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THE IMPACT OF GAMIFICATION IN E-COMMERCE ON GEN Z'S INTENTION TO CONTINUE USING IT IN HO CHI MINH CITY

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ABSTRACT

Purpose – This study examines the impact of gamification elements on the e-commerce continuance intention of Generation Z in Ho Chi Minh City. It addresses a critical gap in literature by evaluating the mediating role of attitude within an integrated Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) framework.

Design/ methodology/ approach – An online survey via Google Forms was conducted to collect data from 260 Generation Z consumers in Ho Chi Minh City who had experience with gamified e-commerce features. The data collected were analyzed using partial least squares structural equation modeling (PLS-SEM) via SmartPLS 4 software to test the research hypotheses.

Findings – The results demonstrate that social influence, rewards, perceived usefulness, and perceived ease of use positively affect attitudes toward gamified e-commerce, with perceived ease of use exerting the strongest influence. Attitude strongly enhances continuance intention and acts as a pivotal mediator. While social influence has no direct significant effect on continuance intention, it exerts a clear indirect effect through attitude.

Originality/ value – Prior research often overlooked the indirect mechanism of attitude within an integrated framework in Vietnam's e-commerce. This study is among the first to empirically demonstrate the critical mediating role of attitude in translating both technology perceptions and social influences into actual continuance intention among Gen Z in an emerging market.

Practical implications – E-commerce managers should design intuitive, user-friendly, gamified interfaces to reduce cognitive barriers and implement tangible rewards (e.g., coins, vouchers) rather than symbolic incentives. Furthermore, gamification features should align with functional shopping purposes to effectively foster positive user attitudes and long-term retention.

Social implications – Regulatory bodies should closely monitor gamification-based promotional activities (e.g., lucky draws, mini-games) to mitigate the risk of misleading young consumers and enforce robust personal data protection laws to establish digital trust.

1. Introduction

E-commerce is increasingly becoming the mainstream shopping channel in the context of global digital transformation (Rahmadhan et al., 2023). The market size is forecast to increase from $36.21 trillion in 2026 to $77.58 trillion by 2031, with an average growth rate of 16.46% (Mordor Intelligence, 2026), indicating strong expansion and an increasing level of competition. This forces businesses to look for innovative solutions in enhancing experience and maintaining users' intention to continue using it (Foroughi et al., 2023).

Gamification is the use of game elements in non-game contexts to enhance user experience and engagement (Deterding et al., 2011). For example, some e-commerce websites not only provide reward points or coins but also allow their customers to play interactive games like planting trees, puzzles, and caring for virtual animals (Yu & Huang, 2022). It has been proven in many studies that gamified systems are more effective than traditional ones because they stimulate psychological motivation and attitude shaping, thus leading to the intention of use (Giggs et al., 2024; Foroughi et al., 2023; Hamari & Koivisto, 2015; Kusumawardani & Soegihono, 2024).

In this context, Gen Z is the most important user group in e-commerce today. Having been brought up in the era of technology and highly exposed to the digital environment, this generation is easily attracted to interactive, entertaining, and personalized experiences. Targeting Gen Z not only brings economic benefits to businesses but also indirectly affects consumption decisions in families. Many studies have shown that Gen Z's intention to use is strongly affected by emotional, experience, and convenience factors rather than purely rational assessments of its effectiveness (Kusumawardani & Soegihono, 2024). Thus, gamification is expected to have a particularly strong impact on attitudes towards the intention for the continued use of this group of users.

In Vietnam, there has been little research on gamification and its relationship to Gen Z's intention to continue using it. Most of the previous studies only focused on the intent to use or the direct effect of each individual element. Whether attitude plays a mediating role in transforming the impact of gamification into the intention to continue use has not been sufficiently addressed. Some of the earlier works that touched on this issue include applications of gamification in education to motivate and improve learning outcomes (Nguyen Viet Bang et al., 2024) and in Momo e-wallet, and the intention to continue using it (Truong & Luong, 2024). What these studies have

not yet developed, however, is an integrated model in the context of e-commerce. There are three main gaps in existing works. First and foremost, the research on the mechanism of internal influence, particularly the mediating role of attitudes in any holistic framework, is almost non-existent. Second, the diversity of theoretical approaches and scales makes the results of the experiments inconsistent. Third, evidence in emerging markets like Vietnam is limited, while cultural traits and consumer behaviors can make a massive difference-most especially for Gen Z with high levels of engagement with the digital environment.

Based on those gaps, this study sets out to assess the influence of gamification factors on the attitude and intention to continue using e-commerce platforms among Gen Z individuals in Ho Chi Minh City by integrating the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). Not only does this study contribute to enriching the theoretical background on technology use behavior concerning gamification, but it also provides practical implications for e-commerce firms in designing user experiences and formulating strategies to retain young customers in a sustainable way.

2. Theoretical background and research model

2.1. Conceptual framework

To explain the intention to continue using e-commerce platforms in the context of gamification integration, this study combines the Technology Acceptance Model (TAM) of Davis (1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) of Venkatesh et al. (2003) to construct a comprehensive analytical framework. TAM is adopted as the primary theoretical foundation because it explains how users' perceptions of technology shape their attitudes and behavioral intentions. According to TAM, perceived usefulness and perceived ease of use are two central determinants of attitude and intention. The more beneficial and easier to operate a system is perceived to be, the more likely users are to develop favorable attitudes toward it and continue using it. TAM has been widely applied in technology adoption research across various contexts. In gamification research, TAM is used to clarify how game-based design elements affect user behavior and engagement (Tobon et al., 2020). The more useful and easier tech is perceived to be, the more likely it is to be accepted and used constantly (Rahmawati et al., 2025).

This study presents a selective rather than full integration of TAM and UTAUT. Only Social Influence from UTAUT is retained; Performance Expectancy and Effort Expectancy are not included because they conceptually overlap with Perceived Usefulness and Perceived Ease of Use in TAM. Previous research have claimed that these constructs tap similar aspects of users' evaluations of technology performance and usability. Therefore, retaining both sets of variables may create conceptual redundancy and reduce model parsimony. Thus, TAM constructs are used to represent technological perceptions, whereas Social Influence from UTAUT is incorporated to capture the social dimension that TAM does not explicitly address.

