DIGITAL TRANSFORMATION AND ADMINISTRATION INNOVATION

Citation: Gullshenas, M. S., & Akbarpour Shirazi, M. (2026). Designing a Gamification Model Based on Customer Engagement Indicators to Increase Loyalty and Revenue in Small and Medium-Sized Online Businesses. *Digital Transformation and Administration Innovation*, 4(1), 1-9.

Received date: 2025-06-28 Revised date: 2025-10-03 Accepted date: 2025-10-12 Initial published date: 2025-10-12 Final published date: 2026-01-01

Designing a Gamification Model Based on Customer Engagement Indicators to Increase Loyalty and Revenue in Small and Medium-Sized Online Businesses

Mohammad Saeed Gullshenas [1], Mohsen Akbarpour Shirazi[2]*

1. Master's student in Information Technology Engineering-Electronic Commerce, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran
2. Department of Industrial Engineering and Management Systems, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran

*Correspondence: akbarpour@aut.ac.ir

Abstract

This study aimed to design and empirically test a gamification model based on customer engagement indicators to enhance customer loyalty and improve business performance in small and medium-sized online businesses. A mixed-methods research design was employed, combining qualitative and quantitative approaches. In the qualitative phase, semi-structured interviews were conducted with 12 experts in digital marketing, user experience design, and online business management to identify key gamification components and mechanisms. Data were analyzed using thematic analysis with open, axial, and selective coding. In the quantitative phase, a researcher-developed questionnaire, informed by the qualitative findings and theoretical literature, was distributed to 384 active customers of Iranian online businesses who interacted with gamified elements through e-commerce platforms. Convenience sampling was used, and data were analyzed using SmartPLS 3.2 for confirmatory factor analysis, structural equation modeling (SEM), and model fit assessment. Inferential analysis showed that gamification had a significant positive effect on customer engagement ($\beta = 0.72$, $t = 12.58$, $p < 0.001$) and that customer engagement significantly influenced customer loyalty ($\beta = 0.69$, $t = 11.76$, $p < 0.001$). Gamification also had a direct positive effect on loyalty ($\beta = 0.34$, $t = 6.32$, $p < 0.001$), with a substantial total effect ($\beta = 0.83$, $t = 15.89$, $p < 0.001$). R^2 values indicated that gamification explained 52% of the variance in engagement and, with engagement, 61% of the variance in loyalty. The Q^2 value (0.440) demonstrated strong predictive relevance, and model fit indices (SRMR = 0.068; GoF = 0.470) confirmed good model adequacy. Gamification is an effective strategy for increasing customer engagement and loyalty in small and medium-sized online businesses, with engagement serving as a partial mediator in the gamification–loyalty relationship. These findings support the integration of gamification into SME digital marketing strategies to strengthen customer relationships and enhance performance outcomes.

Keywords: Gamification, Customer Engagement, Customer Loyalty, Online Businesses, Performance Indicators.

---

1. Introduction

In the rapidly evolving digital marketplace, small and medium-sized online businesses face a competitive landscape in which retaining customers and fostering loyalty have become as critical as attracting them in the first place. The proliferation of e-commerce platforms and digital marketing channels has transformed the consumer decision-making journey, making engagement strategies a primary determinant of sustainable success (Afshari et al., 2019; Mok, 2024). Among the innovative approaches to customer engagement, gamification—defined as the application of game design elements in non-game contexts—has emerged as a powerful tool to drive user interaction, increase brand affinity, and stimulate repeat purchases (Barari, 2024; Başaran, 2022).

Gamification operates by leveraging human motivations such as competition, achievement, social recognition, and intrinsic enjoyment, thereby transforming routine user interactions into experiences that are more engaging and emotionally rewarding (Behl et al., 2023; Justin & Joy, 2022). In the context of online commerce, this approach integrates elements like point systems, badges, leaderboards, and interactive challenges to deepen consumer-brand relationships and encourage desirable behaviors (Mulcahy et al., 2021; Saprikis et al., 2023). The increasing sophistication of digital platforms has allowed gamification to be personalized and adaptive, providing tailored experiences that respond dynamically to user behavior (Loureiro et al., 2020; Mousavi & Bahrami, 2022).

