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Running Towards a Better Brand Attitude: How Gamification in Nike Run Club Can Help?

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Abstract

The dynamics of the knowledge-based economy are intrinsically linked to the concept of gamification, which has been increasingly discussed in the context of companies' marketing strategies. It is therefore necessary to understand how gamification can be strategically applied in different contexts to increase the performance and competitiveness of companies. This paper aimed to analyze how gamification impacts customers' intention to participate in the gamification process and how this strategy influences customers' attitudes towards the brand. Multiple linear regression analyses were conducted in a sample of 238 Portuguese consumers using the Nike Run Club application. The study revealed that gamification can be an effective tool to increase users' interaction with brands. Perceived usefulness, perceived social influence, engagement intention and gamification performance were identified as the main predictors of gamification on brand attitude. Furthermore, social interaction is a key factor for the success of game systems, which should promote interaction between communities of players to share functionality and solve task problems. It was observed that attitude towards the brand is positively influenced by factors such as usefulness, perceived ease of use, social influence, intention to get involved, and gamification of performance, especially when these are mediated by the sensation of pleasure. This finding points to the importance of these elements in shaping consumers' perceptions of brands. To maximize engagement with brands, gamification tools should allow sharing content and tasks, promoting discussions and broadening the connection between the gamers community. It is important to consider technological resources and innovation in the design of gamification tools, as well as to meet the different expectations of consumers, allowing different tasks and high connection between different information-sharing channels. This study contributes to the development of knowledge in gamification on brand attitude. Practical implications have been suggested to guide companies in implementing a successful gamified marketing strategy.

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Introduction

In the era of rapid globalization and technological capability, the global economy has been transformed into an environment where knowledge has become the main engine of growth and innovation (Antonelli & Feder, 2022; Liu & Uzunidis, 2021; Verba, 2022). Companies and nations that can effectively apply accumulated knowledge, as well as generate new insights, are at a competitive advantage, as they can increase productivity and create value through innovations in products, services, systems and processes (Fathollahi et al., 2017; Shahabadi et al., 2018; Širá et al., 2020). Innovation, in this context, is seen as the direct result of the application of knowledge, whether in the form of advanced technologies, more efficient management methodologies, or even the restructuring of business models that meet the demands of an increasingly complex and interconnected global market (Brodny & Tutak, 2022; Müller et al., 2021). This dynamic reinforces the importance of investing in education, research and development, which are fundamental areas for empowering individuals and organizations to transform knowledge into tangible results (Bai et al., 2020). In addition, access to and management of information has become crucial for competitiveness, since the speed with which knowledge can be applied and transformed into innovation determines success or failure in the global market (D'Attoma & Ieva, 2020). Therefore, in today's economy, those who can navigate and take advantage of the vast amount of information available, and turn it into innovation, will be the main protagonists of a global economy driven by knowledge.

In this context, gamification plays a fundamental role, transforming traditional processes into more engaging and interactive experiences, thus facilitating deeper understanding and innovation, with the application of knowledge effectively (Behl et al., 2022). Thus, the dynamics of the knowledge-based economy are intrinsically linked to the concept of gamification. In recent years, gamification has captured more and more attention from academia and companies, standing out as an emerging and increasingly popular topic. Gamification is a term used to describe the application of game design elements and principles in non-game contexts (Rodrigues et al., 2021a). In other words, it is the use of video game elements in other contexts to increase engagement. The process of gamification involves integrating game mechanics, elements, and principles into non-game activities and contexts (Robson et al., 2015). The goal is to motivate and engage users by creating experiences similar to those experienced when playing games (Zainuddin et al., 2020). By using game mechanics, such as points, badges, and leaderboards, gamification aims to make non-game activities more interactive and engaging (Rodrigues et al., 2021a). Gamification strategies aim to use individuals' innately ingrained desires to socialize, compete, attain mastery, learn, express themselves, attain status, and accomplish things (Li et al., 2023a). Gamification potentially possesses wide-ranging applications, including in healthcare, education, and marketing, which may enhance engagement and motivation (Johnson et al., 2016; Richter et al., 2015).

