Gamification Impact on Customer Loyalty: A PRISMA Analysis and Future Research Direction

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Abstract
Purpose: Gamification has become a pivotal strategy for enhancing customer loyalty in digital marketing contexts (e.g., mobile apps, e-commerce), with relevant research accumulating rapidly in recent years. However, the field remains highly fragmented—exhibiting inconsistencies in theoretical frameworks, methodological designs, and contextual applications. This study aims to conduct a comprehensive systematic review to synthesize empirical findings, clarify key research patterns, and help scholars and practitioners gain a holistic understanding of the mechanisms linking gamification to customer loyalty. **Design/methodology/approach:** This study adopts a systematic literature review approach in line with the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) framework (Moher et al., 2009). It analyzes the content of retrieved articles to extract and categorize core information, including research design, underpinning theory, key variables, analytical methods, and core findings. **Findings:** The most widely adopted theoretical framework in existing studies is the Stimulus-Organism-Response (SOR) model, followed by the Technology Acceptance Model (TAM) and Attachment Theory. Quantitative research dominates the field; Structural Equation Modeling (SEM) (via Smart PLS or AMOS) is the most common analytical tool, while fuzzy-set Qualitative Comparative Analysis (fsQCA) is increasingly applied for configurational analysis. Perceived enjoyment, social interaction, and brand trust are the critical mediating variables between gamification and customer loyalty, and research contexts are mainly concentrated in mobile apps and emerging markets. **Research limitations/implications:** This study focuses exclusively on empirical research on gamification and customer loyalty, with its scope limited to English-language studies published between 2017 and 2025. The availability of articles is restricted by subscribed database access, and the relatively nascent nature of

gamification research in underrepresented contexts (e.g., Metaverse, healthcare) results in a limited number of relevant studies. **Originality/value:** By organizing the timeline of gamification and customer loyalty research and classifying literature into theoretical, methodological, and contextual clusters, this study provides a holistic assessment of the current research trend. It identifies critical gaps (e.g., cross-cultural differences, longitudinal effects) and offers actionable directions for future inquiry, facilitating the advancement of both academic theory and practical application.
Keywords: Gamification, Customer Loyalty, Systematic Literature Review, consumer Behavior, PRISMA.

Introduction

The digital transformation of consumer behavior has reshaped the connotation of customer loyalty—shifting from transactional repeat purchases to long-term emotional and behavioral commitment, driven by personalized and engaging brand experiences (Hsu & Chen, 2018).

Gamification, defined as the integration of game design elements (e.g., points, badges, storytelling, virtual avatars) into non-gaming contexts to stimulate user motivation and sustained engagement (Deterding et al., 2011), has emerged as a powerful tool for fostering this loyalty. For example, Duolingo leverages language crowns and daily challenge mechanics to boost user retention rates (Mattke & Maier, 2021), while POPMART's gamified mini-app uses blind-box interactions and user community features to strengthen brand loyalty (Zhang et al., 2025). Despite its significant practical value, research on gamification and customer loyalty remains disjointed. Existing studies vary widely in their identification of key mediating variables: some emphasize perceived enjoyment as the core bridge (Kaur et al., 2023), while others focus on social interaction (Zhang et al., 2025); theoretical lenses also diverge, ranging from psychological frameworks (e.g., Attachment Theory; Bidmon, 2017). Contextually, most research centers on mobile apps and emerging markets, with limited exploration of new domains such as the Metaverse (Arya et al., 2024) or developed markets (e.g., Europe, North America).

While prior studies have explored gamification in isolation (e.g., Hamari et al., 2014) or examined drivers of customer loyalty independently (e.g., Chaduri & Holbrook, 2001), a systematic synthesis of their intersection is lacking. This study addresses this gap by reviewing empirical research on gamification and customer loyalty, with three core research questions:
1.What research designs and theoretical frameworks are most commonly adopted in studies of gamification and customer loyalty?
2.What key variables (antecedents, mediators, outcomes) are central to the relationship between gamification and customer loyalty?
3.What gaps exist in current research, and what directions do scholars propose for future inquiry?

