

Gamification, Consumer Involvement, and Motivation: An Empirical Examination of their Interrelationships

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Received: 16/01/2026

Accepted: 23/05/2025

Published: 01/06/2026

Abstract:

This study investigates how gamification influences consumer involvement and motivation in non-gaming contexts. The results indicate that familiarity with gamification elements significantly enhances consumer involvement, which in turn strongly predicts motivation. While familiarity shows a limited direct effect on motivation, involvement emerges as the primary driver of motivational outcomes. These findings reveal a sequential mechanism whereby familiarity facilitates engagement, but sustained motivation depends on involvement. The study contributes to gamification literature by clarifying the distinct pathways through which gamification affects consumer motivation and offers practical implications.

Keywords: gamification, consumer involvement, motivation, user experience.

Jel Classification Codes: M31, D91.

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1. INTRODUCTION

Sustaining motivation and participation on digital platforms have become a challenge for companies. In response, gamification—the integration of game design elements into non-gaming contexts—has emerged as a prominent strategy to stimulate engagement, enhance user experiences, and influence consumer behavior across platforms, applications, and brand communities.

Moreover, as gamification becomes increasingly ubiquitous, consumers' familiarity with gamification mechanisms may shape how game elements are interpreted and experienced. Familiarity can reduce cognitive uncertainty, facilitate sense-making, and enable more meaningful engagement, yet it remains largely overlooked in empirical models of gamification effectiveness.

Prior research suggests that gamification can positively affect participation, enjoyment, and behavioral outcomes. A key limitation of existing research lies in its tendency to focus on the presence of game elements or extrinsic rewards, while paying limited attention to the experiential mechanisms through which gamification translates into sustained motivation. In particular, consumer involvement, reflecting the cognitive, emotional, and behavioral depth of engagement, has often been conflated with motivation rather than examined as a distinct and central explanatory construct.

Addressing these gaps, the present study examines how familiarity with gamification influences consumer involvement and how involvement, in turn, shapes consumer motivation in non-gaming contexts. By empirically testing the joint and sequential relationships among these constructs using a quantitative approach, this research advances a process-oriented understanding of gamification and clarifies the mechanisms through which gamified experiences generate meaningful and sustained motivational outcomes.

2. LITERATURE REVIEW

2.1 Consumer Involvement in Gamified Environments

The gameful experience denotes a form of customer engagement structured around rules, constraints, and goal-oriented systems typically associated with games (Huotari & Hamari, 2012). These structures regulate permissible actions and restrict available resources, thereby shaping how participants pursue predefined objectives. By intentionally constraining action, gamification frameworks introduce uncertainty and challenge, making goal attainment non-

trivial rather than automatic (Malone, 1981).

Uncertainty plays a central motivational role in gameful systems. Prior research suggests that constrained environments can generate psychological tension or stress, which in turn motivates individuals to invest effort in order to regain a sense of control (Costikyan, 2013). Rather than deterring participation, such uncertainty is often perceived as engaging, as individuals value opportunities to exercise agency within structured systems.

Within these environments, participants engage in gameplay, defined as the set of actions, emotional responses, and social interactions through which individuals navigate rules, constraints, and feedback mechanisms in pursuit of goals (McGonigal, 2011). While designers establish the formal structures of gameplay, the experience itself remains inherently subjective. Individual motivations, interpretations, and strategic choices lead to distinct gameplay experiences, even when participants interact with identical mechanics (Huotari & Hamari, 2012).

Gameplay frequently combines challenge and social embeddedness. Participants may experience challenge through goal pursuit while simultaneously feeling socially connected through competition or collaboration with others. Although gameplay has traditionally been examined in digital and analog game contexts, it also manifests in nongame environments, including marketing, innovation platforms, and online communities, where customers interact under conditions of uncertainty (Zichermann & Linder, 2013). For instance, in online innovation contests, some participants adopt competitive strategies by submitting fully developed solutions independently, perceiving other community members as rivals. Others pursue cooperative strategies by iteratively refining ideas and inviting feedback or collaboration, anticipating shared benefits. Thus, exposure to identical gamification mechanisms may produce fundamentally different gameplay trajectories and experiential outcomes. These differences in gameplay are consequential, as prior research indicates that gameplay contributes to deep experiential engagement through cognitive absorption. Cognitive absorption refers to a state of intense involvement characterized by deep focus on the focal activity (Agarwal & Karahanna, 2000). It has been widely used to explain the heightened engagement observed in interactive and gameful systems and comprises five dimensions: temporal distortion, focused immersion, intrinsic enjoyment, perceived control, and curiosity (Malone, 1981). Temporal distortion reflects reduced awareness of time passing during interaction, while focused immersion

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denotes sustained attentional engagement that suppresses competing cognitive demands. Intrinsic enjoyment captures the pleasure derived from the activity itself, independent of external rewards. Perceived control emphasizes the individual's sense of agency over the interaction, and curiosity refers to the degree to which the experience stimulates sensory and cognitive interest.

