Check for updates

Consumer experience and perception in gamification marketing: evidence from the user survey of POPMART

Jinyu Zhang[1], Yuyun Zou[1], Song Wang[2] and Yong Xiang[1,3]*

[1]School of Art, Peking University, Beijing, China, [2]Renmin Business School, Renmin University of China, Beijing, China, [3]Institute for Cultural Industries, Peking University, Beijing, China

Background: Brand loyalty is crucial for brand marketing effectiveness. Typically, companies may struggle with user feedback and advertising impact, making it challenging to establish consumer habits and receive positive feedback. Gamification marketing engages consumers actively in brand advertising as players. However, the underlying mechanisms of gamification and its impact on advertising effectiveness remain unclear, especially in new consumer domains lacking targeted experiences.

Methods: By introducing the USE model that incorporates utilitarian, social, and experiential purposes, we critically elevate the marketing domain's game evaluation model. Using a survey component of a new online applet, we survey consumers to examine their perceptions and experiences with gamified marketing, exploring data models related to consumer usage motivations and influence levels. The impact of user habits, membership, recommendations, and usage intentions on brand loyalty is analyzed.

Results: Our empirical results demonstrate that gamification marketing can effectively increase consumers' brand loyalty by satisfying utilitarian, social, and experiential purposes, with utilitarian motives showing the strongest significance.

Discussion: This study contributes to enhancing the consumer perception in gamified marketing design, enabling targeted improvements in the experiential effects of gamified marketing for businesses.

KEYWORDS

gamification marketing, brand loyalty, POPMART, consumer experience, USE model

1 Introduction

The utilization of games beyond traditional gaming contexts, such as in education, health, culture, tourism, and e-commerce, has sparked a surge in interest toward gamification marketing across advertising, education, and economic disciplines. Noteworthy studies by Özkul et al. (2020), Hidayat et al. (2020), and Kovshova and Yarovaya (2021) have explored the diverse applications of digital gamification, emphasizing its potential in tourism, social issues, health, and educational realms. The effectiveness of gamified marketing strategies in enhancing sales, as evidenced by Bauer et al. (2020), has firmly established gamification as a powerful marketing tool. Admittedly, prior research predominantly focuses on traditional marketing and mass service industries, recent studies by Wei et al. (2023), Ribeiro et al. (2024), Gkintoni et al. (2024), and Arya et al. (2024) have highlighted the positive effects of gamification in diverse sectors like travel experience, human resources, adolescent physical and mental health, Metaverse and virtual spaces. Computer and video games have evolved

to include advanced graphics, realistic physics, complex narratives, and multiplayer capabilities across various genres (Gil et al., 2023). In the Metaverse and computer games context, blockchain technology addresses challenges related to digital asset ownership, digital scarcity, provenance, and secure transactions. It enables the creation and management of virtual assets, such as virtual real estate and collectibles, which can be securely traded or transferred between users. Additionally, Decentralized Finance protocols offer new avenues for earning and spending cryptocurrencies within the game ecosystems, which revolutionize the virtual economy and enhance user experiences (Zhang et al., 2023). Given the burgeoning interest in experiential value among consumers in the evolving consumption landscape (Yalcin et al., 2009), the new consumption industry serves as a pertinent research domain. This shift has led to integrating immersive elements like visualization, motivation, and rewards into marketing strategies by various brands. Notable examples include Taobao's Taogold game and Pinduoduo's DuoDuo Orchard, showcasing the effectiveness of gamification in e-commerce.

Drawing insights from seminal works in the field, such as Adams et al. (1992), which delve into perceived usefulness, ease of use, and technology adoption, our study aims to further explore the interplay between consumer behavior and brand loyalty within the evolving landscape of new consumer industries. Additionally, referencing Childers et al. (2001) provides a foundational understanding of the motivations behind retail shopping, merging utilitarian and hedonic dimensions in the context of e-commerce. Furthermore, insights from Hamari et al. (2014) on gamification shed light on the effects and contexts of gamification, emphasizing the importance of motivational affordances and the varied outcomes of gamified systems. Wolf et al. (2020)'s conceptual model elucidates the dynamic interplay between motivational user experiences—namely, self-development, social connectedness, expressive freedom, and social comparison—and their impact on firm-beneficial user behaviors, such as customer commitment, willingness to pay, and customer referrals, which provides a reference for how game experience design can impact a digital service's profitability.

Inspired by the technology acceptance model (TAM) and cognitive evaluation theory (CET), our study seeks to elucidate how gamification elements influence consumer purchase intentions and enhance the overall gaming experience. This study delves into how gamification marketing fulfills consumers' utilitarian, social, and experiential needs. By addressing critical research gaps related to consumer perception, satisfaction dimensions, industry-specific contexts, and brand loyalty, our study aims to provide insights into the impact of consumer behavior on brand loyalty within the evolving landscape of new consumption industries. By examining consumer feedback on e-commerce gamification marketing, we aim to expand the horizons of gamification research and assess its accurate impact on consumer behavior and brand perception besides positive correlation, using a real e-commerce case for survey study.

2 Literature review

2.1 Games and gamification

The definition and concept of the term "game" have sparked ongoing debates. Some view "game" as a system and prefer this term,

while others highlight its experiential aspect and prefer "gamification." When treating games as systems, players value games, attach importance to results, and attempt to achieve specific goals. Juul (2003) defines a game as a system in which players follow rules, accept quantifiable outcomes, and experience artificial conflict. However, as the industry evolved, scholars creatively linked game research with service marketing literature to propose a new definition of gamification, emphasizing the experiential nature of games and gamification instead of a systemic understanding of games and providing goals for designing gamification systems. For instance, some scholars traced the origin of the term gamification and studied its evolution (Huotari and Hamari, 2012). Gamification is considered an umbrella term for the use of video game elements rather than mature games to improve non-game services (Deterding et al., 2011b). Most gamification projects do not monitor and analyze their data and evaluate how well the gamification analytics field meets user needs (Heilbrunn et al., 2014). The use of gamification technology has been studied in different fields. The concept of gamification has been introduced into the field of management by some scholars, who attribute its lack of impact to the proliferation of "fake" gamification in the market and the fact that practitioners pay little or no attention to the psychological processes through which gamification influences human behavior (Landers, 2019).

In 2020, the term "Metaverse" attracted considerable attention in the market. Metaverse is a compound term that combines the Internet, augmented reality and virtual world (Jeon, 2021), enabling users to have a mental state of "being there" in the virtual world (Wedel et al., 2020) With the vigorous development of AI technology, an increasing number of metaverse platforms have begun to provide gamification services, which has created links between brands and consumers (Arya et al., 2024). The Metaverse is redefining gaming by leveraging advanced animation and virtual reality to create immersive experiences, enhanced through diverse media and devices like VR headsets. This evolution hinges on technological advancements and prioritizes seamless, user-friendly experiences and multiverse exploration for gamers (Cruz and Oliveira, 2024). Others have integrated the decentralized concept of gamification in different fields and highlighted its relevance to services research (Ciuchita et al., 2023). This study expands the scope of gamification within a marketing context, positioning it as a tool to enhance marketing potential and boost sales by analyzing user perceptions and feedback. It investigates how a mobile gamification app, featuring community, character self-growth, and order functions, meets user needs. The study focuses on gamification as marketing strategies that leverage gamification experiences to satisfy customer motivations, enhance brand loyalty, and ultimately help firms increase profitability.

2.2 Gamification marketing

While prior studies have applied various models to analyze gamification marketing, the models have limitations from different perspectives. Koivisto and Hamari (2019) argue that gamification is an information technology phenomenon in particular because it is centered on the use of information systems and their design. In the field of information systems, technology acceptance theory studies the use of technology-based systems. The technology acceptance model (TAM) is a robust model for predicting user acceptance. Yang et al. (2017) consider gamification to be a technology-based system

and extend the TAM from the field of marketing. They propose a new model based on the TAM framework that examines the impact of gamification on customers' intentions to participate in the gamification process and attitudes toward brands. Fei and Liat (2013) used the conceptual framework of the technology acceptance model to investigate the determinants of Malaysian consumers' continued willingness to purchase online. However, TAM is too broad to properly analyze user intention and neglects the active role of consumer perception in gamification marketing. Users play games not to be addicted to the game itself but to enjoy the experience that the game creates, such as adventure and mental challenge (Lazzaro, 2004). Another case in point is that Werbach et al. (2012) classify game elements into three dimensions, namely dynamics, mechanics, and components, which is known as the "DMC Pyramid Classification." "Dynamics" refers to the elements of a game, such as narrative, relationships, and other relevant elements that facilitate the player's gameplay. By contrast, "mechanics" refers to the gameplay methods that are set up for player-player cooperation and competition. "Components" are elements that include game design, such as leaderboards, badges, and props maps. However, DMC is limited to the strict components and mechanics of serious games and fails to suit the changing format of gamification in marketing practice.

In recent years, the rapid advancement of artificial intelligence technology has led to a heightened focus on enhancing user experiences across various fields. Aw et al. (2022) introduced a new model centered around the Unified Theory of Acceptance and Use of Technology framework to explore how digital voice assistants can improve customer experiences. Developed by Venkatesh et al. (2003), UTAUT integrates elements from the Technology Acceptance Model (TAM) and other models to provide a comprehensive understanding of technology adoption. It encompasses four key dimensions: performance expectancy, effort expectancy, social influence, and facilitating conditions. Kumar et al. (2023) applied this framework to study consumer behavioral intent toward the industrial metaverse, highlighting its relevance in understanding user engagement with emerging technologies. Similarly, the Theory of Planned Behavior (TPB) by Ajzen (1991) offers valuable insights into user behavioral motivation. TPB posits that behavior is influenced by attitudes, subjective norms, and perceived behavioral control. Ivanov et al. (2024) utilized TPB to investigate the drivers of generative AI in higher education, demonstrating its applicability in diverse contexts.

