The Impact of Gamification on Brand Advocacy through the Mediating Role of Continuance Intention an Empirical Study in Egypt's Online Retail Sector

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Abstract. This study investigates the influence of gamification on continuance intention and brand advocacy within digital service platforms, particularly in the context of higher education and e-commerce. Drawing on the stimulus-organism-response (S-O-R) framework, the research explores how gamified elements—such as points, challenges, rewards, and progress tracking—act as stimuli that shape users' psychological engagement and behavioral outcomes. Specifically, the study examines continuance intention as a mediating mechanism that links gamification to users' willingness to advocate for a brand or platform. A quantitative research design was employed using a structured questionnaire administered to 400 participants across Egyptian digital platforms. Measurement constructs were validated through established scales, and data were analyzed using partial least squares structural equation modeling (PLS-SEM). The findings reveal that gamification has a significant and positive effect on both continuance intention and brand advocacy. Furthermore, continuance intention partially mediates the relationship between gamification and brand advocacy, indicating that users are more likely to promote a platform when they are continuously engaged through meaningful and enjoyable gamified experiences. The study contributes to the growing body of knowledge on gamified digital engagement by offering empirical support for the mediating role of continuance intention. It also provides practical insights for platform designers, marketers, and digital strategists seeking to foster user loyalty and advocacy through interactive and motivational design elements. Future research directions are proposed, including the need for longitudinal studies and cross-cultural validation to deepen the understanding of gamification's long-term behavioral impacts.

Keywords: Brand advocacy, Continuance intention, Gamification, PLS-SEM, S-O-R framework, User engagement.

1. INTRODUCTION

In the contemporary digital economy, enterprises face escalating pressure to devise new techniques that enhance user engagement, loyalty, and enduring brand affiliation. Among these strategies, gamification—the integration of game mechanics such as points, leaderboards, challenges, and rewards into non-game contexts—has garnered significant attention for its capacity to convert mundane digital experiences into engaging and emotionally impactful interactions (Sánchez Castillo & Gómez Cano, 2024; Wang et al., 2021; Elwakeel et al., 2025). Organizations are utilizing gamification to influence user behavior, enhance satisfaction, and cultivate emotional ties with digital platforms as users pursue more meaningful and participatory experiences. A significant behavioral consequence influenced by gamified systems is continuation intention, denoting the user's intentional choice to maintain usage of a service beyond initial adoption. The intention to continue using a service is recognized as a vital success factor in digital business models, especially in e-commerce and mobile applications, where recurrent usage indicates happiness, loyalty, and potential for monetization (Foroughi et al., 2023; Cheng, 2023). Studies based on Self-Determination Theory indicate that gamification enhances user retention by fulfilling psychological requirements for competence, autonomy, and relatedness (Xi & Hamari, 2019; Habib et al., 2025). Emotionally gratifying experiences increase user retention on platforms, fostering enduring behaviors that enhance brand-user connections. The strategic potential of gamification transcends retention, impacting brand advocacy, when people willingly support, recommend, or defend a brand in digital and social contexts (Malik & Pradhan, 2025). Advocacy is increasingly acknowledged as the paramount expression of client loyalty and a crucial factor in organic brand expansion, especially in contexts where confidence in peer evaluations and social endorsements exceeds that in conventional advertising (Chatterjee et al., 2020; Noureldin et al., 2025; Sumarmi et al., 2025). As consumers transform into content creators and opinion leaders, their favorable experiences can profoundly influence brand reputation and market penetration.

Despite increasing academic interest in gamification and its impact on user behavior, a significant vacuum persists in the literature regarding the translation of gamification into brand advocacy, especially through the mediating effect of continuance intention. Although previous research has explored these variables independently, there is a scarcity of empirical studies investigating the interconnected relationship among gamification, continuance intention, and brand advocacy, particularly in growing digital markets like Egypt. Egypt's swift growth in mobile use, digital commerce, and platform-centric services signifies a significant knowledge deficiency with both scholarly and practical ramifications. This study examines whether continuing intention influences the relationship between gamification and brand advocacy within Egypt's digital business

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landscape. This study investigates if users who interact with gamified features are more inclined to persist in using the platform and ultimately transform into active brand supporters. The research utilizes Self-Determination Theory and Expectation-Confirmation Theory to build a conceptual model that connects motivating design to enduring behavioral results. The primary aim of this research is to investigate the impact of gamification on brand advocacy and to evaluate if continuance intention acts as a mediating factor in this connection. This research seeks to enhance both theoretical comprehension and managerial application in digital marketing and user engagement. To align with this purpose, the study presents the following primary research question: To what degree does continuing intention moderate the relationship between gamification and brand promotion within the Egyptian digital business environment? This inquiry is substantiated by two supplementary questions: How does gamification influence users' continuance intention on digital platforms? And How does continuance intention influence users' willingness to advocate for a brand? By addressing these questions, the study offers empirical insight into how businesses can design gamified experiences that not only engage users but also cultivate long-term loyalty and user-driven promotion, positioning gamification as a sustainable growth strategy in Egypt's fast-evolving digital economy.

2. CONCEPTUAL MODEL

2.1. Gamification

Gamification refers to the application of game design elements, including points, badges, leaderboards, and incentives, in non-gaming environments to improve user engagement, motivation, and behavioral results (Eppmann et al., 2018). In the commercial realm, gamification has arisen as an effective mechanism to enhance consumer engagement, elevate usage frequency, and cultivate enduring relationships between users and digital platforms (Hamari et al., 2014). As digital competition escalates, organizations are pursuing novel strategies to retain users, with gamification demonstrating effective results in sustaining user attention and engagement over time. The fundamental power of gamification resides in its capacity to generate pleasurable and immersive experiences. These experiences frequently satisfy users' psychological demands, including competence, autonomy, and relatedness, hence positively influencing behavioral intentions and platform loyalty (Xi & Hamari, 2019). Consequently, gamification is crucial in encouraging sustained engagement with platforms, especially in online services and digital commerce.

2.2. Continuance Intention

Continuance Intention denotes the user's intention to persist in utilizing a system or service following the initial adoption phase (Bhattacherjee, 2001). In digital business contexts, this idea is seen as a vital indicator of sustained user retention and total customer lifetime value. In contrast to early adoption, primarily motivated by expectations and novelty, continuity is determined by pleasure, perceived usefulness, enjoyment, and emotional engagement (Liao et al., 2007). The Technology Continuance Theory (TCT) posits that a favorable post-adoption experience, influenced by the confirmation of expectations and emotional engagement, significantly forecasts the desire to continue usage. Consequently, business apps that integrate engaging, interactive elements—such as gamification—are more likely to promote enduring usage behavior.