Literature Review

Gamification: Definition and Core Elements

Gamification is conceptually defined as the intentional integration of game design elements into non-gaming environments to enhance user motivation, engagement, and long-term behavioral commitment (Deterding et al., 2011; Huotari & Hamari, 2017). Unlike full-fledged video games, gamification focuses on "gameful" elements rather than immersive narrative systems, with core components typically categorized into three clusters:

Immersion-related elements: Virtual avatars (e.g., Duolingo's "Duo"), storytelling, and personalized user profiles—these elements fulfill users' psychological need for autonomy by creating a sense of "ownership" over the experience (Koivisto & Hamari, 2019).

Achievement-related elements: Badges, points, progress bars, and task challenges (e.g., POPMART's "lucky value accumulation system")—these satisfy users' need for competence by providing clear goals and feedback on progress (Sailer et al., 2017).

Social-related elements: Leaderboards, user communities (e.g., POPMART's "Player Show" section), and peer competition—these address users' need for social relatedness by facilitating interaction and a sense of belonging (Mattke & Maier, 2021).

Customer Loyalty in the Gamified Context

In gamification research, customer loyalty is conceptualized as a multidimensional construct encompassing behavioral loyalty and attitudinal loyalty (Chauduri & Holbrook, 2001; Palmatier, 2008):

Behavioral loyalty: Refers to observable repeat behaviors, commonly measured by repurchase intention (Zhang et al., 2025), app retention rate (Mattke & Maier, 2021), or frequency of participation in brand gamified activities (Nawaz et al., 2023).

Attitudinal loyalty: Reflects emotional and cognitive commitment to a brand, assessed through metrics such as brand attachment (Bidmon, 2017), positive word-of-mouth, and willingness to recommend (Xi & Hamari, 2020).

Gamification influences customer loyalty through both direct and indirect pathways: direct effects are driven by achievement-related elements (e.g., rewards that enhance customer commitment; Xi & Hamari, 2020), while indirect effects are mediated by psychological variables such as perceived enjoyment (Kaur et al., 2023) and brand trust (Xu et al., 2020).

Methods

A systematic review aims to comprehensively identify and synthesize research that relates to a particular question using organized, transparent, and replicable procedures (Littell, Corcoran, & Pillai, 2008).By conducting a systematic literature review, we can critically evaluate all available evidence to gain a comprehensive understanding of gamification in branding to date. We used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method for literature selection to ensure a transparent and comprehensive approach (Moher et al., 2010). PRISMA framework was used to identify articles and screen them according to peer review criteria recommended for systematic literature reviews (Paul et al., 2023), and is widely applied in information systems and marketing research(Obukhovich et al., 2023).

The identification phase aimed to collect all relevant literature on gamification and customer loyalty. In Figure 1, it shows the strings and keywords (TITLE-ABS-KEY: "gamification" OR "gamified marketing" AND "customer loyalty" OR "customer brand loyalty" OR " brand loyalty") used for Scopus database extraction and document selections. The literature search was conducted on August 20, 2025. Scopus has the most double-blind, peer-reviewed journals. Moreover, the Scopus database has a broader coverage of journals, including more international and multidisciplinary sources. The extensive coverage of Scopus was beneficial for doing a comprehensive review of the literature, especially if the topic spans multiple disciplines (Groff et al., 2020; Kalro and Joshipura, 2023). Furthermore, the database was designed particularly for citation analysis (Singh et al., 2021).In order not to miss any important studies, this study has identified as many records as possible. And this process is regarded as the sensitivity of screening (Siddaway et al., 2019).

Since the initial screening of data, to assess the remaining full-text articles for eligibility is required. The assessment was followed the eligibility criteria. And the inclusion or exclusion criteria were based on the objectives of this study. The search timeframe was restricted to 2017–2025 for two key reasons:
(1) Gamification emerged as a formal topic in marketing research around 2019, with a sharp increase in empirical studies thereafter (Koivisto & Hamari, 2019); (2) This window captures the latest research developments, including studies on gamification in emerging contexts (e.g., brand crowdfunding, Metaverse). Apart from the available full-text and peer-reviewed articles, other paper types, such as editorials, review papers, critiques, research dialogs, and book chapters, were excluded. The full article and the English language were required to ensure a further review.