By combining voluntary participation with structured constraints, gameplay produces a gameful experience that supports all five dimensions of cognitive absorption. Accordingly, the term “gameful” describes an experience in which individuals willingly operate within rules and structures to pursue meaningful goals (Koster, 2013). Playing thus entails not only enjoyment and immersion but also a sense of freedom that fosters curiosity and contributes to temporal distortion (Malone, 1981), while rule-based frameworks enhance perceived control over uncertain situations (McGonigal, 2011).

When a gameful system achieves an appropriate balance between perceived control and uncertainty, it may induce a state of flow—an optimal experience characterized by deep immersion, heightened concentration, and the temporary exclusion of extraneous concerns from consciousness (Csikszentmihalyi, 1990). Individuals experiencing flow report simultaneous enjoyment and cognitive efficiency, reinforcing both affective and instrumental engagement.

Finally, the intrinsic enjoyment and cognitive efficiency generated by gameful experiences have important implications for customer emotions and satisfaction. These outcomes may culminate in a form of experiential engagement characterized by high emotional intensity and high satisfaction reflecting customers' desire to establish and sustain enduring relationships with focal objects, platforms, or brands. Taken together, these insights suggest that users who are more familiar with gamification are likely to be more actively engaged and involved in consumer activities. This rationale leads to the following hypothesis:

Hypothesis 1: Increased familiarity with gamification positively affects consumer involvement.

2.2 Motivation in Gamified Systems

Motivation plays a pivotal role in explaining why individuals initiate, sustain, and intensify engagement with gamified systems. In the gamification literature, motivation is widely recognized as a critical determinant of not only short-term participation but also long-term involvement and behavioral persistence (Deterding et al., 2011; Hamari et al., 2014). Accordingly,

understanding motivational processes is essential for explaining why some gamified systems succeed in fostering durable engagement while others generate only transient effects.

Motivation constitutes a foundational construct for understanding user engagement in gamified environments because it explains both adoption and continuance behavior. Prior research emphasizes that the effectiveness of gamification depends less on the mere inclusion of game elements than on how these elements align with users' underlying motivational orientations (Hamari et al., 2014; Koivisto & Hamari, 2019). Gamification designs that fail to support core motivational processes often produce superficial engagement that rapidly declines once novelty effects dissipate.

Early implementations of gamification primarily relied on extrinsic incentives, such as points, badges, and leaderboards, to stimulate user participation. Although such elements can effectively trigger initial engagement, extensive empirical evidence demonstrates that extrinsic rewards alone are insufficient to sustain long-term motivation and may even undermine intrinsic interest when perceived as controlling (Deci et al., 1999; Ryan & Deci, 2000). In gamification research, this limitation has been widely documented, with studies showing that reward-centric designs tend to produce short-lived engagement rather than enduring involvement (Hamari et al., 2014; Koivisto & Hamari, 2014).

By contrast, intrinsic motivation—defined as engaging in an activity for its inherent enjoyment, interest, or challenge—is consistently associated with persistence, high-quality performance, and psychological well-being (Deci & Ryan, 2012). Self-Determination Theory (SDT) posits that intrinsic motivation emerges when individuals experience satisfaction of three basic psychological needs, namely, autonomy, competence, and relatedness. In gamified systems, these needs are supported through meaningful choice, optimally challenging tasks, informational feedback, and opportunities for social interaction (Hamari et al., 2016; Ryan & Deci, 2000).

Cognitive Evaluation Theory which is a sub-theory of SDT, further explains how different game elements influence motivational quality. Informational feedback, progress indicators, and non-controlling rewards enhance perceived competence and strengthen intrinsic motivation, whereas surveillance, excessive competition, and performance-contingent tangible rewards may undermine it (Deci et al., 1999). These insights have been directly applied in gamification research to explain why certain design configurations foster sustainable

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engagement while others fail (Hofacker et al., 2016).