2.3. Brand Advocacy

In the age of digitally interconnected customers, Brand Advocacy (BA) has become a vital measure of client loyalty and strategic brand achievement. Brand advocacy (BA) denotes a consumer's voluntary and fervent endorsement of a brand, typically manifested through recommendations, social sharing, online reviews, and word-of-mouth promotion (Badrinarayanan & Becerra, 2013; Chatterjee et al., 2020). In contrast to conventional loyalty, which mostly entails repeated transactions, brand advocacy signifies a more profound emotional connection that compels individuals to actively shape others' opinions and choices in support of the brand (Fullerton, 2005). Brand advocates are typically seen as unpaid ambassadors who participate in promotional activities without receiving incentives from the brand. Their influence is especially potent in digital environments where user-generated content (UGC), peer evaluations, and social endorsements significantly impact consumer behavior more than sponsored marketing (Touni et al., 2022). Consequently, BA has been established as a strategic asset in modern marketing, capable of diminishing consumer acquisition expenses and fostering enduring brand equity. Social Identity Theory and Relationship Marketing Theory offer theoretical foundations for understanding advocacy behavior. When people resonate with a company's values, mission, or community, they perceive their self-concept as interconnected with the brand, leading to profound emotional attachment and advocacy (Algharabat et al., 2023). Moreover, relationship marketing underscores that trust, contentment, and emotional engagement—typically cultivated through regular, significant interactions—propel customers toward brand-supportive activities. Numerous precursors of BA have been recognized in the literature. Customer happiness, emotional connection, brand trust, brand affection, and perceived value are consistently associated with heightened advocacy intentions (Badrinarayanan & Becerra, 2013; Tsou & Putra, 2023). Recent research has concentrated on digital experiential elements, including gamification, interactivity, and social presence, which augment user engagement and foster psychological states favorable to advocacy

(Hamari et al., 2014; Chatterjee et al., 2020). Tsou and Putra (2023) revealed that gamification components, including reward systems, competitive challenges, and progression mechanics, markedly enhanced brand affection and advocacy in mobile purchasing contexts. Algharabat et al. (2023) similarly discovered that consumers deriving enhanced enjoyment and satisfaction from gamified platforms were more inclined to serve as brand advocates, especially when their intention to continue was robust. These findings highlight the complex nature of advocacy, wherein emotional and behavioral elements interact to influence consumers' promotional behaviors. In digital ecosystems, brand advocacy is further strengthened by community processes, like brand-centric social media groups, gamified referral systems, and individualized recognition. These tools enhance the prominence of advocacy actions and offer users symbolic benefits and social capital, so incentivizing ongoing advocacy efforts. Researchers, however, warn that advocacy cannot be artificially cultivated just through incentives. Genuine brand advocacy arises from sincere emotional engagement and favorable cumulative experiences with the brand. The excessive use of extrinsic rewards, such as discounts or loyalty points, may encourage short-term engagement but does not cultivate enduring commitment or voluntary advocacy (Hamari et al., 2014; Huotari & Hamari, 2017). From a managerial standpoint, fostering brand support necessitates the creation of user journeys that are emotionally impactful, mentally gratifying, and socially disseminable. This encompasses the implementation of gamified elements, compelling brand narratives, clear communication, and proactive customer service. By connecting digital experiences with user values and motivations, marketers may convert contented users into influential advocates throughout their networks.

3. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT
3.1. Gamification and Continuance Intention

The growing incorporation of digital engagement tactics in commercial settings has prompted the extensive usage of gamification (GF) as an essential tool for improving user experience, encouraging sustained connection, and raising platform retention. Gamification transcends mere cosmetic incentives or game-like aspects; it embodies a profound psychological framework that utilizes game elements to stimulate both intrinsic and extrinsic motivations (Hamari et al., 2014; Xi & Hamari, 2019). This methodology has garnered popularity in e-commerce, education, mobile applications, and digital services, with the objective of transforming passive users into active participants that consistently connect with digital platforms (Foroughi et al., 2023). Recent research has highlighted that Continuance Intention (CI)—the user's intention to persist in utilizing a service or system beyond initial engagement—constitutes a crucial metric for evaluating the enduring effectiveness of digital platforms (Bhattacherjee, 2001; Liao et al., 2007). In this context, gamification is widely regarded as a catalyst for continuance intention, utilizing mechanisms that enhance perceived enjoyment, habit development, and psychological fulfillment (Hamari et al., 2014; Tsou & Putra, 2023). Researchers contend that platforms including gamified systems deliver engaging, pleasurable, and rewarding experiences that encourage habitual usage and generate enduring user value (Huotari & Hamari, 2017). According to Self-Determination Theory (SDT), gamification stimulates essential psychological needs—autonomy, competence, and relatedness—that connect favorably with user motivation and sustained engagement (Deci & Ryan, 1985; Xi & Hamari, 2019). Competence is attained when users surmount obstacles or get acknowledgment through point systems and accomplishments, but autonomy arises when users perceive themselves as in command of their experience. The incorporation of social elements like leaderboards and peer challenges enhances relatedness, hence reinforcing the emotional connections between users and platforms (Foroughi et al., 2023; Hamari et al., 2014). These emotional and motivational elements are crucial for fostering behavioral consistency. Empirical research consistently demonstrates the influence of gamification on continuance intention. Foroughi et al. (2023) discovered that gamification elements integrated into work management software markedly improved users' intention to continue usage through fun, habit, and social influence. Similarly, Xi and Hamari (2019) established that the fulfillment of psychological needs influenced the association between gamified elements and users' continued engagement with the system. Gamification has been demonstrated to satisfy both hedonic and functional requirements, therefore fostering sustained engagement among various user demographics. From a marketing and digital commerce standpoint, gamification enhances customer retention, platform loyalty, and brand engagement—elements closely associated with continuation behaviors (Tsou & Putra, 2023). In e-commerce apps, gamified aspects like daily check-ins, reward tracking, spin-the-wheel games, or tiered loyalty levels foster anticipation and commitment, hence sustaining user engagement over time (Huotari & Hamari, 2017). These mechanisms are associated with behavioral reinforcement, which not only augments continuance intention but also diminishes churn and improves conversion rates. Nevertheless, experts emphasize important factors concerning the sustainability of gamification's impact on continuation. Certain studies warn that novelty effects may wane over time if gamified systems are devoid of variation or personalization (Hamari et al., 2014). Furthermore, excessive dependence on extrinsic motivators (e.g., points or discounts) lacking adequate intrinsic allure may result in transient engagement. Consequently, to maintain continuous innovation, organizations must guarantee that gamification strategies develop and are contextually matched with user requirements and anticipations (Huotari & Hamari, 2017). The efficacy of gamification in fostering continuance intention is predominantly contingent upon design coherence, user-centered development, and psychological reactivity. An

inadequately integrated gamification system within the overall user experience or one that does not correspond with the expectations of the target audience may not succeed in fostering significant, enduring engagement (Deci & Ryan, 1985; Liao et al., 2007). Conversely, when gamification is properly integrated into the platform's user experience, it serves not only as a motivating enhancement but as an essential element of behavioral engagement. Considering the increasing recognition of gamification's impact on digital company performance and its established effect on user psychology and retention, it is both theoretically and practically justifiable to propose a direct and substantial influence on continuance intention.

Hypothesis 1: Gamification has a positive and statistically significant effect on users' continuance intention.

