

Enhancing Customer Engagement and Loyalty through Gamification Strategies in Boutique SME Retail in Dhaka and Chattogram: An Empirical Study

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Abstract

The problem for boutique merchants is keeping clients and establishing long-term relationships in a competitive and changing economy. Incorporating game mechanics, including reward points, badges, leaderboards and challenges, into customer encounters, increases emotional and behavioral engagement. The present empirical study is a mixed method research with a survey data obtained from the clients of boutique SMEs and interview with the store owners/managers in Dhaka and other major urban locations. The results show that gamification has a considerable impact on repeat purchase behavior, brand advocacy and emotional attachment to the company, especially for young, tech-savvy consumers. The report also identifies the most effective design features that attract Bangladeshi consumers and offers strategic suggestions for boutique SMEs to adopt low-cost gamification techniques. Finally, the study contributes to the growing literature on digital customer relationship management and provides practical implications to boost the competitiveness in the retail SME sector of Bangladesh.

Keywords: SMEs, Boutique retailer, Gamification strategies, Loyalty programs, Customer satisfactions.

1. Introduction:

The boutique business is a great contribution to the economy, employment and culture of Bangladesh. This is important in shaping the urban retail ecosystem. With increasing digitalization and customer expectations, the traditional way is no longer enough to secure loyalty and repeat business. The use of game elements in non-game contexts (also known as gamification) has recently been a promising approach for increasing consumer engagement and building long-term relationships. The present study explores the potentiality of gamification strategies for boutique SMEs of Bangladesh in enhancing consumer engagement and loyalty. Using empirical research, this paper tries to bridge the gap between theoretical concepts of gamification and practical implementation of gamification in the local retail context.

1.1 Problem statement:

Customer loyalty in the online retail environment of Bangladesh has also been linked to personalized digital experiences and customers' perceptions of convenience, familiarity and satisfaction (Arnab et al., 2019; Tumpa, 2024). Gamification is the use of game-design elements like points, rewards, challenges,

badges, rankings, and interactive activities in non-game business contexts, making customer experiences more engaging and enjoyable (Hamari et al., 2014; Zichermann & Cunningham, 2011). Past research indicates that gamification influences the purchasing decision in the clothing retail, improves customer experience, and increases brand engagement and loyalty (Akbari & Bigdeli, 2023; Al Attar, 2024; Li & Aumeboonsuke, 2025; Rachmadanty et al., 2025). However, most of the existing literature has been focused on large firms, digital platforms, e-commerce, education, or service industries, with limited empirical attention given to how gamification may influence consumer engagement and loyalty in boutique SME retail settings.

Therefore, the major issue investigated in this research is the lack of empirical knowledge of how gamification strategies influence consumer engagement and loyalty in boutique SME retail businesses in Bangladesh. The objective of this study is to address this gap by investigating the effect of gamification on consumer engagement and loyalty with a view to offering practical and context-specific insights for boutique SME retailers in Bangladesh.

1.2 Rationale of the study:

In a competitive and digital-driven market environment, customer retention and brand loyalty have been vital for the long-term success of boutique SME retailers in Bangladesh. Digital loyalty research emphasizes the importance of personalization, customer experience, trust, and ongoing engagement in retaining customers within digital retail environments. By contrast, boutique SMEs are usually not able to run big marketing campaigns or sophisticated loyalty schemes as big retailers can. So finding new and inexpensive ways to keep customers interested is very important. Gamification, the use of game design elements such as points, rewards, badges and challenges in non-game contexts, has shown promising benefits in terms of consumer engagement, experience, purchase intention and loyalty when marketing and retail. In addition, the evidence from loyalty programs in Bangladesh has indicated that reward-based incentives can facilitate customer retention, which makes reward-oriented gamification especially relevant for retail SMEs.

1.3 Research objectives:

1.3.1 General Objective-

The objective of this study is to explore the influence of gamification on consumer engagement and loyalty in boutique small and medium-sized enterprise (SME) retail businesses in Bangladesh.

1.3.2 Specific Objectives-

- To find out the most used gamification elements by boutique SME retail businesses of Bangladesh.
- To examine the effectiveness of gamification in consumer engagement and purchase behavior.
- To analyze the influence of customer demographic characteristics on responses to gamified retail experiences.
- To study the impact of gamification on customer retention and brand loyalty in boutique SME retail businesses.
- To investigate the challenges and constraints of adopting gamification strategies by the boutique SME retailers in Bangladesh.

2.1 Review of the relevant literature:

Digital marketing has transformed the traditional retail environment with interactive and consumer-centric interaction tactics. Gamification, the application of game elements in non-game contexts, has become an effective tool for influencing consumer behavior (Al Attar, 2024). This section critically reviews the theoretical and empirical literature on digital gamification, augmented reality, consumer engagement and behavioural effects in the retail clothes and online commerce industries.

This finding is supported by Rachmadanty et al. (2025) who found that gamification and user experience (UX) have a statistically significant effect on consumer loyalty among Shopee customers in Indonesia mediated by satisfaction. Gamification and good UX design lead to increased engagement and improved customer-brand relationships.

As a result of digital transformation, predictive analytics has become an integral part of the sustainable supply chain performance. According to the study by Polas et al., (2025) the application of predictive analytics in Bangladesh's manufacturing industry has enhanced operational efficiency and sustainability. This is due to data-driven decision-making, transparency, and resource optimization.

As stated by Phuthong (2023) , AR applications in online retail have a positive effect on consumer engagement through perceived ease of use, social influence, and digital service experience. Personal innovativeness did not significantly impact the utilitarian value . The study demonstrates the potential of AR to generate immersive and trust-building environments, especially considering the post-pandemic e-commerce boom. These results are consistent with the general retail trends reported by UNCTAD (2020), who found a significant increase in online shopping and the adoption of digital devices during and after the COVID-19 pandemic.

Digital gamification isn't just for the big companies. The tools are also gaining more and more traction with SMEs to gain competitive edge in the saturated e-commerce market (Faridi & Malik, 2019). Affordable gamified loyalty programs can help small retailers increase consumer engagement and brand differentiation. This democratization of marketing technology is changing the way businesses think about the customer experience.

Gamification, the application of game elements like rewards, competition and storytelling to non-game contexts, has become a popular tool to boost consumer engagement in the digital marketplace. As digital environments become more and more saturated, brands are turning to gamification strategies to differentiate themselves and build emotional bonds with users. Gamification is most effective with digital-native generations such as Gen Z and Millennials who prefer interactive and immersive experiences (Li & Aumeboonsuke, 2025).

The use of gamification in marketing is grounded in the psychological principles of motivation, especially the Self-Determination Theory (Deci & Ryan, 1985) that concentrates on the intrinsic motivators of competence, autonomy and relatedness. As such, gamification is able to activate these intrinsic motivators and therefore create a deeper engagement of the user (Hamari et al., 2014). In the digital retail, it is useful to enhance the consumer experience with points, badges, leaderboards and challenges to create a sense of achievement and community (Zichermann & Cunningham, 2011).

Gamification has emerged as a revolutionary methodology in modern marketing, employing game elements such as points, badges, leaderboards and interactive challenges to drive user engagement and loyalty. Gupta et al. (2014) states that gamification is a new approach to engage customers with a brand and make them participate behaviourally. This is especially the case for sectors like tourism, sustainability and social marketing where the experience is immersive.

Gamification is a strategic tool, not just a tactical one, that strengthens brand storytelling, builds emotional engagement, and spurs digital innovation. However, the literature also cautions on the “dark side” of gamification, whereby manipulation and overuse of extrinsic rewards can potentially undermine intrinsic motivation and long-term consumer trust (Gupta et al., 2025).

Results of the structural equation modeling (SEM) show that among the various gamification features of immersion (storytelling), achievement (rewards) and social interaction (competition), achievement is the most significant feature influencing customer experience. This means more satisfaction and motivation by reward-based engagement (e.g., points, levels, exclusive offers), which result in increased brand affinity even during crisis periods such as the COVID-19 pandemic (Akbari & Bigdeli, 2023).