As per Venkatesh et al. (2003), social influence is defined as the degree to which users perceive that significant others believe they should use a given system. This is a very applicable construct in virtual settings where recommendations, interactions, and peer opinions play a big role in making decisions related to technology. Owing to its comprehensiveness and explanatory power, UTAUT has been widely applied in research on behaviors toward technology (Roh et al., 2023) – particularly in gamified contexts (Tian et al., 2025).

Such selective integrations would be more applicable to the e-commerce landscape of Vietnam, where platforms apply gamification very strongly – coin accumulation, lucky wheel, daily tasks, etc. to boost user engagement. Studies conducted in Vietnam proved that social influence has a significant impact on driving the intention to use e-commerce platforms with gamification applications. Therefore, the integration of TAM with UTAUT's Social Influence makes a more comprehensive model because it brings together not only technological perceptions but also social influences.

The study does not treat gamification as a single construct but rather as specific mechanisms embedded in e-commerce platforms: reward systems, social influence through user interactions, and factors related to experience. This will therefore explain how gamification directly or indirectly affects the user's perceived usefulness and ease of use, which in turn builds attitudes and affects continuance intention toward the e-commerce system.

2.2. Hypothesis development

Social influence stands for the individual's perception of how people important to them value and expect a certain behavior (Ajzen, 1991). In the technological context, it reflects the degree to which the individual is influenced by the opinions, behaviors, and expectations of others around him when deciding to use the system (Venkatesh et al., 2003).

Social influence, defined as community interaction and connectedness with others, is a significant factor in the UTAUT model concerning the intention to continue using and actual use behavior of technology (Hamari & Koivisto, 2015). Social influence was also found to be significant in subsequent studies based on the UTAUT model (Tian et al., 2025; Venkatesh et al., 2003; Xie et al., 2021) in determining acceptance and use behavior. According to another recent study (Roslan et al., 2023), when a technology becomes a common platform in the community, the necessity for social ties and relationships can induce individuals to form positive attitudes toward that technology (Foroughi et al., 2023; Roh et al., 2023). Sari's study also found that social influence is a significant variable in shaping consumer attitudes (Sari, 2022). It is when behavior is encouraged and approved by the community that social influence becomes the dominant factor promoting attitudes, which further leads to the intention to continue using technology, particularly in the context of technical innovation and gamification applications. Thus, the following hypotheses are formed:

Hypothesis H1: Social influence has a positive impact on attitudes towards gamification.

Hypothesis H2: Social influence has a positive impact on the intention to continue using gamification.

Rewards are one of the main components of gamification; these include reward points, badges, leaderboards, or any other benefits that will encourage users to participate and maintain behavior (Hamari et al., 2014). This is the most commonly applied and researched element in gamification applications (Rahmadhan et al., 2023). Rewards can have material value or direct benefits to the users (Putri et al., 2022) and create a sense of accomplishment and increase satisfaction by reinforcing a positive emotional connection with the platform.

Positive attitudes are more likely to be formed towards the reward system, particularly when the rewards are tangible and felt clearly (Giggs et al., 2024). Truong and Luong (2024) and Pham Hung Cuong et al. (2024) also found that in the digital context, rewards positively impact user emotions and reviews, thereby reinforcing attitudes toward the platform. When effort is rewarded, the experience is often perceived as

more enjoyable and satisfying by the user. Thus, the following hypothesis are formed:

Hypothesis H3: Rewards have a positive impact on attitudes towards gamification.

According to the TAM model, the sense of usefulness is defined as the degree to which the user believes that the use of the system will improve efficiency or provide practical value (Davis, 1989). In the context of gamification, the sense of usefulness comes not only from the core functionality of the platform, but also from the fact that the game elements make the process of use more efficient, enjoyable, and clearly oriented.

When users are well aware of the benefits that gamification brings, they tend to form a more positive attitude towards the system (Vanduhe et al., 2020). Research by Foroughi et al. (2023) shows that users are willing to continue using mobile banking as they evaluate the system's usefulness for transaction activity and user experience. Similarly, when games assist users in getting to know and interacting with the brand, feeling useful promotes positive attitudes (Kusumawardani & Soegihono, 2024). Many other studies have also confirmed that useful perception is a strong predictor of positive attitudes towards technology, including gamification integration platforms (Sari, 2022; Tam et al., 2024). When users perceive gamification as providing real value, they will evaluate the platform in a more positive light. Thus, the following hypothesis are formed:

Hypothesis H4: Feeling useful has a positive effect on attitudes towards gamification.

Perceived ease of use is the degree to which the individual believes that the use of technology is effortless (Davis, 1989). Within gamification, intuitive design, simple rules, and clear operation help reduce the cognitive barrier – and so boost the user experience. When the gamification system is perceived as easy to use, users tend to form a more positive attitude because they can easily access the interesting elements of the platform (Vanduhe et al., 2020).

For an e-commerce platform that integrates gamification, the feel of ease of use becomes even more critical because of gamification elements that can add to the complexity of the interface. When features are designed to be user-friendly and easy to operate, they make the user feel more comfortable and improve their attitude toward the system. Empirical research has shown that the feeling of ease of use positively impacts attitudes when adopting new technology (Khan & Ahmed, 2025), though in some cases this effect is transmitted through a sense of usefulness (Foroughi et al., 2023).

Ease of use will have a positive impact on usefulness. When technology relieves the cognitive burden and minimizes effort, users tend to overestimate the value that the system provides (Rodrigues et al., 2016). If the technology is planned to be user-friendly and accessible, it will enhance the perception of usefulness and, therefore, develop a positive attitude toward use (Kusumawardani & Soegihono, 2024). Several studies have validated and supported the positive impact of perceived ease of use on the perception of usefulness (Aparicio et al., 2021; Foroughi et al., 2023). This leads to the following hypotheses:

Hypothesis H5: The feeling of ease of use has a positive impact on attitudes towards gamification.

Hypothesis H6: The feeling of ease of use has a positive impact on the feeling of usefulness for gamification.