3.2. Continuance Intention and Brand Advocacy

As digital platforms and customer-centric systems advance, firms are increasingly prioritizing the cultivation of sustained user engagement as a means of achieving competitive advantage. In this context, Continuance Intention (CI)—the user's persistent intention to utilize a product, platform, or service after initial adoption—has become a crucial concept in comprehending post-adoption behavior (Bhattacherjee, 2001). Customer Intention (CI) is influenced by characteristics like perceived utility, contentment, enjoyment, and emotional attachment (Liao et al., 2007; Foroughi et al., 2023), which collectively establish the groundwork for elevated behavioral consequences, such as Brand Advocacy (BA). Brand advocacy denotes a consumer's readiness to freely promote, support, or defend a brand without direct incentives (Badrinarayanan & Becerra, 2013). Advocates are not just devoted customers; they actively influence the brand's image within their social networks, both online and offline. Consequently, brand support has emerged as a coveted objective in marketing strategy, providing economical word-of-mouth promotion, social validation, and reputation development (Chatterjee et al., 2020). In this context, continuity intention serves as a behavioral antecedent to brand promotion. The justification is based on relationship marketing and consumer psychology, wherein sustained usage cultivates stronger emotional, attitudinal, and experiential ties to the brand (Fullerton, 2005). Users who persist in their engagement with a product or service are more inclined to amass favorable experiences, cultivate trust, and recognize brand value—elements that motivate them to disseminate their experiences and endorse the brand to others (Algharabat et al., 2023; Touni et al., 2022). Numerous research have scientifically substantiated this association. Algharabat et al. (2023) shown that the intention to continue using e-commerce strongly forecasts brand advocacy, with brand attachment and satisfaction serving as mediators. Touni et al. (2022) similarly found that customer interactions positively influenced behaviors such as online reviews, suggestions, and social media sharing, notably in the hospitality and digital retail sectors. The findings suggest that sustained platform usage not only increases the personal value of a brand but also fosters a psychological connection that encourages consumers to promote the brand. This relationship can be analyzed through the Commitment–Trust Theory (Morgan & Hunt, 1994), which asserts that trust and commitment, cultivated through ongoing encounters, are crucial for relational behaviors such as advocacy. Moreover, Expectation-Confirmation Theory (ECT) posits that when consumers' expectations are fulfilled or surpassed, satisfaction and ongoing usage foster positive attitudes, which are reflected in advocacy behaviors (Bhattacherjee, 2001; Liao et al., 2007). In digital environments, especially mobile applications, loyalty programs, and gamified platforms, users exhibiting strong continuation intention frequently transform into brand ambassadors, endorsing the platform within online communities or app stores via ratings, reviews, and recommendations. This is particularly important in the platform economy, where peer influence significantly shapes adoption behavior (Chatterjee et al., 2020). Researchers assert that the intention to continue does not necessarily lead to advocacy unless it is accompanied with emotional fulfillment, trust, and a sense of community or brand identity (Fullerton, 2005). Users may persist in utilizing a service due to ease or switching prices, without cultivating the emotional commitment requisite for advocacy. Consequently, the quality of the user experience moderates the intensity of the CI–BA association. From a strategic standpoint, augmenting continuance intention can be seen as a pivotal objective in cultivating a loyal client base that inherently fosters brand expansion. Enterprises seeking to enhance advocacy must create experiences that not only retain consumers but also thrill, empower, and emotionally engage them (Algharabat et al., 2023). This entails incorporating elements that foster community, user engagement, feedback systems, and transparent communication. Considering the robust theoretical and empirical evidence connecting continuance intention to brand advocacy, with the growing significance of user-generated promotion in digital ecosystems, it is justifiable to offer the following hypothesis:

Hypothesis 2: Continuance intention positively and significantly influences users' brand advocacy.

3.3. Gamification and Brand Advocacy

As digital competition intensifies and experiential marketing evolves, firms are increasingly adopting gamification (GF) as a strategic instrument to enhance consumer-brand interactions. Gamification, characterized by the incorporation of game-like elements—such as incentives, challenges, points, badges, and progress tracking—into non-game contexts (Deterding et al., 2011), is no longer perceived as a mere superficial engagement strategy. It is acknowledged for its capacity to elicit emotional responses, foster motivation, and improve value co-creation between consumers and companies (Hamari et al., 2014; Huotari & Hamari, 2017). An

essential result of successful gamification is the development of Brand Advocacy (BA), in which customers support, recommend, and defend a brand in social settings without direct incentives (Badrinarayanan & Becerra, 2013). Advocacy represents the pinnacle of consumer loyalty, above basic satisfaction or intent to repurchase, and has emerged as a vital objective for firms aiming for sustainable growth and organic reputation enhancement (Chatterjee et al., 2020; Tsou & Putra, 2023). The convergence of gamification and advocacy signifies a strategic transformation where engagement serves not as a goal, but as a means to facilitate voluntary customer-driven brand promotion. Gamification promotes advocacy via several psychological and behavioral factors. Fundamentally, game features are crafted to evoke fun, accomplishment, acknowledgment, and community, all of which enhance positive affect and brand emotionality (Xi & Hamari, 2019). When customers experience entertainment, appreciation, and connection through gamified brand interactions, they are more inclined to form emotional attachments and intrinsic loyalty, which are reflected in advocacy behaviors (Huotari & Hamari, 2017; Algharabat et al., 2023). Empirical evidence substantiates this connection. Tsou and Putra (2023) discovered in a recent study that gamification aspects, including point systems, challenges, and progress feedback, strongly impacted brand affection and advocacy in mobile purchasing contexts. Their research indicates that immersive and gamified interactions enhance brand identity and consumer loyalty. Chatterjee et al. (2020) similarly shown that gamified digital platforms enhance trust, emotional involvement, and user empowerment—elements that mitigate the influence of gamification on advocacy intentions. From a theoretical perspective, Self-Determination Theory (SDT) (Deci & Ryan, 1985) offers a fundamental elucidation of the mechanism by which gamification fosters brand advocacy. Game features fulfill consumers' intrinsic psychological needs—competence, autonomy, and relatedness—thereby cultivating a sense of empowerment and voluntary allegiance to the brand (Xi & Hamari, 2019). When users perceive advancement, accomplishment, and social engagement within gamified settings, they are more inclined to absorb brand values and function as informal brand advocates. Moreover, Social Exchange Theory asserts that when customers recognize significant experience and emotional value in their encounters with a brand, they are more likely to reciprocate through behaviors like as advocacy, particularly in the absence of material benefits (Badrinarayanan & Becerra, 2013). In gamified ecosystems, the sense of reciprocity is amplified by rewarding feedback loops and the perception of collaboration between users and the brand. From a strategic perspective, gamification not only improves customer engagement but also acts as a cost-effective means of generating genuine brand promotion. Individuals participating in enjoyable, challenge-oriented, and socially engaging situations frequently disseminate their progress, accomplishments, and contentment among their networks, so functioning as voluntary brand advocates (Huotari & Hamari, 2017). This type of organic lobbying is particularly potent in the digital era, as peer influence, user evaluations, and online recommendations significantly impact purchasing decisions. Researchers advise that the effect of gamification on advocacy depends on the quality of design and the relevance to users. Poorly conceived or excessively external game elements may lack emotional impact, hence constraining their capacity to promote advocacy (Hamari et al., 2014). To foster authentic advocacy, gamification systems must be congruent with the brand's values, the users' identities, and the overarching customer journey. In conclusion, when executed proficiently, gamification serves as an efficient method for fostering brand endorsement by cultivating emotional loyalty, promoting user engagement, and enabling consumers to act as brand narrators. Based on the given theoretical and empirical grounds, the subsequent hypothesis is posited:

Hypothesis 3: Gamification positively and significantly influences users' brand advocacy.