The need for competitive differentiation in today's market, coupled with the technological boom, has significantly contributed to the increasing success of gamification. As businesses strive to stand out and capture consumer attention, gamification offers a unique approach to engaging users by leveraging the immersive and interactive elements of games. This strategy enhances user experience and fosters deeper connections between brands and consumers, driving long-term loyalty and sustained consumption behaviors. The integration of advanced technologies like AI further amplifies the effectiveness of gamification, making it a powerful tool for achieving competitive differentiation in a rapidly evolving digital landscape.

To develop a suitable model, our conceptualization of the USE model is inspired by the technology acceptance model (TAM) and cognitive evaluation theory (CET). According to cognitive evaluation theory, the influence of gamification elements on consumers' purchase intention confirmed that the concentration and autonomy brought by gamification would positively improve the game experience and affect

consumers' online purchase intention (Xu et al., 2020). Simultaneously, scholars have started to study gamification marketing from different angles, especially the relationship between gamification marketing and consumer attitude. Yalcin et al. (2009) introduced two dimensions of shopping experience and utilitarian products when studying the relationship between consumers and brand attitudes. Yang et al. (2017) put social influences and entertainment factors into a conceptual model related to brand attitudes. Based on previous research, this study focuses on how gamification marketing satisfies consumers' utilitarian, social, and experiential purposes and investigates the success of the POPMART mini app's gamification marketing approach.

2.3 Players and consumers

As more industries adopt games and gamification for e-commerce purposes, the distinction between player and consumer identities is becoming increasingly blurred. Johannes et al. (2020) examined successful cases of gamified marketing used by major companies to boost sales, suggesting that gamification can enhance marketing effectiveness. The impact of this gamified marketing, along with brand and individual characteristics, is evident in consumers' psychological reactions, particularly in cognitive aspects like brand recall and recognition, emotional responses such as brand attitude, and behavioral intentions including purchase likelihood and word-of-mouth intent (Terlutter and Capella, 2013). Huotari and Hamari (2017) integrated gamification with service marketing theory, which views consumers as co-producers of services. They developed the Affordances-Psychological Outcomes-Behavioural Outcomes framework (Hamari et al., 2014; Huotari and Hamari, 2017) to link consumer behavior with player experiences, exploring how psychological experiences stimulated by games influence behavioral outcomes. Hsu and Chen (2018) investigated the relationship between various motivations and users' intentions and attitudes toward the continuous use of gamification, predicting the impact of consumer participation in games on subsequent consumption behaviors. Ghosh et al. (2021) supported the applicability of the Limited Capacity Model in unique gameplay contexts and contributed to the understanding of product placement and branded entertainment by examining the long-term effects of games on brand memory, brand attitude, and purchase intention. Their study also compared the effects of ad exposure on immediate versus delayed cognitive, emotional, and behavioral responses.

While some research has focused on the design of gamification elements and their impact (Xu et al., 2020), there has been less emphasis on consumers' perceptions as players, leaving a research gap in understanding consumer perception. Islam et al. (2024) addressed this by focusing on consumer-perceived value and studying the impact of product quality, price fairness, and brand reputation on brand loyalty for electronic home appliance brands. Sun et al. (2022) explored the incentive mechanisms of gamified applications for sustainable consumption in the Chinese context, finding that trust mechanisms and social scenarios in gamified applications can enhance users' motivation for sustainable consumption. Given the unique focus of this study, the gamification marketing approach allows players' and consumers' identities to shift under certain circumstances, fostering game-using habits and promoting subsequent consumption.

2.4 Brand loyalty

Brand loyalty is an outcome of brand engagement. Brand engagement is consumers' cognitive, emotional, and behavioral investment in a brand and an adjuvant to forming a beneficial relationship for value co-creation among consumers, enterprises, and audiences. This relationship improves consumers' brand satisfaction, loyalty, participation in the brand community, and promotion. Koivisto and Hamari (2014) conducted an online survey of gamifying exercise service products and investigated the effects of gender, age, and time spent using the service on social, hedonic, and utilitarian benefits, as well as the promoting characteristics of gamifying exercise. The study, however, neglects the important influence of consumer brand loyalty in the gamification marketing process. At present, many scholars have studied the factors that influence brand loyalty. For example, Lucassen and Jansen (2014) studied the effects of gamified marketing applications on brand engagement and loyalty, and their research found that access restrictions, virtual rewards, and identity badges are the main factors affecting brand loyalty. Sheppard et al. (1988) found strong support for using brand attitudes to predict consumer intentions. Based on Hsu's (2023) study confirming that gamification is positively correlated with brand love, Tsou and Putra (2023) further explored the relationship between gamification elements, customer engagement, immersion, and brand love. They found that customer engagement has a positive impact on brand love. Bae and Kim (2023) focused on Korean smartphone users by studying the relationship between Apple iPhone and Samsung Galaxy mobile phones, and found that brand experience directly affects brand loyalty, and brand love plays an intermediary role between brand experience and brand loyalty. However, these studies did not carry out further analysis of brand loyalty or clarify its specific performance. This study links brand loyalty with consumer behavior and explores the situation of brand loyalty through the specific interaction between consumers and brands.

The literature review has revealed four crucial research gaps. First, the definition of gamification in the marketing context does not extend to consumer perception. Secondly, as far as we know, there are no studies that have broken down the purpose of consumer perception into the three dimensions of satisfaction: utilitarian, social, and experience. Third, we have identified a context-specific gap in gamification marketing research. Prior research was mostly based on the traditional marketing service industry and did not acknowledge consumer characteristics in the new consumption industry. Fourth, there exists no specific embodiment of brand loyalty in the marketing context. To address these gaps, we seek to discover consumer behavior's impact on brand loyalty in the utilitarian, social, and experiential dimensions of purpose satisfaction in new consumer industries.

We gain insight into the relationship between consumer behavior perception and brand loyalty through the use of online box dispenser habits by consumers of the new consumer industry brand POPMART. From the perspective of consumer perception, our study explores how gamified marketing affects consumers' brand loyalty to purchase and use experience. Based on the research of social psychology on cognitive evaluation theory (Xu et al., 2020) and information system on technology acceptance theory (Yang et al., 2017), the questionnaire survey aims to clarify how gamified

marketing affects the relationship between usage motivation and brand loyalty, and how consumers participate in and experience brand marketing. It is expected that gamified marketing can satisfy consumers' utilitarian, social, and experience-based purposes (Childers et al., 2001; Yalcin et al., 2009; Yang et al., 2017) and will improve consumers' brand loyalty. Lee et al. (2022) pointed out the connection between membership and brand loyalty. Brand membership influences the relationship between channels, prices, and various aspects of brand loyalty, including trust, affect, purchase loyalty, and attitudinal loyalty. Gera (2021) pointed out the connection between recommendation and brand loyalty. Chen and Wang (2016) found the connection between aircraft check-in system and brand loyalty, and Tang et al. (2022) revealed the connection between check-in and brand loyalty. Srivastava and Kaul (2016) revealed the connection between consumption amount and brand loyalty.

3 Research purpose and object

3.1 Research objectives and questions

Our study uses the POPMART mini app, developed and launched by the trendy game brand POPMART, a company listed on the Hong Kong Stock Exchange (listing code: 09992), as a case study and, using a questionnaire, analyzes the impact of gamified marketing on consumer perception and experience. It further explores the relationship between consumers and brands under this new type of marketing. From the three dimensions of utilitarian, social, and experiential purposes, this study explores consumers' motivations for using gamified marketing and game applets and the impact of the game design factors surrounding these three functions on consumer brand loyalty. By grasping the characteristics of consumers in the new consumption industry and starting from the intrinsic motivation of consumers, this study explores how gamification marketing satisfies the purpose of consumers.

3.2 Research cases and objects

The core of the POPMART mini app is entertaining retail and engaging digital shopping experience. The technology research and development team of POPMART built a platform on the WeChat mini program, and around 19.4% of the program users in China were 31–35 years old and 47.4% were younger (Statista, 2022). This mini program has a variety of functions such as a box drawing machine, player show, and guardian elf. It is an integrated platform for online shopping, social interaction, and digital entertainment with various scenes, IP setting and game effects. WeChat Mini Program, Tmall flagship shop, and Douyin, were the main contributors to the revenue mix in the first half of 2024 of online channels (Daxue Consulting, 2024). For the 6 months ended June 30, 2024, the revenue from online sales showed significant growth compared to the same period in 2023. In the Mainland China operations, the revenue from online sales increased from RMB 817,418,000 in 2023 to RMB 1,095,669,000 in 2024. This represents a growth of approximately 34%. In the Hong Kong, Macao, Taiwan,

and overseas operations, the revenue from online sales increased from RMB 56,791,000 in 2023 to RMB 247,244,000 in 2024, which represents a substantial growth of approximately 335% (Pop Mart International Group Limited, 2024). Overall, the total online sales revenue for both regions combined increased significantly, indicating a strong upward trend in the company's online sales performance.

The "Box Pumping" function is an online box pumping game built by the small program of the POPMART mini app. Consumers can get product tips by shaking their mobile phones. The number of shaking of each blind box is limited. In addition to the handshake box, consumers can also obtain lucky values and function cards through the small program's built-in tasks that help consumers better use the "box" function. As the game of drawing boxes ultimately leads to consumption, in this questionnaire, we explore the impact of utilitarian purposes on consumers in gamified marketing through understanding the function of "drawing boxes." We ask questions about the main reasons why consumers use the function of pumping boxes to understand consumers' motivations for participating in promotional activities and obtaining product information under the utilitarian purpose.