Gamification features alone cannot create brand loyalty. They have to be mediated through the consumer experience and through the brand engagement. Li and Aumeboonsuke (2025) propose a theoretical framework based on Self-Determination Theory (SDT) in which gamified experiences meet consumers’ psychological needs for competence, autonomy and relatedness. Their findings indicate that consumer experience and brand engagement mediate the relationship between gamification features and brand loyalty. Immersive storytelling is particularly effective in emotional attachment, while social competition is effective in peer interaction and community building.

The marriage of brand identities with popular game IPs (intellectual properties) is a powerful trend in East Asian markets. For example, co-branded gamification campaigns allow firms to tap into large fan bases with emotional investments, such as tea beverage brands and gaming platforms. Such an approach across industries is not only useful for customer acquisition, but for building loyalty through shared narratives, aesthetics and cultural capital (Li & Aumeboonsuke, 2025).

Abdula (2025) found that the physical appearance of retail stores, their convenience and quality of service are the main factors that drive loyalty in Dhaka’s urban superstores, while price and assortment are relatively less important. It implies that experiential attributes are more important than purely economic factors for creating long term patronage and is consistent with gamified and digital loyalty mechanisms.

2.2 Literature gap:

The world has a lot of literature on digital marketing and gamification, but in the setting of Bangladesh, the studies are few and fragmented. Most of the existing studies are based on international findings and there is a lack of localized empirical evidence on how Bangladeshi consumers, particularly in the e-commerce and retail sectors react to gamified strategies, augmented reality applications and personalized digital experiences. Furthermore, there is no integrated framework that connects gamification, customer experience and brand loyalty in the local digital ecosystem. They seldom think about the ethical issues of manipulation of consumers or the psychological effects of gamification. The lack of consumer segmentation by age, digital proficiency and regional disparity further limits deeper comprehension of behavior in Bangladesh’s fast evolving digital marketplace. These gaps indicate the need for context-specific, ethically aware and empirically grounded research to inform effective digital marketing practices in Bangladesh.

3.1 Sample population and Area:

Data has been collected from at least 200 customers, and 15-20 boutique owners were interviewed from Dhaka and Chattogram. Data was collected with a questionnaire distributed by the enumerators and in-depth interview of the boutique owners were done in person.

3.2 Sampling design:

This research follows a mixed method approach, both qualitative and quantitative. Primary data collected from customers through survey questionnaires and retail owners through in-depth interviews. There was a separate questionnaire for boutique owners and customers. Both open and close-ended questions were there. A Likert scale was used ranging from 1 to 5. Questions regarding gamification strategies, experiences of the customers regarding this, customer's feedback, demographics loyalty indicators were included. For the SME owners, their experiences, operational and financial challenges, motivation to adopt gamification, gamification features and strategies for future development were there. Dependent variables are customer loyalty, purchase decision and independent variables are gamification strategies (Discount, Coupon, Referral Rewards, Leaderboard, Loyalty Tiers, Badges and Achievements).

3.3 Theoretical Framework:

This study is theoretically grounded in Self-Determination Theory (SDT) and supported by the Stimulus–Organism–Response (S-O-R) framework, Customer Engagement Theory, and Relationship Marketing Theory. These theories are appropriate because the study examines how gamification strategies motivate customers, enhance their engagement, and ultimately strengthen customer loyalty in boutique SME retail businesses in Bangladesh.

3.3.1 Self-Determination Theory as the Main Theoretical Foundation:

According to Edward L. Deci and Richard M. Ryan (2000) the Self-Determination Theory highlights three basic psychological needs of human beings to explain human motivation which are competence, autonomy, and relatedness. Ryan and Deci (2000) note that people are more likely to be intrinsically motivated and fully engaged in an activity when these needs are satisfied. This theory is very relevant for gamification because gamified marketing strategies are intended to motivate customer participation. In boutique SME retail, points, rewards, badges, challenges, leaderboards, competitions, and storytelling can help to encourage a feeling of achievement, freedom of participation, and social connection.

3.3.2 Stimulus–Organism–Response Framework as the Structural Foundation:

The study is structurally based on the stimulus–organism–response framework developed by Albert Mehrabian and James A. Russell. The S-O-R model describes how external stimuli affect a person's internal psychology and then induce a behavioral response. The model has been widely used in marketing research to investigate the effect of retail or environmental stimuli on consumer emotions, perceptions and behavior.

Thus, the S-O-R framework supports the proposed pathway:

Gamification Strategies → Customer Engagement → Customer Loyalty

Stimulus Organism Response

3.3.3 Customer Engagement Theory as a Supporting Theory:

The framework is also supported by the Client Engagement Theory of Brodie, Hollebeek, Jurić and Ilić (2011) as customer involvement is the key mediating variable of the study. Customer involvement is a concept from relationship marketing and service-dominant logic and refers to the active cognitive, emotional and behavioral participation of customers in brand-related interactions (Brodie et al., 2011).

The customer may get involved in boutique SME retail when they engage with social media posts, participate in contests, accumulate reward points, complete promotional challenges, share brand content

or recommend the boutique to friends. Gamification can transform customers from passive buyers to active participants in the boutique's brand experience.

3.3.4 Relationship Marketing Theory as a Supporting Theory:

Relationship Marketing Theory (developed by Leonard L. Berry (1983) and expanded by Morgan and Hunt (1994)) is also relevant, since boutique SMEs often rely on repeat customers, personal communication, trust, emotional bond and word-of-mouth. According to Morgan and Hunt's commitment-trust theory, the two core ingredients of successful relationship marketing are relationship commitment and trust.

Trust and commitment are not separate variables in this study, but the theory supports the outcome of loyalty of the framework. Gamification enables boutique retailers to maintain a continuous dialogue with their customers through incentives, personalized discounts, challenges and recognition.

3.4 Conceptual Framework:

The study proposes a conceptual framework for studying the effect of gamification strategies on customer loyalty and purchase decision. In this context, the explanatory variables are the seven specific elements of gamification, namely leaderboard, digital badges, general discount, referral bonus, spin the wheel, point system and daily login. These variables represent different aspects of gamification that can increase consumer engagement, motivation and behavioral response in the retail setting.

The framework suggests that these components of gamification have a positive direct impact on the customer loyalty. So, the effective implementation of these strategies can improve the customer's tendency to attach to the brand, repurchase the brand, and recommend the brand to other people. The framework also shows that each of the gamification element has a direct positive relationship with purchase decision. This implies that gamification features can influence customers' purchase intentions and actual purchase behavior by enhancing the attractiveness, reward, and engagement of the shopping experience.

4.1 Demographic and Respondent Profile Analysis:

4.1.1 Frequency analysis:

Table 2. Demographic profile of respondents

Variable	Category	Frequency	Percent	Cumulative percent
Age	18-24	85	42.5	42.5
	25-34	87	43.5	86.0
	35-44	14	7.0	93.0
	45-54	10	5.0	98.0
	55+	4	2.0	100.0
Gender	Female	122	61.0	61.0
	Male	78	39.0	100.0
City	Dhaka	132	66.0	66.0
	Chattogram	68	34.0	100.0

Source: Author's findings from primary data survey.

Table 2 shows the demographic characteristics of the respondents. Among the 200 respondents, the majority belonged to the 25–34 years age group (43.5%), followed closely by the 18–24 years age group (42.5%). Together, these two groups represented 86.0% of the sample, indicating that the respondents were mainly young adults. Older age groups were less represented, with 7.0% aged 35–44, 5.0% aged 45–54, and only 2.0% aged 55 or above.

In terms of gender, 61.0% of the respondents were female, while 39.0% were male, showing a female-dominant sample. Regarding location, 66.0% of respondents were from Dhaka and 34.0% were from Chattogram. Therefore, the sample was mainly composed of young, female, and Dhaka-based respondents.