Recent years have witnessed a surge in the popularity of gamification. According to Boskamp (2023), as many as 70% of Global 2000 companies make use of gamification in some capacity. The gamification market worth stands at approximately $11.94 billion and has demonstrated a remarkable 48% surge in engagement, as per Peker (2022). Additionally, according to Bennett (2023), research indicates that 80% of workers enjoy using gamification software at the workplace, and 90% feel more productive while using it. All of these data highlights the potential advantages of gamification in diverse settings.

Enhancing brand attitudes is an area where gamification has shown great potential. Many businesses have high hopes for gamification, believing that it can increase consumers' engagement, awareness, and loyalty towards their brands (Wang et al., 2024; Xi & Hamari, 2020). The elements of fun and reward-based gaming strongly influence brand attitudes concerning the intent (Yang et al., 2017). Moreover, gamification can enhance consumers' knowledge, attitudes, and behaviour, leading to better outcomes in sustainable behaviour (Sheetal et al., 2022). For this reason, the Technology Acceptance Model (TAM) serves as the main model for studying the effects of gamification on brand attitudes. Factors such as perceived usefulness (PU), perceived pleasure (PE), perceived ease of use (PEU), engagement intention (IOE), and perceived social influence (PSI) make up TAM, according to recent studies (Panagiotarou et al., 2020; Rodrigues et al., 2021a). Brand attitudes can be manipulated using performance gamification (PG), which leverages reward-based game elements to improve sustainable behaviour outcomes, thus enhancing consumers' knowledge and attitude (Sheetal et al., 2022). As such, gamification can effectively promote brand engagement and attitude (Rodrigues et al., 2021a).

In the field of gamification's impact on brand attitudes, studies have been limited in scope. Some studies suggest that gamification boosts brand recognition and loyalty, but not all are in agreement, presenting inconsistencies (Lu & Ho, 2020; Seaborn & Fels, 2015). Koivisto and Hamari (2019) revealed that while positive outcomes are common, the abundance of mixed results is noteworthy, and gamification research still lacks uniformity in research models, variables, and theoretical foundations. Furthermore, more research is needed to understand the role of psychological ownership concerning gaming, as well as in mediating the relationship between a gaming experience and attitude towards gaming (Mishra & Malhotra, 2021). Therefore, it is important to answer three research questions: RQ1: How can gamification be used to improve consumers' engagement with a brand? RQ2: What are the best practices for developing effective gamification strategies to improve customers' engagement with a brand? RQ3: How can gamification be integrated into different marketing channels to improve brand engagement?

In this context, the aim of this study was to analyse the impact of gamification on customers' intention to participate in the gamification process and how this strategy influences customers' attitudes towards the brand. To this end, 238 responses were collected from Nike Run Club application users.

This paper brings three important contributions. Firstly, the understanding of gamification in brand behaviour is extended, allowing a better perception of how gamification and purchase intention can improve the public's engagement with brands. Secondly, it contributes to a better understanding of the relationship between

TAM, gamification, brand attitude and marketing performance by identifying which gamification mechanisms impact brand attitude. A new finding of this study contributes to the literature by demonstrating that perceived usefulness, perceived ease of use, social influence, intention to engage and gamification of performance have a positive impact on attitude towards the brand, especially highlighting the mediating role of perceived enjoyment. Finally, it provides insight into how social groups influence brand attitude propensity, highlighting that the impact of social groups and access to information systems can improve consumers' brand attitude.

