimulate motivation and change user behavior (Xi & Hamari, 2020). This strategy is considered highly relevant for attracting young consumer segments familiar with game-based interactions (Hofacker et al., 2016). Bank Neo Commerce (BNC), as one of the pioneers of digital banking in Indonesia, has extensively implemented gamification through features such as Neo Fortune and Neo Points. This approach has proven successful in attracting over 20 million users and has become key to increasing the frequency of user interaction with the application (Marketeers, 2022)

Nevertheless, the relationship between gamification and its impact on brand loyalty is not always direct. The Stimulus-Organism-Response (S-O-R) theoretical framework posits that an external stimulus (S), such as gamification, influences an individual's internal state (O), which in turn produces a specific behavioral response (R), like loyalty (Mehrabian & Russell, 1974; Li et al., 2020). In this context, customer engagement—encompassing cognitive, affective, and behavioral consumer involvement—is positioned as the organism (O) variable, or the crucial internal state. Several studies support that gamification can enhance customer engagement, which subsequently strengthens loyalty (Xi & Hamari, 2020; Tsou & Putra, 2023). However, previous research findings show inconsistencies; some studies find the effects of gamification to be indirect and mediated by engagement (Bitrián et al., 2021), while others have focused on applications outside the banking sector, such as e-commerce or fitness.

This research gap, particularly the limited exploration within the unique market context of Indonesian digital banking, highlights the urgency of further examining the mediating role of customer engagement. Therefore, this study aims to analyze the influence of gamification on brand loyalty by testing customer engagement as a mediating variable among users of the Bank Neo Commerce application. The results of this research are expected to provide a theoretical contribution to the digital marketing literature and offer strategic insights for the banking industry in its efforts to enhance customer retention and loyalty through innovative approaches.

Literature Review

Gamification

Gamification is commonly described in recent studies as the application of game elements—like points, rewards, and challenges—into non-gaming environments (Lee et al., 2024). Its primary objectives are to stimulate individual motivation, foster user habits, and drive behavioral change by transforming routine or utilitarian tasks into more engaging and pleasurable experiences. From a strategic marketing standpoint, this concept is intentionally applied by integrating game design elements into a brand's digital application (Feng

et al., 2020). The objective is to gain consumer value and encourage specific outcomes that benefit the brand, such as fostering support and building long-term brand loyalty. This positions gamification as a critical component of service design, and as found by Xi & Hamari (2020), a well-designed strategy can significantly increase both user engagement and brand loyalty, making it a powerful tool in a competitive market.

To empirically measure this construct, this study adopts a framework that operationalizes the gamification experience into its core components. Following the approach of Tsou & Putra (2023), this research focuses on four key dimensions considered highly relevant in the context of digital applications: rewards, challenges, points, and enjoyment. These dimensions collectively represent the gamified experience that is hypothesized to influence customer engagement and, subsequently, brand loyalty.

Customer Engagement

Customer engagement is recognized as a key concept in contemporary marketing, characterized as a complex construct that surpasses simple purchase-based exchanges. At its core, it reflects a psychological condition wherein consumers are inclined to dedicate their cognitive, emotional, and behavioral efforts in engaging with a brand (Chauhan et al., 2023). This engagement emerges through ongoing interactive and co-creative exchanges between the consumer and the brand, resulting in voluntary behaviors driven by intrinsic motivation that extend beyond direct purchasing activities. (Bapat & Hollebeek, 2023).

Reflecting its complexity, customer engagement is widely understood to be a multi-dimensional phenomenon, often conceptualized through its cognitive, affective, and behavioral aspects. The emotional connection formed through these interactions is particularly critical, as a high level of engagement can result in greater cognitive satisfaction and is considered a significant precursor to building consumer loyalty. Therefore, for the purpose of this study, customer engagement is operationalized using the three-dimensional framework proposed by Habachi et al. (2024), which effectively captures its key facets through the core dimensions of cognitive, affection, and activation.

Brand Loyalty

Brand loyalty serves as the ultimate dependent variable in this study, reflecting a strong and enduring consumer preference for a specific brand. It refers to the consistent selection and repeated use of a brand over time, despite the availability of alternative options in the market (Ali et al., 2024). This loyalty is often rooted in a consumer's belief that the brand offers superior quality compared to others in the same category and is frequently built upon strong brand-consumer relationships. Furthermore, it is characterized as a conscious and voluntary commitment, where consumers remain faithful to their chosen brand despite situational factors such as price changes or competitor promotions (Dapena-Baron et al., 2020).