The final inclusion stage confirmed that all 28 studies met the above criteria and contributed unique insights to the understanding of the gamification customer loyalty relationship. These studies were formally included in the data extraction and synthesis process.
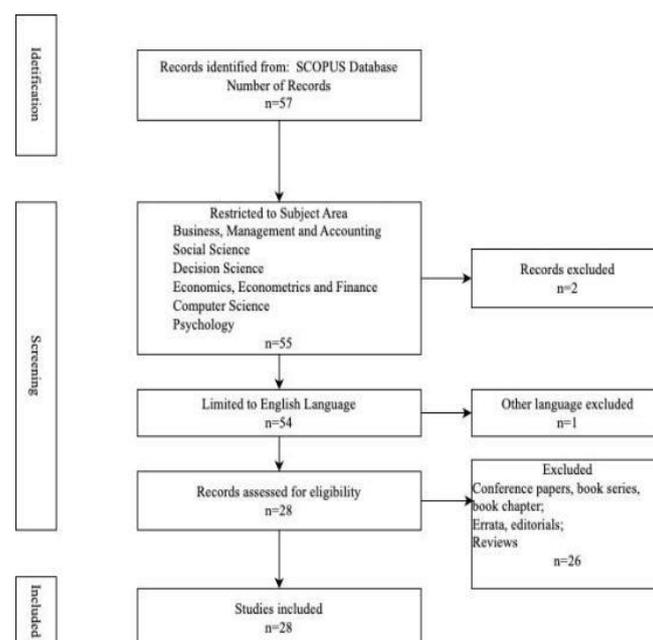

Figure 1 Steps in the research article process

Findings

After the search strategy, there are 28 full-text records, the number is very small as this area is relatively new and still developing. The synthesis of these eligible studies yields several key findings, covering the progression of research, elements of research design, underpinning theories, and key variables, all supported by empirical evidence from the included literature.

Progression of studies

The included studies span a certain time range, with most publications concentrated in the recent years of this range(see Figure 2). Throughout the entire period, an obvious increasing trend in the number of studies is observed. Although research on gamification and customer loyalty began to attract academic attention earlier, due to the relatively novel nature of gamification as a marketing strategy and the gradual deepening of academic understanding of customer loyalty in digital contexts, the number of empirical studies in this field only started to rise significantly in the last few years (Koivisto & Hamari, 2019). This trend is closely tied to the widespread adoption of digital platforms (e.g., mobile apps, social media) in marketing practice: Mattke & Maier (2021) noted that the surge in relevant studies aligns with the popularization of mobile educational and retail apps, while Zhang et al. (2025) highlighted that the growth in research post-2021 corresponds to the commercial success of gamified brand apps (e.g., POPMART's mini-app).
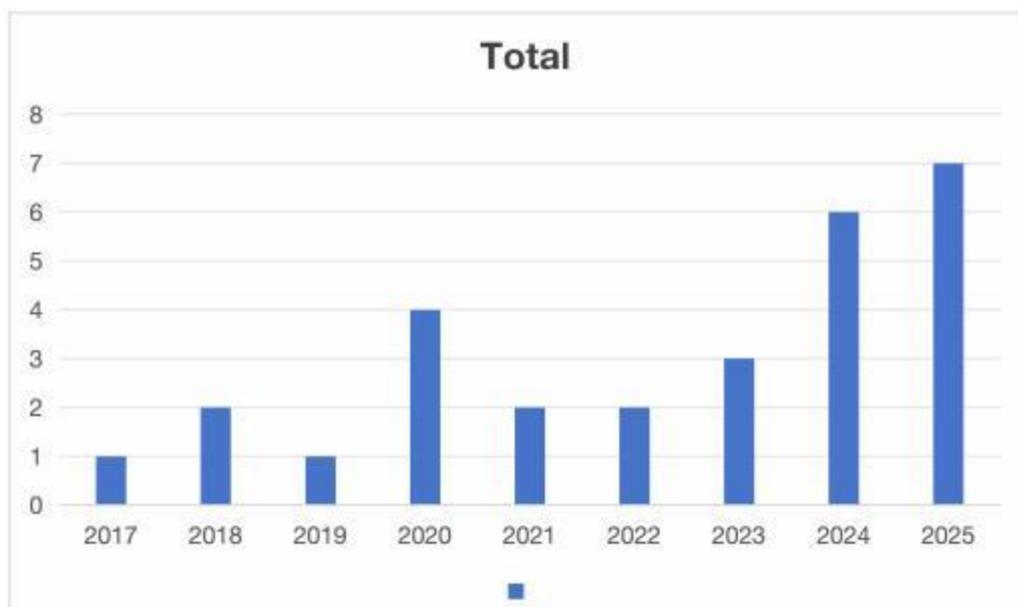