Table 3. Behavioral and usage profile of respondents

Variable	Category	Frequency	Percent	Cumulative percent
Engagement	Not engaged at all	39	19.5	19.5
	Slightly engaged	78	39.0	58.5
	Moderately Engaged	59	29.5	88.0
	Extremely Engaged	24	12.0	100.0
Ease of use	1	61	30.5	30.5
	2	32	16.0	46.5
	3	74	37.0	83.5
	4	17	8.5	92.0
	5	16	8.0	100.0
Purchase frequency	Daily	5	2.5	2.5
	Weekly	8	4.0	6.5
	Frequently	33	16.5	23.0
	Monthly	63	31.5	54.5
	twice or thrice a year	71	35.5	90.0
	Rarely	3	1.5	91.5
	Other	17	8.5	100.0

Source: Author's findings from primary data survey.

Table 3 presents the respondents' engagement, ease of use, and purchase frequency. For engagement, the largest proportion of respondents were slightly engaged (39.0%), followed by moderately engaged respondents (29.5%). Only 12.0% were extremely engaged, while 19.5% were not engaged at all. This indicates that most respondents had a low to moderate level of engagement.

For ease of use, the highest percentage of respondents selected score 3 (37.0%), followed by score 1 (30.5%) and score 2 (16.0%). Since 1 means very easy and 5 means very difficult, the results suggest that

most respondents perceived the system or experience as easy to moderately easy. Only 16.5% selected scores 4 or 5, indicating difficulty.

The largest group has made purchases twice or thrice a year (35.5%), followed by monthly purchasers (31.5%). Only 2.5% were daily and 4.0% weekly buyers. This means most of the respondents were infrequent purchasers rather than frequent purchasers.

Table 4. Descriptive statistics for selected profile indicators

Indicator	N	Mean	SD	Median	Interpretation
Ease of use score	200	2.48	1.23	3.0	1=very easy; 5=very difficult
Number of gamified features noticed	200	2.17	1.57	2.0	Higher value = broader awareness
Number of purchase platforms selected	200	1.46	0.79	1.0	Higher value = multi-channel buying

Source: Author's findings from primary data survey

Selected profile indicators are summarized in Table 4. The mean score for ease of use was 2.48 (median 3.0), suggesting that participants generally perceived the experience as moderate to easy. The standard deviation of 1.23 indicates some variation in user experience.

4.1.2 Cross-tabulation analysis:

Table 5. Age group by gender

Category	Total	Female	Male
18-24	85	45 (52.9)	40 (47.1)
25-34	87	58 (66.7)	29 (33.3)
35-44	14	9 (64.3)	5 (35.7)
45-54	10	9 (90.0)	1 (10.0)
55+	4	1 (25.0)	3 (75.0)

Source: Author's findings from primary data survey.

The gender breakdown by age group is provided in Table 5. The gender distribution in the 18-24 years group was relatively equal with 52.9% of female respondents and 47.1% of male respondents. For the 25-34 years group, females (66.7%) were more dominant than males (33.3%). A similar pattern was seen in the 35-44 years group also with females contributing 64.3%.

Table 6. Gender by city

Category	Total	Dhaka	Chattogram
Female	122	72 (59.0)	50 (41.0)
Male	78	60 (76.9)	18 (23.1)

Source: Author's findings from primary data survey.

It is seen from Table 6 that the majority of the male and female respondents were from Dhaka. However, the male respondents were more concentrated in Dhaka than female respondents. The female respondents were also well distributed between Dhaka and Chattogram.

Table 7. Age group by city

Category	Total	Dhaka	Chattogram
18-24	85	62 (72.9)	23 (27.1)
25-34	87	61 (70.1)	26 (29.9)
35-44	14	5 (35.7)	9 (64.3)
45-54	10	2 (20.0)	8 (80.0)
55+	4	2 (50.0)	2 (50.0)

Source: Author's findings from primary data survey.

Generally, the respondents from Dhaka were mostly young and relatively old respondents were more from Chattogram. However, these older age groups had small frequencies, and these findings should be interpreted with caution.

4.2 Multiple Regression Analysis (Customer Loyalty):

4.2.1 Model Summary:

Table 08. Model Summary for the Effect of Gamification Features on Customer Loyalty

Model	R	R Square	Adjusted Square	Std. Error of the Estimate	Durbin-Watson
1	0.679	0.461	0.441	0.565	1.861

Source: Author's findings from primary data survey.

Table 8 presents the overall fit of the regression model. The results showed the statistical significance of the model and significant variance explained by the model for customer loyalty. $R = 0.679$ means that there is a moderate relationship between the observed and predicted values of customer loyalty.

The R Square of 0.461 indicates that the seven predictors related to gamification that were included in the model accounted for 46.1% of the variation in customer loyalty.

The Adjusted R Square of 0.441 also supports the fact that the explanatory power of the model still remained satisfactory when adjusted for number of predictive variables. The standard error of the estimate was 0.565 which is a reasonable level of prediction error. The Durbin-Watson statistic of 1.861 also indicates that there is no serious autocorrelation problem in the residuals.

4.2.2 ANOVA Results

Table 09 presents the ANOVA results of the regression model. The F-statistic was 23.469 with a significance value of $p < .001$, indicating that the overall regression model was statistically significant. This means that the independent variables, when considered jointly, significantly predicted customer loyalty.

Table 09. ANOVA for Multiple Regression Model

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	51.914	7	7.416	23.469	0.000
Residual	60.665	192	0.316		
Total	112.579	199			

Source: Author's findings from primary data survey.

The ANOVA results therefore confirm that the fitted model provides a significantly better explanation of customer loyalty than a model with no predictors.

4.2.3 Coefficient Estimates

Table 10 presents the regression coefficients for each predictor. The results indicate that General Discount had the strongest and most significant positive effect on customer loyalty ($B = 0.366$, $\beta = 0.460$, $t = 7.691$, $p < .001$). Referral Bonus also had a significant positive effect ($B = 0.166$, $\beta = 0.222$, $t = 3.401$, $p = .001$), while Point System had a positive and statistically significant effect ($B = 0.118$, $\beta = 0.166$, $t = 2.137$, $p = .034$). In contrast, Leaderboard, Digital Badges, Spin the Wheel, and Daily Login did not show statistically significant effects on customer loyalty.

Table 10. Regression Coefficients for Loyalty Predicting Customer

Predictor	B	Std. Error	Beta	t	Sig.
Constant	1.210	0.243		4.986	0.000
Leaderboard	0.028	0.058	0.039	0.488	0.626
Digital Badges	-0.067	0.066	-0.088	-1.018	0.310
General Discount	0.366	0.048	0.460	7.691	0.000
Referral Bonus	0.166	0.049	0.222	3.401	0.001
Spin the Wheel	0.011	0.061	0.014	0.179	0.858
Point System	0.118	0.055	0.166	2.137	0.034
Daily Login	0.026	0.053	0.037	0.494	0.622

Source: Author's findings from primary data survey.

Based on the unstandardized coefficients, the regression equation may be expressed as follows:
Customer Loyalty = 1.210 + 0.028(Leaderboard) - 0.067(Digital Badges) + 0.366(General Discount) + 0.166(Referral Bonus) + 0.011(Spin the Wheel) + 0.118(Point System) + 0.026(Daily-Log-in)
 This equation indicates that, among all predictors, General Discount contributed the largest positive change to customer loyalty, followed by Referral Bonus and Point System.

4.2.4 Hypothesis Testing

Using the hypothesis order implied by the model, the hypothesis decisions are presented in Table 11. A hypothesis was considered supported if the corresponding regression coefficient was statistically significant at the 5% level and the sign of the relationship was in the expected positive direction.