In line with several previous studies on this topic, brand loyalty is treated in this research as a unidimensional construct rather than being broken down into multiple dimensions. Therefore, its measurement is conducted directly through a set of indicator items adapted from the work of (Ali et al., 2024). This approach was chosen to best represent the core tenets of attitudinal and behavioral loyalty while minimizing redundancy in the measurement instrument.

Methods

This research adopted a quantitative, verificative approach to empirically test the formulated hypotheses. Data were collected through an online questionnaire distributed to users of a well-known digital banking application in Indonesia. The sampling was geographically focused on the Jabodetabek area, resulting in a total of 323 valid respondents who had used the application for at least four months. A 4-point Likert scale was utilized for all measurement items. To ensure content validity, the measurement instruments were adapted from established sources. Specifically, the items measuring gamification were derived from (Tsou & Putra, 2023), customer engagement was adapted from (Habachi et al., 2024), and brand loyalty items were based on (Ali et al., 2024). The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the SmartPLS 3.0 software. This method was selected due to its suitability for predictive modeling and complex causal analysis. In accordance with (Hair et al., 2022), the analysis followed a two-stage approach: the first stage involved the evaluation of the measurement model to assess the reliability and validity of the constructs, while the second stage involved the assessment of the structural model to test the hypotheses using the bootstrapping procedure.

Results and Discussion

Based on the questionnaires distributed, the characteristics of respondents in this study are categorized into the following aspects: gender, age, employment status, and domicile. These categories were used to capture a descriptive overview of the respondents and support the contextual interpretation of the research findings.

Table 1 Respondent Characteristic

Respondent Characteristic	Category	Total	Percentage (%)
Gender	Male	146	45,2
	Female	177	54,8

Age	18-24	132	40,9
	25-35	125	38,7
	36-45	45	13,9
	46-55	14	4,3
	56-66	7	2,2
Employment Status	Student	22	6,8
	University Student	106	32,8%
	Private Employee	92	28,5%
	Freelance/Self-employee	21	6,5%
	Government Employee	38	11,8%
Domicile	Unemployed	7	2,2%
	Jakarta	123	38,1%
	Bogor	44	13,6%
	Depok	67	20,7%
	Tangerang	49	15,2%
Education	Bekasi	40	12,4%
	SD	3	0,9%
	SMP	12	3,7%
	SMA	62	19,2%
	S1	227	70,3%
	S2	18	5,6%
	S3	1	0,3%

Source : Data results processed in 2025

The demographic profile of the 323 respondents in this study revealed a relatively balanced gender distribution, with 54.8% identifying as female and 45.2% as male. The age composition was predominantly concentrated in the 18–24 (40.9%) and 25–35 (38.7%) year-old segments, suggesting a strong representation of digitally literate young adults who are generally more receptive to technological advancements. Regarding employment status, university students constituted the largest group at 32.8%, followed by private sector employees (28.5%) and government employees (11.8%). This composition indicates that the sample primarily consisted of individuals actively engaged in academic or professional settings—demographics that typically exhibit high levels of digital platform adoption, including mobile banking applications.

Geographically, most respondents were domiciled in Jakarta (38.1%), followed by Depok (20.7%), Tangerang (15.2%), Bekasi (12.4%), and Bogor (13.6%), suggesting that the study reached populations in highly urbanized and digitally connected areas within Jabodetabek. Regarding education level, 70.3% of respondents held a bachelor's degree (S1), while 19.2% had completed high school (SMA), and 5.6% held a master's degree (S2). These figures suggest a generally well-educated user base, which may support the cognitive engagement needed to interact with gamified application features. The composition of the sample aligns with the target market of digital banking platforms that emphasize ease, speed, and engagement through mobile technology.

Evaluation of Measurement Models

Convergent validity can be assessed through the outer loading values obtained from the SEM-PLS algorithm results.

Table 2 Outer Loading Results

Variable	Indicator	Outer Loading Value	Information
Gamification	REW1	0,813	Valid
	REW2	0,824	Valid
	REW3	0,838	Valid
	REW4	0,799	Valid
	CHL1	0,775	Valid
	CHL2	0,763	Valid
	CHL3	0,752	Valid
	CHL4	0,704	Valid
	CHI5	0,795	Valid
	PO1	0,756	Valid
	PO2	0,754	Valid
	PO3	0,780	Valid
	PO4	0,758	Valid
	PO5	0,749	Valid
	ENJ1	0,727	Valid
ENJ2	0,748	Valid	