Although intrinsic motivation represents the most robust and self-sustaining form of engagement, many behaviors in gamified environments are initially driven by extrinsic motivation. SDT conceptualizes extrinsic motivation along a continuum, ranging from external regulation to more autonomous forms such as identified and integrated regulation (Ryan & Deci, 2000). Through internalization, externally motivated behaviors may become self-endorsed when users perceive activities as personally meaningful. Organismic Integration Theory explains how autonomy-supportive gamified environments facilitate this process, leading to higher-quality motivation, improved performance, and enhanced well-being (Ryan & Deci, 2000; Vansteenkiste et al., 2010).

SDT therefore provides an integrative framework for understanding motivational quality in gamified systems. Empirical studies consistently demonstrate that environments supporting autonomy, competence, and relatedness generate more durable engagement than controlling environments (Gagné & Deci, 2005; Vansteenkiste et al., 2010). In the context of gamification, this implies that meaningful choice, adaptive challenge, constructive feedback, and social connectedness are essential design principles for sustaining consumer motivation and involvement over time (Hamari et al., 2016).

Motivational responses to gamification are further shaped by individual differences. Bartle's (1996) typology of player motivations—achievers, explorers, socializers, and competitors—illustrates that users derive motivation from distinct goals and experiential orientations within gamified systems. Empirical research suggests that most users exhibit multiple motivational orientations that evolve over time, reinforcing the need for flexible and personalized gamification designs (Hamari & Tuunanen, 2014).

Flow Theory (Csikszentmihalyi, 1990) complements SDT by explaining optimal experiential states characterized by deep immersion, enjoyment, and focused engagement. Flow emerges when task challenges are well balanced with individual skills, goals are clearly defined, and feedback is immediate. Gamification research demonstrates that flow experiences enhance intrinsic motivation and reinforce sustained involvement, particularly when challenges are adaptive and participation remains voluntary (Hamari et al., 2016).

Taken together, these theoretical perspectives suggest that sustainable consumer motivation in gamified systems arises when game elements are

designed to support autonomy, competence, and relatedness rather than relying exclusively on external incentives. Gamified environments that balance meaningful challenges, autonomy-supportive feedback, and social connection are therefore more likely to foster long-term consumer involvement and motivational persistence.

To synthesize the preceding discussion, involvement in gamified systems is not merely a behavioral outcome but also a motivational resource. As consumers become more cognitively, emotionally, and behaviorally involved, they are more likely to internalize the activity, experience enjoyment and competence, and develop stronger motivational states. Accordingly, the present study proposes the following hypothesis:

Hypothesis 2: Higher levels of consumer involvement positively influence consumer motivation.

2.3 Interactive Effects of Gamification and Involvement on Motivation

Motivation and consumer involvement are closely related yet conceptually distinct constructs that are jointly explained by gamification. Motivation refers to the psychological forces that initiate, direct, and sustain behavior (Brooks & Goldstein, 2012), whereas involvement captures the intensity, quality, and depth of an individual's participation in an activity. While motivation typically precedes action, involvement reflects the experiential and behavioral manifestation of motivational processes over time (Appleton et al., 2006).

Involvement is commonly conceptualized as a multidimensional construct encompassing cognitive, emotional, and behavioral components. Rather than being reducible to time spent on a task, involvement reflects absorption, enthusiasm, and personal relevance (Ryan, 2000). This understanding aligns with flow theory, which emphasizes deep concentration and optimal challenge as core conditions for sustained engagement (Csikszentmihalyi, 1990).

Within marketing and digital environments, consumer involvement has emerged as a primary outcome of gamification. Empirical studies demonstrate that well-designed gamified systems strengthen motivation by enhancing involvement, improving task completion, and encouraging continued participation (Deterding et al., 2011).

Gamified experiences are co-created through the interaction of designers and users. While designers provide the structural framework and rules, users actively shape the experience through participation, interpretation, and social

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interaction (Huotari & Hamari, 2012). Social interaction has been identified as a particularly powerful driver of involvement, as gamification enhances perceived social connectedness and increases usage intentions.

However, engagement effects are not always stable. Longitudinal research indicates that perceived enjoyment and usefulness of gamified systems may decline over time, highlighting the importance of motivational quality rather than novelty-driven engagement (Koivisto & Hamari, 2014; Lucassen & Jansen, 2014). Self-Determination Theory and Flow Theory jointly explain these dynamics by emphasizing the role of intrinsic motivation, voluntary participation, and optimal challenge in sustaining involvement (Ryan & Deci, 2000).