Table 11. Summary of Hypothesis Testing

Hypothesis	Statement	Result
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H1	Leaderboard has a significant positive effect on customer loyalty.	Not supported
H2	Digital badges have a significant positive effect on customer loyalty.	Not supported
H3	General discount has a significant positive effect on customer loyalty.	Supported
H4	Referral bonus has a significant positive effect on customer loyalty.	Supported
H5	Spin the wheel has a significant positive effect on customer loyalty.	Not supported
H6	Point system has a significant positive effect on customer loyalty.	Supported
H7	Daily login has a significant positive effect on customer loyalty.	Not supported

Source: Author's findings from primary data survey.

Table 11 shows that only three hypotheses were supported. Specifically, the results supported the positive effects of General Discount, Referral Bonus, and Point System on customer loyalty. The remaining hypotheses were not supported because their coefficients were not statistically significant.

4.2.5 Interpretation of Findings

The results show that gamification features do not have the same impact on customer loyalty. Customers appear to respond more to economically beneficial and reward-oriented mechanisms than to symbolic and entertainment-oriented ones. In particular, General Discount was the most predictive of customer loyalty. This means customers are more likely to be loyal when they receive direct financial incentives from the platform or brand.

The positive effect of Referral Bonus also suggests that customers value reward schemes that recognize and incentivize social sharing or word-of-mouth marketing. This could suggest that referral-based benefits do more than just improve advocacy behaviour but are also able to improve the customer's relationship with the brand. Likewise, the significance of the Point System implies that cumulative reward systems can be used to build loyalty by incentivizing repeat purchases and ongoing participation. The accumulation of points may create a feeling of progress, achievement and future benefit which in turn reinforces loyalty behaviour.

However, in the current model, Leaderboard, Digital Badges, Spin the Wheel and Daily Login were not significant predictors of customer loyalty. Although such features may generate engagement, fun or short-term interest, the findings suggest they do not play a role in customer loyalty independent of other, more practical reward features examined at the same time. It may be that customers appreciate real benefits more than symbolic recognition or interaction based on entertainment.

4.2.6 Diagnostic Assessment

Table 11. Selected Diagnostic Statistics

Diagnostic Indicator	Value	Interpretation
Durbin-Watson	1.861	No serious autocorrelation

Jarque–Bera p-value	0.245	Residuals approximately normal
Breusch–Pagan p-value	0.258	No strong evidence of heteroscedasticity
VIF range	Moderate	Some overlap among predictors

Source: Author's findings from primary data survey.

In general, the regression results showed that the model explained customer loyalty very well, and only a few of the gamification mechanisms were effective predictors. Specifically, General Discount, Referral Bonus and Point System were found to have statistically significant positive effects on customer loyalty, while Leaderboard, Digital Badges, Spin the Wheel and Daily Login were not significant. These results indicate that customers react more to gamification features with explicit, utilitarian and monetary value than to features that are mainly competitive, symbolic and entertainment-based.

4.3 Multiple Regression Analysis (Purchase Decision):

Multiple linear regression analysis was used to test the effect of gamification features on purchase decision. In this model, Purchase Decision Mean was taken as the dependent variable and Leaderboard Mean, Digital Badges Mean, General Discount Mean, Referral Bonus Mean, Spin the Wheel Mean, Point System Mean and Daily Login Mean were entered as the independent variables.

4.3.1 Model Summary:

The overall fitness of regression model is shown in Table 12. The model resulted in a R value of 0.692 which shows a moderately strong association between the observed and predicted values of purchase decision. The R² value 0.479 shows that seven predictors related to gamification explained the 47.9 % of the variation in purchase decision.

Moreover, the adjusted R² value of 0.460 also confirms the quite satisfactory explanatory power of the model even after the adjustment for the number of predictors. Prediction error was acceptable with a standard error of estimate of .833. The Durbin-Watson statistic was 1.869 indicating no serious autocorrelation problem in the residuals.

Table 12 Model Summary for the Effect of Gamification Features on Purchase Decision

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin–Watson
1	0.692	0.479	0.460	0.833	1.869

Source: Author's findings from primary data survey.

4.3.2 ANOVA Results:

Table 13 shows the ANOVA results of the regression model. The F-statistic was 25.234 with a significance value of $p < .001$, suggesting that the overall regression model was statistically significant. This implies that the independent variables significantly predicted the purchase decision jointly.

Table 13 ANOVA for the Multiple Regression Model

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	122.614	7	17.516	25.234	< .001
Residual	133.278	192	0.694		
Total	255.891	199			

Source: Author's findings from primary data survey.

4.3.3 Coefficient Estimates:

Table 14 gives the regression coefficients for each predictor. The unstandardized coefficients show the predicted change in purchase decision for a one unit increase in each predictor variable, while controlling for the other predictor variables. The standardized beta coefficients make it possible to compare the relative strength of each predictor.

The results showed that General Discount had the strongest and most significant positive effect on purchase decision ($B = 0.390$, $\beta = 0.495$, $t = 8.418$, $p < .001$). The Referral Bonus also had a statistically significant positive effect ($B = 0.145$, $\beta = 0.196$, $t = 3.057$, $p = .003$). Conversely, Leaderboard, Digital Badges, Spin the Wheel, Point System and Daily Login did not have statistically significant effects in the fitted model.

Table 14 Regression Coefficients for Predicting Purchase Decision

Predictor	B	Std. Error	Beta	t	Sig.
Constant	1.173	0.165		7.129	< .001
Leaderboard	0.043	0.056	0.061	0.771	0.442
Digital Badges	-0.013	0.064	-0.018	-0.204	0.838
General Discount	0.390	0.046	0.495	8.418	< .001
Referral Bonus	0.145	0.047	0.196	3.057	0.003
Spin the Wheel	-0.012	0.059	-0.016	-0.200	0.841
Point System	0.072	0.054	0.102	1.336	0.183
Daily Login	0.044	0.052	0.064	0.842	0.401

Source: Author's findings from primary data survey.

Based on the unstandardized coefficients, the regression equation can be expressed as follows:
Purchase Decision = 1.173 + 0.043(Leaderboard) – 0.013(Digital Badges) + 0.390(General Discount) + 0.145(Referral Bonus) – 0.012(Spin the Wheel) + 0.072(Point System) + 0.044(Daily Login)

4.3.4 Hypothesis Testing

The decisions on the proposed hypotheses are summarized in Table 15. A hypothesis was considered supported if the relevant regression coefficient was statistically significant at the 5% level and the relationship was positive .

Table 15 Summary of Hypothesis Testing

Hypothesis	Statement	Result
H8	Leaderboard has a significant positive effect on purchase decision.	Not supported
H9	Digital badges have a significant positive effect on purchase decision.	Not supported
H10	General discount has a significant positive effect on purchase decision.	Supported
H11	Referral bonus has a significant positive effect on purchase decision.	Supported
H12	Spin the wheel has a significant positive effect on purchase decision.	Not supported
H13	Point system has a significant positive effect on purchase decision.	Not supported
H14	Daily login has a significant positive effect on purchase decision.	Not supported

Source: Author's findings from primary data survey.

4.3.5 Interpretation of Findings:

The results show that the impact of gamification features on purchase decision is not the same. As indicated in the table, it seems that customers are more responsive to tangible reward-oriented mechanisms than to symbolic or entertainment-driven features. General Discount in particular emerged as the strongest predictor of purchase decision. This means that the customers may be more inclined to pick, return or give priority to a store when they feel a direct financial gain in the form of discounts.

Referral Bonus also had a significant positive effect, suggesting that customers value reward mechanisms that recognize and compensate their social sharing or recommendation behavior. The positive sign of Point System, Leaderboard, and Daily Login suggest a favorable direction, but these effects were not statistically significant once all predictors were entered at the same time. Digital Badges and Spin the Wheel were also not significant independent effects in the model.

In sum, the results indicate that customers are swayed more by gamification features with clear practical value than by those that are primarily symbolic, competitive, or entertainment-based.

4.3.6 Diagnostic Assessment:

Table 16 shows a selection of diagnostic indicators. Based on the Durbin–Watson statistic, autocorrelation does not seem to be a serious problem. The Jarque–Bera p-value was 0.059 indicating the residual distribution was broadly acceptable and close to normal at the 5% level. However, the Breusch-Pagan test was statistically significant, suggesting heteroscedasticity. The VIF values also indicate moderate multicollinearity between some predictors.