	ENJ3	0,701	Valid
	ENJ4	0,799	Valid
	ENJ5	0,790	Valid
Customer Engagement	COG1	0,829	Valid
	COG2	0,797	Valid
	COG3	0,781	Valid
	ACT1	0,799	Valid
	ACT2	0,809	Valid
	ACT3	0,806	Valid
	AFF1	0,741	Valid
	AFF2	0,765	Valid
	AFF3	0,830	Valid
	AFF4	0,764	Valid
Brand Loyalty	LOY1	0,788	Valid
	LOY2	0,827	Valid
	LOY3	0,817	Valid

Source : SmartPLS 3.0 Data Processing

All indicators in this study demonstrated outer loading values above the recommended threshold of 0.70 (Hair et al., 2022), confirming that each observed variable strongly reflects its respective latent construct. This result supports the convergent validity of the measurement model across the constructs of Gamification, Customer Engagement, and Brand Loyalty, indicating that the indicators are both statistically reliable and conceptually appropriate for measuring the intended theoretical dimensions.

Table 3 Validity and Reliability Test Results

Construct	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Activation	0.728	0.729	0.846	0.648
Affection	0.779	0.781	0.858	0.602
Brand Loyalty	0.739	0.741	0.852	0.658
Challenge	0.814	0.815	0.871	0.575
Cognitive	0.723	0.723	0.844	0.644
Enjoyment	0.81	0.817	0.868	0.569
Point	0.817	0.817	0.872	0.577
Reward	0.836	0.836	0.890	0.670

Source : SmartPLS 3.0 Data Processing

The results presented in the table confirm the robustness of the study's measurement model. All constructs demonstrate strong internal consistency reliability, with Cronbach's Alpha values ranging from 0.723 to 0.836, all of which exceed the recommended threshold of 0.70. This is further supported by the Composite Reliability (CR) scores, which are all above 0.840, indicating excellent reliability.

Furthermore, convergent validity was successfully established for all constructs. The Average Variance Extracted (AVE) for every construct surpassed the minimum required value of 0.50 (Hair et al., 2022), with scores ranging from 0.569 to 0.670. Collectively, these results affirm that the measurement model is both reliable and valid, providing a solid foundation for the subsequent structural model analysis.

Table 4 Result of Direct Effect and Indirect Effect

Variable	Path Coefficients	Standard Deviation	t-statistic	P-Value	Result
Gamification → Customer Engagement	0.910	0.011	8.381	0.000	Accepted
Customer Engagement → Brand Loyalty	0.291	0.087	3.348	0.000	Accepted
Gamification → Brand Loyalty	0.542	0.085	6.337	0.000	Accepted
Gamification → Customer Engagement → Brand Loyalty	0.265	0.079	3.331	0.000	Accepted

Source : SmartPLS 3.0 Data Processing

Direct Effect

The evaluation of the structural model demonstrated that each of the hypothesized direct paths reached statistical significance. Specifically, the link between gamification and customer engagement (H1) was

notably strong and positive ($\beta = 0.910$, $p < 0.001$), suggesting that gamification elements embedded within the digital banking application play a critical role in significantly enhancing user engagement.

Additionally, customer engagement was confirmed to be a significant and positive predictor of brand loyalty (H2), with a path coefficient of $\beta = 0.291$ ($p < 0.001$). This outcome supports existing theoretical frameworks, indicating that customers who are mentally and emotionally connected to a brand are more inclined to form and sustain lasting loyalty over time.

Finally, the model revealed a significant direct positive relationship between gamification and brand loyalty (H3), with a path coefficient of $\beta = 0.542$ ($p < 0.001$). This finding highlights that gamification alone can contribute meaningfully to fostering brand loyalty, likely by cultivating pleasurable usage patterns and favorable perceptions of the brand—even in the absence of fully developed customer engagement.

Indirect Effect

The mediating effect of customer engagement on the link between gamification and brand loyalty (H4) was also examined. The analysis indicated a significant positive indirect relationship ($\beta = 0.265$, $p < 0.001$), demonstrating that customer engagement serves as a partial mediator. Since both the direct path from gamification to brand loyalty and the indirect path through customer engagement were statistically significant, it can be concluded that gamification influences brand loyalty not only directly, but also by strengthening users' engagement with the brand.

Table 5 R-Square Results

Variable	R ²	R ² Adjusted	Description
Customer Engagement	0.828	0.827	High
Brand Loyalty	0.665	0.663	Moderate

Source : SmartPLS 3.0 Data Processing

To assess the model's ability to explain variation in the dependent variables, the coefficient of determination (R²) was analyzed. The results demonstrate that 82.8% of the variance in customer engagement (R² = 0.828) can be explained by the model, indicating strong predictive capability. In addition, 66.5% of the variance in brand loyalty (R² = 0.665) is accounted for, reflecting a moderate to high explanatory strength. These results suggest that the structural model is well-constructed and exhibits substantial relevance in predicting the study's primary outcome variables.