"Players Show" is a user community ecological game built by the mini app, where consumers can communicate with other users. Users can not only share their purchased products in the player show board but also participate in the topic activities initiated by POPMART officials and interact with other users. This questionnaire explores the influence of social purposes on consumers by asking questions about the "Player Show" feature. As "Player Show" is a new feature of the mini app, the questionnaire asked consumers about their future behavioral intentions to understand their tendency to show their creativity and gain recognition from others.

The "Guardian Elf" is a small program in the mini app that builds a form of gameplay; consumers can develop their IP elf through various activities here, enhancing their emotional connection with IP. In this questionnaire, we explored the influence of the purpose of experience on consumers by asking questions about the function of the "Guardian Elf." We also set questions about consumers' views on the gameplay of "Guardian Elf" and explored consumers' views on playability and usability in terms of experience.

For enterprises, compared with other offline channels and traditional e-commerce platforms, the advantages of WeChat applets regarding operating costs, data analysis, and member management have become more and more apparent, and they have become an essential branch of POPMART's sales channels. For consumers, the use of applets makes private user purchases and product information collection more concise and convenient, and the game screen and scene interaction are more interesting. Users can increase their "lucky value" by playing the game and participating in limited product promotions. The game design also allows consumers to extend their experience from offline shops to online and forms a personal connection with IP.

3.3 Hypothesis development

The model in this article is built upon the foundation established by Yang et al. (2017), with some adjustments made to examine the

impact of gamification marketing on brand loyalty. Prior results indicate that perceived usefulness has a positive and significant influence on customers' intention to engage in gamification and their brand attitude. Higher levels of perceived social influence are associated with a more positive brand attitude. Perceived enjoyment, which includes the perception that the game is a good way to spend leisure time, also has a positive and significant effect on the intention to engage, which leads to a more positive brand attitude.

3.3.1 Utilitarian purpose

For utilitarian purposes, the main effect of gamification marketing is to engage consumers in promotional activities and access to product information. The classic definition of game studies states that games and gamification are characterized by explicit systems of rules and competition or conflict between participants in these systems toward discrete goals or outcomes (Deterding et al., 2011a). Essentially, gamified services provide game-like functionality, such as goal-setting through the provision of objectives and rewards and tracking and monitoring of given activities (Hamari and Koivisto, 2013). The Motivation-Goal Compatibility (MEC) theory suggests that motives are organized in a hierarchical structure, with benefits serving as sub-goals of values. The connection between benefits and intention highlights the significance of concrete goals (benefits) in shaping behavioral intention, although it challenges the hierarchical structure proposed by the MEC theory. In a utilitarian context, gamers are motivated by factors such as ease of use and control over the game, which can lead to utilitarian goals that enhance their intention to continue playing (Sharma et al., 2020). Beyond this, another utilitarian purpose of gamification marketing is its capacity to lower the barriers to product usage for consumers, thereby mitigating certain impediments to online consumption. Building on this foundation, this study examines gamification services through four dimensions: "Providing daily pastime," "Enhancing ease of purchase," "Increasing the chance of drawing a box," and "Obtaining product information." This study examines how well gamification marketing satisfies consumers' needs in the utilitarian dimension and subdivides "providing daily entertainment" into two indicators: "kill time" and "rich gameplay."

> H1: Gamification marketing is effective in increasing consumer loyalty to a brand for utilitarian purposes.

3.3.2 Social purpose

The fulfillment of social purposes is also increasingly important for online consumers, especially in products with a strong social and display value, such as hipster game brands. Users also play games to build close relationships with their in-game friends and to talk to people while playing the game (Hamari and Koivisto, 2013; Ng and Wiemer-Hastings, 2005). Some scholar's findings suggest that social factors are strong predictors of how gamification is perceived and whether users intend to continue using the service and recommend it to others. In the Unified Theory of Acceptance and Use of Technology model (Venkatesh et al., 2003), social influence is posited as a core variable that, along with performance expectancy and effort expectancy, impacts behavioral intention and ultimately influences user behavior. Social influence is further delineated into three components: subjective norm, social factors,

and the image projected to others. In "Player Show," all players have developed a sense of community. The interaction between the players creates a socially constructed space where common topics, understandings, and behaviors of shared identity are developed. This study examines gamification through four metrics: "Demonstrating Creativity," "Gaining Recognition from Others," "Constructing a Virtual Identity," and "Seeking a Sense of Belonging." The existing literature shows that the importance of creativity display (Bechmann and Lomborg, 2013), community belonging (Baym, 1998), others' recognition (Seraj, 2012) and virtual identity construction (Van Dijck, 2013) in social purposes has gradually attracted attention. The study highlights that virtual communities, through supportive interactions and creative content displays, are able to promote members' sense of social belonging while stimulating the construction of individual and group identities. In addition, diversified social functions provided by online platforms provide users with a space for self-expression and social participation, thus forming a multi-level value co-creation process. This study examines how well-gamified marketing satisfies consumer needs in the social dimension through these four indicators.

H2: Gamification marketing for social purposes is effective in increasing consumer loyalty to a brand.

3.3.3 Purpose of experience

The diverse engagement opportunities with game experiences in networked media extend leisure experiences and contribute to the reconstruction of hobbyist identities. Leisure brings meaning through engagement with oneself, others, and valued aspects of life. Consumers prefer activities that affirm their identity and aid in self-expression. Online sharing and self-expression have become more relevant to developing a shared sense of self in online communities (Kankainen, 2024). Consumers' enjoyment at the perceived level positively impacts their purchase intention and plays a mediating role between internal and external game elements and purchase intention (Wu and Santana, 2022). In a hedonic context, gamers may be driven

by enjoyment-related motivations like playfulness and fun, which influence their continued engagement with the game. Hedonic value, such as perceived playfulness and enjoyability, acts as intrinsic motivation and can also determine users' intention to continue playing (Davis et al., 2013). The use of game elements makes it easier for consumers to be attracted to the rich gameplay in the product marketing process. This introduces the third dimension explored in this study – the experiential dimension. Unlike the "MDE" model (Robson et al., 2014), which focuses on Mechanics, Dynamics, and Emotion, this study emphasizes consumers' subjective experiences and feelings. Therefore, the "E" is extended from Emotion to Experience. This study further breaks down the experience dimension into four indicators: "Playfulness," "Engagement," "Ease of use," and "Connection."

The indicator "Playfulness" aligns with the hedonic value discussed by Davis et al. (2013), which highlights the importance of perceived playfulness and enjoyability in driving continued engagement. "Engagement" reflects the concept of active involvement and interaction with the game, which is supported by Kankainen (2024) in the context of online communities. "Ease of use" corresponds to the utilitarian benefits mentioned by Wu and Santana (2022), emphasizing the role of perceived complexity and control in influencing purchase intention. Lastly, "Connection" relates to the social aspects of gaming, where consumers develop a shared sense of self within online communities, as noted by Kankainen (2024). This study examines how well gamification marketing satisfies consumers' needs in the experience dimension by integrating these indicators with the existing literature on consumer behavior and game engagement.

H3: Gamification marketing is effective in increasing consumer loyalty to a brand by fulfilling the purpose of the experience.

Figure 1 shows the conceptual model used to develop the hypothesis.

Adverts and games are distinguished by their unique forms, such as sound effects and motion graphics. At the consumer level, games can also impact the user's perception of time and participation. To better
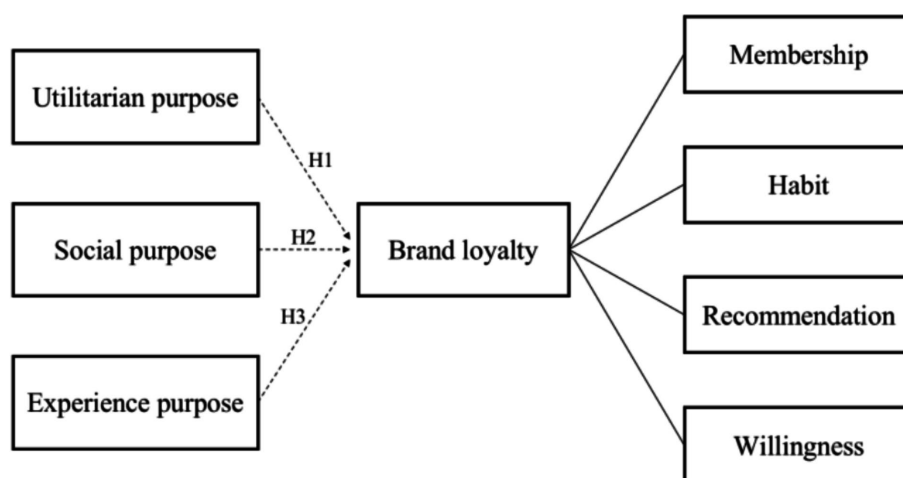

FIGURE 1
The "USE" conceptual model of gamification marketing's impact on consumer brand loyalty.

understand consumers' experience and perception of gamification marketing, we design the model of gamified marketing from three dimensions: utilitarian purpose, social purpose, and experience purpose.

This study argues that the dynamics and mechanics dimensions are more applicable to the analysis of traditional serious games. As this study focuses on exploring the correlation between gamification marketing and consumer loyalty, the research model pays more attention to the design of the "components" of the mini app in the gamification marketing approach. To better understand the consumers' experience and perception in the process of gamification marketing in e-commerce, this study refers to the existing literature and models of gamification marketing. It combines the actual applet design module of the mini app with the "USE" model, which covers the three dimensions of Utility, Social, and Experience.

4 Methodology

4.1 Questionnaire design

This study explores the underlying factors that influence consumer perception in gamified marketing. Their emotional link with the product influences consumer perception in gamification marketing, the time they spend on it, habit formation, and word-of-mouth communication of the brand. To further examine these influencing factors, this study selects the trendy toy industry in the current cultural and creative industry. It uses the game-based marketing mini app as the research object. The study designed two relevant questionnaires to explore users' experience and consumption of the program. The first questionnaire was designed for the pre-test. The final questionnaire was formed after modification and improvement, and a total of 274 valid samples were obtained after 2 weeks.