3.4. The Mediating Role of Continuance Intention

In the dynamic realm of digital interaction, firms are progressively developing gamified systems to not only enhance immediate user engagement but also to foster enduring behavioral results like brand advocacy (BA). Although the direct impact of gamification (GF) on brand advocacy is substantiated (Tsou & Putra, 2023; Chatterjee et al., 2020), current studies indicate that this link may be more intricate and indirect, mediated by users' continuation intention (CI). Gamification promotes brand endorsement not merely through immediate gratification or pleasure, but by nurturing prolonged involvement, which progressively develops deeper emotional and attitudinal loyalty (Algharabat et al., 2023). Continuance intention refers to the user's intentional commitment to persist in utilizing a platform, product, or service over an extended period (Bhattacherjee, 2001). From a behavioral process standpoint, it signifies a pivotal transitional phase between initial engagement and elevated outcomes such as loyalty, word-of-mouth, or advocacy (Liao et al., 2007). In this context, gamification acts as a catalyst that affects Continuous Improvement (CI) through enjoyment, feedback, social engagement, and progress monitoring—essential motivational elements based on Self-Determination Theory (SDT) (Deci & Ryan, 1985; Xi & Hamari, 2019). Empirical research provide substantial evidence for this pathway. Foroughi et al. (2023) discovered that gamified elements markedly elevated continuation intention in task management applications by fostering intrinsic motivation and habit development. Consequently, consumer involvement (CI) has been demonstrated to affect consumers' propensity to participate in brand-supportive actions, including suggestions, reviews, and public endorsements (Touni et al., 2022; Algharabat et al., 2023). Users who persist in engaging with a platform are more inclined to cultivate brand familiarity, attachment, and trust—antecedents to voluntary advocacy. The mediating function of CI corresponds with theoretical frameworks like the Expectation-

Confirmation Theory (ECT), which asserts that when users' expectations are fulfilled and maintained through positive experiences, they not only persist in usage but also develop favorable attitudes that result in advocacy behaviors (Bhattacherjee, 2001). The Commitment–Trust Theory (Morgan & Hunt, 1994) posits that consistent, positive contacts foster relational commitment, a fundamental catalyst for advocacy. Gamified platforms that effectively retain users by providing rewarding, meaningful, and socially engaging experiences enhance the probability of those users becoming brand ambassadors. Moreover, gamification by itself may be inadequate to promote advocacy without the intermediary phase of sustained engagement. According to Huotari and Hamari (2017), the value derived from gamified services accumulates progressively over time. CI enables customers to enhance their connection with the brand, assimilate its values, and cultivate emotional bonds—prerequisites for genuine advocacy. In the absence of continuous improvement, gamification may elicit temporary enthusiasm but ultimately fail to provide enduring behavioral results. This model posits that organizations should not perceive gamification as a direct mechanism for advocacy, but rather as a component of a two-phase process: gamification promotes sustained engagement, which subsequently cultivates the emotional and cognitive conditions conducive to advocacy. Creating gamified experiences that are both enjoyable and significant, as well as conducive to habit formation, is crucial for realizing the complete potential of brand promotion inside digital ecosystems.

Hypothesis 4: Continuance Intention mediates the relationship between Gamification and Brand Advocacy.

4. RESEARCH FRAMEWORK

This study's research approach is structured around three principal constructs: Gamification (GF) as the independent variable, Brand Advocacy (BA) as the dependent variable, and Continuance Intention (CI) as the mediating variable. Gamification denotes the deliberate integration of game components—such as points, badges, challenges, and leaderboards—into digital platforms and services to augment user engagement, motivation, and experiential value (Hamari et al., 2014; Deterding et al., 2011). GF is progressively employed in digital commercial contexts to cultivate emotional bonds, enhance platform allegiance, and affect user conduct beyond initial engagement. Continuance Intention refers to the user's intentional commitment to continue utilizing a system or service following the initial adoption period. It indicates sustained user happiness, regular engagement, and emotional resonance with the platform (Bhattacherjee, 2001; Foroughi et al., 2023). In gamified systems, customer engagement (CI) is a crucial behavioral outcome of motivated design and is considered a forerunner to more profound customer-brand interactions. It establishes the basis for users to cultivate brand trust, emotional involvement, and loyalty over time (Xi & Hamari, 2019; Algharabat et al., 2023). Brand Advocacy (BA) involves voluntary actions whereby individuals actively endorse, promote, or defend a brand in both digital and physical environments. Brand advocacy (BA) is regarded as a superior behavioral outcome in relationship marketing, indicative of profound emotional attachment and favorable brand perception (Chatterjee et al., 2020; Touni et al., 2022). Advocates not only exhibit sustained usage but also sway prospective clients through genuine word-of-mouth, social media dissemination, and personal recommendations. The proposed framework asserts that gamification directly improves both continuation intention and brand advocacy. Moreover, CI is posited to facilitate the connection between GF and BA, indicating that sustained involvement is an essential mechanism by which gamified experiences convert into voluntary brand advocacy. This mediating pathway underscores the need of continuous user-platform engagement in fostering emotional loyalty and advocacy, especially within intensely competitive digital environments.
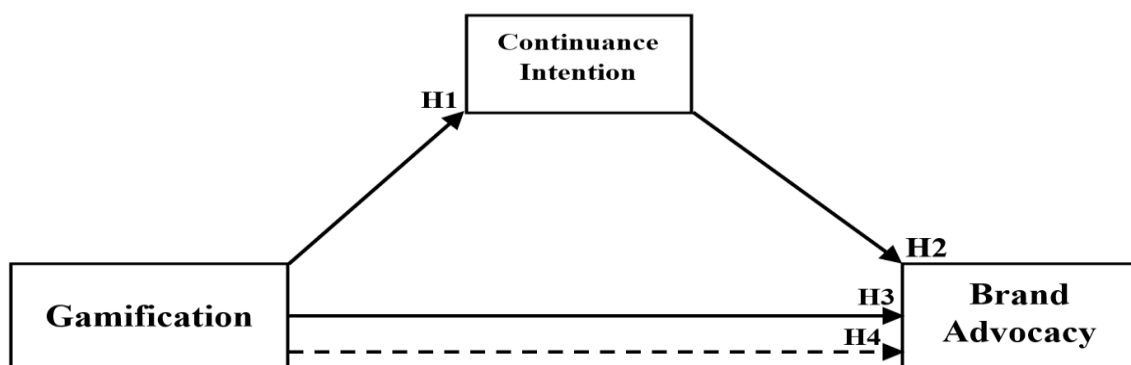

Figure 1: Research Framework.

5. METHODOLOGY

This research employed a quantitative, cross-sectional methodology to examine the correlation among gamification (GF), continuance intention (CI), and brand advocacy (BA) within Egypt's digital business sector. The study sought to investigate if continuing intention mediates the relationship between gamification and brand support, utilizing data gathered from users of gamified digital platforms, including e-commerce applications,

online loyalty programs, and mobile service platforms. A structured online questionnaire was created to gather primary data, utilizing previously validated measurement scales. The poll was conducted electronically through multiple channels, including email lists, internet communities, and mobile applications, thereby reaching a varied audience of active users within Egypt's digital economy. The choice of survey methodology corresponds with previous studies that emphasize its effectiveness in analyzing behavioral intentions and user-generated results throughout extensive digital user populations (Foroughi et al., 2023; Sánchez Castillo & Gómez Cano, 2024).

5.1. Measures

All constructs in the study were measured using multi-item Likert scales, rated from 1 ("strongly disagree") to 5 ("strongly agree"), to ensure consistency and content validity. Gamification (GF): Assessed using five adapted items based on the gamification experience scale (GAMEX), covering dimensions such as enjoyment, challenge, feedback, competition, and perceived immersion (Eppmann et al., 2018; Punwatkar & Verghese, 2025). These items were adapted to fit commercial app usage contexts. Continuance Intention (CI): Measured using four items derived and modified from Bhattacherjee (2001) and Xi & Hamari (2019), focusing on user commitment to continued use, habitual engagement, and intent to keep using the service despite alternatives. Brand Advocacy (BA): Evaluated using five items adapted from Chatterjee et al. (2020) and Malik & Pradhan (2025), capturing behaviors such as recommending the platform to others, posting positive reviews, defending the brand, and willingness to speak on its behalf. All measurement items underwent validity and reliability testing. Content validity was ensured through expert review and pre-testing. Internal consistency was assessed using Cronbach's alpha, and construct validity was tested through composite reliability (CR) and average variance extracted (AVE) using confirmatory factor analysis (CFA), in alignment with structural equation modeling (SEM) best practices.