From a theoretical perspective, gamification can be linked to motivational theories, including self-determination theory, which emphasizes the role of autonomy, competence, and relatedness in fostering intrinsic motivation (Haryanti, 2023; Kusumawardani et al., 2023). When implemented effectively, gamification not only captures consumer attention but also sustains engagement by fulfilling these psychological needs (Girdauskiene, 2022; Milanesi et al., 2022). Moreover, research suggests that immersive and hedonic aspects of gamified environments can positively influence brand love and emotional attachment, thereby strengthening long-term loyalty (Santy & Iffan, 2023; Tsou, 2023).

Empirical studies across different markets have demonstrated the positive effects of gamification on customer experience and loyalty. For instance, integrating game mechanics into online retail environments has been shown to increase purchase intention, enhance customer satisfaction, and stimulate electronic word-of-mouth (Al-Zyoud, 2021; Noorbehbahani et al., 2019). Similarly, gamification in mobile applications has been found to enhance app effectiveness and user retention, particularly when aligned with user preferences and contextual relevance (Barari, 2024; Mok, 2024). These findings reinforce the notion that gamification is not merely an entertainment feature but a strategic marketing tool capable of delivering measurable business outcomes (Başaran, 2022; Behl et al., 2023).

The adoption of gamification is further influenced by the convergence of technological advancements and evolving consumer expectations. Advances in mobile technology, augmented reality (AR), and artificial intelligence (AI) have expanded the range of gamification possibilities, enabling more immersive and interactive experiences (Santy & Iffan, 2023; Saprikis et al., 2023). This technological synergy facilitates personalized engagement, whereby user behavior data can be used to adapt challenges, rewards, and narratives in real time (Loureiro et al., 2020; Mousavi & Bahrami, 2022). As a result, gamification is increasingly seen as part of a broader digital marketing ecosystem that integrates social, utilitarian, and hedonic value propositions (Haryanti, 2023; Kusumawardani et al., 2023).

While the benefits of gamification are widely recognized, research also highlights certain limitations and contextual constraints. For example, gamification strategies may not yield consistent results across all demographic segments or cultural contexts (Hass et al., 2021; Ndi, 2018). The novelty effect—where engagement declines once the game elements lose their initial appeal—poses another challenge (Justin & Joy, 2022; Mulcahy et al., 2021). Moreover, the overemphasis on extrinsic rewards, such as points or discounts, can undermine intrinsic motivation if not balanced with meaningful, value-driven engagement (Behl et al., 2023; Girdauskiene, 2022).

The role of gamification in fostering customer loyalty is complex and often mediated by intermediate factors such as customer engagement, perceived enjoyment, and brand experience (Santy & Iffan, 2023; Tsou, 2023). Loyalty, in this sense, extends beyond repeat purchases to encompass emotional commitment and advocacy (Afshari et al., 2019; Al-Zyoud, 2021). Several studies have indicated that gamification's influence on loyalty is strengthened when it promotes sustained interaction and community participation, thereby embedding the brand in the consumer's lifestyle (Başaran, 2022; Noorbehbahani et al., 2019).

In the domain of small and medium-sized online businesses, gamification offers particular promise due to its scalability, adaptability, and cost-effectiveness (Barari, 2024; Mousavi & Bahrami, 2022). SMEs often operate with limited marketing budgets and resources, making gamification an attractive strategy to differentiate their offerings and build a loyal customer base (Girdauskiene, 2022; Kusumawardani et al., 2023). Furthermore, gamification can be integrated into existing digital platforms, such as e-commerce websites or mobile applications, without requiring extensive infrastructure investment (Justin & Joy, 2022; Milanesi et al., 2022).

Gamification's strategic potential also lies in its ability to generate valuable consumer data through user interactions with game elements (Behl et al., 2023; Mok, 2024). This data can be used to refine marketing strategies, segment audiences, and personalize future engagement efforts (Santy & Iffan, 2023; Saprikis et al., 2023). In turn, these data-driven insights can enhance predictive modeling for customer behavior, enabling more targeted loyalty programs and retention initiatives (Loureiro et al., 2020; Mousavi & Bahrami, 2022).