Literature Review

Gamification

In the age of globalization and technological capability, the global economy is increasingly driven by knowledge, where wealth creation depends on the application of this knowledge to increase productivity through the innovation of products, services, systems and processes (Asongu & Kuada, 2020; Malerba & McKelvey, 2020; Yuan et al., 2024). In this scenario, gamification emerges as a powerful strategy, integrating playful elements and game mechanics into non-game contexts to engage, motivate and transform the way knowledge is applied and disseminated (Camisón-Haba et al., 2024; Lopes et al., 2024). By incorporating gamification, companies and institutions can create more dynamic and interactive environments that encourage creativity, collaboration and problem-solving, which are essential for innovation (Rodrigues et al., 2021a). Through challenges, rewards, and instant feedback, gamification can increase employee engagement, stimulating the constant search for improvements and new solutions. In addition, gamification can also be used to accelerate learning and skills development by transforming educational and training processes into engaging and competitive experiences, making the process of acquiring knowledge more effective (Lopes et al., 2023). In a knowledge-based economy, where the ability to innovate is fundamental to survival and growth, gamification not only motivates individuals and teams, but also fosters a culture of continuous innovation, where learning must be streamlined. Gamification thus aligns perfectly with the objectives of the knowledge economy, by transforming intellectual potential into tangible value, generating a significant impact on productivity and competitiveness on a global scale.

Gamification is a technique that consists of applying game design elements in contexts that are not related to games, such as marketing. The goal is to engage and motivate people to perform specific actions (Harwood & Garry, 2015; Spais et al., 2022). As technology advances and productivity improves, customers become increasingly demanding about how and where to invest their time and money (Rodrigues et al., 2021b). Generating value, improving marketing results, and driving innovation are just a few ways gamification has been employed as a company strategy to increase customers' engagement and loyalty (Ciuchita et al., 2023; Sheetal et al., 2022). This approach has become a popular choice due to its ability to influence behaviours. Marketing strategies have adopted gamification as a highly

effective approach for engaging and motivating their target audience. O'Neill (2023) explains that 93% of marketers recognize gamification as essential in their campaigns. Gamification is particularly advantageous in enhancing customers' experience by introducing game-like features into marketing campaigns. By utilizing such elements, businesses can make consumer interactions more engaging and fun, as noted by Hofacker et al. (2016). Marketers seeking to enhance customers' engagement and marketing effectiveness are turning to gamification, which can also generate important data on consumers' behaviour and preferences (Hofacker et al., 2016). Gamification has emerged as a successful tool in promoting customers' loyalty and retention (Conaway & Garay, 2014), making it an increasingly popular marketing strategy.

In the realm of marketing, gamification has been widely researched and proven to be effective in various ways. A study conducted by Merhabi et al. (2021) revealed that gamification can enhance customers' engagement and loyalty. Similarly, Xu (2015) exploration of gamification design advocated that it is a highly effective tool in motivating users to achieve their goals. Milanesi et al. (2022) conducted research on gamification's usefulness as a marketing strategy to provide a luxurious digital experience. Furthermore, Looyestyn et al. (2017) conducted a systematic literature review and discovered that gamification significantly increases engagement in online programs. A recent study found that a unique brand experience can effectively be created by engaging customers through gamification. Companies looking to enhance customers' engagement and loyalty can benefit from the promising gamification strategy, as suggested by various studies. Engagement and customers' retention are key concerns for companies nowadays, with some relying on gamification to achieve this goal (Dwivedi et al., 2023; Wang et al., 2024; Xia et al., 2024; Zhou & Xiong, 2024). In fact, the emergence of the metaverse has only accentuated the importance of engaging in virtual experiences. Nevertheless, gamification should not be seen as a panacea for all companies, as it needs to be tweaked to suit different audience preferences and requirements (Sheetal et al., 2022).

Incorporating gaming into marketing has proven fruitful for some organizations. Take, for instance, Coca-Cola's "Happiness Machine" approach, which involved a vending machine handing out souvenirs to consumers who interacted with it (Coca-Cola Company, 2010). The outcome augmented brand devotion and social media engagement (Conaway & Garay, 2014). Similarly, Nike's "FuelBand" had customers using a wearable gadget to monitor their fitness goals (Dolan, 2014), which led to a rise in brand loyalty and sales (Hsu & Chen, 2018). Activating users' interest through validation of their actions, task completion, and reward offers can result in increased engagement and loyalty. This is the essence of effective gamification marketing, as Harwood and Garry (2015) and Xi and Hamari (2020).