Discussion

The Influence of Gamification on Customer Engagement

This study found an exceptionally strong and positive relationship between gamification and customer engagement ($\beta = 0.910$). This finding strongly suggests that the gamified features—such as rewards, challenges, and points—are not merely peripheral additions but are a primary driver of user interaction within the digital banking application. This aligns with the Stimulus-Organism-Response (S-O-R) framework, where gamification acts as a powerful stimulus (S) that effectively captures users' cognitive and affective resources, thus fostering their internal state of engagement (O). This result is consistent with previous studies by researchers like Tsou & Putra (2023) and Xi & Hamari (2020), who also found that well-designed game elements can significantly increase user involvement. The magnitude of the effect in this study highlights the particular resonance of this strategy with the digital bank's user base.

The Effect of Customer Engagement on Brand Loyalty

The analysis confirmed that customer engagement play a significant positive influence on brand loyalty ($\beta = 0.291$). This supports the well-established marketing principle that customers who are actively engaged are more likely to become loyal. The finding indicates that when users move beyond passive consumption and become cognitively, emotionally, and behaviorally invested in the brand, a stronger and more durable sense of loyalty is formed. This is in line with Hapsari et al. (2017), who explained that when users are highly engaged, they tend to feel more satisfied, and this satisfaction plays an important role in building their loyalty to the brand. In the context of the S-O-R model, this validates the critical connection between the organism's internal state (O) and the final behavioral response (R), demonstrating that engagement is a crucial antecedent to loyalty in digital services.

The Effect of Gamification on Brand Loyalty

Interestingly, this study found that gamification has a direct and statistically significant positive effect on brand loyalty ($\beta = 0.542$). This suggests that the influence of gamification is not solely dependent on creating deep engagement. The enjoyable and rewarding nature of the gamified experience can, by itself, foster a direct path to loyalty. This can be explained by the development of favorable user habits and a strong emotional attachment to the application's enjoyable elements, which is consistent with the findings of Vilkaite - Vaitone et al. (2024) start. This result adds a layer of nuance to the S-O-R framework in this context, suggesting that a powerful stimulus can, in some cases, directly elicit a loyalty response without the full mediation of a complex internal state.

The Mediating Role of Customer Engagement on Gamification and Brand Loyalty

The final and most comprehensive finding is the confirmation that customer engagement partially mediates the relationship between gamification and brand loyalty. The significant indirect effect ($\beta = 0.265$) demonstrates that a substantial portion of gamification's impact on loyalty is channeled through its ability to first enhance customer engagement. This aligns perfectly with studies by Bitrián et al. (2021) and Choirisa et al. (2024) start, which also identified engagement as a key mediator. The discovery of partial mediation is particularly insightful; it implies that gamification operates on two parallel paths. It builds loyalty directly through enjoyable and rewarding experiences, while simultaneously fostering a deeper, more resilient form of loyalty by cultivating active user engagement. This provides a holistic view of how gamification strategies can be optimized to build lasting customer relationships.

Conclusion

This study concludes that gamification is a potent strategy for building brand loyalty in the competitive digital banking sector, with its influence being significantly mediated by customer engagement. The findings reveal a dual pathway through which this occurs: gamification not only fosters loyalty directly by creating enjoyable and habit-forming user experiences, but its effect is also substantially channeled through the cultivation of deeper cognitive and emotional engagement. These findings offer strong empirical validation of the Stimulus-Organism-Response (S-O-R) model when applied within the realm of financial technology, confirming that engagement acts as a critical psychological state that translates marketing stimuli into behavioral loyalty. From a practical standpoint, this research underscores that for digital services, the strategic goal of gamification should extend beyond superficial mechanics to create meaningful interactions that create a strong, lasting relationship between the user and the brand. In the end, cultivating authentic user engagement is essential to fully realizing the effectiveness of gamification in strengthening customer loyalty.