The literature also suggests that gamification's effectiveness is contingent upon its design quality and alignment with brand values (Girdauskiene, 2022; Haryanti, 2023). Poorly executed gamification, lacking in coherence or relevance, can lead to disengagement and even negative brand perceptions (Hass et al., 2021; Ndi, 2018). Consequently, understanding the mechanisms by which gamification drives engagement and loyalty is crucial for both scholars and practitioners (Barari, 2024; Milanesi et al., 2022).

Despite the growing body of research, there remain significant gaps in the literature concerning the application of gamification in SMEs, particularly in emerging markets (Afshari et al., 2019; Mousavi & Bahrami, 2022). Many existing studies focus on large corporations or multinational brands, leaving questions about scalability, cultural adaptability, and sector-specific customization unanswered (Ndi, 2018; Noorbehbahani et al., 2019). Additionally, limited empirical work has examined the interplay between gamification, engagement metrics (such as return rate, time on platform, and participation rate), and financial performance in the SME context (Justin & Joy, 2022; Mulcahy et al., 2021).

Addressing these gaps requires a more integrated approach that considers both the qualitative and quantitative dimensions of gamification's impact. Qualitative insights can illuminate the design principles and motivational triggers most relevant to specific target audiences, while quantitative analyses can test the statistical relationships between gamification elements, engagement indicators, and loyalty outcomes (Behl et al., 2023; Haryanti, 2023). Such an approach aligns with calls in the literature for multi-method research that bridges conceptual frameworks with empirical validation (Barari, 2024; Mok, 2024).

In this study, we design and test a gamification model for small and medium-sized online businesses that incorporates key customer engagement indicators—participation rate, return rate, time spent on platform, and loyalty score—as mediating variables between gamification and business performance

2. Methods and Materials

In this study, a mixed-methods research approach (a combination of qualitative and quantitative methods) was employed to comprehensively design and test a gamification model based on customer engagement indicators in small and medium-sized online businesses. The first stage of the research was conducted qualitatively with the aim of identifying the key components and mechanisms of gamification. For this purpose, the semi-structured interview technique was used with 12 experts in digital marketing, user experience design, and managers of successful online businesses. Sampling in this stage was carried out purposively, based on the criterion of theoretical saturation. Qualitative data analysis was performed using thematic analysis, in which open, axial, and selective coding were applied to extract conceptual categories and thematic patterns.

In the second stage of the research, the quantitative phase was implemented to test the conceptual model derived from the qualitative phase. The statistical population in this stage included active customers of Iranian online businesses who interacted with gamification elements through online stores or e-commerce applications. Using the Morgan table, the sample size was determined to be 384 participants, and convenience sampling was conducted via social media and online communication channels. The data collection instrument was a researcher-developed questionnaire, designed based on the findings of the qualitative phase and the theoretical literature, and included items for measuring the dimensions of gamification (such as scoring, competition, rewards, missions, loyalty, and engagement). The reliability of the questionnaire, measured using

Cronbach's alpha coefficient, was reported to be above 0.80 for all variables, indicating the instrument's reliability. Face and content validity were confirmed by experts, and construct validity was assessed through confirmatory factor analysis.

For quantitative data analysis, SmartPLS software version 3.2 was used. First, the measurement model was examined to confirm factor loadings, convergent validity, and composite reliability. Then, the structural model was tested, and the relationships between variables were analyzed. Model fit indices, such as Q^2, R^2, and SRMR, were also examined to confirm the overall model fit. To assess the significance of the paths, the Bootstrapping test was applied. The results of structural equation modeling revealed that gamification has a significant direct effect on loyalty and repurchase intention through customer engagement. It was also found that customer engagement plays a partial mediating role in the relationship between gamification elements and loyalty.

3. Findings and Results

The findings of this study present the demographic characteristics of the respondents, descriptive indicators of the main research variables, and the relationships among these variables. The results provide a clear picture of the sample composition, the central tendencies of the measured constructs, and the strength and direction of the correlations between gamification, customer engagement, and customer loyalty.