5.2. Collecting Data and Sample

The data collection focused on consumers of Egyptian digital platforms across multiple industries, including e-commerce, fintech, online services, and retail applications. A purposive sample technique was employed to guarantee answers from users with active engagement in gamified elements on digital platforms. Eligible participants were evaluated to confirm their use of gamified platforms (e.g., applications with reward points, badges, levels, or challenges) within the preceding six months. The questionnaire was disseminated online via platform mailing lists, e-commerce forums, and social media advertisements. In compliance with SEM recommendations, a minimum sample size of 300 was established to guarantee statistical power and model stability. A total of 480 replies were gathered. Following data cleansing, which entailed the elimination of incomplete replies, multivariate outliers, and participants who did not pass attention-check questions, a final dataset including 426 valid responses was preserved for analysis. Descriptive statistics were produced to illustrate demographic variables, encompassing gender, age, educational attainment, employment sector, frequency of application usage, and previous exposure to gamified elements. These factors were subsequently included in moderation and control assessments throughout the structural analysis phase.

Table 1: Sample description.

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	198	46.5
	Female	228	53.5
Age Group	18–24	60	14.1
	25–34	135	31.7
	35–44	120	28.2
	45 and above	111	26.0
Employment Sector	E-commerce	138	32.4
	Fintech / Mobile Banking	90	21.2
	Online Services (delivery, etc.)	117	27.5
	Loyalty / Rewards Apps	81	19.0
Years of App Usage	Less than 1 year	70	16.4
	1–2 years	130	30.6
	3–4 years	120	28.2
	More than 4 years	106	25.0
Type of Platform Used	Mobile App	270	63.5
	Web Platform	75	17.6
	Both	81	19.0
Frequency of Use	Daily	180	42.3
	Several times/week	135	31.7
	Weekly	75	17.6
	Less than weekly	36	8.4

Table 1 delineates the demographic characteristics of the 426 individuals polled for this study, all of whom utilize gamified digital platforms within Egypt's digital business environment. The gender distribution reveals a very equitable sample, with female responders (53.5%) just surpassing male participants (46.5%). This indicates the growing involvement of women in Egypt's digital economy, especially in user-focused areas like e-commerce,

digital retail, and fintech. The predominant age group among participants is 25–34 years (31.7%), followed by 35–44 years (28.2%), and individuals aged 45 and above (26%). This indicates that the sample predominantly consists of working-age professionals who are likely to engage significantly with digital platforms and possess substantial exposure to gamified systems. The comparatively minor segment of respondents aged 18–24 (14.1%) provides insights into the initial behavioral trends of younger users. Concerning sectoral interaction, participants were sourced from several business sectors. E-commerce platforms accounted for the highest representation (32.4%), followed by online services (27.5%), fintech and mobile banking (21.2%), and loyalty or rewards-based apps (19%). This distribution improves the study's applicability across many sectors utilizing gamification tactics in Egypt. The duration of platform usage indicates that 30.6% of users possess 1–2 years of experience, 28.2% have 3–4 years, and 25% report above 4 years of engagement with gamified systems. Only 16.4% are relatively new users (less than 1 year), indicating that most participants are familiar with long-term engagement, making them suitable for evaluating continuance intention and advocacy behaviors. The majority of respondents choose mobile apps for accessing gamified content (63.5%), whereas web-based usage constitutes 17.6%, and 19% utilize both platforms. These statistics highlight the mobile-centric character of digital commerce in Egypt, especially among younger and mid-career professionals. Regarding usage frequency, 42.3% indicated daily engagement, whereas 31.7% utilize platforms multiple times per week. The elevated interaction rate substantiates the appropriateness of the sample for examining engagement-related characteristics such as continuance intention. Weekly or less frequent users (26%) still offer valuable comparative insights into varying levels of platform loyalty. The sample's demographic composition is diversified and well-balanced in terms of gender, age, sector, and usage experience. The amalgamation of novice and seasoned users throughout several digital business sectors establishes a solid basis for investigating the impact of gamification on enduring user behaviors, specifically continuation intention and brand advocacy, within the Egyptian digital marketplace.

5.3. Data Analysis

This research utilized Smart PLS 4.0 and the Partial Least Squares Structural Equation Modeling (PLS-SEM) methodology to analyze the measurement and structural models, as well as to evaluate the offered hypotheses. PLS-SEM was selected for its efficacy in managing intricate, multi-variable models and its appropriateness for exploratory research involving both reflective and formative components (Hair et al., 2021). It is especially beneficial in digital behavioral research, where models frequently incorporate latent variables such as user intention, involvement, and advocacy that are challenging to assess directly. Quoquab et al. (2021) highlight that PLS-SEM diminishes unexplained variation in endogenous constructs and facilitates the estimate of intricate path linkages without necessitating multivariate normality, a frequent constraint in empirical behavioral data. This method enables concurrent assessment of both direct and indirect effects, which is consistent with the mediating structure of this study. Consequently, PLS-SEM was employed to meticulously assess the measurement model, examining construct reliability (via Cronbach's alpha and composite reliability), convergent validity (by average variance retrieved), and discriminant validity (utilizing the Fornell-Larcker criterion and HTMT ratio). After the model achieved the reliability and validity criteria, the structural model was evaluated to examine the proposed links among gamification, continuance intention, and brand advocacy. This analytical method allowed the study to assess if continuing intention significantly mediates the relationship between gamification and brand advocacy, while also offering estimates of effect sizes, path coefficients, and the explained variance (R^2) of dependent items. The PLS-SEM results provide statistically robust insights into the behavioral effects of gamified digital initiatives inside Egypt's commercial platform ecosystem.

6. RESULTS

6.1. Assessment of the Reflective Measurement Model

This study's reflective measuring approach included three main constructs: Gamification (GF), Continuance Intention (CI), and Brand Advocacy (BA), each defined by indicators derived from established instruments in previous research. All questions were assessed utilizing a five-point Likert scale, spanning from 1 ("strongly disagree") to 5 ("strongly agree"). The evaluation followed the methodological parameters established by Hair et al. (2019) to guarantee the model's robustness and reliability, encompassing assessments of indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. Specifically, the measurement model was evaluated based on standardized loadings, Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE). All constructs exhibited satisfactory measurement quality, with item loadings exceeding the threshold of 0.70, Cronbach's alpha values above 0.70, composite reliability (CR) values over 0.70, and average variance extracted (AVE) values better than 0.50. These findings confirmed that the constructs exhibited sufficient convergent validity and internal consistency. Additionally, discriminant validity was confirmed via Fornell-Larcker criteria and HTMT ratio analysis, demonstrating that each construct was empirically unique from the others. Taken together, the measurement model demonstrated strong psychometric properties, allowing for confidence in the subsequent evaluation of the structural relationships among gamification, continuance intention, and brand advocacy.

Table 2: Measurement items of the first-order constructs.