Technology Acceptance Model

The Theory of Rational Action has resulted in the widely-used Technology Acceptance Model (TAM) (Jnr & Petersen, 2023; Lai, 2017). It explains and predicts user adoption of technology with a particular emphasis on information systems and

technology studies. The framework measures a technology's Perceived Usefulness (PU) and Perceived Ease of Use (PEU), consistent with rational action theory (Taherdoost, 2018). TAM's usefulness extends beyond its application in the information sector, having been used broadly in healthcare, educational technology, and gamification. According to Lai (2017), TAM is a distinctive and established model for technology adoption.

Identified as predictors of technology acceptance, the primary constructs of TAM include PU and PEU (Alexopoulos et al., 2023; Rodrigues et al., 2021a). Research indicates that PU refers to a user's belief that technology will enhance his/her performance, while PEU refers to the perception of ease of using the technology. Marangunić and Granić (2015) discovered that the model, which intervenes in the intricate connection between technology adoption and user acceptance, is essential.

The application of TAM has been beneficial in understanding technology user acceptance, yet it has received its fair share of backlash and constraints. Some recent research has emphasized the necessity of widening the framework apart from PU and PEU (Lai, 2017). Furthermore, the model has encountered objections to overlooking social and cultural influences that could impact user acceptance (Yang et al., 2017). Although these criticisms exist, TAM maintains its dominant position as a go-to model in technology research and information systems (Granić & Marangunić, 2019).

Gamification to Boost Brand Attitude

Influencing consumer attitudes towards a brand, product or service, gamification on brand attitude (GBA) plays a critical role, gauging consumer satisfaction (Rodrigues et al., 2021a). GBA's intention, enjoyment and usefulness regarding gamification all impact its overall evaluation (Yang et al., 2017). Notably, GBA's significance lies in its ability to predict consumer behaviour regarding loyalty, purchase intentions and willingness to pay a premium price for a product or service (Park et al., 2010). Thus, understanding the factors that influence GBA is crucial for companies' effective marketing strategies.

For generating favourable emotions and experiences in consumers, gamification has emerged as a significant technique in GBA, which eventually results in building brand awareness and encouraging engagement and loyalty among them (Yadav & Chakrabarti, 2022). Sari (2022) and Xi and Hamari (2020) have found that gamification can enhance a brand's social impact, perceived enjoyment, and usefulness, all of which play significant roles in boosting GBA.

Promoting engagement and GBA with gamified apps has proven effective through empirical studies (Xi & Hamari, 2020). In investigating this effectiveness, Rodrigues et al. (2021a) determined that gamification can improve brand engagement, satisfaction, and attitude towards the app. Likewise, Daim et al. (2014) and Sari (2022) confirmed the positive impact of perceived usefulness, social influence, and enjoyment of gamification on GBA.

In analysing the impacts of gamified customer relationships on brand affinity, Li et al. (2023b) found that the perceived enjoyment of the gamification component

positively influences consumers' GBA and willingness to persist in usage. Furthermore, Li et al. (2023b) reported that brand trust, attitude, and familiarity are confounding factors that impact the relationship between gamification and GBA. Finally, Xi and Hamari (2020) found that gamification increases brand awareness and destination loyalty and that utility and enjoyment are predictors of engagement intention and GBA. Therefore, empirical evidence suggests that gamification can be an effective strategy for companies to improve GBA and overall marketing performance.

Considering several factors, such as Perceived Enjoyment (PE) and Perceived Social Influence (PSI), is crucial when incorporating gamification into marketing. These factors help in understanding a consumer's Intention of Engagement (IOE) and Performance Gamification (PG) within the game, which eventually impacts their overall perspective towards the brand (Rodrigues et al., 2021a; Yang et al., 2017).