References

- Ali, F., Suvawatwanakul, C., Nanu, L., Ali, M., & Terrah, A. (2024). Social media marketing and brand loyalty: exploring interrelationships through symmetrical and asymmetrical modeling. *Spanish Journal of Marketing - ESIC*. <https://doi.org/10.1108/SJME-08-2023-0219>
- Bapat, D., & Hollebeek, L. D. (2023). Customer value, customer engagement, and customer-based brand equity in the context of a digital payment app. *Marketing Intelligence & Planning*, 41(7), 837–853. <https://doi.org/10.1108/MIP-09-2022-0417>
- Bitrián, P., Buil, I., & Catalán, S. (2021). Enhancing user engagement: The role of gamification in mobile apps. *Journal of Business Research*, 132, 170–185. <https://doi.org/https://doi.org/10.1016/j.jbusres.2021.04.028>
- Chauhan, T., Sindhu, S., & Mor, R. S. (2023). Analyzing the Enablers of Customer Engagement in Healthcare Using TISM and Fuzzy MICMAC. *Applied System Innovation*, 6(1). <https://doi.org/10.3390/asi6010005>
- Choirisa, S. F., Waworuntu, A., & Istiono, W. (2024). Enhancing user engagement and loyalty in online travel agents: a gamification approach. *Journal of Hospitality and Tourism Technology*. <https://doi.org/10.1108/JHTT-08-2023-0214>
- CNBC Indonesia, Z. A. (2024, February 29). Layanan Digital Bank Besar Makin Lengkap, Bank Digital Masih Relevan? <https://www.cnbcindonesia.com/Market/20240229140351-17-518608/Layanan-Digital-Bank-Besar-Makin-Lengkap-Bank-Digital-Masih-Relevan>.
- Dapena-Baron, M., Gruen, T., & Guo, L. (2020). Heart, head, and hand: a tripartite conceptualization, operationalization, and examination of brand loyalty. *Journal of Brand Management*, 27. <https://doi.org/10.1057/s41262-019-00185-3>
- Feng, W., Tu, R., & Hsieh, P. (2020). Can gamification increase consumers' engagement in fitness apps? The moderating role of commensurability of the game elements. *Journal of Retailing and Consumer Services*, 57, 102229. <https://doi.org/https://doi.org/10.1016/j.jretconser.2020.102229>
- Habachi, S., Matute, J., & Palau-Saumell, R. (2024). Gamify, engage, build loyalty: exploring the benefits of gameful experience for branded sports apps. *Journal of Product and Brand Management*, 33(1), 57–75. <https://doi.org/10.1108/JPBM-07-2022-4070>
- Hair, J., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. SAGE Publications, Inc.
- Hapsari, R., Clemes, M. D., & Dean, D. (2017). The impact of service quality, customer engagement and selected marketing constructs on airline passenger loyalty. *International Journal of Quality and Service Sciences*, 9(1), 21–40. <https://doi.org/10.1108/IJQSS-07-2016-0048>
- Hofacker, C., de ruyter, ko, Lurie, N., Manchanda, P., & Donaldson, J. (2016). Gamification and Mobile Marketing Effectiveness. *Journal of Interactive Marketing*, 34. <https://doi.org/10.1016/j.intmar.2016.03.001>
- Lee, W., Lu, L., & (Robert) Li, X. (2024). Unlocking the power of gamification: Alleviating reward-sensitivity in promotional interactions. *International Journal of Hospitality Management*, 119, 103717. <https://doi.org/10.1016/J.IJHM.2024.103717>

- Li, M.-W., Teng, H.-Y., & Chen, C.-Y. (2020). Unlocking the customer engagement-brand loyalty relationship in tourism social media: The roles of brand attachment and customer trust. *Journal of Hospitality and Tourism Management*, 44, 184–192. <https://doi.org/https://doi.org/10.1016/j.jhtm.2020.06.015>
- Marketeers, T. K. Y. (2022, February 9). Gamifikasi Jadi Kunci Sukses Aplikasi neobank Di Pasar Keuangan. <https://www.marketeers.com/gamifikasi-jadi-kunci-sukses-aplikasi-neobank-di-pasar-keuangan/>.
- Mehrabian, A., & Russell, J. A. (1974). An approach to environmental psychology. In *An approach to environmental psychology*. The MIT Press.
- Tsou, H.-T., & Putra, M. T. (2023). How gamification elements benefit brand love: the moderating effect of immersion. *Marketing Intelligence & Planning*, 41(7), 1015–1036. <https://doi.org/10.1108/MIP-04-2023-0143>
- Vilkaite - Vaitone, N., Kirse, S., Adomaviciute - Sakalauske, K., Dikcius, V., & Zimaitis, I. (2024). The usefulness of gamification for enhancing customer loyalty to small e-tailers. *EuroMed Journal of Business*, ahead-of-print(ahead-of-print). <https://doi.org/10.1108/EMJB-09-2023-0240>
- Xi, N., & Hamari, J. (2020). Does gamification affect brand engagement and equity? A study in online brand communities. *Journal of Business Research*, 109, 449–460. <https://doi.org/https://doi.org/10.1016/j.jbusres.2019.11.058>