Table 1. Demographic Characteristics of Respondents

Variable	Levels
Gender	Female: 58%, Male: 42%
Age	Under 25 years: 34%, 25–35 years: 44%, Above 35 years: 22%
Education	Diploma: 12%, Bachelor's degree: 55%, Master's degree: 25%, Doctorate: 8%
Online purchase frequency	Less than once a month: 14%, 1–3 times per month: 48%, More than 3 times per month: 38%

The demographic analysis indicates that the majority of participants were female (58%), with males constituting 42% of the sample. The largest age group was 25–35 years old (44%), followed by participants under 25 years (34%) and those over 35 years (22%). More than half of the respondents (55%) held a bachelor's degree, while 25% had a master's degree, 12% held a diploma, and 8% possessed a doctorate. Regarding online purchasing behavior, 48% reported making online purchases one to three times per month, 38% made purchases more than three times per month, and only 14% purchased online less than once a month. These results suggest that the sample primarily consists of young to middle-aged, well-educated individuals with a relatively high frequency of online shopping.

Table 2. Descriptive Indicators of Main Variables

Variable	Mean	Standard Deviation	Maximum	Minimum
Gamification	3.94	0.56	5.00	2.00
Customer Engagement	4.02	0.48	5.00	2.50
Customer Loyalty	3.85	0.67	5.00	1.75
Platform Satisfaction	4.11	0.51	5.00	2.20

The descriptive statistics reveal that all key variables scored above the midpoint of the scale, indicating generally positive perceptions among participants. Platform satisfaction had the highest mean score ($M = 4.11$, $SD = 0.51$), followed closely by customer engagement ($M = 4.02$, $SD = 0.48$) and gamification ($M = 3.94$, $SD = 0.56$). Customer loyalty also showed a relatively high mean value ($M = 3.85$, $SD = 0.67$), suggesting a favorable loyalty trend among users. The relatively low standard deviations indicate moderate to high consistency in responses across participants.

Table 3. Pearson Correlation Matrix Among Variables

Variable	Gamification	Customer Engagement	Customer Loyalty
Gamification	1.00	0.68	0.61
Customer Engagement	0.68	1.00	0.73
Customer Loyalty	0.61	0.73	1.00

The correlation analysis demonstrates significant and positive relationships among all main variables. Gamification exhibited a strong positive correlation with customer engagement ($r = 0.68$) and a substantial correlation with customer loyalty ($r = 0.61$). Customer engagement showed an even stronger positive correlation with customer loyalty ($r = 0.73$), indicating that higher engagement is closely associated with greater loyalty. These results provide empirical support for the conceptual model, suggesting that gamification indirectly influences loyalty through its positive impact on engagement.

Table 4. Path Coefficients in the Structural Equation Model (PLS-SEM)

Path	Path Coefficient (β)	t-value	p-value
Gamification → Customer Engagement	0.72	12.58	<0.001
Customer Engagement → Customer Loyalty	0.69	11.76	<0.001
Gamification → Customer Loyalty (Direct)	0.34	6.32	<0.001
Gamification → Customer Loyalty (Total)	0.83	15.89	<0.001

The structural equation modeling results indicate that gamification has a strong and statistically significant positive effect on customer engagement ($\beta = 0.72$, $t = 12.58$, $p < 0.001$). Likewise, customer engagement exerts a significant positive influence on customer loyalty ($\beta = 0.69$, $t = 11.76$, $p < 0.001$). The direct path from gamification to customer loyalty is also positive and significant ($\beta = 0.34$, $t = 6.32$, $p < 0.001$), confirming that gamification can enhance loyalty both directly and indirectly. The total effect of gamification on customer loyalty, accounting for the mediating role of engagement, is substantial ($\beta = 0.83$, $t = 15.89$, $p < 0.001$). These results highlight the central mediating role of customer engagement in translating gamification efforts into stronger loyalty outcomes.

Table 5. PLS Model Fit Indices

Index	Value
R^2 (Customer Engagement)	0.520
R^2 (Customer Loyalty)	0.610
Q^2 Predictive Relevance	0.440
SRMR	0.068
GoF	0.470

The model fit assessment demonstrates that the PLS-SEM model exhibits strong explanatory and predictive capabilities. The R^2 value for customer engagement is 0.520, indicating that 52% of the variance in engagement is explained by gamification. Similarly, the R^2 value for customer loyalty is 0.610, meaning that 61% of loyalty variance is explained by gamification and engagement. The Q^2 value of 0.440 confirms substantial predictive relevance of the model. The SRMR value of 0.068 falls below the recommended threshold of 0.08, indicating good model fit. Furthermore, the GoF index of 0.470 reflects a high overall goodness-of-fit, suggesting that the proposed model is both statistically sound and practically meaningful in explaining the relationships among the variables.