The questionnaire is divided into three parts. In addition to the user basic information, the questionnaire designs multidimensional questions about the "box pumping," "player show," and "guardian elf" functions of the mini app. In the questionnaire, we compared the function of "box pumping" to the utilitarian purpose, "player show" to the social purpose, and "guardian elf" to the experience purpose and detailed the questions for each dimension. To understand the consumers' tendency toward the three purposes during the use of applets, the questionnaire was designed with frequency and satisfaction questions for each function. The questionnaire was designed with reference to the Likert scale, which is scored by adding up the ratings. The statements of this questionnaire are five-dimensional, and each statement has five types of responses: very sure, fairly sure, generally sure, not too sure, and very unsure, to calculate the strength of the participant's attitude or his different states on this scale. In addition to this, the questionnaire also asks questions about reward acquisition methods, feedback on feature experience, and willingness to pay for time to get a full picture of the consumer's preference bias.

This research object and the questionnaire were authorized by POPMART company. The requirements of consumer information protection and questionnaire ethics were complied with during the survey. The studies involving human participants were reviewed and approved by Peking University School of Arts Research Ethics

Committee (ID:SoA022). The participants provided their informed consent to participate in this study. To better test and study the hypothesis of consumers' attitudes and experience toward the mini app machine, we first analyzed and sorted out the "USE" model of the influence of gamification marketing on consumers and brands. The questionnaire design was carried out based on the "USE" conceptual model, and nearly 5,000 consumers were reached through about 20 WeChat groups of POPMART members for questionnaire placement and collection. The first questionnaire was based on the survey of senior employees at three different levels of the company (one grassroots employee, one middle manager, and one senior executive) and one company consumer data analyst. We sent the first questionnaire to seven users for a pre-test and they returned it after 1 day. After modifying the irrationality of the first questionnaire, we formed a second questionnaire after modification and improvement. All questionnaires were carried out and collected online.

After a 2-week private domain placement, a total of 274 valid questionnaires were collected in this study, and the basic profiles of the questionnaire fillers are as follows. Regarding geographical distribution, the largest number of consumers originated from Guangdong Province, with a total of 58. They were followed by Liaoning Province, Heilongjiang Province, and Beijing Municipality. Regarding the gender ratio, 66% were female and 34% were male. In terms of age distribution, those aged 21–25 accounted for the highest proportion of 38.32 percent, followed by those aged 26–30 with 33.58 percent, while those under 20 accounted for the lowest proportion of less than 5 percent. Regarding spending, more than 55% of users spent more than RMB 2,000 cumulatively, of which about 48% spent more than RMB 3,000. As the unit price of POPMART's main blind box items is around RMB 60, it is evident that most users in this research sample are loyal consumers of POPMART.

4.2 Empirical model

To test H1-H3, we design the following OLS model (Equation 1) with reference to Han et al. (2019):

$$BL = \alpha + \beta_1 Purpose + \beta_2 Gender + \beta_3 Age + \beta_4 First + \varepsilon \quad (1)$$

BL is brand loyalty, and *Purpose* is the corresponding purpose in the hypothesis, which refers to *Utility*, *Social*, and *Experience*, respectively. To accurately identify this effect, we select Gender (the gender of the respondents) with reference to Yang et al. (2017), Age (age of the respondents) with reference to Yalcin et al. (2009), and First (the number of years of use of the respondents) with reference to Lounis et al. (2013) as the control variables of the model. These control variables can alleviate the endogeneity caused by individual characteristics of consumers. Detailed variable definitions are shown in Table 1.

4.2.1 Variables measurements

4.2.1.1 The dependent variable and independent variable

Based on the data collected from the questionnaire, we utilized the following method to generate first-level indicators with

TABLE 1 Variable definitions.

Variable name	Definition	References
BL	The calculated score of brand loyalty; the calculation details are shown in Table 2	Abou-Shouk and Soliman (2021) and Yalcin et al. (2009)
Utility	The calculated score of utilitarian purpose; the calculation details are shown in Table 2	Yang et al. (2017) and Childers et al. (2001)
Social	The calculated score of social purpose; the calculation details are shown in Table 2	Yang et al. (2017)
Experience	The calculated score of experience purpose; the calculation details are shown in Table 2	Yang et al. (2017) and Childers et al. (2001)
Gender	If the respondent is male, the value is 1; otherwise, it is 0	Yang et al. (2017)
Age	The respondents are divided into five groups based on age. The smallest group is assigned a value of 1, the largest group is assigned a value of 5, and so on	van Reijmersdal et al. (2010) and Bittner and Schipper (2014)
First	The year from the first use of the mini program to the present, and the minimum value is 0	Lounis et al. (2013), Xu et al. (2017), and Koivisto and Hamari (2014)

TABLE 2 Variable calculation method.

Dimension	Details		Percentage	
Utilitarian purpose	Providing leisure (LS)	Kill time	25%	12.5%
		Gaming		12.5%
	Enhancing ease of purchase (C)		25%	
	Increasing the chance of drawing a box (IC)		25%	
	Obtaining product information (PI)		25%	
Social purpose	Demonstrating creativity (DC)		25%	
	Community belonging (CB)		25%	
	Gaining recognition from others (GR)		25%	
	Constructing a virtual identity (VI)		25%	
Purpose of experience	Playfulness (P)		25%	
	Engagement (EG)		25%	
	Ease of use (EU)		25%	
	Connection (CN)		25%	
Brand loyalty	Membership (MB)		25%	
	Habit of check-in (H)		25%	
	Recommendation (R)		25%	
	Accumulated consumption amount (ACM)		25%	

reference to Childers et al. (2001), Yalcin et al. (2009), and Yang et al. (2017). We synthesized indicators using as scientific a method as possible based on the analysis of our research questions. As far as possible, the first-level indicators' values include all the corresponding dimensions' second-level indicators. We assign the same weight to the second-level indicators and the third-level indicators to avoid the possible POPMART effect caused by the overestimation of the high-weight indicators. An equal-weight approach would be more advantageous to correctly identify causal effects. Equation 2 to Equation 6 show the calculation steps of explanatory variables and explained variables. It is worth explaining that due to the particularity of the second-level indicator of Providing Leisure (*Utility-LS*), we can only calculate the third-level indicator from the questionnaire, as shown in Equation 2. The original data of the second-level indicators except *Utility-LS* are obtained directly from the questionnaire, and the original data of the third-level indicators *Kill time* and *Gaming* are also obtained from the questionnaire. Other variables are calculated from the original data in the questionnaire. Details are shown in Table 2.

$$Utility - LS = Kill\ time \times 50\% + Gaming \times 50\% \quad (2)$$

$$Utility = Utility - LS \times 25\% + Utility - C \times 25\% \\ + Utility - IC \times 25\% + Utility - PI \times 25\% \quad (3)$$

$$Social = Social - DC \times 25\% + Social - CB \times 25\% \\ + Social - GR \times 25\% + Social - VI \times 25\% \quad (4)$$

$$Experience = \begin{pmatrix} Experience - P + Experience - EG \\ + Experience - EU + Experience - CN \end{pmatrix} \times 25\% \quad (5)$$

$$BL = BL - MB \times 25\% + BL - H \times 25\% \\ + BL - R \times 25\% + BL - ACM \times 25\% \quad (6)$$

TABLE 3 Descriptive statistics.

Variables	Mean	Median	SD	Min	Max	N
BL	3.294	3.500	0.791	1.000	4.750	274
Utility	4.014	4.125	0.827	1.000	5.000	274
Social	3.495	3.500	1.126	1.000	5.000	274
Experience	3.751	3.875	1.038	1.000	5.000	274
Gender	0.343	0.000	0.476	0.000	1.000	274
Age	2.847	3.000	1.030	1.000	5.000	274
First	2.292	2.000	1.316	0.000	4.000	274

TABLE 4 Baseline regressions.

	(1)	(2)	(3)	(4)
	BL	*BL*	*BL*	*BL*
Utility	0.334***			0.343***
	(6.24)			(5.10)
Social		0.093**		−0.080
		(2.21)		(−1.46)
Experience			0.165***	0.065
			(3.72)	(1.05)
Gender	0.095	0.096	0.085	0.092
	(1.02)	(0.97)	(0.88)	(0.99)
Age	0.045	0.055	0.048	0.040
	(1.04)	(1.21)	(1.08)	(0.92)
First	0.124***	0.120***	0.112***	0.117***
	(3.69)	(3.33)	(3.18)	(3.45)
Constant	1.509***	2.506***	2.251***	1.540***
	(5.65)	(10.86)	(9.73)	(5.67)
Observations	274	274	274	274
Adj. *R*-squared	0.151	0.045	0.075	0.151

***, **, and * Denote statistical significance at the 1, 5, and 10% levels, respectively.

Based on the data generation process described above, we obtained response variables (BL) and explanatory variables (Utility, Social, Experience) as first-level indicators, and their descriptive statistics are shown in Table 3 below.

4.3 Regression analysis

Table 4 provides the regression results based on Equation 1. Columns (1), (2), and (3) report the regression results for Utility, Social, and Experience as explanatory variables, respectively. The coefficients of the Utility and Experience on BL are all positive and significant at the level of 1%, and the coefficient of Social on BL is significant at the level of 5%. The results support H1, H2, and H3. According to the reports of Column (4), the coefficient of the Utility on BL is still positive and significant at the level of 1%. This shows that the utilitarian purpose plays the largest role in brand loyalty.

4.4 Robustness analysis

We further conducted robustness tests on the model, and the results showed that the conclusions drawn in the previous section remained robust even after applying White's heteroscedasticity correction to the standard errors. Therefore, we have reasons to believe that the conclusions drawn from the regression results are unbiased and robust (Table 5).