Given the detection of heteroscedasticity, the coefficient estimates should be interpreted with caution. As a robustness check, we also examined heteroscedasticity-consistent standard errors separately. The major significance pattern remained unchanged for General Discount and Referral Bonus.

Table 16 Selected Diagnostic Statistics

Diagnostic Indicator	Value	Interpretation
Durbin–Watson	1.869	No serious autocorrelation
Jarque–Bera p-value	0.059	Residuals approximately normal
Breusch–Pagan p-value	0.006	Evidence of heteroscedasticity
VIF range	5.37 to 7.89	Moderate multicollinearity

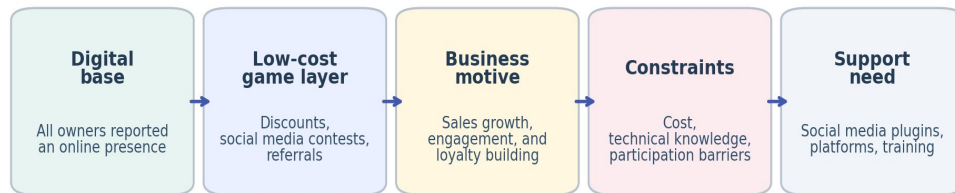
Source: Author's findings from primary data survey.

4.4 Gamification strategies from the Boutique Owner's perspectives:

From the owner's perspective, gamification is not considered a complex technology investment. It seems to be understood instead as a low-cost way to engage that can boost sales, stimulate customer interaction and encourage repeat purchase behavior. But the foregoing responses also show implementation constraints. The most visible challenges were: Implementation cost, lack of technical knowledge, and low customer participation. The most requested support was social media plugins, followed by ready-made gamification platforms and training or workshops.

The results should not be statistically generalized due to the small sample size and self-reported responses. They are best viewed as exploratory evidence that can inform a thesis discussion or descriptive results chapter or pilot study on gamification adoption among boutique SME owners.

Owner-Perspective Strategic Interpretation Framework



Interpretation: boutique owners appear ready for practical, low-cost, social-media-based gamification rather than complex stand-alone systems.

*Figure 1. Owner-perspective strategic interpretation framework derived from the survey responses.
Source: Author's compilation from primary data survey.*

4.4.1 Descriptive Profile of Boutique Owners

The sample is dominated by female boutique owners. 14 of 16 respondents are female. Most of the respondents belong to the 30–39 age group, followed by the 40–49 age group. The sample is somewhat geographically balanced, with Dhaka being slightly over-represented in the sample as compared to Chattogram.

The sample includes early-stage and established boutique operations in terms of business maturity. Seven respondents reported having been in business for more than six years, five reported one to three years and four reported four to six years. This indicates the dataset is capturing owner perceptions from not just start-ups, but also boutiques at various levels of maturity.

Employment size indicates that many of the boutiques surveyed are small, but not necessarily micro only. Half of the sample indicated 11–20 employees and a quarter indicated 1–5 employees. This is important because the feasibility of gamification may depend on whether owners have the staff capacity to deal with customer communication, reward tracking, social media posts and redemption control.

Boutique Owner and Enterprise Profile (n=16)

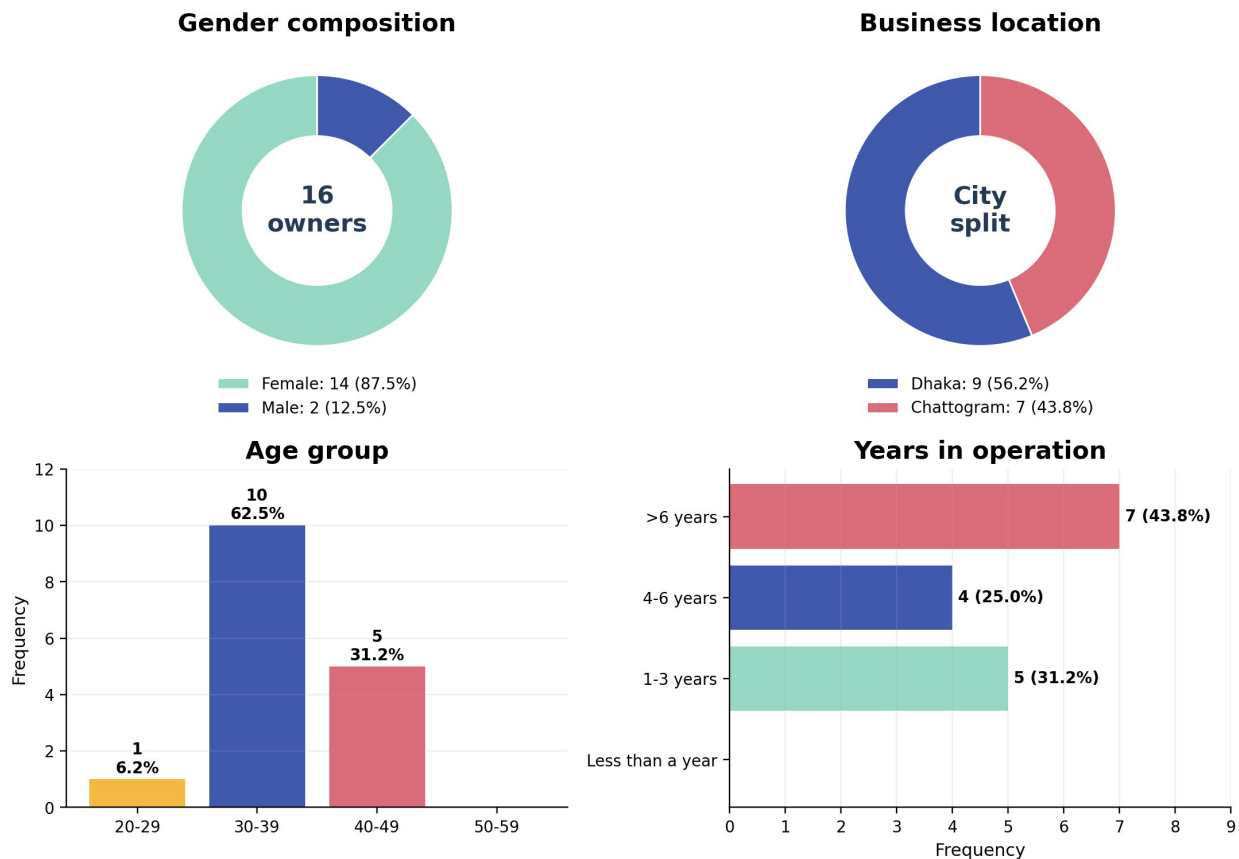


Figure 2. Boutique owner and enterprise profile dashboard.

Source: Author's compilation from primary data survey.

Table 17. Descriptive profile of surveyed boutique owners and businesses

Variable	Category	Frequency	Percentage
Gender	Female	14	87.5%
Gender	Male	2	12.5%
Age group	20-29	1	6.2%
Age group	30-39	10	62.5%
Age group	40-49	5	31.2%
Location	Dhaka	9	56.2%
Location	Chattogram	7	43.8%
Years in operation	1-3 years	5	31.2%
Years in operation	4-6 years	4	25.0%
Years in operation	More than 6 years	7	43.8%
Number of employees	1-5	4	25.0%
Number of employees	6-10	2	12.5%
Number of employees	11-20	8	50.0%

Variable	Category	Frequency	Percentage
Number of employees	More than 20	2	12.5%

Source: Author's compilation from primary data survey.

4.4.2 Digital Presence, Awareness, and Perceived Relevance:

All 16 boutique owners reported having some form of online presence. However, the dominant form was social media rather than a full e-commerce or website-based presence. Twelve respondents indicated social media, three indicated website presence, and one indicated e-commerce presence. This pattern is important because it suggests that owners may be more prepared for social-media-based gamification than for technologically complex systems.