Construct and Items	Standardized Loading (sig.)	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Gamification (GF)		0.912	0.934	0.703
GF1: I enjoy using the platform due to its game-like features (e.g., points, badges).	0.821**			
GF2: The platform's challenges and rewards motivate me to continue using it.	0.844**			
GF3: I feel immersed while using the gamified features of this platform.	0.861**			
GF4: I find the gamified experience fun and engaging.	0.836**			
GF5: The competitive elements (e.g., leaderboards) increase my interest.	0.822**			
Continuance Intention (CI)		0.887	0.915	0.683
CI1: I intend to continue using this platform regularly.	0.834**			
CI2: I will keep using this platform even if I have other alternatives.	0.815**			
CI3: I consider this platform as my primary choice for related tasks.	0.854**			
CI4: Using this platform has become a habit for me.	0.818**			
Brand Advocacy (BA)		0.901	0.927	0.717
BA1: I often recommend this platform to others.	0.861**			
BA2: I speak positively about this platform on social media or in conversations.	0.829**			
BA3: I defend this platform when others criticize it.	0.832**			
BA4: I would encourage my friends and peers to try this platform.	0.851**			
BA5: I support the platform by creating or sharing content related to it.	0.814**			

Note: $p < 0.01$. Cronbach's alpha measures internal consistency; CR is composite reliability; AVE is average variance extracted.

Table 2 delineates the measuring items employed to assess the three principal constructs: Gamification (GF), Continuance Intention (CI), and Brand Advocacy (BA). All standardized factor loadings surpassed the advised criterion of 0.70 (Hair et al., 2019), signifying that each observed item is a dependable and valid measure of its respective latent construct. The robust item loading indicates that the scale items reliably represent the underlying variables under investigation, therefore affirming convergent validity. The Cronbach's alpha values for all three constructs ranged from 0.887 to 0.912, well above the minimum acceptable level of 0.70. This discovery validates a significant level of internal consistency among the items assessing each construct. Furthermore, the composite reliability (CR) ratings, which evaluate the overall reliability of a construct, exceeded the required level of 0.70. Gamification (CR = 0.934), Continuance Intention (CR = 0.915), and Brand Advocacy (CR = 0.927) exhibited exceptional dependability, hence affirming the internal consistency of the assessment model. The average variance extracted (AVE) for all constructs surpassed the threshold of 0.50, with GF (0.703), CI (0.683), and BA (0.717) all satisfying the criterion for convergent validity. These numbers indicate that a significant percentage of the variance in the indicators is accounted for by the latent construct rather than by measurement error. The psychometric results collectively demonstrate that the reflective measurement approach possesses robust reliability and validity across all constructs. This establishes a robust basis for conducting the structural model analysis, guaranteeing that the associations between gamification, continuance intention, and brand advocacy can be evaluated with statistical validity and theoretical precision within the framework of Egypt's digital business platforms.

Table 3: Descriptive statistics and correlations between constructs (Fornell–Larcker method).

No.	Construct	1	2	3
1	Gamification (GF)	0.839		
2	Continuance Intention (CI)	0.711**	0.826	
3	Brand Advocacy (BA)	0.688**	0.729**	0.846
Mean		3.82	3.76	3.81
Standard Deviation		0.709	0.687	0.724

Notes: $p < 0.001$. The square root of AVE is typed in **bold** along the diagonal.

Table 3 displays the descriptive statistics, inter-construct correlations, and the square roots of the Average Variance Extracted (AVE) for each latent construct based on the Fornell–Larcker criterion (Fornell & Larcker, 1981). The square roots of AVE values are shown in bold along the diagonal and compared against the inter-construct correlation coefficients to establish discriminant validity. The results reveal that the square root of AVE for Gamification (GF) is 0.839, for Continuance Intention (CI) is 0.826, and for Brand Advocacy (BA) is 0.846. In all cases, the square root of each construct's AVE exceeds its correlations with other constructs (e.g., GF–CI = 0.711; CI–BA = 0.729; GF–BA = 0.688). These findings confirm that each construct shares more variance with its own items than with any other latent variable, thereby satisfying the Fornell–Larcker criterion

for discriminant validity. Furthermore, all inter-construct correlations are statistically significant at the p < 0.001 level, lending support to the hypothesized relationships within the conceptual framework. The results affirm the distinctiveness of gamification, continuance intention, and brand advocacy as separate constructs and provide justification for proceeding with the structural model analysis. The clear empirical separation among the constructs also strengthens the theoretical foundations of the proposed mediation model in the context of Egypt's digital consumer engagement platforms.

Table 4: Heterotrait–Monotrait (HTMT) Criterion Values.

No.	Construct	1	2	3
1	Gamification (GF)			
2	Continuance Intention (CI)	0.774		
3	Brand Advocacy (BA)	0.701	0.768	

Table 4 presents the Heterotrait–Monotrait Ratio (HTMT) values, which function as a sophisticated approach for evaluating discriminant validity among latent components. Henseler et al. (2015) assert that HTMT values must remain below the 0.90 level to establish adequate discriminant validity. In this study, all HTMT values were significantly below the benchmark: 0.774 between Gamification (GF) and Continuance Intention (CI), 0.701 between GF and Brand Advocacy (BA), and 0.768 between CI and BA. The findings unequivocally indicate that the three notions are conceptually unique and do not display unacceptable levels of multicollinearity or conceptual overlap. The HTMT analysis supplements the Fornell–Larcker criterion by providing strong statistical evidence for the discriminant validity of the measurement model. This underscores the empirical uniqueness of gamification, continuance intention, and brand advocacy, establishing a robust psychometric basis for subsequent structural equation modeling in the realm of digital engagement methods within Egyptian commercial contexts.

6.2. Evaluating the Structural Model

Table 5: Structural model evaluation.

Construct	Variance Inflation Factor (VIF) Collineariy Assessment	Confidence Intervals 95% (BCa) Bootstrap	f² Effect Size	Level of R²
Gamification (GF) → Continuance Intention (CI)	1.872	0.476 − 0.732	0.371	
Gamification (GF) → Brand Advocacy (BA)	1.910	0.189 − 0.489	0.148	
Continuance Intention (CI) → Brand Advocacy (BA)	1.825	0.367 − 0.662	0.264	0.534

Table 5 presents data from the structural model evaluation, emphasizing the model's robustness through critical indicators including collinearity, effect sizes, and explained variance (R^2). All constructs exhibited acceptable Variance Inflation Factor (VIF) values, ranging from 1.825 to 1.910, much below the crucial threshold of 5.0 (Hair et al., 2019), hence proving the absence of multicollinearity within the model. The bootstrapped bias-corrected confidence intervals at 95% confirm the statistical importance of the suggested structural routes, as all intervals exclude zero. Gamification (GF) has a substantial direct impact on Continuance Intention (CI) ($f^2 = 0.371$) and a lesser yet significant direct effect on Brand Advocacy (BA) ($f^2 = 0.148$). Simultaneously, Continuance Intention (CI) exerts a moderate influence on Brand Advocacy ($f^2 = 0.264$), confirming its function as a mediating variable in the suggested model. The R^2 value of 0.534 for Brand Advocacy signifies that the model accounts for 53.4% of the variation in this dependent variable, indicating a considerable degree of predictive accuracy (Cohen, 1988). These results corroborate the theoretical model, highlighting that gamification not only directly promotes user advocacy but does so more effectively through the intermediary factor of prolonged involvement (continuance intention). This observation underscores the strategic significance of gamified user experiences in fostering enduring brand relationships on commercial digital platforms, especially within the Egyptian corporate landscape.