Figure 2   Selected articles publication year.

Research design

Among the selected studies, quantitative research design dominates the field of gamification and customer loyalty, with most studies adopting this approach (Bidmon, 2017; Kaur et al., 2023; Mattke & Maier, 2021). Only a small number of studies use mixed-methods design (e.g., Nawaz et al., 2023, which combined surveys with crowdfunding performance data), while qualitative research design is rarely seen.

In terms of data collection, most studies take surveys as the primary method. For example, Bidmon (2017) conducted surveys to explore the relationship between attachment style and brand loyalty among adolescents, and Kaur et al. (2023) used surveys to analyze the impact of gamification elements in brand apps on consumer behavior. A small number of studies rely on secondary data, such as Nawaz et al. (2023) who used brand crowdfunding participation metrics, and Luo et al. (2021) who analyzed user behavior logs from relevant platforms.

Data analysis methods vary by research focus. Most studies adopt Structural Equation Modeling (SEM) to test mediating or moderating relationships between variables: Kaur et al. (2023) used SEM to validate the mediating role of perceived enjoyment in the gamification-loyalty chain, and reported good model fit. For studies focusing on configurational relationships (e.g., combinations of gamification elements that drive high customer loyalty), a small number of researchers use fuzzy-set Qualitative Comparative Analysis (fsQCA), such as Mattke & Maier (2021) who applied this method to identify key configurations for high brand loyalty in mobile apps. For studies involving big data processing, a few use Python, such as Luo et al. (2021) who used it to analyze linguistic data from relevant marketing scenarios.

Theories And frameworks
Most studies in this field adopt the Stimulus-Organism-Response (SOR) model as their core theoretical framework (Zhang et al., 2025; Ming et al., 2021). Derived from traditional stimulus-response theory and supplemented with the "organism" dimension reflecting psychological states (Jacoby, 2022), the SOR model is highly compatible with the logic of gamification research: Zhang et al. (2025) applied the SOR model to demonstrate that utilitarian (e.g., product information presentation) and social (e.g., user community interaction) gamification elements (as stimuli) enhance user engagement (as organism), which in turn promotes brand loyalty (as response).

The Technology Acceptance Model (TAM) is the second most widely used framework (Yang et al., 2017; Hsu & Chen, 2018). Yang et al. (2017) extended the TAM to the gamification context, finding that perceived enjoyment— a core construct of TAM— mediates the impact of gamification on brand attitude, and brand attitude further predicts customer loyalty.

A portion of studies adopt Attachment Theory (Bidmon, 2017). Bidmon (2017) used this theory to explore how parental attachment styles influence the brand attachment-brand trust-brand loyalty chain in adolescents, and found that the dependent-independent dimension of parental attachment style has a significant impact on relevant constructs in the chain.

Other relatively less commonly used frameworks include the Mechanics-Dynamics-Aesthetics (MDA) framework (Kaur et al., 2023) and the Unified Theory of Acceptance and Use of Technology (UTAUT). Kaur et al. (2023) used the MDA framework to analyze how different types of gamification elements (mechanics, dynamics, aesthetics) influence perceived enjoyment, and further affect consumer behavior.