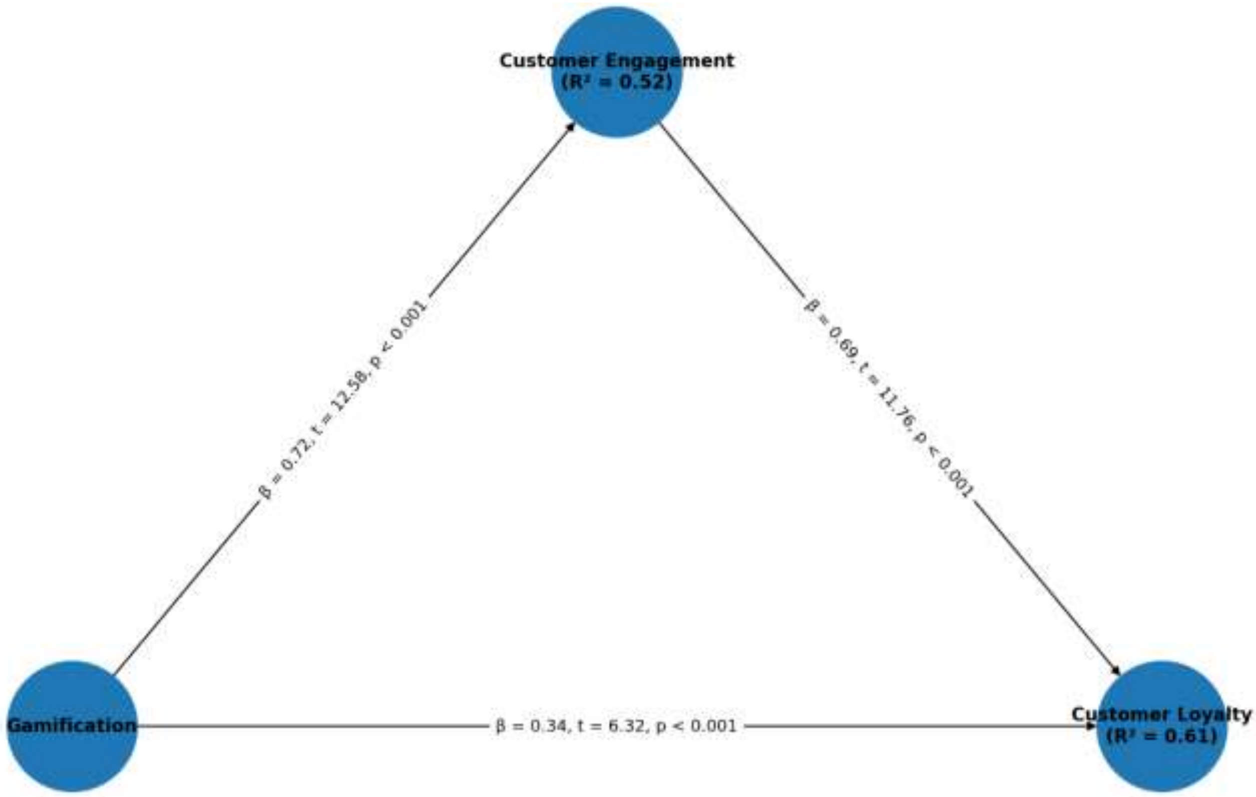

Figure 1. Final Model of the Study

4. Discussion and Conclusion

The results of this study provide robust evidence that gamification exerts a significant influence on customer engagement and loyalty in small and medium-sized online businesses. Structural equation modeling revealed that gamification directly impacts customer loyalty while also exerting an indirect influence through the mediating role of customer engagement. The strong path coefficient from gamification to engagement ($\beta = 0.72$, $p < 0.001$) indicates that well-designed gamified elements—such as points, competitions, rewards, and missions—effectively stimulate user interaction. Moreover, the path from engagement to loyalty ($\beta = 0.69$, $p < 0.001$) highlights the centrality of ongoing customer involvement in fostering commitment to the brand. These findings align with prior research emphasizing that engagement is a key driver of loyalty, serving as the bridge between marketing activities and sustained customer relationships (Afshari et al., 2019; Barari, 2024).