Awareness of gamification appears to come mostly from professional or market-facing exposure. Twelve respondents first learned about gamification through industry events or workshops, while four selected an unspecified other source. This indicates that owner awareness may be strengthened through training programs, trade events, boutique associations, and practical workshops.

Perceived relevance is high within the sample. Fourteen respondents considered gamification very relevant, and the remaining two considered it somewhat relevant. None selected that gamification was not relevant at all. From an owner perspective, this shows favorable readiness, but readiness should be interpreted alongside cost and skill barriers reported later.

Digital Channel, Awareness Source, and Perceived Relevance

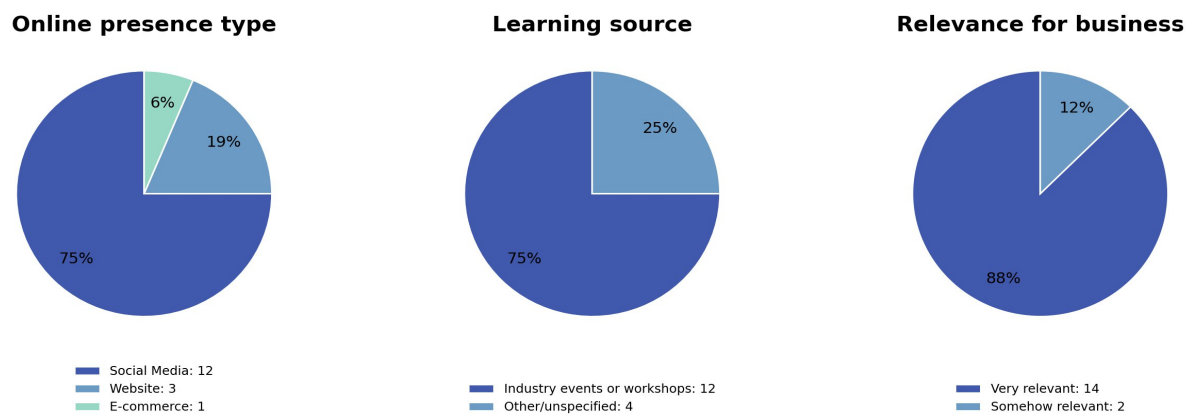


Figure 3. Digital channel, awareness source, and perceived relevance of gamification.

Source: Author's compilation from primary data survey.

Table 18. Digital presence, awareness, and perceived relevance

Variable	Category	Frequency	Percentage
Online presence	Yes	16	100.0%
Type of online presence	Social Media	12	75.0%
Type of online presence	Website	3	18.8%
Type of online presence	E-commerce	1	6.2%
Learning source	Industry events or workshops	12	75.0%

Variable	Category	Frequency	Percentage
Learning source	Other/unspecified	4	25.0%
Relevance of gamification	Very relevant	14	87.5%
Relevance of gamification	Somehow relevant	2	12.5%

Source: Author's compilation from primary data survey.

4.4.3 Gamification Adoption, Strategies, and Business Goals:

All but one respondent (15 out of 16) reported that they have implemented some form of gamified feature. Therefore, the level of adoption reported by the owner in this dataset is high. However, the type of strategies used show that the implementation is mostly simple and promotional rather than advanced or technology-heavy.

All respondents cited discount-based gamification in the multi-response strategy item. Four respondents referred to social media contests, three referred to referral rewards, two referred to loyalty-based programs and two referred to point systems. Unidentified contest formats and interactive content appeared once each. That is to say, the most used promotional mechanisms at the moment are those that the owners of the boutiques know best, such as discounts. The loyalty and points systems are less structured.

The core business goals were to increase sales and connect with customers. Fourteen respondents chose boosting sales, thirteen chose increasing customer involvement and eight chose improving brand loyalty. From the owner perspective, this shows that gamification is primarily used as a sales-and-engagement tool, where loyalty is an important but secondary objective.

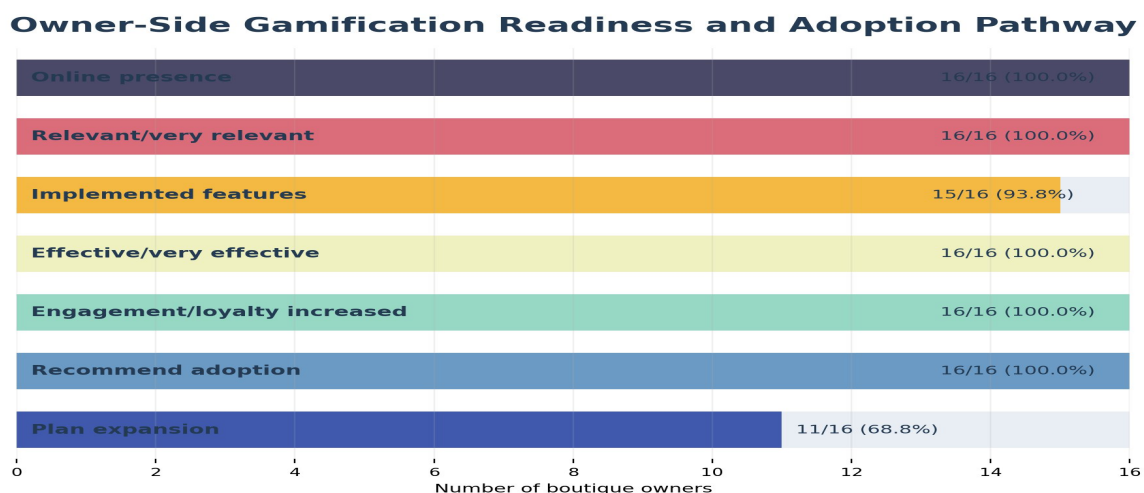


Figure 4. Owner-side gamification readiness and adoption pathway.

Source: Author's compilation from primary data survey.

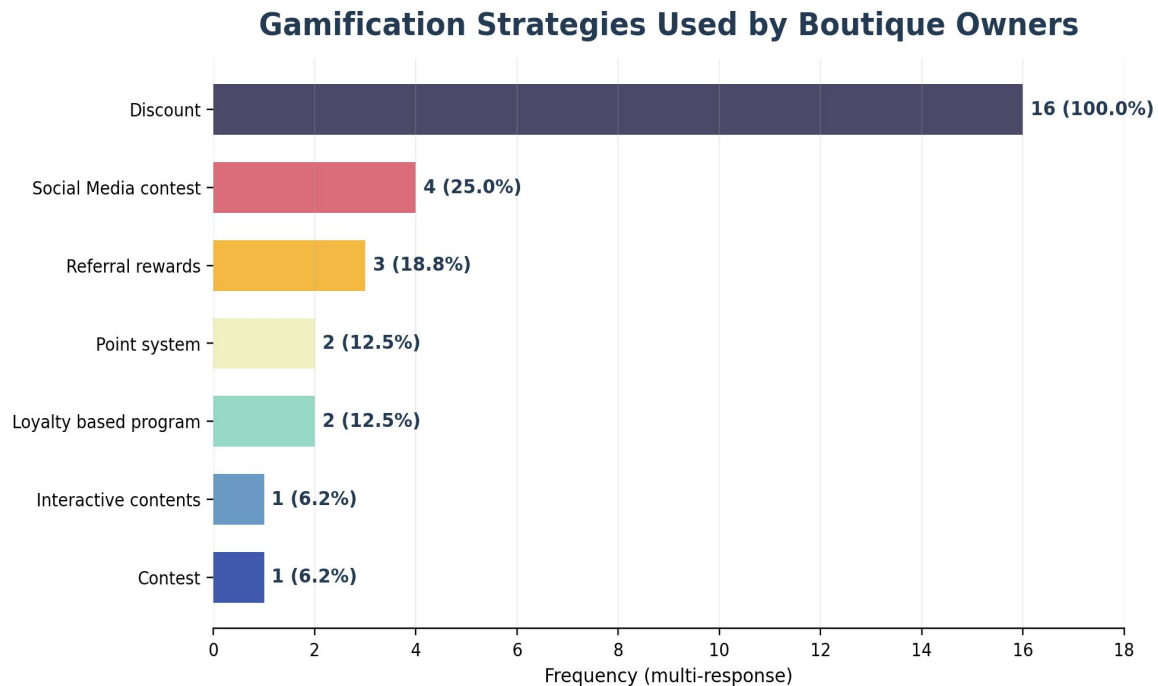


Figure 5. Gamification strategies used by boutique owners.
Source: Author's compilation from primary data survey.