6.3. Hypotheses Tests

Table 6: Structural model estimates.

Hypothesis	Path	β	Critical Ratio (CR)	P-Value	Results
H1	Gamification (GF) → Continuance Intention (CI)	0.587	13.842	< 0.01	Supported
H2	Continuance Intention (CI) → Brand Advocacy (BA)	0.439	8.521	< 0.01	Supported
H3	Gamification (GF) → Brand Advocacy (BA)	0.262	5.239	< 0.01	Supported
H4	Gamification (GF) → Continuance Intention (CI) → Brand Advocacy (BA)	0.187	6.102	< 0.01	Partial mediation

Table 6 presents the structural model estimates and offers robust empirical evidence for the proposed links among the research constructs. The direct relationship between Gamification (GF) and Continuance Intention (CI) is statistically significant (β = 0.587, CR = 13.842, p < 0.01), hence validating H1 and supporting the assertion that effectively designed gamified elements enhance users' incentive to persist in utilizing digital platforms. This discovery underscores the efficacy of intrinsic motivation factors, including enjoyment, challenge, and reward, in maintaining user engagement. The relationship between Continuance Intention (CI) and Brand Advocacy (BA) is substantial (β = 0.439, CR = 8.521, p < 0.01), hence supporting H2. This suggests that users who plan to continue utilizing a platform are more inclined to endorse it to others, establishing continuance intention as a behavioral precursor to advocacy. The direct impact of Gamification (GF) on Brand Advocacy (BA) is statistically significant (β = 0.262, CR = 5.239, p < 0.01) although of lesser magnitude, hence corroborating H3. This suggests that while gamification can directly promote brand advocacy, it is more efficacious when facilitated by prolonged user interaction. The mediation analysis in H4 verifies that Continuance Intention serves as a partial mediator between Gamification and Brand Advocacy, exhibiting an indirect effect of β = 0.187 (CR = 6.102, p < 0.01). This partial mediation indicates that gamification has both direct and indirect influences on advocacy behaviors, with its effect intensified when users exhibit psychological commitment to the platform through sustained intention to utilize it. Collectively, these findings create a solid paradigm that emphasizes the importance of user engagement strategies—such as gamification—not just in encouraging repeated usage but also in fostering enduring brand relationships. These insights are particularly beneficial for marketing strategists and platform designers seeking to improve digital brand advocacy within Egypt's competitive market environment.

7. DISCUSSION

This study set out to explore the structural relationships among Gamification (GF), Continuance Intention (CI), and Brand Advocacy (BA), with a particular focus on the mediating role of continuance intention. Grounded in motivational theory and extended models of technology acceptance and loyalty, the study provides new empirical insights into how gamified experiences affect user engagement and brand outcomes, especially within Egypt's evolving commercial and digital sectors.

Gamification and Continuance Intention

The results robustly support the hypothesis that gamification significantly predicts continuance intention (H1: β = 0.587, CR = 13.842, p < 0.01). This finding is consistent with earlier research which has shown that gamified systems, by embedding features such as points, levels, challenges, and leaderboards, enhance intrinsic motivation and stimulate user enjoyment (Hamari et al., 2014; Xi & Hamari, 2019; Foroughi et al., 2023). These elements foster a psychological sense of achievement and autonomy, which are crucial for sustaining user engagement over time.

Notably, the high strength of the path coefficient demonstrates that gamification is not merely a temporary engagement tactic but has enduring effects on user behavior. This supports the assertion that users are more likely to continue using platforms that are not only functional but also entertaining and rewarding. In the Egyptian business context—particularly in digital services, e-commerce, and fintech—this insight is critical, as user retention is often a greater challenge than acquisition. Gamified designs offer a strategic advantage in enhancing the stickiness of platforms by converting routine usage into engaging experiences.

7.1. Continuance Intention and Brand Advocacy

The study also confirms that continuance intention significantly influences brand advocacy (H2: β = 0.439, CR = 8.521, p < 0.01), in alignment with existing theories of loyalty and consumer behavior (Fullerton, 2011; Badrinarayanan et al., 2022). Users who repeatedly engage with a platform develop emotional and functional trust, making them more likely to recommend, defend, and speak positively about the brand.

This linkage between engagement and advocacy underscores the importance of internal user satisfaction as a foundation for external brand promotion. In contrast to traditional marketing methods, advocacy is organic and user-driven. The findings suggest that when users feel personally committed to a platform, they naturally transition into promoters—an effect that is especially important in digitally saturated markets like Egypt, where

peer recommendations heavily influence digital adoption.

7.2. Gamification and Brand Advocacy (Direct Effect)

The direct effect of gamification on brand advocacy (H3: β = 0.262, CR = 5.239, p < 0.01) was also statistically significant, though less pronounced than its indirect effect through continuance intention. This finding aligns with Tsou & Putra (2023), who noted that gamification can enhance emotional brand attachment, making users more likely to act as brand advocates even in the absence of a strong loyalty history. Features such as badges or social leaderboards can foster a sense of recognition and pride, which may independently trigger advocacy behaviors such as reviews or recommendations.

However, the moderate effect size suggests that while gamification contributes to advocacy, it may not be sufficient on its own. Users might enjoy a platform but still refrain from recommending it unless they feel long-term satisfaction and commitment—represented in this model by continuance intention.

7.3. Mediating Role of Continuance Intention

The mediation analysis (H4) revealed a significant partial mediating role of continuance intention in the relationship between gamification and brand advocacy (β = 0.187, CR = 6.102, p < 0.01). This suggests a dual pathway: gamification has both a direct influence on brand advocacy and an indirect influence via sustained user engagement.

This result highlights the importance of continuance intention as a strategic conduit through which user experience design translates into brand value. From a psychological perspective, this supports Self-Determination Theory (Deci & Ryan, 2000), which posits that internalized motivation—enhanced by gamification—leads to deeper behavioral outcomes, including loyalty and advocacy. Users who are intrinsically motivated to stay are more likely to convert that satisfaction into brand-supportive actions.

The partial nature of the mediation is also insightful, suggesting that gamification designs should not only aim for fun and interaction but also encourage goal-setting, self-progression, and emotional connection—all of which reinforce continuance and, by extension, advocacy.

8. CONCLUSION

This study examined the influence of gamification (GF) on brand advocacy (BA), focusing specifically on the mediating effect of continuance intention (CI) within the Egyptian business and digital commerce environment. The study utilized a quantitative methodology and structural equation modeling, resulting in several significant findings. Initially, gamification was determined to have a substantial beneficial impact on continuance intention, validating that engaging and motivational design elements—such as points, challenges, prizes, and social competition—promote user persistence in their interaction with digital platforms. Secondly, continuance intention demonstrated a significant direct impact on brand advocacy, highlighting that committed, repeat consumers are more inclined to endorse the brand through recommendations and supporting actions. Third, while gamification directly influences brand advocacy, its impact is considerably enhanced when mediated by continuance intention, confirming a partial mediation effect and underscoring the significance of user retention in digital branding initiatives. The Egyptian business landscape provides a distinctive context for this investigation, characterized by swift digital growth, a young and technologically adept demographic, and escalating rivalry in areas such as e-commerce, digital services, and mobile platforms. In these circumstances, gamification serves not merely as a means of user amusement but as a purposeful instrument for fostering loyalty and advocacy. The shift from first usage to brand loyalty is neither automatic nor linear; it necessitates the cultivation of emotional engagement, satisfaction, and behavioral intent, collectively defined as continuation intention. The findings thus affirm that brand support is not solely a consequence of gamification, but rather the outcome of a deliberate, multifaceted experience that guides consumers from engagement to endorsement. These results significantly enhance the ongoing discussion regarding user engagement and loyalty in digitally mediated commercial contexts. In growing countries like Egypt, where consumer retention and trust are paramount, gamification should be conceived not as a mere novelty, but as a sustainable strategy for optimizing experiences. By investing in psychologically gratifying experiences that promote habitual engagement, organizations can leverage user delight to foster organic promotional behavior. The study highlights the significance of interactive design and user continuity in promoting sustainable brand growth, offering both practical and theoretical avenues for future research in digital marketing and consumer behavior.