Gamification differs from traditional games in its engagement trajectory. While games typically generate intense but temporally bounded engagement (Caillois, 1961; Huizinga, 1971; Tekinbas & Zimmerman, 2004), gamification seeks to extend involvement beyond the game itself toward focal objects such as brands, platforms, or communities (Hamari & Koivisto, 2015). Consequently, gamification should be understood not as an end goal but as a process that channels user engagement toward meaningful behavioral and marketing outcomes (Lucassen & Jansen, 2014). Research further identifies specific game design features that link gamification to involvement. These features are commonly categorized as immersion-related, achievement-related, and social-related elements (Xi & Hamari, 2019). Achievement and social features are particularly effective in enhancing cognitive and emotional involvement, while immersive features primarily reinforce social engagement.

From a branding perspective, consumer involvement extends beyond purchase behavior to include non-transactional activities such as community participation, content sharing, and advocacy (Vivek et al., 2012). Consumer brand engagement is widely conceptualized as a multidimensional construct encompassing cognitive, emotional, and behavioral dimensions. Gamification activates these dimensions by offering experiential, participatory, and value-creating interactions, thereby strengthening loyalty and long-term involvement (Xi & Hamari, 2019).

Finally, consumer benefits represent a key mechanism linking gamification, involvement, and motivation. Gamified environments deliver cognitive, social, hedonic, and personal integrative benefits that motivate continued participation (Hofacker et al., 2016). Social and personal integrative benefits, in particular,

strongly predict positive perceptions of gamification and continued usage intentions (Hamari & Koivisto, 2014). When expected benefits are not realized, involvement and motivation may deteriorate, underscoring the central role of perceived value in sustaining engagement over time (Harwood & Garry, 2015).

Taken together, prior research suggests that gamification does not influence motivation in isolation. Instead, motivational outcomes emerge from the joint effects of consumers' familiarity with gamification mechanisms and their level of involvement in gamified experiences. Based on this integrative perspective, the following hypothesis is proposed:

Hypothesis 3: Familiarity with gamification and consumer involvement jointly influence consumer motivations.

3. METHODS

This study employs a conclusive quantitative research design aimed at empirically testing the relationships among familiarity with gamification, consumer involvement, and motivation in non-gaming contexts. Specifically, the research investigates three hypotheses: (1) familiarity with gamification positively influences consumer involvement, (2) consumer involvement positively affects motivation, and (3) familiarity and involvement jointly influence motivation. The study uses a cross-sectional survey to collect data and applies rigorous statistical techniques, including one-sample t-tests, simple linear regression, and hierarchical multiple regression, to test the proposed hypotheses.

The target population comprises consumers who engage with digital platforms featuring gamification elements, including rewards, points, badges, challenges, and leaderboards. A non-probability purposive sampling (judgmental) was employed to select participants familiar with digital gamified systems. A total of 164 respondents participated in the study, exceeding the minimum threshold recommended for multiple regression, ensuring sufficient statistical power for hypotheses testing (Green, 1991). Data were collected using a structured questionnaire, administered online.

- **Familiarity with Gamification:** Assessed through items measuring respondents' awareness and understanding of common gamification elements (e.g., points, badges, challenges, rewards, leaderboards).
- **Consumer Involvement:** Captured using a items reflecting self-relevance of gamification and its outcome.
- **Consumer Motivation:** Measured through items representing intrinsic and extrinsic motivational factors, including perceived competence, social interaction,

and reward significance.

All items were rated on a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree), enabling nuanced assessment of participants' perceptions.

A multi-step analytical strategy was adopted:

- Descriptive Analysis and One-Sample *t*-Tests: Conducted to examine participants' familiarity with gamification and the motivational relevance of gamification elements. The one-sample *t*-tests compared observed means against the neutral midpoint of the Likert scale ($\mu = 4$) to assess significantly higher-than-neutral evaluations.
- Simple Linear Regression: Employed to test the direct effects of familiarity on involvement (H1) and involvement on motivation (H2).
- Hierarchical Multiple Regression: Utilized to test the joint effect of familiarity and involvement on motivation (H3). Two models were estimated: Model 1 assessed the direct effect of familiarity, while Model 2 introduced involvement to evaluate incremental explanatory power. All assumptions on which regression is based, were checked before the analysis (Tabachnick & Fidell, 2007).

4. RESULTS AND DISCUSSION

2.1 Testing Hypothesis 1

To test Hypothesis H1, which posits that familiarity with gamification positively influences consumer involvement, a two-step analytical approach was adopted. First, one-sample *t*-tests were conducted to assess respondents' familiarity with core gamification elements. Second, a simple linear regression analysis was performed to examine the effect of overall gamification familiarity on consumer involvement.