5 Results

5.1 Findings

This study proposes and validates the "USE" model of consumer use and perception factors under branded gamification marketing by combining domestic and international literature on games, gamification, and gamification marketing. Primary and secondary

TABLE 5 Robustness results.

	(1)	(2)	(3)	(4)
	BL	BL	BL	BL
Utility	0.334***			0.343***
	(6.13)			(4.83)
Social		0.093*		−0.080
		(1.95)		(−1.48)
Experience			0.165***	0.065
			(3.25)	(1.02)
Gender	0.095	0.096	0.085	0.092
	(1.03)	(0.97)	(0.88)	(1.00)
Age	0.045	0.055	0.048	0.040
	(1.12)	(1.32)	(1.18)	(1.01)
First	0.124***	0.120***	0.112***	0.117***
	(3.55)	(3.21)	(3.02)	(3.26)
Constant	1.509***	2.506***	2.251***	1.540***
	(5.11)	(9.89)	(8.79)	(5.09)
Observations	274	274	274	274
Adj. R-squared	0.151	0.045	0.075	0.151

***, **, and * Denote statistical significance at the 1, 5, and 10% levels, respectively.

factors are designed from the three dimensions of utilitarian purpose, social purpose, and experiential purpose. The positive impacts of gamification marketing are verified through consumer research on the mini app: the emotional link between consumers and the product, the occupation of consumers' time and the development of their habits, and the word-of-mouth communication of the brand. The results of the study indicate that gamification marketing can effectively increase consumers' brand loyalty by satisfying utilitarian, social, and experiential purposes and that utilitarian purposes have a more significant impact on consumers' brand loyalty than others.

According to our survey, 96 valid feedbacks of the Box Drawing Machine function from users highlights several key areas for improvement. 22.34% of users requested enhanced functionality and features, such as personal collections and simultaneous box drawing, with one user suggesting, "You can integrate a personal collection, for example, list the styles I already own in this series, the ones I do not own, and mark the duplicates with numbers, so that collectors can have a clear overview." Queue management and game fairness were also major concerns, with 13.83% of users suggesting improvements to make the system more equitable, including suggestions like "When there are many people in line for popular items, limit the number of purchases per person, otherwise the first ones in line will buy everything, and those behind will have waited for nothing." Additionally, users expressed a need for better notifications and updates of product information, with one user stating, "I hope to know about new items as soon as they are released." Technical issues were reported by 8.51% of users, who mentioned problems like system lag and bugs. Enhancing the social interaction between users was also frequently mentioned, with suggestions like "Enable a gifting feature between users." Addressing these areas could significantly enhance user satisfaction and engagement.

As for Player Show, there are 194 valid feedbacks with specific advice and needs. Among them, 30.26% of users expressed a need for increased engagement, indicating a desire for more interactive and compelling content otherwise they would feel indifferent. Additionally, 19.74% of users requested enhanced interactivity features, suggesting that more dynamic and participatory elements could enhance their experience. Improving the presentation of content was also a notable concern, with 15.79% of users seeking better ways to showcase their personally owned collections. Content variety and quality were emphasized by 13.16% of users, indicating a need for diverse and high-quality offerings such as tip for personal modifying dolls. Ease of use was mentioned by 10.53% of users, highlighting a seamless and intuitive interface, which includes the proper use of color in UI design and clear category. Incentives and rewards were suggested by 6.58% of users to encourage participation of posting, meanwhile, 5.26% of users emphasized the importance of social sharing and community-building features to foster a sense of community among users. Specific functions suggested include being able to add other users as friends, sharing posts to friends circle of social media accounts, and establishing online group chat.

Based on the 80 valid feedbacks collected, users of Guardian Elf have expressed a strong desire for increased interactivity and engagement, with 20 users (25%) suggesting features such as visiting friends' homepages and game competition with other users to enhance the experience. Additionally, 22 users (27.5%) requested more variety in gameplay and features, emphasizing the need for new mini-games and diverse elf abilities and game tasks. Performance issues were noted by 5 users (6.25%), who reported lag and slow loading times. There is also a demand for content and IP diversity, with 22.5% of users asking for new elf characters from different IP such as Molly, Dimoo, and more customization options that could be merged in future game settings. Rewards and incentives were another key area, with 18.75% of users wanting more frequent drops of coupons or functional cards and better rewards for completing tasks. User interface and design

improvements were suggested by 7 users, who called for a more visually appealing UI and better design for elf animations.

Overall, consumers are increasingly focused on the consumer experience in online channels, placing higher demands on gamified IP introduction, gameplay design, social sharing, and product information, which is consistent to our research model. The UI design, page jump time, and smoothness of online platforms also impact the drawbox experience. Gamified design and interaction would be beneficial to encourage user participation and the marketing content output is more likely to be accepted by consumers and generate time stays and habitual visits to the feature.

5.2 Utilitarian purpose

From the perspective of individual consumers, gamified marketing is a way to spend free time through gaming. Our study shows that 88% of users are more and more willing to spend time on the "box draw" function of the POPMART mini app, which indicates that the majority of consumers are more willing to pursue utilitarian purposes. Korean online gamers play online games mainly for leisure purposes and enjoy online games when they are bored and have nothing else to do (Koo, 2009); they enjoy online games through online social gatherings. The main reason for respondents to play online games is to escape from daily life, so they often play online games when they are lonely, bored, and have nothing to do (Wood et al., 2004). In this study, 54 percent of the users use mini app to kill time. Therefore, this study concludes that gamification marketing can provide consumers with a pastime in their daily lives.

External factors and internal factors are two important factors that can stimulate human behavior. From the perspective of external motivation, perceived value and interests can drive people's behavior (Lee et al., 2005). Davis (1989) believes that perceived usefulness refers to the degree to which a person believes that using a particular system will improve their performance. Perceived usefulness is one of the extrinsic motivators in the TAM and a key driver of usage behavior and intentions.

In the present study, the calculation of benefits and value acquisition was specifically reflected in the accumulation of lucky values, which increased the probability of drawing the centerpiece style. The results indicated that more than 84% of the people agreed that they use the box drawer to increase their chances through function cards and lucky values. Additionally, the POPMART mini app can also improve the convenience of purchasing behavior and expand the way of obtaining product information. Regarding convenience, nearly 70% of the users in this study use the mini app to purchase products anytime, anywhere. This dimension is not "exclusive" to gamified marketing but is a result of the digitalization of the brand's sales channels. The difference is that the POPMART dispenser is built on the WeChat app port. Because the communication platform is used more frequently, it is more convenient for consumers to buy products from the POPMART dispenser than through other channels. Additionally, 84% of users use the mini app to draw boxes when there are limited promotions or coupons available or to get information about new products and other products. Consumers can understand the specific parameters and release information about each product more intuitively and clearly through the gamification process.

5.3 Social purpose

Identity and motivation are closely related, and in the context of POPMART, the baby-friend identity, and the baby-altering trend have made consumers fans with a need to create and dabble in second-hand alterations and second-hand creations, which is more common in all major social media platforms. This is evidenced by the fact that nearly 54% of the users in this study were more or less willing to display their alterations or other creations in the "Players' Show" section, and Adams et al. (1992) argued that playing games and engaging in self-expressive activities can be both fun and build intrinsic motivation. Such activities are inherently motivational, providing guaranteed participation and increasing challenge time, thus allowing players to have initiative.

The uploading of behavioral and creative content from players in games is also motivated by the aim of gaining recognition from others, which enhances interaction between players and facilitates the transaction of non-monetary value on such platforms. For a typical gamified service, the social aspect is essential: people collect badges, move up on the list of high scores, and collect likes for social reasons (Hamari and Koivisto, 2013). Such like-forwards can be seen as a form of social feedback, promoting reciprocal behaviors and increasing the perceived benefits gained from using the service. Additionally, games can provide shared spaces that facilitate social interaction and foster a sense of belonging and engagement. Campbell and Jovchelovitch (2000) argue that the broader advantages of games as community sites must be taken seriously and that online games can also reflect and forge relational or identity-based communities in contemporary society. Such identity-based communities are made up of groups of people engaged in specific activities. Players engage in virtual exchanges in this space, including behaviors such as leveling and liking each other, as well as mentoring between novices and experts, and consumers re-generate social relationships. They are embedded in a specific community of practice (Wenger, 1998). At the same time, Locke and Latham (1990) argue that sharing and social interaction with other users may also promote acceptance and engagement with the challenges and promises of gaming. Thus, belonging is also an essential element that consumers need to satisfy, and the specific design of gamified marketing approaches needs to include the construction of player belonging as an important indicator.

In the virtual reality of the Internet, adolescents do not hesitate to use online technologies that offer the opportunity to explore new technologies and expand their identities; some adolescents believe that the anonymity of the Internet allows them to truly be themselves (Lenhart et al., 2001). In Koo's study, it was found that the respondents perceived escapism to be the most important motivation to play online games, followed by enjoyment and social relationships (Koo, 2009). Therefore, brands should provide players with the opportunity to construct a virtual identity.

5.4 Purpose of experience

In this study, more than half of the users believe that the virtual scenes and IP images in the game are vivid and beautiful and that the game can enhance the emotional link between users and IP. This result is instructive for the design of gamification marketing in the experience dimension. Under the experience dimension, we set up different indicators for gamification design and user experience,

aiming to explore the influencing elements further within the experience dimension.

A gamified marketing approach needs to be easy to use and interactive. Ease of use means that the design of the product is consistent with the user's daily habits, and in the case of gamification marketing, ease of use means that it is easier for consumers to "get started" with the gameplay. The quality of interaction between the design and the system of gamification marketing is also an important manifestation of ease of use. Ease of use and utility are recognized as important determinants of system experience (Adams et al., 1992). A high level of information quality is also likely to provide users with convenience, enhanced enjoyment, and better purchase decisions. Additionally, the level of consumer engagement during gamification marketing is equally important. Lucassen and Jansen (2014) found that an active and interactive approach increases user stickiness and that respondents in the study wanted to increase engagement through elements such as competitions and leaderboards, as such practices arouse curiosity among some consumers.