Research Model and Hypotheses

Perceived Usefulness

Perceived usefulness (PU) is a concept that refers to an individual's belief that using a particular system or technology would improve his/her job performance or overall experience (Bolodeoku et al., 2022; Rodrigues et al., 2021a). Over time, whether or not individuals will keep utilizing a specific system or technology is an important aspect determined by Bolodeoku et al. (2022) and Lai (2017).

In the investigation of gamification, there has been much scrutiny on PU. Elareshi et al. (2023) research brings to light PU's influence on individuals' volition to embrace online banking services. Additionally, Lee et al. (2020b) survey revealed that PU plays a pivotal role in retaining individuals' loyalty towards a specific technology. Diop et al. (2019) stated that one of the predictors of a person's intention to use a particular technology is PU.

In terms of studying the correlation between PU and GBA, Sandema-Sombe (2019) found something interesting. They found that individuals are inclined to have a favourable impression of a brand if they perceive its offerings as practical. This holds significance for brand managers and marketers, as they can explore the idea of PU by creating offerings that strike a chord with their target demographic, resulting in a more favourable reception of their brand and increased customer allegiance (Sandema-Sombe, 2019).

H1: Gamification on brand attitude depends on perceived usefulness.

Perceived Ease of Use

Using technology without difficulty is what Perceived ease of use (PEU) is about (Aydin, 2015). In other words, PEU is the extent to which users perceive technology as easy to use (Buabeng-Andoh, 2018). PEU is important in determining users' attitudes towards technology acceptance (Lai, 2017).

PEU has been studied in various domains, including gamification. In gamification, PEU has significantly impacted user engagement (Kashive & Mohite, 2023). Kashive and Mohite (2023) have shown that incorporating PEU elements into gamification can increase user engagement and motivation. Studies have shown that PEU positively impacts PUs regarding technology adoption (Hu et al., 2019; Peng & Yan, 2022) and is a significant predictor of behavioural intention to use the technology (Baidoun & Salem, 2024).

Relatively to GBA, studies have found that GBA depends on PEU (Lai, 2017). In analysing technology acceptance, PEU stood out as one of the top pillars in a recent study conducted by Rodrigues et al. (2021a). Similarly, Alam et al. (2022) concluded that brand attitude is heavily influenced by PEU. It appears that PEU carries significant weight in shaping user attitudes across various domains, such as GBA and gamification.

H2: Gamification on brand attitude depends on perceived ease of use.

Perceived Social Influence

The degree to which a person believes others' opinions and deeds sway their actions is known as perceived social influence (PSI) (Bhatti & Haq, 2017). PSI can be thought of as a multifaceted concept that encompasses normative and informational sway. Compliance with social norms is referred to as normative sway, while the effects of others' opinions and information on one's beliefs and attitudes are known as informational sway (Giles, 2002). Various contexts, such as gamification and branding, require a knowledge of PSI in order to examine its function thoroughly.

Gamification has been extensively researched, particularly in terms of PSI (Rodrigues et al., 2021a). According to Hamari et al. (2014) and Zhou and Xiong (2024), social factors like PSI can significantly shape an individual's attitude towards gamified services and their intention to continue using them. Interestingly, Tseng et al. (2022) found that media richness, which enhances social presence, impacts how gamers perceive closeness and social influence.

On social media, people's favourable and unfavourable experiences were inquired about in a Primack et al. (2019) research wherein their GBA relied on PSI. This study scrutinized the social media usage and PSI of the respondents. The study found that PSI significantly predicted positive and negative social media experiences, predicting GBA. Furthermore, interpersonal attraction increased the public's purchase intentions towards influencers on social media (Su et al., 2021).

H3: Gamification on brand attitude depends on perceived social influence.

Perceived Enjoyment

Perceived enjoyment (PE) is the degree to which an individual perceives an activity, such as using technology or engaging in physical education, as enjoyable, independently of any external factors (Rodrigues et al., 2021a). PE has been studied in

various domains, including gamification and virtual reality (Rodrigues et al., 2021a; Syed-Abdul et al., 2019).