The direct relationship between gamification and loyalty ($\beta = 0.34$, $p < 0.001$) supports previous studies showing that game-based elements can create immediate positive attitudes toward brands, which in turn increase purchase intentions and retention rates (Al-Zyoud, 2021; Mulcahy et al., 2021). However, the substantial total effect of gamification on loyalty ($\beta = 0.83$) in this study underscores that the indirect pathway—operating through engagement—is the dominant mechanism. This resonates with the findings of (Tsou, 2023) and (Saprikis et al., 2023), who observed that gamification enhances brand love and emotional connection primarily by deepening the user's active participation with the platform.

The explanatory power of the model was considerable, with R^2 values indicating that gamification accounted for 52% of the variance in customer engagement and, together with engagement, explained 61% of the variance in loyalty. These values are consistent with the work of (Mousavi & Bahrami, 2022), who proposed a gamification model for small businesses and found similarly high levels of predictive capacity for engagement-related outcomes. The predictive relevance ($Q^2 = 0.440$) in our model also reinforces the argument that gamification is not merely a superficial enhancement but a strategic driver of measurable business performance (Başaran, 2022; Behl et al., 2023).

The finding that customer engagement plays a partial mediating role is noteworthy. This indicates that while gamification can directly influence loyalty—likely through novelty, emotional enjoyment, and perceived brand innovativeness—it is more effective when it fosters meaningful and repeated interactions. This mediating effect is well-supported in the literature. (Girdauskiene, 2022) argued that gamification's real strength lies in its ability to promote sustained employee or customer engagement, which subsequently leads to loyalty. Similarly, (Kusumawardani et al., 2023) found that social and hedonic values embedded in gamified e-commerce platforms increase adoption and repeat usage through enhanced user involvement.

The positive correlations observed between gamification, engagement, and loyalty in our study mirror those reported in (Loureiro et al., 2020) and (Milanesi et al., 2022), where gamification in digital and luxury retail contexts led to higher levels of brand engagement and customer satisfaction. In particular, our results reinforce (Santy & Iffan, 2023)'s observation that gamification integrated with AI and personalization mechanisms amplifies its effects on purchase intention by creating unique customer experiences. Likewise, the evidence supports (Mok, 2024)'s assertion from a systematic review that fun, as the core experience of gamification, is essential for sustained marketing effectiveness.

Our findings also resonate with studies that position gamification as part of a broader digital marketing ecosystem that integrates functional, social, and experiential value propositions. For instance, (Saprikis et al., 2023) demonstrated that gamification combined with augmented reality elements strengthens brand engagement by making online shopping more immersive. Similarly, (Mulcahy et al., 2021) showed that gamified interventions could shift consumer behavior toward sustainability, suggesting that the mechanism is not limited to commercial loyalty but can extend to behavioral change goals.

Furthermore, the significant direct and indirect effects found in this study are consistent with (Behl et al., 2023), who highlighted that combining gamification with neuromarketing techniques can enhance user experience by triggering deeper cognitive and emotional responses. (Justin & Joy, 2022) and (Başaran, 2022) also underscore that the careful design of gamification mechanics—aligned with user motivations and brand positioning—is critical for maximizing impact.

From a strategic perspective, the relatively high SRMR (0.068) and GoF (0.470) values in our model indicate a good fit and strong overall explanatory quality. This aligns with (Barari, 2024)'s meta-analytic review, which found that well-implemented gamification significantly enhances mobile app effectiveness and customer retention when designed with clear objectives and robust feedback mechanisms. The importance of alignment is echoed by (Haryanti, 2023), who emphasized the value of structured evaluation frameworks (such as the CIPP model) to optimize gamification outcomes in educational and commercial contexts.

Notably, our results also contribute to the discussion on scalability and applicability in SME contexts. (Mousavi & Bahrami, 2022) and (Afshari et al., 2019) argued that gamification's adaptability makes it a viable strategy for resource-constrained businesses, provided it is integrated thoughtfully into existing platforms. The ability of gamification to generate actionable user data further enhances its value proposition, as noted by (Santy & Iffan, 2023) and (Saprikis et al., 2023), allowing SMEs to refine targeting and personalization efforts over time.