8.1. Theoretical and Managerial Implications

This work provides significant theoretical contributions to the expanding literature on gamification, user behavior, and brand engagement inside digital business environments. It prominently presents and substantiates a paradigm wherein continuity intention mediates the connection between gamification and brand promotion, consequently associating motivational design tactics with consumer loyalty behavior. This mediation discovery identifies a deficiency in existing research by demonstrating that gamification alone may not effectively increase advocacy; instead, it encourages sustained engagement that subsequently cultivates advocacy behaviors over

time. This study enhances the Self-Determination Theory (SDT) and the Technology Acceptance Model (TAM) by demonstrating that intrinsic motivation, fostered by engaging and rewarding gamified features, results in prolonged engagement and enduring commitment. This research positions continuity intention as a vital psychological construct linking gamification and brand advocacy, so enhancing previous models that regard gamification solely as a catalyst for immediate activity rather than fostering long-term brand loyalty. Furthermore, the discovery of partial mediation introduces complexity, indicating that gamification not only promotes direct behavioral results (advocacy) but also facilitates indirect effects through prolonged engagement. This study also tackles a geographical and industrial deficiency. This study extends the concept to Egypt's digital commerce environment, particularly in mobile applications and online service platforms, whereas previous research has primarily concentrated on Western, technology-driven markets. Consequently, the model provides a contextualized contribution that improves the cross-cultural validity of gamification and branding theories, rendering them more suitable for emerging markets with unique behavioral, cultural, and infrastructural traits.

8.2. Managerial Implications

This study provides numerous useful insights for digital business leaders, marketing strategists, and platform designers. It emphasizes that gamification tactics must be crafted not solely for user entertainment, but to foster repeated engagement through significant interactions that generate emotional fulfillment, habitual behavior, and loyalty. Elements such as tiers, badges, points, contests, and customized rewards must to be integrated to address psychological motivators of persistence—namely enjoyment, autonomy, and competence. Secondly, managers must acknowledge that brand endorsement does not stem from singular interactions, but rather a cumulative user experience that intensifies through ongoing platform engagement. This requires investment in both innovative gaming mechanics and retention-oriented methods, like push notifications, user progress monitoring, and feedback systems. Moreover, Egyptian enterprises in digital industries must comprehend the distinct user incentives pertinent to their local context. Culturally relevant gamified elements, such as localized challenges or community leaderboards, may augment social affiliation with the brand. Business executives should incorporate analytics tools to track user behavior, determining which game elements most efficiently transform engagement into advocacy. These insights can be employed to further enhance gamification tactics. Finally, training initiatives for marketing and product teams should emphasize comprehension of behavioral science, motivation theory, and UX design to develop gamified experiences that are both enjoyable and aligned with business goals such as customer retention and advocacy enhancement.

8.3. Practical Implications

This report provides valuable information that help guide digital engagement strategies within the Egyptian commercial sector from a comprehensive policy and stakeholder perspective. Policymakers at the Ministry of Communications and Information Technology, along with other institutions, might formulate national rules to promote gamification in consumer engagement platforms, especially within e-commerce, fintech, and digital services. These standards should prioritize user-centric innovation, promoting design frameworks that attract and keep users through sustained interaction and enjoyment. At the institutional and organizational level, enterprises within Egypt's digital economy—particularly startups and SMEs—should be motivated to integrate gamification as a strategic instrument rather than a mere cosmetic element. Platforms ought to incorporate mechanisms such as achievement badges, progress indicators, and reward systems that are consistent with behavioral science principles. These mechanisms can enhance users' intention to continue, which, as demonstrated in this study, is a crucial facilitator of brand advocacy. Furthermore, training initiatives funded by commercial chambers, entrepreneurship accelerators, or government-supported innovation hubs (e.g., ITIDA, MCIT) could familiarize local entrepreneurs and UX designers with gamification design principles, highlighting their significance in improving digital user experience and customer loyalty. Such initiatives could enhance understanding of how skillfully designed game-based interaction can foster robust emotional connections between users and companies. International development agencies and donor programs participating in digital transformation in Egypt's commerce and service sectors should also contemplate financing behavioral research, digital infrastructure, and capacity-building initiatives focused on user engagement. Endorsement of localized gamification strategies—customized to align with Egyptian consumer behaviors, preferences, and cultural subtleties—has the potential to markedly enhance digital adoption rates and advocacy-driven expansion. Finally, platform developers and marketing strategists ought to utilize real-time data analytics to evaluate the efficacy of gamified features in promoting user retention and advocacy. This would enable adaptive gamification models that evolve according to user feedback and behavioral patterns. Ultimately, these initiatives will foster a more sustainable digital ecosystem in Egypt, wherein user loyalty is developed through deliberate, data-informed engagement tactics that optimize customer lifetime value.

8.4. Limitations and Future Research Directions

The study significantly enhances the comprehension of gamification's impact on continuance intention and brand advocacy within digital platforms; nonetheless, numerous limitations must be recognized. The cross-

sectional form of the research limits the capacity to infer causality among the variables studied. Longitudinal research is essential to examine the evolution of users' continuance intention and advocacy behavior over time as they are consistently exposed to gamified experiences. This study was only done within the Egyptian digital commerce ecosystem, potentially impacting the generalizability of the findings. Cultural, technological, and behavioral disparities among nations may profoundly affect consumers' reactions to gamified systems. Future study ought to explore cross-national comparative studies or examine sector-specific implementations of gamification (e.g., education, banking, healthcare) to evaluate the model's robustness in varied contexts. Third, the study depended on self-reported data, which may include bias stemming from social desirability or perceptual mistakes. To enhance validity, future research should integrate behavioral data or platform analytics—such as login frequency, interaction duration, or actual referral behavior—to correlate user-reported intents with observed engagement metrics. While continuation intention was analyzed as a mediator, additional psychological or contextual factors may also affect the gamification–advocacy relationship. Future study may investigate the moderating effects of user motivation types (intrinsic versus extrinsic), platform types (e.g., mobile versus online), or demographic factors such as age, digital literacy, and user tenure. Furthermore, emotional factors such as enjoyment, trust, and felt empowerment may enhance our comprehension of user loyalty dynamics in gamified systems. This study saw brand advocacy as a cohesive construct. Future research may decompose advocacy into its components—verbal endorsement, content dissemination, or social persuasion—to enhance comprehension of how gamification distinctly activates various advocacy behaviors. Moreover, experimental or field-based methodologies could be utilized to evaluate the immediate effects of diverse gamified components (e.g., leaderboards, badges, storytelling) on user retention and brand-associated behaviors. This study highlights the strategic potential of gamification in fostering enduring user relationships and advocacy. To fully exploit this potential, forthcoming research should employ longitudinal, comparative, and multi-method strategies to yield a more nuanced and contextually aware comprehension of gamified participation within digital ecosystems.

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