In Planned Behavior Theory, attitudes are defined as "the degree to which a person has a favorable or unfavorable evaluation of the behavior in question, and this is a direct and strong determinant of behavioral intention" (Ajzen, 1991). Similarly, in the TAM model,

when users develop a positive evaluation of the system, they tend to develop an intention to use it in the future (Davis, 1989).

Results of experiments prove that attitude has a direct relation to intention for future use. For gamified e-commerce, the intention for future use is influenced by technological factors as well as the emotional experience, level of excitement, and engagement while interacting with the platform. According to Kusumawardani and Soegihono (2024), attitude is the strongest predictor of continued use in this environment.

Increasing consumer appeal and sympathy boost the commercial viability of the technology, while also fostering positive reviews and long-term use intent (Laradi et al., 2025). Similar results were obtained in the studies of Vanduhe et al. (2020) and Foroughi et al. (2023), which confirm the central role of attitude in the relationship between gamification factors and intention to continue use. Hence, the following hypothesis is formed:

Hypothesis H7: The attitude has a positive impact on the intention to continue using the gamification platform.

Attitude is perceived as a crucial mediating variable that connects social influence with purchase intention (Maziriri et al., 2024). A positive review is developed by the individual if validation is received from the social environment, which further strengthens the intention to purchase and use in the future (Purwianti et al., 2024).

In the context of gamification, rewards enhance the intention to continue using it by forming positive attitudes. The attractiveness of rewards will thus influence attitudes and levels of engagement in loyalty programs on e-commerce platforms (Sundjaja et al., 2022). Tangible rewards are seen as powerful motivators, both directly and indirectly impacting the intention to remain through user attitudes (Giggs et al., 2024).

Perceived usefulness is defined as the degree to which users believe the technology would enhance their performance and bring about the attainment of the desired outcomes (Purwianti et al., 2024). Positive attitudes are formed when technology makes things more efficient, saves time, or makes the experience better. Some other studies show that this factor has an indirect influence on the intention to continue using through attitude (Turan et al., 2022).

Ease of use has both direct and indirect impacts on intention through attitude. According to the TAM model, if users can easily operate the system, they are likely to have a more positive attitude, which subsequently increases the intention to use it (Davis, 1989). Other studies have also confirmed that perceived ease of use positively influences future intentions through attitudes and positive evaluations of the system (Venkatesh & Davis, 2000). In the context of continued use, Bhattacherjee (2001) shows that positive perceptions of the system help in strengthening attitudes and promoting intentional retention. Therefore, attitude is an intermediate variable that plays a role in transforming social influence, rewards, useful feelings, and ease of use into the intention to continue to use. Based on this, the following hypotheses are proposed in the study:

Hypothesis H8: Attitude plays an intermediate role in the relationship between social influence and the intention to continue to use.

Hypothesis H9: Attitude plays an intermediate role in the relationship between reward and intention to continue to use.

Hypothesis H10: Attitude plays an intermediate role in the relationship between perceived usefulness and intention to continue to use.

Hypothesis H11: Attitude plays an intermediate role in the relationship between perceived ease of use and intention to continue using it.

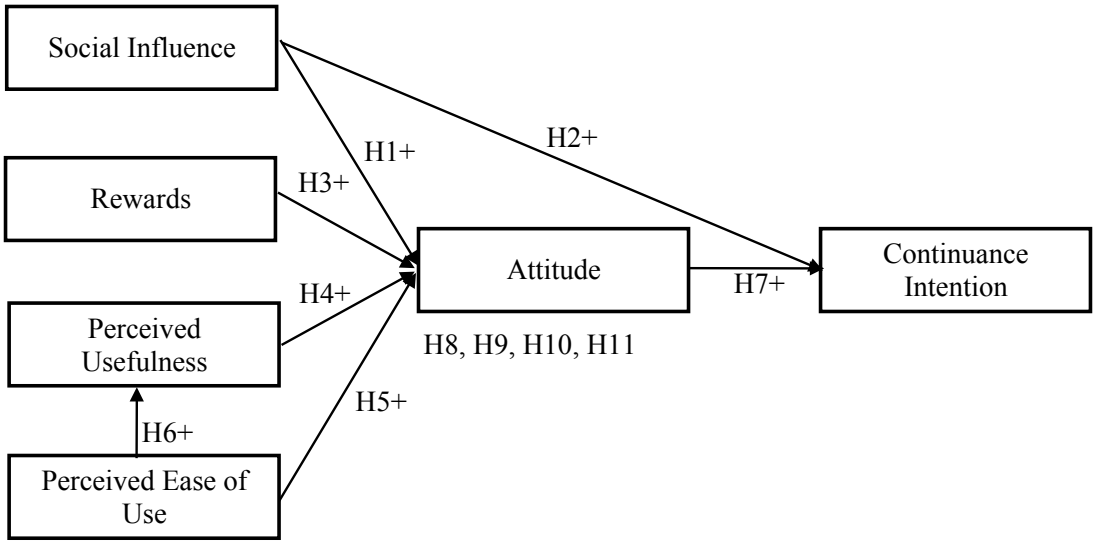

Figure 1. Proposed research model

3. Methodology

The research data were collected through an online questionnaire administered via Google Forms. The survey link was distributed through email, social media, and forums to enhance coverage and improve response rates. The sampling method was considered appropriate for the target population, namely consumers of Generation Z in Ho Chi Minh City using e-commerce platforms with gamification features, and it was also suitable for the time and resource constraints of the study. Respondents were defined as Generation Z consumers born between 1997 and 2012 and have experience using gamification features on e-commerce platforms. To ensure that respondents were suitable, screening questions were placed at the beginning of the questionnaire to check eligibility in terms of age and past experience with gamified e-commerce.

As suggested by Hair et al. (2019), a sample of 200 observations is sufficient for PLS-SEM to maintain the stability of estimates and the quality of the model. The data were collected during the months of October and November 2025. After removing incomplete responses, duplicate submissions, and inconsistent responses, 260 valid responses were kept for analysis.