In the context of gamification, PE has been found to increase the enjoyment of a task, which can lead to increased engagement and motivation (Van der Kooij et al., 2019). Therefore, understanding the role of PE in different contexts can provide valuable information on how to design and implement effective interventions that promote enjoyment and engagement.

In the literature, there is evidence to support the hypothesis that GBA is dependent on PE. Several studies have found that PE strongly predicts GBA, particularly in gamification (Kaur et al., 2023; Raman, 2021). Raman (2021) found that female consumers like gamified elements and perceive PE as a strong predictor of behavioural intentions.

H4: Gamification on brand attitude depends on perceived enjoyment.

Intention of Engagement

The intention of engagement (IOE) is the motivation or desire to participate in an activity or interact with a product or service (Kelders et al., 2020). The conceptualisation of IOE suggests that it is a multidimensional construct that includes cognitive, affective and behavioural components (Ciuchita et al., 2023).

Gamification is one domain in which IOE has been studied. Ciuchita et al. (2023) noted that gamification, a technique that utilizes game mechanics in non-game situations, can impact conduct and increase involvement. Moreover, Yang et al. (2017) research reveals that gamification positively affects customers' inclination to participate in the gaming process and their consequent actions. The success of gamification is dependent on several factors, such as the user's personality traits, motivation levels, and the gamification system's design (Canio et al., 2021; Looyestyn et al., 2017; Santos et al., 2021).

In marketing research, there has been an examination of the IOE and GBA dynamic. According to a study conducted by Ahmed et al. (2022), customer experience, engagement, and association are factors which have a favourable impact on behavioural intentions, ultimately leading to purchase intentions. Additionally, research indicates that GBA and purchase intentions can be positively affected by IOE (Lee et al., 2020a; Schivinski & Dabrowski, 2016).

H5: Gamification on brand attitude depends on the intention of engagement.

Performance Gamification

According to researchers, applying gaming mechanisms and elements to enhance performance in non-game scenarios is known as performance gamification (Sailer et al., 2017). This entails integrating game-like features such as badges, leaderboards, and other motivational aspects to encourage individuals to attain specific objectives or boost their performance (Thomas et al., 2022). Performance

gamification has been employed in different fields, such as health, education, and marketing, to enhance involvement and drive.

Gamification could be a promising approach; however, its efficiency and downsides require further investigation. According to Chen and Liang (2022) study, gamification may enhance learners' motivation by making studying enjoyable and increasing their self-efficacy. Nonetheless, it could inadvertently lead to decreased intrinsic motivation. Additionally, personal traits, including personality, could influence PG's outcome (Smiderle et al., 2020).

Applying PG raises interest in how it impacts GBA, which is a crucial area to examine. A study by (Rodrigues et al., 2021a) aimed to analyse the feasibility of gamified apps, including PG, to promote engagement and GBA. The study found that gamified apps can positively impact GBA, especially when game elements are aligned with brand values and goals (Rodrigues et al., 2021a). This suggests that PG can effectively improve GBA, an important aspect of marketing and branding strategies.

H6: Gamification on brand attitude depends on performance gamification.

The Mediation Role of Perceived Enjoyment

Considering the above, it can be inferred that perceived usefulness, perceived ease of use, perceived social influence, intention of engagement, and performance gamification influence the gamification of brand attitude when mediated by perceived enjoyment.

Some studies tend to point to a relationship between perceived usefulness, perceived pleasure, and the gamification of brand attitude (Lee, 2019; Yang et al., 2017). Yang et al. (2017) indicate that both perceived usefulness and perceived enjoyment can be significant predictors of the intention to engage with a gamified brand. Li et al. (2023b) found that a highly gamified customer relationship management program induced more pleasure and higher favorability among participants. This suggests that the perceived enjoyment of the gamified experience plays a crucial role in shaping brand attitudes. Furthermore, gamification can increase brand awareness and loyalty, with perceived usefulness and enjoyment being significant predictors of engagement intention and brand attitude (Lee, 2019; Xi & Hamari, 2020). Taken together, these studies tend to support the hypothesis that perceived enjoyment mediates the relationship between perceived usefulness and gamification of brand attitude.