Regarding user experience, a gamified marketing approach needs to be playable and stir user emotions. Playability usually implies a belief that the interaction will lead to pleasure or attention and curiosity fulfillment. In Ahn et al's (2007) study, researchers examined playfulness as a psychological state that represents a person's transient cognitive experience. Individuals with high levels of fun seem to seek out-of-mind streaming experiences and have positive attitudes toward computer-mediated online environments. More than 50% of the users in this study believed that the virtual scenarios and interaction design of applets optimize the consumption experience. Additionally, gamification marketing is important for players' emotional satisfaction. Hartman et al's (2006) study of adolescents' online consumption behaviors found that among the experiences brought about by hedonism, behaviors such as online surfing and chatting are primary processes, as well as subjective and experiential processes. They bring emotional elements such as fun, excitement, and playfulness, which have an impact on consumption engagement. Therefore, when designing a gamification marketing for a brand, it is necessary to consider the mobilization of game elements on the emotionality of the player and to promote a more profound emotional link between the consumer and the brand (Table 5).

6 Conclusion

6.1 Practical implications

The data and empirical results in this paper further support gamification marketing enhances brand loyalty by satisfying consumers' utilitarian purpose, social purpose, and experiential purpose. Utilitarian purpose is the biggest driver in increasing consumer brand loyalty. This shows that gamification marketing has the expected effect, providing social attributes and experience attributes while meeting consumers' utilitarianism demand for product information, which is a win-win marketing strategy for consumers and brands.

The research results provide valuable insights into user preferences and behaviors regarding blind box products and online marketing. By understanding the specific areas where users seek improvements—such as playfulness, ease of use, engagement,

community interaction—businesses can develop more effective marketing strategies. These insights serve as a foundational reference for both product development and marketing efforts, ensuring that strategies are aligned with user expectations and user experience.

Also, with the recent influx of blind box products into overseas markets and the growing popularity of digital marketing, the findings of this research offer crucial guidance for businesses looking to adapt or localize their offerings. The emphasis on personalized and interactive experiences, as highlighted by user feedback, can help brands outside of China develop a deeper and more loyal customer base. This adaptation not only enhances customer satisfaction but also strengthens brand loyalty, making it a vital strategy for businesses aiming to succeed in diverse global markets.

Although this study was conducted within the context of the Chinese market, its findings hold significant relevance for international markets due to the increasing global presence and expansion of Chinese brands and similar blind box products, such as Miniso and POPMART. For instance, Miniso opened 2,936 overseas stores outside China by 2024 September 30. Additionally, Miniso has marked the U.S. as strategic investment target with 200 stores (MINISO Group Holding Limited, 2024). According to the 2024 mid-year performance report by Pop Mart International Group Limited, as of June 30, 2024, the company operated 92 offline stores and 162 robot stores in China and overseas markets. In the first half of 2024, these offline stores generated revenue of RMB 890 million, marking a year-over-year increase of 441.5% and accounting for 66% of total overseas revenue. Additionally, the company announced plans to add 30–40 new overseas stores in the second half of 2024, focusing on high-potential markets such as North America and Southeast Asia (Guandian Institution, 2024). These brands not only offer similar products but also employ comparable marketing strategies. The application of gamified marketing in the blind box sector has been more established in China compared to the still-emerging overseas markets (see Table 6).

On a global scale, our study reveals the positive impact of applying gamification marketing to blind box products and the possibility of implanting mini apps to the daily use of social media, as a way of online shopping and digital marketing. Through the combination of the two, gamification marketing enables users to have a more convenient and continuous contact experience with brands, which improves users' brand loyalty. Gamification marketing provides playfulness and social interactions for consumers and integrates product information into the game experience. This study provides an appropriate marketing case for global enterprises to enhance their brand loyalty in the digital era. Future research could benefit from localizing the consumer focus and adapt to the preferences and behaviors of international consumers.

6.2 Theoretical implication

This study proposes and validates the "USE" model of consumer use and perception factors under branded gamification marketing by combining domestic and international literature on games, gamification, and gamification marketing. Primary and secondary factors are designed from the three dimensions of utilitarian purpose,

TABLE 6 Blind box market size by region.

Region/Country	Sales revenue 2024 (Million $)
Global	14251.2
North America	5700.48
United States	4497.68
Canada	684.06
Mexico	518.74
Europe	4275.3
United Kingdom	718.26
France	393.33
Germany	846.52
Italy	367.68
Russia	662.68
Spain	350.58
Rest of Europe	662.68
Asia Pacific	3277.78
China	1,475
Japan	452.33
Korea	327.78
India	393.33
Australia	170.44
Rest of APAC	232.72
South America	712.56
Brazil	304.98
Argentina	119.71
Colombia	63.42
Peru	58.43
Chile	51.3
Rest of South America	114.72
Middle East and Africa	285.02
Turkey	24.51
Nigeria	29.93
Egypt	29.93
South Africa	45.03
GCC Countries	121.99
Rest of MEA	33.63

Data from cognitive Market Research's Blind Box Toys Market Report.

social purpose, and experiential purpose. The positive impacts of gamification marketing are verified through the consumer research of POPMART cartridges: the emotional link between consumers and the product, the occupation of consumers' time and the development of their habits, as well as the word-of-mouth communication of the brand.

This research supports and extends current theoretical frameworks in the context of gamification marketing and its positive impact on brand loyalty, which aligns with prior studies' results (Robson et al., 2014; Koivisto and Hamari, 2014; Al-Zyoud,

2021). The study also extends the model by incorporating the experiential dimension, which was previously underemphasized in the dimensions of social, hedonic, and utilitarian benefits (Koivisto and Hamari, 2014). The study supports existing theories by reinforcing the importance of utilitarian, social, and experiential dimensions in gamification marketing. The findings align with the Technology Acceptance Model (TAM), emphasizing the significance of perceived usefulness and social influence in brand attitude (Yang et al., 2017). Prior research has shown that enjoyment is positively linked to user engagement and brand attitude. In our research, we defined and tested the experiential purpose in the gamification context, where engagement and playfulness are perceived as the purpose and motives of consumers rather than outcomes. Consumers have displayed a strong desire and expectation for engagement and interaction when experiencing gamification marketing. The strong need for social purposes, including community belonging and gaining recognition from others, affirms Kankainen's (2024) point about the importance of connection and social aspects of gaming in the context of online communities.

Additionally, our research specifies brand loyalty into specific indicators based on Abou-Shouk and Soliman (2021). We include membership, habit of check-in, recommendation, and accumulated consumption amount, which better reflect brand loyalty in numbers and user behaviors. Finally, the research extends the research context from learning and tourism to the specific rising digital retail business of blind boxes, thereby contributing to a more comprehensive understanding of gamification marketing.

6.3 Limitations and recommendations for future research

This study has some limitations regarding sample size; it lacks in-depth interviews and textual analyses of the research subjects. These must be added and improved in subsequent studies. The main limitation of this study is that analyses cross-sectional survey data, and therefore the results could be illusory, based on mere correlations. Furthermore, the convergent and discriminant validity of the independent and dependent variables was not reported, needs to be confirmed by future studies. Statistically, the sample size here is relatively small, and the distribution of questionnaire to participants was also affected by the actual distribution of offline shops, which did not cover all regional cities. We have considered scientific sampling to every extent possible in the survey; it remains difficult, however, to completely avoid the selectivity bias of the sample owing to the influence of the commodity attributes and the enterprise sales strategy.

Regarding demographic sociology, this study does not consider factors such as consumers' income level, education level, marriage, and parenthood. Certain gaps exist. Some information is too private to obtain; additionally, this information is usually prone to distortion owing to the face saving effect. The study has primarily shown that the gamification elements introduced by online apps have a positive impact on toy product brand marketing. The impact of a single game element must be further differentiated and calculated.

Additionally, the research product of this study—hip-game products—has a certain specificity, and the study did not conduct a comparative analysis with other product categories or with offline hip-game product sales. Although this is because of the sales nature of the goods, this factor weakens the credibility of our conclusions to a certain extent.

We encourage further comparative studies to explore gamification marketing's differences from offline marketing and other methods. When the online and offline sales of a commodity or service are almost equal, the effect of gamification marketing on improving brand loyalty can be more accurately identified. Moreover, we urge future researchers to enhance their methodology to overcome the limitations of current approaches. A call exists to consider consumer psychological factors and employ electroencephalogram (EEG) or eye-tracking experiments to capture a broader range of gamification stimuli, such as visual cues and rewards, along with user responses. This is intended to offer more robust psychological evidence, including visual and physiological aspects, in the field of gamification research. Such initiatives aim to provide more accurate insights for a greater number of scholars and relevant businesses, thereby expanding related research and enhancing practical applications in this domain.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Peking University School of Arts Research Committee (ID:SoA022). The participants provided their written informed consent to participate in this study.

Author contributions

JZ: Conceptualization, Investigation, Methodology, Project administration, Resources, Supervision, Writing – original draft, Writing – review & editing. YZ: Conceptualization, Data curation, Investigation, Methodology, Writing – original draft, Writing – review & editing. SW: Data curation, Formal analysis, Methodology, Software, Validation, Writing – original draft, Writing – review & editing. YX: Funding acquisition, Resources, Supervision, Writing – original draft, Writing – review & editing.