The measurement scales applied in this study were those adopted from previous works, which were then adjusted to ensure their appropriateness in the Vietnamese context *(see Appendix 1 online)*. To ensure content validity and linguistic equivalence, the questionnaire was translated and backtranslated. A group of experts then examined and reworded the questionnaire for clarity and context. A pilot study was conducted prior to the main survey to test item comprehensibility, measurement appropriateness, and preliminary reliability. Comments from the pilot testing were used to modify the final questionnaire. The survey instrument had 30 observable variables; these were designed to measure the constructs included in the proposed research model.

Ethical considerations were also taken care of during the entire process of data collection. Informed consent was obtained from the participants only after they had been informed about the study and its objectives and after it had been made clear that participation was voluntary. Anonymity and confidentiality of respondent information were observed to ensure ethical compliance. Procedural remedies were also implemented to reduce the potential common method bias, such as assuring respondent anonymity, reducing evaluation apprehension, and improving questionnaire clarity. Statistical assessment procedures were also applied to test the potential influence of common method bias.

To determine whether common method bias exists, Harman's single-factor test was conducted by running Principal Component Analysis. The results in the table of Total Variance Explained show that the first factor accounts for 37.796% of the total variance, which is less than the threshold recommended by Podsakoff et al. (2003) of 50%. This implies that there is no single factor that can significantly explain most of the variance in the data, so common method bias is not likely to be a serious problem and should not affect the validity of the results substantially.

Partial least squares structural equation modelling with SmartPLS 4 software was used to analyse the data.

4. Results

4.1. Descriptive statistics

The research sample included 260 Generation Z consumers in Ho Chi Minh City, consisting of 51.54% female and 48.46% male respondents. It can be seen that the gender distribution is relatively equal between the two groups *(see Appendix 2 online).*

Ages 18 to 21 years made up the highest percentage, at 44.23%, followed by those 22 to 25 years at 30%. This distribution of age groups represents the behaviors of consumers from Generation Z, who are highly involved with online platforms and are one of the primary user groups for electronic commerce.

The educational profile of the sample revealed that 86.54% of the respondents had attained a College or University degree or higher. This implies that they could understand, analyze, and respond to the questionnaire coherently and informatively, as well as reflect the cognitive profile of the younger Generation Z consumers.

Occupationally, 71.15% of respondents were pupils or university students, which matches the demographic structure of Generation Z since most of them are still in formal education.

In terms of monthly income, 45% of participants earned below VND 4 million; 29.61% earned between VND 4 million and VND 8 million. This is what the income distribution of consumers in Generation Z looks like in general.

In general, the sample is deemed suitable for the analysis of relationships between gamification, attitude, and continuance intention within the context of young consumers in Ho Chi Minh City.

4.2. Measurement model assessment

In the first step of the measurement model assessment, we checked the reliability of the observed variables by looking at their outer loadings *(see Appendix 3 online)*. Most of the indicators obtained outer loading values above 0.7, which meet the recommended threshold for indicator reliability. Although CI4, PU2, and PEU5 exhibited outer loadings lower than 0.7 yet higher than 0.4, they were retained in the model on the grounds that their values remained within the acceptable range. This confirms that all the observed variables have met the minimum requirements for reliability

with a satisfactory level of acceptance (Hair et al., 2019).

Cronbach's Alpha coefficients of the constructs ranged from 0.769 to 0.919, which is above the recommended threshold of 0.7. All constructs also showed composite reliability values above 0.7. These findings confirm that the model achieved adequate internal consistency, reliability and convergent validity.

In the end, the AVE values of all constructs were above the minimum threshold of 0.5, further confirming that there was convergent validity in the measurement model (Hock & Ringle, 2010).

The study applied the Heterotrait Monotrait (HTMT) ratio of correlations index to assess discriminant validity among the constructs in the research model. As per the suggestion of Henseler et al. (2015), a threshold value less than 0.9 is considered acceptable. As shown in Appendix 4 *(see Appendix 4 online)*, all HTMT values for pairs of constructs are below the 0.9 threshold, so they meet the recommended criterion. This result also confirms that there is no serious conceptual overlap among the constructs in the model and that they do, indeed, demonstrate adequate discriminant validity.

4.3. Structural model results

Based on the results of the assessment of the measurement model, the study proceeded to evaluate the structural model to determine the overall model fit and to test the proposed hypotheses. Multicollinearity is considered a problem if the variance inflation factor goes above the rule of thumb, say 5. Results in Appendix 5 *(see Appendix 5 online)* show that VIF values of the constructs in the model vary from 1.00 to 1.827, which are all below 5. Thus, it can be inferred that the independent variables have a low level of linear correlation, there is no multicollinearity problem, and the model is suitable to go for further analysis regarding testing of structural relationships.

To assess the explanatory power and predictive relevance of the structural model, this study used the coefficient of determination R^2, adjusted R^2, and predictive relevance index Q^2 as recommended by Hair et al. (2019). With an adjusted R^2 of 0.715, Attitude demonstrated high explanatory power, as 71.5% of its variance was accounted for by the model. Continuance Intention had an adjusted R^2 of 0.409, and Perceived Usefulness had an adjusted R^2 of 0.345, both moderate levels of explanatory power; 40.9% of the variance in Continuance Intention and 34.5% of the variance in Perceived Usefulness are explained by the model.

Also, the Q^2 values for Attitude, Continuance Intention, and Perceived Usefulness are 0.536, 0.216, and 0.175, respectively. All these are greater than zero. This confirms that the structural model has adequate predictive relevance and thus supports the overall suitability of the proposed research model in the surveyed context.