Key Variables
Dependent Variables: Customer loyalty and its proxies are the core dependent variables in most studies. Among these, purchase intention (a key precursor to behavioral loyalty) is the most commonly examined variable (Guo et al., 2021; Ko & Chen, 2020; Kaur et al., 2023)—for example, Kaur et al. (2023) focused on how gamification elements in brand apps influence consumers' purchase intention. Followed by impulsive purchase behavior (Ming et al., 2021; Wu et al., 2020) and customer engagement (Nawaz et al., 2023; Kang et al., 2021). Additionally, some studies examine users' continuance usage intention of gamified platforms (Zhang et al., 2025) and repurchase intention—the latter serving as a direct indicator of long-term loyalty (Mattke & Maier, 2021; Xi & Hamari, 2020).

Mediating Variables: Three types of variables are widely recognized as core mediators in the relationship between gamification and customer loyalty. Most studies identify perceived enjoyment as a key mediator: defined as the subjective pleasure users obtain from participating in gamified activities (Davis et al., 1992), it connects gamification elements to loyalty-related behaviors. For instance, Kaur et al. (2023) found that gamified storytelling enhances perceived enjoyment, which in turn affects purchase intention. Followed by social interaction (Zhang et al., 2025; Nawaz et al., 2023), referring to interactive behaviors conducted by users through gamified features (e.g., leaderboards, communities). This type of interaction strengthens the emotional bond between users and brands, thereby promoting loyalty. Additionally, some studies identify brand trust as a crucial mediator (Xu et al., 2020; Bidmon, 2017): gamification enhances trust by improving consumers' perception of brand reliability, which ultimately translates into loyalty.

Antecedent Variables (Gamification Elements): Most studies categorize gamification elements into three core clusters (Mattke & Maier, 2021; Diehl, 2009). The first is immersion-related elements, such as virtual avatars, storytelling, and personalized user profiles—Mattke & Maier (2021) noted that frequent use of these elements enhances user involvement and contributes to loyalty. Followed by achievement-related elements, including badges, progress bars, daily challenges, and reward mechanisms (Xi & Hamari, 2020; Sailer et al., 2017), which satisfy users' need for competence. For example, Xi & Hamari (2020) found that reward mechanisms enhance customer commitment, thereby fostering loyalty. The third category is social-related elements, such as leaderboards, user communities, and peer competition (Zhang et al., 2025; Nawaz et al., 2023), which strengthen brand connections by fulfilling users' social needs.

Table 1
Key Variables

Variable Type	Variable Subcategory	Core Definition/Description
Dependent Variables	Purchase Intention	A key precursor to behavioral loyalty, reflecting consumers' willingness to purchase a specific brand/product in the future
	Impulsive Purchase Behavior	Unplanned purchase behavior triggered by immediate stimuli without sufficient consumer planning
	Customer Engagement	The depth of interaction and level of commitment between consumers and brands/platforms, serving as an important manifestation of loyalty
	ntinuance Usage Intention of Gamified Platforms	Consumers' willingness to use gamified functions/platforms over the long term
	Repurchase Intention	Consumers' willingness to purchase the same brand/product again, acting as a direct indicator of long-term loyalty
Mediating Variables	Perceived Enjoyment	The subjective pleasure users obtain from participating in gamified activities, serving as a core emotional bridge connecting gamification and loyalty
	Social Interaction	Interactive behaviors conducted by users through gamified features (e.g., leaderboards, communities), which strengthen the emotional bond between users and brands
	Brand Trust	Consumers' perception of a brand's reliability and integrity; gamification enhances trust to convert it into loyalty
Antecedent Variables (Gamification	Immersion-Related Elements	Gamified designs that enhance user immersion, such as virtual avatars, storytelling, and personalized user profiles

Elements)
Achievement-Related Elements
Social-Related Elements
Gamified designs that satisfy users' need for competence, including badges, progress bars, daily challenges, and reward mechanisms
Gamified designs that satisfy users' social needs, such as leaderboards, user communities, and peer competition