The results of the one-sample *t*-tests indicate that respondents reported significantly higher-than-neutral familiarity with all five gamification features examined (points systems, badges, challenges, rewards, and leaderboards). Given that the hypothesized population mean was set at 4 on a 7-point Likert scale, the statistically significant mean differences (all $p < .01$) suggest that respondents possess a relatively strong awareness and understanding of commonly used gamification mechanisms.

$$\begin{cases} H_0: \mu \leq 4 \\ H_1: \mu > 4 \end{cases}$$

Table 4.1 One Sample Test – H1

	Mean	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Item 1	4.4085	2.824	163	.005	.40854	.1228	.6942
Item 2	4.8780	6.058	163	.000	.87805	.5919	1.1642
Item 3	4.9207	5.988	163	.000	.92073	.6171	1.2243
Item 4	5.0671	7.169	163	.000	1.06707	.7732	1.3610
Item 5	5.3720	10.028	163	.000	1.37195	1.1018	1.6421

Source: By the authors

Among these elements, familiarity was highest for leaderboards and rewards, followed by challenges, badges, and points systems. This pattern suggests that respondents are particularly accustomed to gamification features that provide social comparison and tangible incentives, which are frequently emphasized in contemporary digital platforms. Overall, these findings confirm that the sample demonstrates a sufficiently high level of gamification familiarity to meaningfully assess its impact on involvement.

Table 4.2 ANOVA – H1

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	92.120	1	92.120	74.495	.000
	Residual	200.329	162	1.237		
	Total	292.450	163			

Source: By the authors

The simple linear regression analysis revealed that the model predicting consumer involvement from familiarity with gamification is statistically

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significant ($F = 74.495$, $p < .0001$). This indicates that familiarity with gamification contributes meaningfully to explaining variations in consumer involvement and that the relationship observed is unlikely to be due to random chance.

Table 4.3 Coefficients– H1

	Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	1.942	.307		6.335	.000
	Familiarity_Ave	.515	.060	.561	8.631	.000

Source: By the authors

Examination of the regression coefficients shows that familiarity with gamification exerts a strong and positive effect on consumer involvement. The standardized beta coefficient ($\beta = 0.561$, $p < .0001$) indicates a substantial effect size, suggesting that increases in familiarity are associated with notable increases in involvement levels. This finding implies that consumers who better understand and recognize gamification mechanisms tend to be more cognitively and emotionally engaged with digital platforms.

Table 4.4 Model Summary – H1

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.561	.315	.311	1.11203

Source: By the authors

The model explains 31.5% of the variance in consumer involvement ($R^2 = 0.315$), which represents a moderate explanatory power in the context of behavioral and marketing research. While this indicates that familiarity with gamification is a key determinant of involvement, it also suggests that other psychological, contextual, or experiential factors may further influence consumer involvement and should be explored in future research.

Overall, the findings provide strong empirical support for Hypothesis H1. The results demonstrate that consumers’ familiarity with gamification elements significantly and positively influences their level of involvement. This suggests that gamification is more effective when users are not only exposed to game-like features but also understand and recognize their purpose and functionality. Consequently, increasing consumer familiarity with gamification mechanisms may be a critical strategy for enhancing engagement and involvement in digital environments.

2.2 Testing Hypothesis 2

Hypothesis 2 posits that *higher levels of consumer involvement positively influence consumer motivation*. To test this hypothesis, a two-step analytical approach was adopted. First, one-sample *t*-tests were conducted to assess respondents’ evaluations of key gamification-related motivational elements. Second, a simple linear regression analysis was performed to examine the predictive effect of involvement on motivation .

First, One-sample *t*-tests were conducted on five items measuring motivation, using a test value of 4 (neutral point on the 7- point Likert scale).

The results indicate that four out of five motivational items show statistically significant mean differences from the test value ($p < 0.05$). Specifically, respondents reported significantly higher importance for receiving rewards, earning points, earning badges, and being ranked to track achievements.