Table 1. Results of hypothesis testing

Hypothesis		Original sample	T statistics	P values	Accept
H1	SI → ATT	0.294	6.864	0.000	Yes
H2	SI → CI	0.094	1.292	0.197	No
H3	RW → ATT	0.268	6.069	0.000	Yes
H4	PU → ATT	0.155	3.424	0.001	Yes
H5	PEU → ATT	0.358	7.970	0.000	Yes
H6	PEU → PU	0.590	12.676	0.000	Yes

Hypothesis		Original sample	T statistics	P values	Accept
H7	ATT → CI	0.578	9.188	0.000	Yes
H8	SI → ATT → CI	0.170	5.402	0.000	Yes
H9	RW → ATT → CI	0.155	5.880	0.000	Yes
H10	PU → ATT → CI	0.090	2.938	0.003	Yes
H11	PEU → ATT → CI	0.207	5.802	0.000	Yes

The structural model results show that most of the proposed hypotheses are supported, except for H2 (SI → CI), which is not statistically significant (β = 0.094; p = 0.197). Social Influence (SI), Rewards (RW), Perceived Usefulness (PU), and Perceived Ease of Use (PEU) have all positive and statistically significant effects on Attitude (ATT). Perceived Ease of Use has the most substantial effect (β = 0.358; p < 0.001) among these factors, followed by Social Influence and Rewards. Additionally, it strongly positively affects Perceived Usefulness (β = 0.590; p < 0.001), thus confirming its foundational role within the model. Attitude significantly influences Continuance Intention (β = 0.578; p < 0.001). Despite the direct effect of Social Influence on Continuance Intention being statistically nonsignificant, Social Influence nevertheless exerts an indirect effect on Continuance Intention through Attitude. In the same way, Rewards, Perceived Usefulness, and Perceived Ease of Use help shape Continuance Intention through their positive effects on Attitude, as seen in the significant mediation results (H8-H11). The results highlight the central mediating role of Attitude in facilitating the translation of user perceptions and external stimuli into continuance intention toward gamified e-commerce platforms.

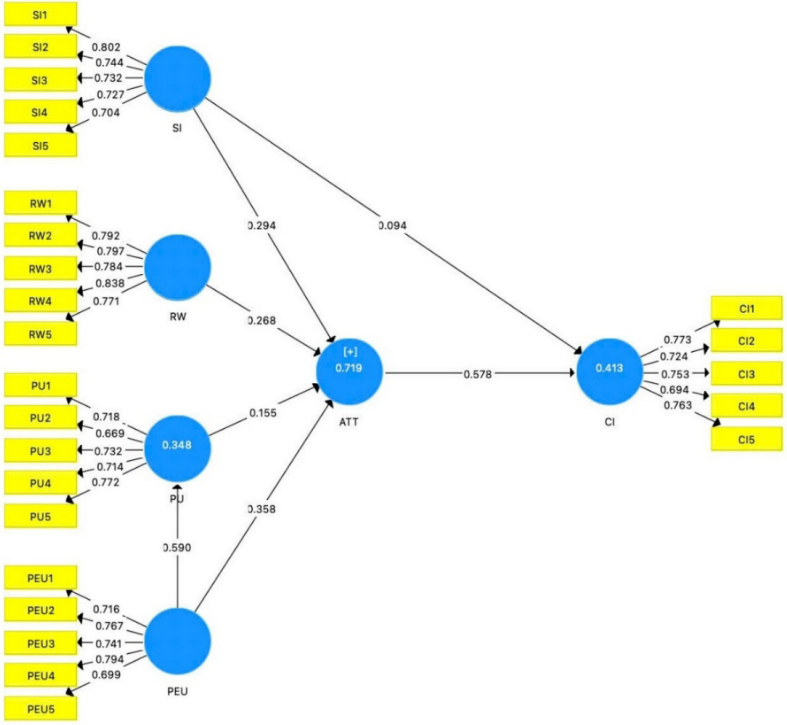

Figure 2. PLS-SEM estimation results of the research model

4.4. Discussion

The results would shed light on the influence of gamification-based factors on the continuance intention of Gen Z consumers toward e-commerce platforms in Ho Chi Minh City. The impacts of Social Influence (SI), Rewards (RW), Perceived Usefulness (PU), and Perceived Ease of Use (PEU) on Attitude (ATT) are all positive and significant, thus confirming the hypotheses. Vanduhe et al. (2020), Foroughi et al. (2023), Sari (2022), Giggs et al. (2024), and Khan and Ahmed (2025) all found similar results in their studies. Of the antecedents, Perceived Ease of Use appears to be the strongest influencer of Attitude ($\beta = 0.358$). This is followed by Social Influence ($\beta = 0.294$), Rewards ($\beta = 0.268$), and Perceived Usefulness ($\beta = 0.155$). This indicates that Generation Z consumers value the convenience, simplicity, and smooth interaction in using gamified features on an e-commerce platform. An easy-to-use site is almost as important as the fun and reward-based incentives in creating positive reviews for the platform.

Attitude is a significantly positive determinant of Continuance Intention ($\beta = 0.578$, $p < 0.001$). H7 is supported, and therefore, the centrality of attitude in explaining post-adoption behavior is established. This finding is in line with those of Sari (2022) and Purwianti et al. (2024), who found that positive attitudes toward technology-driven experiences significantly enhance user willingness to continue using digital platforms. What the mediation analysis further demonstrates is that Attitude is a substantial psychological factor through which the relationship between gamification elements and Continuance Intention is channeled. All other factors also had significant indirect effects, showing that they contribute to continuance intention by creating positive evaluations for the platform: Perceived Ease of Use ($\beta = 0.207$), Social Influence ($\beta = 0.170$), Rewards ($\beta = 0.155$), and Perceived Usefulness ($\beta = 0.090$).

The direct effect of Social Influence on Continuance Intention was not statistically significant ($\beta = 0.094$, $p = 0.197$). Its indirect effect through Attitude was significant. This means that, in and of itself, social influence may be insufficient to drive continued platform usage among Generation Z consumers. Rather, recommendations, peer interactions, and social cues will only influence continuance intention if and only if they foster favorable attitudes toward the platform. This finding is inconsistent with Tian et al. (2025) and Xie et al. (2021), who found a significant direct relationship between social influence and continuance intention. It also indicates that, in the context of gamified e-commerce, Attitude is the primary mechanism through which external social factors are translated into behavioral intentions, as per the basic tenets of TAM.