Funding

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

Abou-Shouk, M., and Soliman, M. (2021). The impact of gamification adoption intention on brand awareness and loyalty in tourism: the mediating effect of customer engagement. *J. Destin. Mark. Manag.* 20:100559. doi: 10.1016/j.jdmm.2021.100559

Adams, D. A., Nelson, R. R., and Todd, P. A. (1992). Perceived usefulness, ease of use, and usage of information technology: a replication. *MIS Q.* 16:227. doi: 10.2307/249577

Ahn, T., Ryu, S., and Han, I. (2007). The impact of web quality and playfulness on user acceptance of online retailing. *Inf. Manag.* 44, 263–275. doi: 10.1016/j.im.2006.12.008

Ajzen, I. (1991). The theory of planned behavior. *Organ. Behav. Hum. Decis. Process.* 50, 179–211. doi: 10.1016/0749-5978(91)90020-t

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

Arya, V., Sambyal, R., Sharma, A., and Dwivedi, Y. K. (2024). Brands are calling your AVATAR in Metaverse–a study to explore XR-based gamification marketing activities & consumer-based brand equity in virtual world. *J. Consum. Behav.* 23, 556–585. doi: 10.1002/cb.2214

Aw, E. C., Tan, G. W., Cham, T., Raman, R., and Ooi, K. (2022). Alexa, what's on my shopping list? Transforming customer experience with digital voice assistants. *Technol. Forecast. Soc. Chang.* 180:121711. doi: 10.1016/j.techfore.2022.121711

Bae, B. R., and Kim, S. E. (2023). Effect of brand experiences on brand loyalty mediated by brand love: the moderated mediation role of brand trust. *Asia Pacific J. Mark. Logist.* 35, 2412–2430. doi: 10.1108/apjml-03-2022-0203

Bauer, J. C., Linzmajer, M., Nagengast, L., Rudolph, T., and D'Cruz, E. (2020). Gamifying the digital shopping experience: games without monetary participation

incentives increase customer satisfaction and loyalty. *J. Serv. Manag.* 31, 563–595. doi: 10.1108/josm-10-2018-0347

Baym, N. K. (1998). The emergence of on-line community. *Cybersociety* 2, 35–68. doi: 10.4135/9781452243689.n2

Bechmann, A., and Lomborg, S. (2013). Mapping actor roles in social media: different perspectives on value creation in theories of user participation. *New Media Soc.* 15, 765–781. doi: 10.1177/1461444812462853

Bittner, J. V., and Schipper, J. (2014). Motivational effects and age differences of gamification in product advertising. *J. Consum. Mark.* 31, 391–400. doi: 10.1108/JCM-04-2014-0945

Campbell, C., and Jovchelovitch, S. (2000). Health, community and development: towards a social psychology of participation. *J. Community Appl. Soc. Psychol.* 10, 255–270. doi: 10.1002/1099-1298(200007/08)10:4<255::AID-CASP582>3.0.CO;2-M

Chen, C., and Wang, J. (2016). Customer participation, value co-creation and customer loyalty - a case of airline online check-in system. *Comput. Hum. Behav.* 62, 346–352. doi: 10.1016/j.chb.2016.04.010

Childers, T. L., Carr, C. L., Peck, J., and Carson, S. (2001). Hedonic and utilitarian motivations for online retail shopping behavior. *J. Retail.* 77, 511–535. doi: 10.1016/S0022-4359(01)00056-2

Ciuchita, R., Heller, J., Köcher, S., Köcher, S., Leclercq, T., Sidaoui, K., et al. (2023). It is really not a game: an integrative review of gamification for service research. *J. Serv. Res.* 26, 3–20. doi: 10.1177/10946705221076272

Cruz, M., and Oliveira, A. (2024). Unravelling virtual realities—gamers' perceptions of the metaverse. *Electronics* 13:2491. doi: 10.3390/electronics13132491

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

Davis, R., Lang, B., and Gautam, N. (2013). Modeling utilitarian-hedonic dual mediation (UHDM) in the purchase and use of games. *Internet Res.* 23, 229–256. doi: 10.1108/10662241311313330

Daxue Consulting. (2024). POP MART in China: how it became a brand that pops to mind. Market Research and Consulting China. https://daxueconsulting.com/pop-mart-designer-toy-market-in-china/ (Accessed January 28, 2025).

Deterding, S., Dixon, D., and Khaled, R. (2011a). "From game design elements to gamefulness: defining "gamification"" in *Proc. 15th Int. Acad. MindTrek Conf.: Envisioning future media environ*, 9–15.

Deterding, S., Sicart, M., Nacke, L., O'Hara, K., and Dixon, D. (2011b). "Gamification: using game-design elements in non-gaming contexts" in *Proceedings of the international conference on human factors in computing systems, CHI 2011, extended abstracts volume, Vancouver, BC, Canada (may 7–12, 2011)*.

Fei, Y. M., and Liat, C. B. (2013). Factors affecting consumer's continuance online purchase intention in Malaysia. *GATR Global J. Business Soc. Sci. Rev.* 1, 154–161. doi: 10.35609/gjbssr.2013.1.2(17)

Gera, S. (2021). Impact of word of mouth and brand recommendation on customer loyalty for branded apparels in Dehradun City. *Turkish Online J. Qual. Inq.* 12, 1607–1612.

Ghosh, T., Sreejesh, S., and Dwivedi, Y. K. (2021). Examining the deferred effects of gaming platform and game speed of advergames on memory, attitude, and purchase intention. *J. Interact. Mark.* 55, 52–66. doi: 10.1016/j.intmar.2021.01.002

Gil, R. M., Gutiérrez-Ujaque, D., and Teixidó, M. (2023). Analyzing the Metaverse: computer games, Blockchain, and 21st-century challenge. *Int. J. Hum. Comp. Int.* 40, 6758–6775. doi: 10.1080/10447318.2023.2290380

Gkintoni, E., Vantaraki, F., Skoulidi, C., Anastassopoulos, P., and Vantarakis, A. (2024). Promoting physical and mental health among children and adolescents via gamification—a conceptual systematic review. *Behav. Sci.* 14:102. doi: 10.3390/bs14020102

Guandian Institution. (2024). Pop Mart plans to add 30–40 new overseas stores in the second half of the year. Available at: https://m.163.com/dy/article/JA49B0P20519D45U.html

Hamari, J., and Koivisto, J. (2013). Social motivations to use gamification: an empirical study of gamifying exercise. ECIS 2013 Completed Research, 105. Available at: http://aisel.aisnet.org/ecis2013_cr/105 (Accessed February 18, 2024).

Hamari, J., Koivisto, J., and Sarsa, H. (2014). Does gamification work? - a literature review of empirical studies on gamification. 47th Hawaii International Conference on System Sciences

Han, H., Yu, J., and Kim, W. (2019). Environmental corporate social responsibility and the strategy to boost the airline's image and customer loyalty intentions. *J. Travel Tour. Mark.* 36, 371–383. doi: 10.1080/10548408.2018.1557580

Hartman, J. B., Shim, S., and Barber, B. (2006). Adolescents' utilitarian and hedonic web consumption behavior: hierarchical influence of personal values and innovativeness. *Psychol. Mark.* 23, 813–839. doi: 10.1002/mar.20135

Heilbrunn, B., Herzig, P., and Schill, A. (2014). Tools for gamification analytics: a survey. IEEE/ACM 7th International Conference on Utility and Cloud Computing. IEEE. 603–608

Hidayat, I. K., Novica, D. R., and Sutrisno, A. (2020). Changing the world by games: an approach to solve problems. *KnE Soc. Sci.* 4, 538–546. doi: 10.18502/kss.v4i12.7628

Hsu, C. L. (2023). Enhancing brand love, customer engagement, brand experience, and repurchase intention: focusing on the role of gamification in Mobile apps. *Decis. Support. Syst.* 174:114020. doi: 10.1016/j.dss.2023.114020

Hsu, C. L., and Chen, M. C. (2018). How gamification marketing activities motivate desirable consumer behaviors: focusing on the role of brand love. *Comput. Hum. Behav.* 88, 121–133. doi: 10.1016/j.chb.2018.06.037

Huotari, K., and Hamari, J. (2012). "Defining gamification: a service marketing perspective," in *Proceeding of the 16th international academic MindTrek conference*. 17–22.

Huotari, K., and Hamari, J. (2017). A definition for gamification: anchoring gamification in the service marketing literature. *Electron. Mark.* 27, 21–31. doi: 10.1007/s12525-015-0212-z

Islam, S., Zahin, M., and Rahim, S. B. (2024). Investigating how consumer-perceived value and store image influence brand loyalty in emerging markets. *South Asian J. Bus. Stud.* 13, 505–526. doi: 10.1108/sajbs-04-2023-0097

Ivanov, S., Soliman, M., Tuomi, A., Alkathiri, N. A., and Al-Alawi, A. N. (2024). Drivers of generative AI adoption in higher education through the lens of the theory of planned behaviour. *Technol. Soc.* 77:102521. doi: 10.1016/j.techsoc.2024.102521

Jeon, J. (2021). The effects of user experience-based design innovativeness on user-Metaverse Platform Channel relationships in South Korea. *J. Distribution Sci.* 19, 81–90. doi: 10.15722/jds.19.11.202111.81

Johannes, A. Z., Pingak, R. K., and Bukit, M. (2020). "Tauc Plot Software: Calculating energy gap values of organic materials based on Ultraviolet-Visible absorbance spectrum," in *IOP conference series: materials science and engineering* (IOP Publishing), 823:012030.

Juul, J. (2003). The game, the player, the world: Looking for a heart of gameness. *DiGRA 2003 Conference: Level Up*. 4–6.