Table 4.5 One Sample Test – H2

	Mean	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Item 1	4.9512	6.362	163	.000	.95122	.6560	1.2465
Item 2	5.0307	7.136	162	.000	1.03067	.7455	1.3159
Item 3	4.5793	3.913	163	.000	.57927	.2869	.8716
Item 4	4.2500	1.605	163	.110	.25000	-.0576	.5576
Item 5	4.7195	4.575	163	.000	.71951	.4090	1.0300

Source: By the authors

In contrast, the item related to participation in challenges on digital platforms did not reach statistical significance ($p = 0.110$), suggesting a

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more neutral perception of this particular gamification feature. Overall, the findings indicate a generally positive perception of most gamification elements, supporting the motivational relevance of rewards, points, badges, and ranking mechanisms

Second, to further examine H2, a simple linear regression was conducted with involvement as the independent variable and motivation as the dependent variable. The ANOVA results reveal that the regression model is statistically significant ($F = 92.005$, $p < 0.001$), indicating that involvement significantly predicts motivation.

Table 4.6 ANOVA – H2

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	145.011	1	145.011	92.005	.000
	Residual	255.332	162	1.576		
	Total	400.343	163			

Source: By the authors

The calculated F -statistic substantially exceeds the critical F value (3.8), confirming the overall usefulness and robustness of the model. Moreover, the regression coefficients show a statistically significant positive relationship between involvement and motivation. The standardized beta coefficient ($\beta = 0.602$, $p < 0.0001$) indicates a moderate positive effect, suggesting that higher levels of consumer involvement are associated with increased motivation toward gamified activities.

Table 4.7 Coefficients– H2

	Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.553	.343		4.525	.000
	Involvement	.704	.073	.602	9.592	.000

Source: By the authors

The model explains a meaningful proportion of variance in motivation ($R^2 = 0.362$). This implies that approximately 36.2% of the variance in consumer

motivation is accounted for by involvement. While this represents a moderate explanatory power, it also suggests that additional factors beyond involvement contribute to consumer motivation.

Table 4.8 Model Summary – H2

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.602	.362	.358	1.25544

Source: By the authors

Taken together, the results of the one-sample *t*-tests and regression analysis provide empirical support for Hypothesis 2. The findings confirm that consumer involvement exerts a positive and statistically significant influence on consumer motivation, thereby validating the proposed relationship within the context of gamification.

2.3 Testing Hypothesis 3

Hypothesis 3 (H3) proposes that Familiarity with gamification and consumer involvement (*independent variables*) jointly influence consumer motivation (*dependent variable*). To empirically test this hypothesis, a hierarchical multiple regression analysis was conducted. This approach allows for assessing both the individual and incremental effects of familiarity and involvement on motivation .

The sample size ($N = 164$) exceeds the minimum recommended threshold for multiple regression analysis, ensuring sufficient statistical power. Examination of Mahalanobis distances revealed no multivariate outliers, as all values were below the critical chi-square value ($\chi^2_{2,0.001} = 13.82$). Visual inspection further confirmed the absence of extreme observations. Normality of residuals was assessed using probability–probability plots, which showed residuals closely aligned with the diagonal

Figure 4.1 Outliers Test – H3

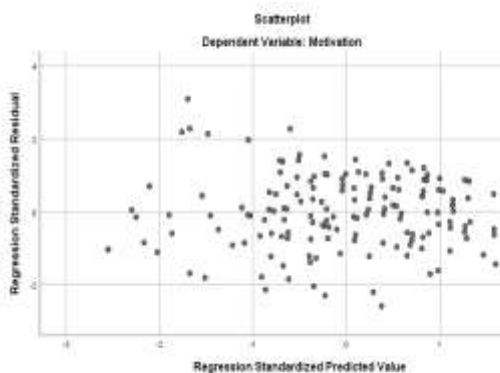
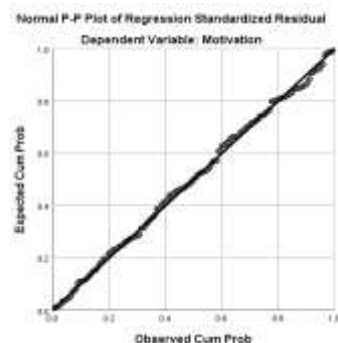


Figure 4.2 Residuals Normality Test – H3



line, indicating that the normality assumption was met.

Multicollinearity diagnostics revealed tolerance values equal 0.685 and variance inflation factors (VIF) was 1.46, confirming that multicollinearity did not pose a concern. The Durbin–Watson statistic (1.640) suggests marginal autocorrelation. However, given the cross-sectional nature of the data and the absence of a temporal structure, this value does not materially threaten the validity of the regression estimates.

2.3.1 Model 1: Effect of Familiarity with Gamification on Motivation

The first regression model examined the direct effect of familiarity with gamification on consumer motivation. The model was statistically significant ($F = 18.736, p < 0.0001$), indicating that familiarity alone contributes meaningfully to explaining variation in motivation.