Perceived Ease of Use was also found to have a significant positive influence on Perceived Usefulness ($\beta = 0.590$, $p < 0.001$). This means that if users consider the platform to be intuitive and easy to handle, then they will most likely realize its functional value and benefits as well. This result is in line with Aparicio et al. (2021) and Kusumawardani and Soegihono (2024), who found that ease of use perception is closely related to usefulness perception in the context of technology adoption. The platform should, therefore, be made more usable, and the interaction with gamified elements made simple so that perceptions and actual long-term use can be increased simultaneously.

In general, the results help better comprehend the psychological mechanisms that underline continuance intention in gamified e-commerce environments. By incorporating TAM and selected components of UTAUT, this study demonstrates that it is mainly through the formation of attitudes that gamification-related factors influence continuance intention. The results also demonstrate the pathway through

which perceptions of technology and social influences can be transformed into continued engagement on a platform by fostering positive user attitudes among Generation Z consumers.

5. Conclusion and managerial implications

5.1. Conclusion

This research paper met its goal by proving how factors relating to gamification affect Gen Z consumers' intentions to continue using e-commerce platforms in Vietnam. The study proved that social influence, rewards, perceived usefulness, and perceived ease of use positively influence the attitude of users toward gamified e-commerce platforms. Attitude strongly and positively influences continuance intention and is therefore the primary mechanism through which these factors affect the user's continued engagement. Notably, social influence does not have a significant direct effect on continuance intention; its effect is felt indirectly through attitude, thus underscoring the central mediating role of attitude in the process of making a decision regarding continuance.

Of the factors examined, perceived ease of use registers the highest effect on attitude, thereby indicating that Generation Z consumers prioritize simplicity, convenience, and a seamless digital experience. Rewards, social influence, and perceived usefulness also help in building a positive attitude toward the platform. These findings suggest that continuance intention is shaped not only by the functional value of gamification features but also by the social experience of users and their overall evaluation of the platform.

Theoretically, this research offers empirical evidence on the mediation of attitude between factors of gamification and continuance intention. These results also prove the usefulness of combining TAM with certain parts of UTAUT in consumer behavior in gamified e-commerce environments. From a managerial perspective, what e-commerce companies must do is enhance platform usability, strengthen the functional value of gamification features, and develop meaningful reward mechanisms that foster positive user attitudes. Such efforts can improve customer retention, encourage long-term engagement, and support the sustainable growth of e-commerce platforms in Vietnam's digital economy.

5.2. Managerial implications

The results of this study have great organizational significance for e-commerce firms and other relevant stakeholders in the design and implementation of gamification mechanisms to facilitate user engagement and retention among Generation Z.

The results of the study show that, from a managerial point of view, attitude is a major mediating variable in the transformation of gamification factors into continuance intention. What this means is that it is not the superficial inclusion of gamification features that matters; rather, companies should focus on how users perceive and think about these tools. For individuals, scented ease of use was found to have the strongest impact on attitude; this would mean that gamification strategies should be simple, intuitive, and easy to control, avoiding complicated rules or vague compensation structures. When the optimization of user experiences does not interfere with the shopping process, the users are more likely to develop a positive attitude toward the medium.

Furthermore, rewards and social impact are also major factors in the formation of user attitudes. Rather than offering merely symbolic rewards, firms should design reward systems with tangible value, such as discount vouchers, redeemable points, or exclusive shopping privileges. In the same breath, the integration of

colonial features like leaderboards, achievement sharing, or interactive user meetings can leverage Generation Z's preference for colonial glory and community-oriented experiences; thus, this would help in maintaining user attachment to the forum. Additionally, perceived service suggests that gamification should align with shopping-related purposes, such as helping users keep costs down, access relevant product information, or improve decision-making efficiency rather than mere short-term entertainment value.

From a regulatory perspective, the findings imply that the regulators should enforce transparency and competition and keep a close watch on gamification-based trade practices to reduce the risk of misleading young consumers. To control ambiguous promotional practices and the spread of deceptive information, it is necessary to strengthen the regulation of online promotional activities, such as mini-games, lucky draws, or point-accumulation tools. Simultaneously, robust personal data and digital income security laws are pivotal in building customer trust in the e-commerce ecosystem.

For Generation Z clients, involvement in gamified activities should be selective and more mindful. Practical value should be attached to the rewards, and there should not be overindulgence in the gaming aspects that might trigger unnecessary expenditure. In addition, data access permissions should be taken seriously by clients when taking part in mini-games or bonus programs in order to reduce the risk to privacy and data security. Direct feedback on user incidents could also help in making platforms more transparent and sustainable in improving gamification design.

Practically, many e-commerce websites in Vietnam apply gamification effectively, which improves user engagement. For instance, Shopee applies the "Shopee Coins" system, daily missions, and reward-based contests to keep users active on the app. TikTok Shop has integrated reward activities related to video watching, participating in livestreams, and other shopping-related tasks to keep users interacting with the medium. The above tools prove that gamification is not only an entertainment tool but also an effective strategy for retaining users in highly competitive e-commerce.

In addition to their advantages, the performance of gamification standards should be considered in terms of feasibility and cost-effectiveness. For large e-commerce platforms, more advanced gamification techniques, such as personalized tasks, emotional reward systems, or artificial brain integration, can be technically and financially feasible since they have stronger technological and financial resources. But for small and medium-sized businesses, the implementation of such mechanisms can be constrained by development costs, requirements for maintaining systems, and governance capabilities over user data. Thus, firms have to choose very attentively the level and complexity of gamification implementation that can be supported by their available resources and is in line with strategic goals to ensure long-term effectiveness and sustainability.

The results show that gamification factors have a positive impact on attitudes and continuance intention; therefore, the implementation of such factors should be taken seriously. For example, if not properly designed, systems for collecting rewards, daily tasks, and continuous motivation may either lead to over-participation by the user or gradually decrease user awareness. Additionally, the collection and use of behavioral data for personalizing gamification may raise issues relating to privacy and data protection. Thus, e-commerce media should be very careful to keep a balance between increasing user attention and maintaining a positive user experience and consumer trust.