However, our findings also support cautionary perspectives in the literature. (Ndi, 2018) warned that the strategic power of gamification could be limited by contextual and structural factors, such as political economy constraints and digital divide issues. Similarly, (Hass et al., 2021) pointed out that generational differences in digital habits may affect the reception and effectiveness of gamified experiences. While our model demonstrated strong results in an Iranian SME context, these limitations highlight the need for localized adaptation.

In conclusion, the present study extends prior work by confirming that gamification has both direct and engagement-mediated effects on customer loyalty in small and medium-sized online businesses. The consistency of our results with previous studies (Afshari et al., 2019; Al-Zyoud, 2021; Barari, 2024; Başaran, 2022; Behl et al., 2023; Girdauskiene, 2022; Haryanti, 2023; Hass et al., 2021; Justin & Joy, 2022; Kusumawardani et al., 2023; Loureiro et al., 2020; Milanesi et al., 2022; Mok, 2024; Mousavi & Bahrami, 2022; Mulcahy et al., 2021; Ndi, 2018; Noorbehbahani et al., 2019; Santy & Iffan, 2023; Saprikis et al., 2023; Tsou, 2023) strengthens the argument that gamification should be considered a core component of SME digital marketing strategies.

While this study provides valuable insights, several limitations must be acknowledged. First, the data were collected from Iranian SMEs, which may limit the generalizability of the results to other cultural and economic contexts. Differences in consumer behavior, digital literacy, and technological infrastructure across regions could influence the applicability of the findings. Second, the cross-sectional design precludes causal inferences; although structural equation modeling offers robust insights into relationships among variables, longitudinal research would be required to confirm causality. Third, self-reported measures, while validated and reliable, are susceptible to common method bias and social desirability effects. Finally, the study focused on a defined set of gamification elements and engagement indicators, which may not capture the full diversity of strategies available in the digital marketplace.

Future studies could extend this work by adopting longitudinal designs to capture changes in engagement and loyalty over time. Comparative research across different cultural contexts, industries, and business sizes would also provide valuable insights into the contextual factors that influence gamification effectiveness. Experimental studies could isolate the effects of individual gamification elements to determine which mechanics deliver the greatest impact on specific outcomes. Moreover, integrating physiological or behavioral tracking methods—such as eye-tracking or clickstream analysis—could provide deeper insights into how customers interact with gamified interfaces. Finally, exploring the synergy between gamification and emerging technologies like AI, AR, and blockchain could open new avenues for creating immersive and personalized customer experiences.

Managers of small and medium-sized online businesses should consider integrating gamification into their customer engagement strategies as a means of enhancing loyalty and driving revenue growth. To maximize effectiveness, gamification should be designed with a clear understanding of the target audience's motivations and preferences, ensuring that game elements align with the brand's value proposition. Regular performance evaluation and user feedback collection can help refine and adapt gamification features over time. Importantly, balancing extrinsic rewards with intrinsic motivators will help sustain engagement beyond initial novelty effects. By leveraging gamification not only as an entertainment tool but also as a strategic mechanism for relationship building, SMEs can strengthen their competitive positioning in the increasingly crowded digital marketplace.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

Acknowledgments

Authors thank all who helped us through this study.

Conflict of Interest

The authors report no conflict of interest.

Funding/Financial Support

According to the authors, this article has no financial support.

References

Afshari, M., Kazemi, S., & Yarmohammadi, R. (2019). The impact of gamification on customer loyalty in online stores. *Journal of Modern Marketing Research*, *9*(3), 21-34.