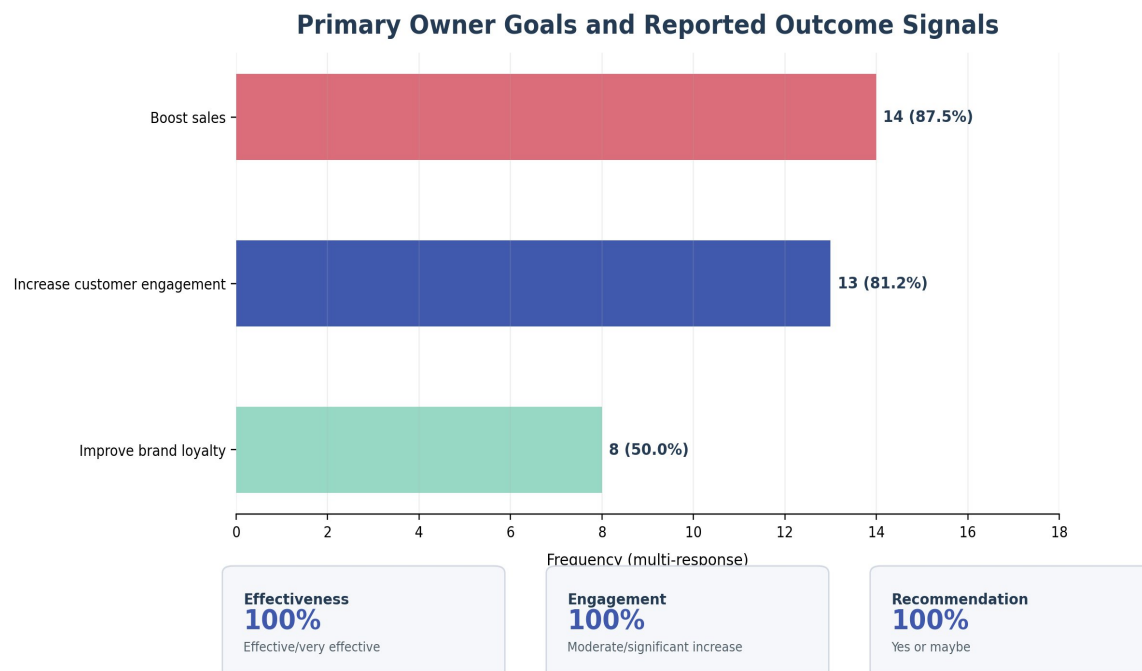


Figure 6. Primary owner goals and reported outcome signals.
Source: Author's compilation from primary data survey.

4.4.4 Reported Outcomes: Effectiveness, Engagement, and Loyalty:

The outcome responses are very positive in the sample. Twelve respondents rated gamification as very effective and four rated it effective. Similarly, fourteen respondents reported a large increase in consumer

engagement or loyalty and two respondents reported a moderate increase. There was no respondent reporting a reduction.

These responses show a high perceived usefulness from the boutique owner point of view. However, the wording should remain descriptive, as the data are self-reported and cross-sectional. The results indicate that owners experienced a positive change but these results do not demonstrate that the positive change was due to gamification.

The recommendation intent was also high. Fifteen respondents said they would recommend other boutique owners to use gamification and one selected maybe. The intention for future expansion was more modest with eleven respondents planning to expand or upgrade gamification strategies in the next 12 months, three did not, and two were unsure. The discrepancy between high recommendation and lower expansion intention probably reflects the practical barriers we discuss in the next section.

Gamification Readiness Radar from Boutique Owner Responses

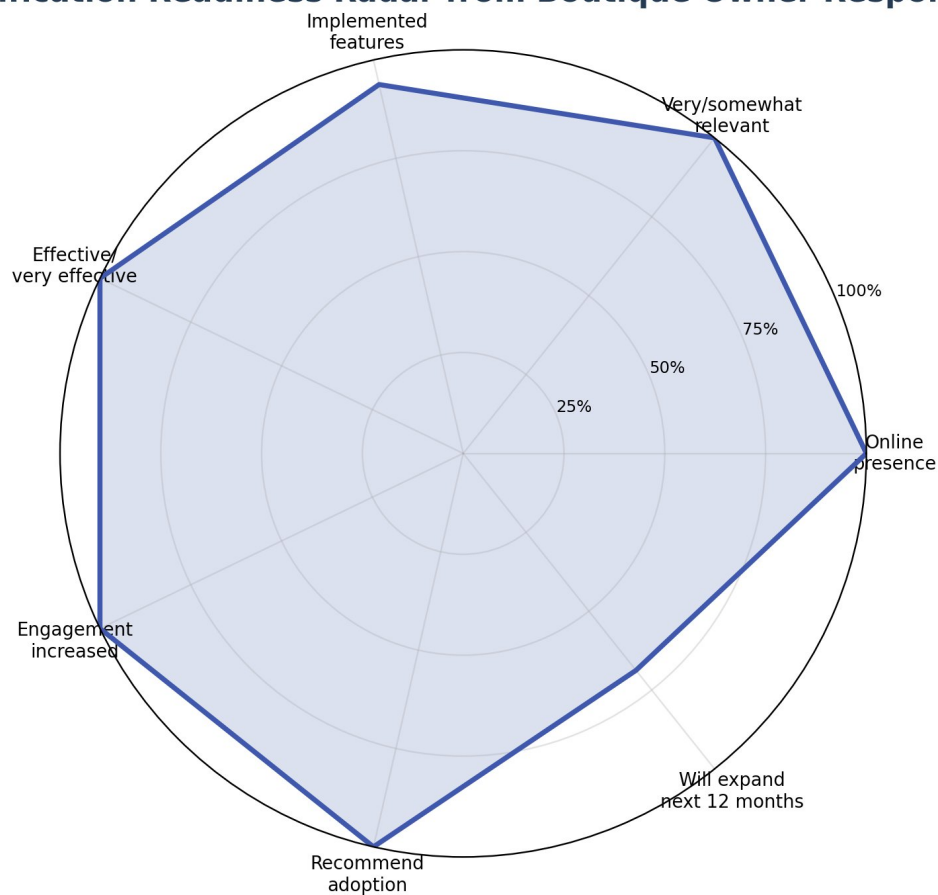


Figure 7. Gamification readiness radar based on boutique owner responses.

Source: Author's compilation from primary data survey.

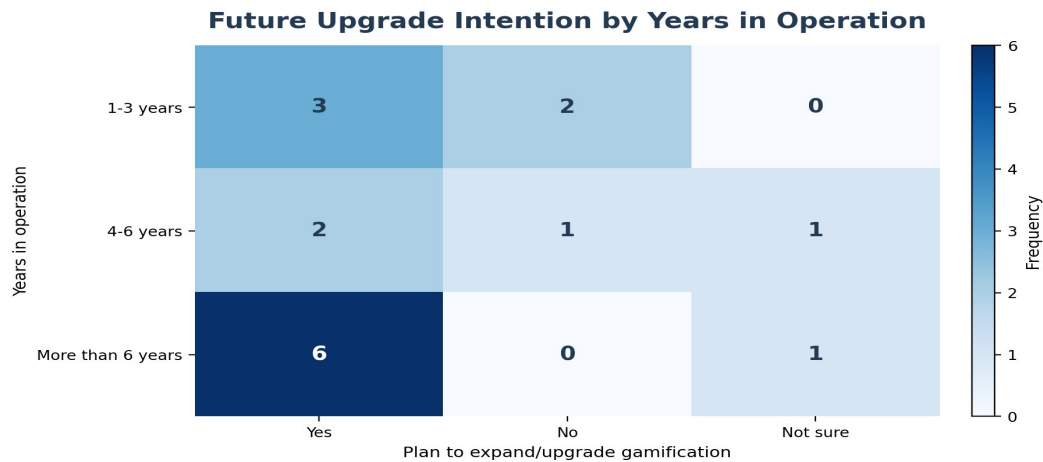


Figure 8. Future upgrade intention by years in operation.