5.3. Limitations and directions for future research

The study has enhanced academic and practical insights but has some limitations to note. First, since the sample was Gen Z in Ho Chi Minh City and conveniently obtained, this study might be too limited in generalizability and predictability for Gen Zs throughout Vietnam. Their behavior might differ due to economic, social, and consumers' circumstances across countries or regions. Also, studying one generation group creates challenges when comparing across generations of consumers.

Convenience sampling carries the risk of sample selection bias, which would consequently lower the generalizability of the results of the study. Second, this is a cross-sectional survey design, and data were collected through self-reports at one point in time. It could be applicable to situations in which time and resources are limited, but no definitive relationship that influences causality between the variables can be ascertained.

Most of the survey data were self-reported, so there could be some biased reporting by the respondents. Given that this study design relies heavily on respondents' cognitive processes and subjective interpretations, their answers may have been influenced either by an intention to conform to what society considers appropriate or by memory-related limitations that prevent them from providing fully adequate responses. In the end, though, the research model is framed around the major effects of gamification elements on attitude and intention to continue use. It's also built on the core tenets of TAM and UTAUT.

Fit for the purpose of research, the research model is somewhat incomplete at this stage. The psychological processes that create engagement, fun, and entertainment, as well as the feeling of flow with intrinsic motivation, were not being tested. Also, some other missing intermediate and regulatory variables that should affect the relationship in the proposed model are thus less explained by the influences of other elements on the factors influencing users' intention to continue.

To enhance the generalizability of the research results, further studies are recommended to enlarge the scope of the survey to other provinces and cities in Vietnam and make comparisons between Gen Z and other generations (Gen Y or Gen X). This will help to more clearly explain the differences and stability of the relationships within the model. Moreover, probability sampling techniques such as stratified sampling or simple random sampling should be applied to increase representativeness and decrease sample selection bias. By applying a longitudinal study design, subsequent research would be able to track changes in attitudes and continued usage intention over time, thereby providing stronger evidence regarding the relationships among variables. Besides, empirical research can be used to more effectively control influencing factors and directly evaluate the influence of each gamification factor. Further research can extend the model by including additional mediating variables, for example, engagement or platform loyalty, perceived value, or intrinsic motivation, to clarify further the mechanism through which gamification impacts users' intentions. Differences in relationships of the research among different user groups can be assessed by considering variables such as gender, education level, frequency of use, or online shopping experience as moderators. The role of these factors can be further explored with the inclusion of psychological theories such as Flow Theory and Self-Determination Theory to enhance the model's explanatory power regarding continued usage intention in the context of e-commerce with gamification applications.

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Data Availability

Data will be made available on request.

AI Usage Statement

During the preparation of this work, the first author used ChatGPT to improve readability and language. After using this tool, the authors reviewed and edited the content as needed and took full responsibility for the publication's content.

References

Aparicio, M., Costa, C. J., & Moises, R. (2021). Gamification and reputation: Key determinants of e-commerce usage and repurchase intention. *Heliyon*, *7*(3), 1-14. https://doi.org/10.1016/j.heliyon.2021.e06383

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179-211. https://doi.org/10.1016/0749-5978(91)90020-T

Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model1. *MIS quarterly*, *25*(3), 351-370. https://doi.org/10.2307/3250921

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, *13*(3), 319-340. https://doi.org/10.2307/249008

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining "gamification". *In Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments* (pp. 9-15). https://doi.org/10.1145/2181037.2181040

Foroughi, B., Iranmanesh, M., Kuppusamy, M., Ganesan, Y., Ghobakhloo, M., & Senali, M. G. (2023). Determinants of continuance intention to use gamification applications for task management: An extension of technology continuance theory. *The Electronic Library*, *41*(2-3), 286-307. https://doi.org/10.1108/EL-05-2022-0108

Giggs, D. R., Hidayat, D., & Ferdianto (2024). Gamification impact on fintech: Reward mechanisms and mission engagement in continuance intention to use e-wallet. In *Proceedings of the 2024 International Conference on ICT for Smart Society (ICISS)* (pp. 1-6). IEEE. https://doi.org/10.1109/ICISS62896.2024.10751317

Hock, M., & Ringle, C. M. (2010). Local strategic networks in the software industry: An empirical analysis of the value continuum. *International Journal of Knowledge Management Studies*, *4*(2), 132-151. https://doi.org/10.1504/IJKMS.2010.030789

Truong, H. T., & Luong, N. T. (2024). The impact of gamification factors on the continuous usage intention of Momo e-wallet users in Hanoi. *VNU University of Economics and Business*, *4*(6), 115-124. https://doi.org/10.57110/vnu-jeb.v4i6.349

Hamari, J., Koivisto, J., & Sarsa, H. (2014). Does gamification work?--A literature review of empirical studies on gamification. In *Proceedings of the 2014 47th Hawaii International Conference on System Sciences* (pp. 3025-3034). IEEE. https://doi.org/10.1109/HICSS.2014.377

Hamari, J., & Koivisto, J. (2015). "Working out for likes": An empirical study on social influence in exercise gamification. *Computers in Human Behavior*, *50*, 333-347. https://doi.org/10.1016/j.chb.2015.04.018

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115-135. https://doi.org/10.1007/s11747-014-0403-8

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2-24. https://doi.org/10.1108/EBR-11-2018-0203

Kusumawardani, K. A., & Soegihono, L. F. (2024). Does gamification on an e-commerce application lead intention to use the application and spread word of mouth?. *International Journal of Business and Systems Research*, *18*(1), 65-84. https://doi.org/10.1504/IJBSR.2024.135779

Khan, M., & Ahmad, M. A. (2025). Examining the impact of gamification elements on online purchase intention in e-commerce industry of Pakistan. *International Journal of Management Research and Emerging Sciences*, *15*(4), 01-18. https://doi.org/10.56536/ijmres.v15i4.781

Laradi, S., Elfekair, A., Rehman, H. M., Hanna, D., & Alrawad, M. (2025). Continuance intention of m-banking adoption: The dynamics of UTAUT3, trust and attitudes. *FIIB Business Review*, 1-23. https://doi.org/10.1177/23197145251358049