Table 4.9 ANOVA – H3						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41.501	1	41.501	18.736	.000
	Residual	358.841	162	2.215		
	Total	400.343	163			
2	Regression	145.157	2	72.578	45.791	.000
	Residual	255.186	161	1.585		
	Total	400.343	163			

Source: By the authors

The standardized regression coefficient reveals a positive and statistically significant relationship between familiarity and motivation ($\beta = 0.322, p < 0.001$). This suggests that consumers who are more knowledgeable about gamification mechanics and concepts tend to report higher motivational levels. Familiarity likely reduces cognitive uncertainty, enhances perceived

ease of use, and increases confidence when interacting with gamified systems, thereby fostering motivational engagement.

Table 4.10 Coefficients – H3

	Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Collinearity Statistics	
		B	Std. Error				Tolerance	VIF
1	(Constant)	3.004	.410		7.321	.000		
	Familiarity	.346	.080	.322	4.328	.000	1.000	1.000
2	(Constant)	1.607	.388		4.145	.000		
	Familiarity	-.025	.082	-.023	-.304	.762	.685	1.460
	Involvement	.719	.089	.615	8.087	.000	.685	1.460

Source: By the authors

However, despite its statistical significance, the explanatory power of Model 1 remains limited. Familiarity accounts for only 9.8% of the variance in motivation (Adjusted $R^2 = 0.098$), indicating that while familiarity plays a facilitative role, it is insufficient on its own to strongly motivate consumers. This finding suggests that cognitive awareness of gamification elements does not necessarily translate into sustained motivational outcomes without deeper experiential engagement.

Table 4.11 Model Summary – H3

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.322	.104	.098	1.48831	
2	.602	.363	.355	1.25897	1.640

Source: By the authors

In the second model, consumer involvement was introduced alongside familiarity to examine its incremental explanatory power. The results

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demonstrate a substantial improvement in model fit, with the overall regression being highly significant ($F = 45.791, p < 0.0001$). The adjusted R^2 increased markedly to 0.355, indicating that the two predictors jointly explain 35.5% of the variance in consumer motivation.

In this model, involvement emerges as the dominant predictor of motivation ($\beta = 0.615, p < 0.0001$). This strong positive effect indicates that active participation, emotional engagement, and sustained interaction with gamified activities are critical drivers of motivational outcomes. Involvement reflects experiential immersion rather than mere awareness, reinforcing the idea that motivation is primarily shaped by behavioral and affective engagement.

Notably, once involvement is included in the model, the effect of familiarity becomes statistically non-significant ($\beta = -0.023, p = 0.762$). This shift suggests that familiarity does not exert an independent influence on motivation when active involvement is accounted for. Instead, familiarity appears to function as an antecedent condition that enables engagement but does not directly motivate consumers in the absence of involvement.

The comparison between Model 1 and Model 2 provides important theoretical insights. While familiarity with gamification initially contributes to consumer motivation, its effect is largely absorbed once involvement is introduced. This pattern indicates a hierarchical relationship, whereby familiarity facilitates entry into gamified environments, but involvement is the primary mechanism through which motivation is generated and sustained.

These findings align with motivational and engagement theories, which emphasize experiential participation over passive knowledge as the key driver of motivational intensity. Consequently, consumers may need to first understand gamification structures, but it is their active involvement that ultimately transforms familiarity into meaningful motivation. Overall, the results provide strong empirical support for Hypothesis 3, confirming that consumer motivation depends on both familiarity with gamification and, more critically, on active involvement in gamified activities.

To sum up this section, this study set out to examine how gamification influences consumer involvement and motivation in non-gaming contexts by disentangling the roles of familiarity with gamification, consumer involvement, and motivation. Drawing on Self-Determination Theory, Flow Theory, and engagement literature, the findings provide a nuanced

understanding of how cognitive awareness and experiential engagement jointly shape motivational outcomes.

First, the results support Hypothesis 1, demonstrating that familiarity with gamification positively influences consumer involvement. This finding aligns with prior research suggesting that users who understand game mechanics are better equipped to interpret system cues, anticipate rewards, and engage meaningfully with gamified environments (Hamari et al., 2014; Hofacker et al., 2016). Familiarity appears to reduce cognitive ambiguity and increase perceived ease of interaction, thereby facilitating cognitive and emotional engagement. Importantly, the relatively strong explanatory power of familiarity for involvement suggests that gamification is unlikely to be effective when users lack basic awareness of its underlying mechanisms. This finding reinforces the view that gamification effectiveness is contingent not merely on exposure to game elements, but on users' ability to recognize and interpret them as meaningful signals.