Kankainen, V. (2024). Curating the self-identity: tabletop game hobbyist online practices as an extended leisure experience. *Leis. Sci.* 1–20, 1–20. doi: 10.1080/01490400.2024.2305666

Koivisto, J., and Hamari, J. (2014). Demographic differences in perceived benefits from gamification. *Comput. Hum. Behav.* 35, 179–188. doi: 10.1016/j.chb.2014.03.007

Koivisto, J., and Hamari, J. (2019). The rise of motivational information systems: A review of gamification research. *Int. J. Inf. Manag.* 45, 191–210. doi: 10.2139/ssrn.3226221

Koo, D.-M. (2009). The moderating role of locus of control on the links between experiential motives and intention to play online games. *Comput. Hum. Behav.* 25, 466–474. doi: 10.1016/j.chb.2008.10.010

Kovshova, Y. N., and Yarovaya, Y. A. (2021). From didactic game to educational gamification. *J. Pedag. Innov.* 3, 105–119. doi: 10.15293/1812-9463.2103.09

Kumar, A., Shankar, A., Behl, A., Gupta, B. B., and Mavuri, S. (2023). Lights, camera, Metaverse!: eliciting intention to use industrial Metaverse, organizational agility, and firm performance. *J. Global Inform. Manage.* 31, 1–20. doi: 10.4018/JGIM.333169

Landers, R. N. (2019). Gamification misunderstood: how badly executed and rhetorical gamification obscures its transformative potential. *J. Manag. Inq.* 28, 137–140. doi: 10.1177/1056492618790913

Lazzaro, N. (2004). Why we play games: four keys to more emotion without story. Available at: https://gamemodworkshop.com/readings/xeodesign_whyweplaygames.pdf (Accessed February 15, 2024).

Lee, M. K. O., Cheung, C. M. K., and Chen, Z. (2005). Acceptance of internet-based learning medium: the role of extrinsic and intrinsic motivation. *Inf. Manag.* 42, 1095–1104. doi: 10.1016/j.im.2003.10.007

Lee, S. H., Deale, C. S., and Lee, J. (2022). Does it pay to book direct?: customers' perceptions of online channel distributors, price, and loyalty membership on brand dimensions. *J. Revenue Pricing Manag.* 21, 657–667. doi: 10.1057/s41272-022-00382-x

Lenhart, A., Simon, M., and Graziano, M. (2001). *The internet and education: Findings of the pew internet & American life project*. 2–11. Available at https://eric.ed.gov/?id=ED457849 (Accessed January 10, 2025).

Locke, E. A., and Latham, G. P. (1990). *A theory of goal setting and task performance*. New Jersey: Prentice Hall, Englewood Cliffs.

Lounis, S., Neratzouli, X., and Pramatari, K. (2013). "Can gamification increase consumer engagement? A qualitative approach on a green case," in *Collaborative, Trusted and Privacy-Aware e/m-Services: 12th IFIP WG 6.11 Conference on e-Business, e-Services, and e-Society, I3E 2013, Athens, Greece, April 25-26, 2013. Proceedings 12*. Berlin, Heidelberg: Springer, 200–212.

Lucassen, G., and Jansen, S. (2014). Gamification in consumer marketing - future or fallacy? *Procedia Soc Behav.* 148, 194–202. doi: 10.1016/j.sbspro.2014.07.034

MINISO Group Holding Limited. (2024). Inside information unaudited financial results for the three months and nine months ended September 30, 2024. Available at: https://filecache.investorroom.com/mr5ir_miniso/334/24Q3%20Earning%20Release%20%28EN%29.pdf (Accessed January 28, 2025).

Ng, B. D., and Wiemer-Hastings, P. (2005). Addiction to the internet and online gaming. *Cyberpsychol. Behav.* 8, 110–113. doi: 10.1089/cpb.2005.8.110

Özkul, E., Uygun, E., and Levent, S. (2020). "Digital gamification in the tourism industry" in *In handbook of research on smart technology applications in the tourism industry* (Hershey, PA, USA: IGI Global), 169–203.

Pop Mart International Group Limited. (2024). Interim results announcement for the six months ended 30 June 2024. Hong Kong Exchanges and Clearing Limited and The Stock Exchange of Hong Kong Limited. Available at: https://prod-out-res.popmart.com/cms/INTERIM_RESULTS_ANNOUNCEMENT_FOR_THE_SIX_MONTHS_ENDED_30_JUNE_2024_3538e1faa3.pdf (Accessed January 28, 2025).

Ribeiro, C., Fernandes, I., and Portela, F. (2024). Toward an Enterprise gamification system to motivate human resources in IT companies. *Information* 15:26. doi: 10.3390/info15010026

Robson, K., Plangger, K., Kietzmann, J. H., McCarthy, I., and Pitt, L. (2014). Understanding gamification of consumer experiences. *Adv. Consumer Res.* 42, 352–356.

Seraj, M. (2012). We create, we connect, we respect, therefore we are: intellectual, social, and cultural value in online communities. *J. Interact. Mark.* 26, 209–222. doi: 10.1016/j.intmar.2012.03.002

Sharma, T. G., Tak, P., and Kesharwani, A. (2020). Understanding continuance intention to play online games: the roles of hedonic value, utilitarian value and perceived risk. *J. Internet Commer.* 19, 346–372. doi: 10.1080/15332861.2020.1756189

Sheppard, B. H., Hartwick, J., and Warshaw, P. R. (1988). The theory of reasoned action: a meta-analysis of past research with recommendations for modifications and future research. *J. Consum. Res.* 15:325. doi: 10.1086/209170

Srivastava, M., and Kaul, D. (2016). Exploring the link between customer experience–loyalty–consumer spend. *J. Retail. Consum. Serv.* 31, 277–286. doi: 10.1016/j.jretconser.2016.04.009

Statista. (2022). *Share of pop Mart's WeChat Mini program users China in 2020, by age group. Available at*: https://www.statista.com/statistics/1199395/china-age-breakdown-of-popmart-s-wechat-mini-program-users/ (Accessed January 28, 2025).

Sun, S., Wang, Z., Wu, Q., and Wang, W. (2022). Research on incentive mechanism and evaluation of gamification application for sustainable consumption in the context of China. *Front. Sustain.* 3:846774. doi: 10.3389/frsus.2022.846774

Tang, Y. C., Hsieh, Y. C., Yin, C. C., Jhu, S. J., and Chiu, H. C. (2022). Find me here: share store information through check-in. *J. Res. Interact. Mark.* 16, 259–276. doi: 10.1108/JRIM-03-2021-0062

Terlutter, R., and Capella, M. L. (2013). The gamification of advertising: analysis and research directions of in-game advertising, advergames, and advertising in social network games. *J. Advert.* 42, 95–112. doi: 10.1080/00913367.2013.774610

Tsou, H. T., and Putra, M. T. (2023). How gamification elements benefit brand love: the moderating effect of immersion. *Mark* 41, 1015–1036. doi: 10.1108/mip-04-2023-0143

Van Dijck, J. (2013). 'You have one identity': performing the self on Facebook and LinkedIn. *Media Cult. Soc.* 35, 199–215. doi: 10.1177/0163443712468605

van Reijmersdal, E. A., Jansz, J., Peters, O., and van Noort, G. (2010). The effects of interactive brand placements in online games on children's cognitive, affective, and conative brand responses. *Comput. Hum. Behav.* 26, 1787–1794. doi: 10.1016/j.chb.2010.07.006

Venkatesh, V., Morris, M. G., Davis, G. B., and Davis, F. D. (2003). User acceptance of information technology: toward a unified view. *Manag. Inform. Syst. Q.* 27, 425–478. doi: 10.2307/30036540

Wedel, M., Bigné, E., and Zhang, J. (2020). Virtual and augmented reality: advancing research in consumer marketing. *Int. J. Res. Mark.* 37, 443–465. doi: 10.1016/j.ijresmar.2020.04.004

Wei, Z., Zhang, J., Huang, X., and Qiu, H. (2023). Can gamification improve the virtual reality tourism experience? Analyzing the mediating role of tourism fatigue. *Tour. Manag.* 96:104715. doi: 10.1016/j.tourman.2022.104715

Wenger, E. (1998). Communities of practice: Learning as a social system. *Systems Thinker* 9, 2–3.

Werbach, K., Hunter, D., and Dixon, W. (2012). *For the win: How game thinking can revolutionize your business*. Philadelphia: Wharton Digital Press.

Wolf, T., Weiger, W. H., and Hammerschmidt, M. (2020). Experiences that matter? The motivational experiences and business outcomes of gamified services. *J. Bus. Res.* 106, 353–364. doi: 10.1016/j.jbusres.2018.12.058

Wood, R. T. A., Griffiths, M. D., Chappell, D., and Davies, M. N. O. (2004). The structural characteristics of video games: a psycho-structural analysis. *Cyber Psychol. Behav.* 7, 1–10. doi: 10.1089/109493104322820057

Wu, X., and Santana, S. (2022). Impact of intrinsic and extrinsic gaming elements on online purchase intention. *Front. Psychol.* 13:885619. doi: 10.3389/fpsyg.2022.885619

Xu, F., Buhalis, D., and Weber, J. (2017). Serious games and the gamification of tourism. *Tour. Manag.* 60, 244–256. doi: 10.1016/j.tourman.2016.11.020

Xu, Y., Chen, Z., Peng, M. Y.-P., and Anser, M. K. (2020). Enhancing consumer online purchase intention through gamification in China: perspective of cognitive evaluation theory. *Front. Psychol.* 11:581200. doi: 10.3389/fpsyg.2020.581200

Yalcin, M., Eren-Erdogmus, I., and Demir, S. (2009). Using associations to create positive brand attitude for generation Y consumers: application in fashion retailing. *J. Facul. Econ. Admin. Sci.* 14, 261–276.

Yang, Y., Asaad, Y., and Dwivedi, Y. (2017). Examining the impact of gamification on intention of engagement and brand attitude in the marketing context. *Comput. Hum. Behav.* 73, 459–469. doi: 10.1016/j.chb.2017.03.066

Zhang, L., Anjum, M. A., and Wang, Y. (2023). The impact of trust-building mechanisms on purchase intention towards metaverse shopping: the moderating role of age. *Int. J. Hum. Computer Interact.* 40, 3185–3203. doi: 10.1080/10447318.2023.2184594