Discussion and Conclusion

This PRISMA-compliant systematic review synthesizes 28 empirical studies to unpack the gamification-customer loyalty nexus, addressing the three core research questions and resolving fragmentation in the field. First, regarding how existing research analyzes the gamification-loyalty relationship, studies uniformly conceptualize this link as a dual-path mechanism (direct and indirect). Direct effects are primarily driven by achievement-related gamification elements (e.g., reward systems, progress bars), which satisfy users' competence needs to enhance immediate commitment (Xi & Hamari, 2020). Indirect effects operate through three pivotal mediators: perceived enjoyment (subjective pleasure derived from gamified activities, e.g., Kaur et al. (2023)'s finding that storytelling boosts enjoyment to influence purchase intention), social interaction (community engagement via leaderboards or user forums, as in Zhang et al. (2025)'s POPMART case), and brand trust (improved perceptions of brand reliability, per Xu et al. (2020)). Notably, customer loyalty is consistently operationalized as multidimensional, encompassing behavioral loyalty (e.g., app retention, repurchase intention; Mattke & Maier, 2021) and attitudinal loyalty (e.g., brand attachment, positive word-of-mouth; Bidmon, 2017), reflecting the shift from transactional to emotional commitment in digital marketing contexts. Second, on theoretical, methodological, and contextual patterns: The Stimulus-Organism-Response (SOR) model is the dominant theoretical framework (Zhang et al., 2025; Ming et al., 2021), as its structure—mapping gamification elements (stimuli) to psychological states (organism) and loyalty (response)—aligns with gamification's behavioral influence logic. It is followed by the Technology Acceptance Model (TAM; Yang et al., 2017), which emphasizes perceived enjoyment as a mediator of technology adoption and loyalty, and Attachment Theory (Bidmon, 2017), which explores long-term emotional bonds between users and brands. Methodologically, quantitative designs predominate: Structural Equation Modeling (SEM) via SmartPLS or AMOS is the primary tool for testing mediating/moderating relationships (Kaur et al., 2023), while fuzzy-set Qualitative Comparative Analysis (fsQCA) is emerging to identify configurational effects (e.g., Mattke & Maier (2021)'s study of element combinations driving loyalty in Duolingo). Contextually, research clusters in mobile apps (due to high user engagement and accessibility) and emerging markets (China, India) (attributed to rapid digital adoption and brand experimentation with gamified strategies; Zhang et al., 2025). Third, regarding future research directions, existing studies implicitly or explicitly point to gaps in cross-cultural generalizability, long-term effect validation, and application in new contexts (e.g., Metaverse, healthcare). Collectively, this review integrates fragmented findings, validates core theoretical and methodological patterns, and provides actionable insights for practitioners—such as prioritizing mediators like perceived enjoyment and tailoring gamification to mobile platforms—while laying a rigorous foundation for subsequent inquiry.

Limitations and Suggestions for Future Research

This systematic review is not without limitations that constrain its generalizability and scope. First, it exclusively includes English-language empirical studies published between 2017 and 2025, excluding non-English research (e.g., Chinese studies on local brand gamification) that could offer critical cultural nuances to the gamification-loyalty relationship. Second, literature retrieval was restricted to subscribed databases,

omitting "grey literature" (e.g., industry reports, working papers) that might capture practical gamification applications (e.g., unreported corporate case studies) and bridge the gap between academic theory and practice. Third, the relative nascency of gamification research in underrepresented contexts—such as the Metaverse (Arya et al., 2024) and healthcare (e.g., gamified wellness apps)—resulted in a paucity of relevant studies, limiting the review's ability to generalize beyond mobile apps and emerging markets. Finally, the focus on empirical work excluded conceptual papers that could refine theoretical frameworks (e.g., redefining gamification elements for new digital environments) and address theoretical ambiguities (e.g., overlapping definitions of "perceived enjoyment" across studies). To address these limitations and advance the field, future research should adopt four key directions: First, conduct cross-cultural comparative studies to explore how cultural values (e.g., individualism vs. collectivism) moderate gamification's impact—for instance, testing whether social-related elements (leaderboards) are more effective in collectivist cultures (e.g., India) than individualist ones (e.g., the U.S.). Second, adopt longitudinal designs to validate the long-term sustainability of gamification-driven loyalty, as most current studies rely on cross-sectional data that cannot confirm if initial engagement translates to sustained repurchases or brand advocacy. Third, expand to new contexts (e.g., Metaverse branding, healthcare, or sustainable consumption) to test the generalizability of existing frameworks—for example, exploring how immersive gamification (e.g., virtual avatars in the Metaverse) influences attitudinal loyalty.

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