Source: Author's compilation from primary data survey.

Table 19. Adoption, perceived outcomes, recommendation, and future plan

Variable	Category	Frequency	Percentage
Implemented gamified feature	Yes	15	93.8%
Implemented gamified feature	No	1	6.2%
Perceived effectiveness	Very effective	12	75.0%
Perceived effectiveness	Effective	4	25.0%
Observed engagement/loyalty change	Significant increase	14	87.5%
Observed engagement/loyalty change	Moderate increase	2	12.5%
Recommend to other boutique owners	Yes	15	93.8%
Recommend to other boutique owners	Maybe	1	6.2%
Plan to expand/upgrade in next 12 months	Yes	11	68.8%
Plan to expand/upgrade in next 12 months	No	3	18.8%
Plan to expand/upgrade in next 12 months	Not sure	2	12.5%

Source: Author's compilation from primary data survey.

4.4.5 Implementation Challenges and Support Requirements:

Owner attitudes toward gamification are positive but implementation challenges are clear. The most common challenge mentioned by respondents was cost of implementation, cited by twelve respondents. Five respondents mentioned lack of technical knowledge, four low customer participation, two lack of time to manage and two other challenges.

The requested support pattern closely matches the social-media-heavy nature of the sample. Fifteen respondents asked for social media plugins, seven asked for ready-made gamification platforms and four asked for training or workshops. Only one respondent mentioned affordable mobile apps and one consultancy/expert advice. This signals boutique owners are focusing on practical, accessible tools rather than expensive custom systems.

The implication is clear from the owner's perspective: gamification solutions for boutique SMEs should be low-cost, easy to manage, compatible with social media and supported with simple training. Complex gamification systems may be less attractive unless they are delivered as ready-to-use services.

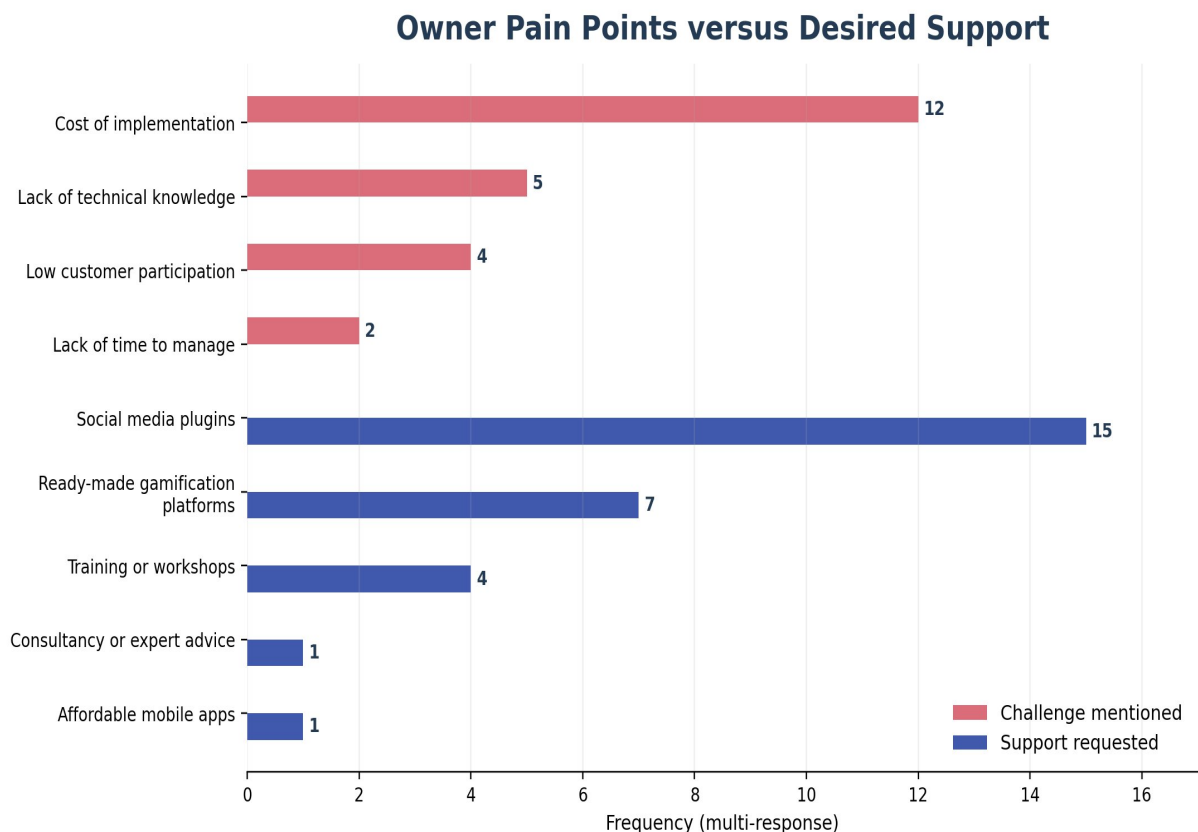


Figure 9. Owner pain points versus desired support.

Source: Author's compilation from primary data survey.

4.4.6 Owner-Perspective Strategic Interpretation:

Digital base: All respondents reported online presence, but the strongest channel was social media. This makes social-media gamification the most realistic starting point.

Low-cost game layer: Current gamification practices are dominated by discounts, with smaller use of contests, referrals, loyalty programs, and point systems.

Business motive: Owners primarily connect gamification with boosting sales, increasing customer engagement, and improving brand loyalty.

Constraints: Cost, technical knowledge, and customer participation issues limit the move from simple promotions to more systematic gamification.

Support need: Social media plugins, ready-made platforms, and training appear to be the most practical support mechanisms.

Table 20. Thematic interpretation of open-ended owner comments

Theme from open comments	Owner-perspective meaning
Use existing social media infrastructure	Instagram, Facebook, WhatsApp, and Messenger can host quizzes, polls, challenges, and referral messages without major technology spending.
Prefer low-tech or hybrid tools	Punch cards, manual raffles, cardboard spin wheels, and scratch-card style promotions can work for boutiques with limited budgets.
Localize campaigns around shopping seasons	Eid, Puja, wedding seasons, fairs, and sales periods can increase campaign relevance and participation.
Keep rewards small but visible	Coupons, accessories, styling perks, and small discounts can create excitement without excessive cost.
Use customer participation as promotion	Photo tags, reviews, videos, referrals, and user-generated posts can turn customers into micro-promoters.
Measure and control redemption	Owners suggested tracking engagement, redemption, and abuse prevention before scaling campaigns.

Source: Author's compilation from primary data survey.

Conclusion and Future Scope:

Most boutique owners perceived gamification as relevant and useful for increasing sales, improving customer engagement, and encouraging loyalty. However, the study also identified several implementation challenges, including cost of implementation, lack of technical knowledge, limited managerial capacity, and low customer participation. These findings indicate that boutique SME retailers require simple, affordable, and easy-to-operate gamification mechanisms rather than complex and expensive technological systems.

Overall, the study concludes that gamification should not be treated merely as an entertainment-based promotional activity. In the context of boutique SME retail in Bangladesh, gamification is more effective when it is designed as a practical customer relationship strategy. Discount-based rewards, referral incentives, and point-based loyalty systems appear to be more suitable for boutique retailers because these mechanisms provide customers with visible value and encourage repeated interaction with the brand.

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