Maziriri, E. T., Nyagadza, B., Chuchu, T., & Mazuruse, G. (2024). Antecedents of attitudes towards the use of environmentally friendly household appliance products in Zimbabwe: An extension of the theory of planned behaviour. *PSU Research Review: An International Journal*, *8*(3), 749-773. https://doi.org/10.1108/PRR-03-2022-0033

Mordor Intelligence (2026). *E-commerce market size & share analysis – Growth trends and forecast (2026-2031)*, https://www.mordorintelligence.com/industry-reports/global-ecommerce-market

Putri, M. F., Juita, R., Nidayanto, A. N., & Inan, D. I. (2022). Gamification on mobile payment application: Uses and gratification perspective. *Asia Pacific Journal of Information Systems*, *32*(4), 750-769. https://doi.org/10.14329/apjis.2022.32.4.750

Purwianti, L., Nurjanah, L., Katherine, K., & Chen, R. (2024). The impact of TAM, social influence, and information quality on purchase intention in e-commerce. *Jurnal Organisasi dan Manajemen*, *20*(2), 187-206. https://doi.org/10.33830/jom.v24i2.9123.2024

Pham Hung Cuong, Le Son Dai, & Le Minh Thanh (2024). Tác động của trò chơi hóa đến ý định mua hàng của người dùng trên ứng dụng thương mại điện tử Shopee [The impact of gamification on users purchase intention on the Shopee e commerce application]. *Tạp chí Khoa học Thương mại, 185/2024*, 89–104. https://doi.org/10.54404/JTS.2024.185V.07

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Rodrigues, L. F., Oliveira, A., & Costa, C. J. (2016). Does ease-of-use contributes to the perception of enjoyment? A case of gamification in e-banking. *Computers in Human Behavior*, *61*, 114-126. https://doi.org/10.1016/j.chb.2016.03.015

Rahmadhan, M. A. W. P. ., Sensuse, D. I. ., Suryono, R. R., & Kautsarina, K. (2023). Trends and applications of gamification in e-commerce: A systematic literature review. *Journal of Information Systems Engineering & Business Intelligence*, *9*(1), 28-37. http://dx.doi.org/10.20473/jisebi.9.1.28-37

Roslan, R., Ayub, A. F. M., Ghazali, N. B., Zulkifli, N. N., Latip, S. N. H. B. M., & Hanifah, S. S. A. (2023). Investigating factors that affect the continuance use intention among the higher education institutions' learners towards a gamified m-learning application. *Journal of Information Technology Education: Research*, *22*, 097-128. https://doi.org/10.28945/5080

Roh, T., Park, B. I., & Xiao, S. S. (2023). Adoption of AI-enabled robo-advisors in fintech: Simultaneous employment of UTAUT and the theory of reasoned action. *Journal of Electronic Commerce Research*, *24*(1), 29-47.

Rahmawati, A. F. D., Sudaryanto, & Paramu, H. (2025). Repurchase intention of Gen Z on Shopee marketplace: A technology acceptance model approach. *WIGA: Jurnal Penelitian Ilmu Ekonomi*, *15*(2), 114-126. https://doi.org/10.30741/wiga.v15i2.1564

Sari, N. N. (2022). The use of technology acceptance model to explain brand attitude and loyalty intention in e-commerce: The gamification case. *ASEAN Marketing Journal*, *14*(1). https://doi.org/10.21002/amj.v14i1.1151

Sundjaja, A. M., Savina, G., Yuli, & Hardianto, T. (2022). The moderating effect of gamification on loyalty program usage in Indonesian e-commerce. *Binus Business Review*, *13*(1), 19-29. https://doi.org/10.21512/bbr.v13i1.6801

Tobon, S., Ruiz-Alba, J. L., & García-Madariaga, J. (2020). Gamification and online consumer decisions: Is the game over? *Decision Support Systems*, *128*. https://doi.org/10.1016/j.dss.2019.113167

Turan, Z., Küçük, S., & Karabey, S. (2022). Investigating pre-service teachers' behavioral intentions to use web 2.0 gamification tools. *Participatory Educational Research*, *9*(4), 172-189. https://doi.org/10.17275/per.22.85.9.4

Tian, Y., Li, Z., Liu, D., & Son, S. (2025). Research on the influencing factors of users' continuance intentions of wearable medical devices-a perspective integrating the UTAUT model and gamification elements. *Frontiers in Public Health*, *13*. https://doi.org/10.3389/fpubh.2025.1602230

Tam, T. V., Tien, N. H., & Banka, M. (2024). Identifying gamification factors for digital banking service users in Vietnam: Extending TAM model with gamification and perceived value. *Cogent Business & Management, 11*(1). https://doi.org/10.1080/23311975.2024.2398730

Nguyen Viet Bang, Nguyen Viet Bac, Nguyen Thi Phuong Thao, & Nguyen Van Anh (2024). Trò chơi hóa trong học tập: Nâng cao sự tương tác, sự hài lòng và cải thiện hiệu quả học tập của người học [Gamification in learning: Enhancing interaction, satisfaction, and improving learners academic performance]. *Tạp chí Kinh Tế và Phát triển, 321*(2), 130–139. https://doi.org/10.33301/JED.VI.1692

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, *27*(3), 425-478. https://doi.org/10.2307/30036540

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, *46*(2), 186-204. https://doi.org/10.1287/mnsc.46.2.186.11926

Vanduhe, V. Z., Nat, M., & Hasan, H. F. (2020). Continuance intentions to use gamification for training in higher education: Integrating the technology acceptance model (TAM), social motivation, and task technology fit (TTF). *IEEE Access*, *8*, 21473-21484. https://doi.org/10.1109/ACCESS.2020.2966179

Xie, J., Ye, L., Huang, W., & Ye, M. (2021). Understanding fintech platform adoption: Impacts of perceived value and perceived risk. *Journal of Theoretical and Applied Electronic Commerce Research*, *16*(5), 1893-1911. https://doi.org/10.3390/jtaer16050106

Yu, N., & Huang, Y.-T. (2022). Why do people play games on mobile commerce platforms? An empirical study on the influence of gamification on purchase intention. *Computers in Human Behavior*, *126*. https://doi.org/10.1016/j.chb.2021.106991