Second, the findings provide robust support for Hypothesis 2, confirming that consumer involvement positively influences motivation. Involvement emerged as a strong predictor of motivation, explaining a substantial proportion of variance. This result reinforces theoretical perspectives that conceptualize involvement as the experiential manifestation of motivational processes (Appleton et al., 2006). While motivation may initiate engagement, sustained motivation appears to be reinforced through active participation, emotional immersion, and perceived personal relevance. In this sense, involvement functions not only as an outcome of gamification but also as a motivational amplifier, strengthening intrinsic interest and internalization over time. The non-significant effect of challenge-related items in the descriptive analysis further suggests that not all gamification elements contribute equally to motivation, underscoring the importance of experiential depth rather than mere task presence.

The most theoretically significant contribution emerges from the test of Hypothesis 3, which examined the joint effects of familiarity and involvement on motivation. The hierarchical regression results reveal a clear pattern: while familiarity initially exerts a positive effect on motivation, this effect becomes non-significant once involvement is introduced. In contrast, involvement remains a strong and dominant predictor. This finding suggests a hierarchical and sequential relationship among the constructs. Familiarity operates as an antecedent condition that

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enables engagement, whereas involvement represents the primary mechanism through which motivation is generated and sustained.

This pattern aligns closely with Self-Determination Theory, which posits that motivation quality depends on experiential satisfaction of autonomy, competence, and relatedness rather than on cognitive awareness alone (Ryan & Deci, 2000). Familiarity may support perceived competence at an initial stage, but without active involvement—through meaningful interaction, feedback, and social participation—motivation is unlikely to persist. Similarly, Flow Theory emphasizes that deep motivational states arise from immersive engagement rather than from passive understanding (Csikszentmihalyi, 1990). The findings therefore extend prior gamification research by empirically demonstrating that familiarity is necessary but insufficient, whereas involvement is both necessary and sufficient for sustained motivational outcomes.

Taken together, the results suggest that gamification effectiveness should be understood as a process rather than a static design outcome. Gamification first functions as a cognitive framing mechanism through familiarity, then transitions into an experiential system where involvement drives motivational internalization. This perspective helps explain why some gamified systems generate only short-lived engagement: they may succeed in creating awareness but fail to foster deep involvement. By empirically validating this process, the study advances current understanding of how gamification translates into durable motivational effects.

4. CONCLUSION

This study contributes to the gamification and consumer engagement literature by empirically clarifying the interrelationships among familiarity with gamification, consumer involvement, and motivation in non-gaming contexts. Using a quantitative approach, the findings demonstrate that gamification does not influence motivation directly or uniformly. Instead, motivational outcomes emerge through a sequential mechanism in which familiarity facilitates involvement, and involvement serves as the primary driver of motivation.

The results confirm that familiarity with gamification enhances consumer involvement, highlighting the importance of cognitive understanding and recognition of game elements. However, involvement

proves to be the decisive factor in generating motivation, overshadowing the direct effect of familiarity once experiential engagement is accounted for. This distinction is critical, as it suggests that gamification strategies focused solely on surface-level mechanics or reward visibility are unlikely to sustain motivation without fostering meaningful participation.

From a theoretical standpoint, the study extends Self-Determination Theory and Flow Theory. By positioning involvement as a mediating experiential mechanism rather than a mere outcome, the study contributes to a more dynamic and process-oriented understanding of gamification effects. This perspective moves beyond novelty-based explanations and provides a stronger foundation for explaining long-term engagement.

From a managerial perspective, the findings imply that effective gamification design should prioritize user onboarding and education to build familiarity, while simultaneously emphasizing deep, autonomy-supportive, and socially rich experiences to cultivate involvement. Managers should focus less on isolated game elements and more on creating coherent engagement journeys that encourage sustained interaction and personal relevance.

Despite its contributions, the study has limitations. The cross-sectional design limits causal inference, and future research should adopt longitudinal approaches to capture engagement dynamics over time. Additionally, individual differences in motivational orientations may moderate gamification effects and warrant further investigation. Future studies could also extend the model by examining contextual factors such as platform type or cultural influences.

In conclusion, this research demonstrates that gamification influences consumer motivation not through mere exposure to game elements, but through a layered process in which familiarity enables involvement and involvement drives motivation. By clarifying these mechanisms, the study offers both theoretical advancement and practical guidance for designing more effective, engagement-oriented gamified systems.

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