Al-Zyoud, M. F. (2021). The impact of gamification on consumer loyalty, electronic word-of mouth sharing and purchase behavior. *Journal of Public Affairs*, *21*(3), e2263. https://doi.org/10.1002/pa.2263

Barari, M. (2024). How and When Does Gamification Level Up Mobile App Effectiveness? Meta-Analytics Review. *Marketing Intelligence & Planning*, *42*(6), 1093-1114. https://doi.org/10.1108/mip-10-2023-0569

Başaran, Ü. (2022). Gamification in Marketing. 137-165. https://doi.org/10.4018/978-1-7998-9223-6.ch007

Behl, A., Jayawardena, N. S., Shankar, A., Gupta, M., & Lang, L. D. (2023). Gamification and Neuromarketing: A Unified Approach for Improving User Experience. *Journal of Consumer Behaviour*, *23*(1), 218-228. https://doi.org/10.1002/cb.2178

Girdauskiene, L. (2022). Gamification as an Innovative Instrument for Employee Engagement. *Marketing and Management of Innovations*, *1*(1), 10-17. https://doi.org/10.21272/mmi.2022.1-01

Haryanti, D. (2023). Optimizing Marketing Learning Evaluation: Gamification With CIPP Model at SMKN 1 Bandung. *J. Curric. Dev.*, *2*(2), 251-268. https://doi.org/10.17509/curricula.v2i2.63765

Hass, D., Hass, A., & Joseph, M. (2021). A Preliminary Investigation of Gamification From the Young Consumer's Perspective. *Young Consumers Insight and Ideas for Responsible Marketers*, *22*(3), 413-428. https://doi.org/10.1108/yc-10-2020-1221

Justin, E., & Joy, M. M. (2022). Application of Gamification in a Marketing Context. 121-136. https://doi.org/10.4018/978-1-7998-9223-6.ch006

Kusumawardani, K. A., Widyanto, H. A., & Tambunan, J. E. G. (2023). The Role of Gamification, Social, Hedonic and Utilitarian Values on E-Commerce Adoption. *Spanish Journal of Marketing - Esic*, *27*(2), 158-177. https://doi.org/10.1108/sjme-09-2022-0188

Loureiro, S. M. C., Bilro, R. G., & Angelino, F. (2020). Virtual Reality and Gamification in Marketing Higher Education: A Review and Research Agenda. *Spanish Journal of Marketing - Esic*, *25*(2), 179-216. https://doi.org/10.1108/sjme-01-2020-0013

Milanesi, M., Guercini, S., & Runfola, A. (2022). Let's Play! Gamification as a Marketing Tool to Deliver a Digital Luxury Experience. *Electronic Commerce Research*, *23*(4), 2135-2152. https://doi.org/10.1007/s10660-021-09529-1

Mok, T. L. (2024). Fun as the Principle Experience: A Systematic Review of Gamification in Marketing. https://doi.org/10.32920/25164581.v1

Mousavi, S., & Bahrami, N. (2022). Designing a gamification model in digital marketing for small businesses. *Management and Entrepreneurship Research*, *8*(1), 67-85.

Mulcahy, R., McAndrew, R., Russell-Bennett, R., & Iacobucci, D. (2021). "Game On!" Pushing Consumer Buttons to Change Sustainable Behavior: A Gamification Field Study. *European Journal of Marketing*, *55*(10), 2593-2619. https://doi.org/10.1108/ejm-05-2020-0341

Ndi, A. (2018). Digital Marketing Gamification and Limitations of Its Strategic Power: Exploring the Online Universe of the Consumer in Critical Contexts of Political Economy. *Greener Journal of Internet Information and Communication Systems*, *4*(1), 20-29. https://doi.org/10.15580/gjiics.2018.1.112018162

Noorbehbahani, F., Salehi, F., & Zadeh, R. J. (2019). A Systematic Mapping Study on Gamification Applied to E-Marketing. *Journal of Research in Interactive Marketing*, *13*(3), 392-410. https://doi.org/10.1108/jrim-08-2018-0103

Santy, R. D., & Iffan, M. (2023). The Effect of Artificial Intelligence and Gamification on Online Purchase Intention Mediated by Customer Experience: Study on Indonesian Marketplace Users. *Mix Jurnal Ilmiah Manajemen*, *13*(1), 227. https://doi.org/10.22441/jurnal_mix.2023.v13i1.015

Saprikis, V., Spanou, M. S., Despotakis, N., & Katos, G. (2023). Evaluating customer perceptions toward AR-based online shopping: An analysis of the effects of gamification on brand engagement. *European Journal of Marketing*, *57*(6), 1465-1492. https://doi.org/10.1108/EJM-12-2021-0923

Tsou, H.-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