H7: Perceived usefulness positively influence the gamification of brand attitude when mediating by the perceived enjoyment.

Perceived ease of use alone may not influence engagement intention and attitude toward the brand (Bitrián et al., 2021). However, when perceived enjoyment is introduced as a mediator, the relationship between perceived ease of use and brand gamification attitude can become significant. Perceived enjoyment can be considered a key factor for the success of gamification in marketing, as it improves the

user's overall experience and positively influences their attitude towards the brand (Nugroho, 2024). In general, the literature tends to support the hypothesis that perceived ease of use can positively impact brand gamification attitude through perceived enjoyment.

H8: Perceived ease of use positively influence the gamification of brand attitude when mediating by the perceived enjoyment.

The literature indicates that perceived social influence and perceived enjoyment positively influence brand attitude through gamification (Chen & Liang, 2022; Yang et al., 2017). However, perceived social influence only influences brand attitude, while perceived enjoyment mediates the relationship between perceived social influence and the gamification of brand attitude (Bitrián et al., 2021; Chen & Liang, 2022). In other words, perceived social influence can lead to a positive attitude towards the brand, but it is the enjoyment of the gamification experience that reinforces this relationship.

H9: Perceived social influence positively influence the gamification of brand attitude when mediating by the perceived enjoyment.

Some studies tend to support the idea that perceived enjoyment mediates the relationship between engagement intention and brand attitude in gamification (Bitrián et al., 2021; Li et al., 2023b; Wu & Santana, 2022). According to Li et al. (2023b), perceived enjoyment was a significant mediator in the relationship between engagement intention and brand attitude in a gamified customer relationship management system. Similarly, Bitrián et al. (2021) points to perceived enjoyment and perceived usefulness as significant predictors of engagement intention and attitude towards the brand in gamification. The study examined the impact of gamification on engagement intention and brand attitude in various contexts, including a mobile wellness app, a social media platform and a gamified website. These results suggest that perceived enjoyment is a crucial factor in mediating the relationship between engagement intention and brand attitude in the context of gamification.

H10: Intention of engagement positively influence the gamification of brand attitude when mediating by the perceived enjoyment.

Some studies suggest that perceived enjoyment may play a mediating role in the relationship between performance gamification and brand attitude (Kwak et al., 2019; Rodrigues et al., 2021a). Kwak et al. (2019) examined the impact of gamification on team cohesion and performance, concluding that perceived enjoyment tends to be a significant mediator in the relationship between performance gamification and brand attitude. Perceived enjoyment can have a significant positive effect on gamification acceptance, which in turn has a positive impact on brand attitude (Yang et al., 2017). These results tend to support the idea that, when mediated by perceived enjoyment, performance gamification can positively influence attitudes toward the brand.

H11: Performance gamification positively influence the gamification of brand attitude when mediating by the perceived enjoyment.

Figure 1 shows the research model of this study.

Method

Participants

This cross-sectional study was conducted in a convenience sample encompassing 238 subjects (101 women, 42.4%, and 137 men, 57.6%). Although 681 participants accessed the study, only 238 answered affirmatively that they used the Nike Run Club application. The mean age was 29.17 ($SD = 7.84$), ranging from 17 to 59 years old. Regarding years of education, 10 (4.3%) participants completed nine years or less of education, 51 (21.9%) completed secondary school, 111 (47.6%) had a university graduate degree, 56 (24%) had a master's degree and five (2.1%) had a doctoral degree.

Instruments

Questionnaire based on the Technology Acceptance Model (TAM). This questionnaire (QTAM) is a 30-item self-report questionnaire based on a previous questionnaire developed by Yang et al. (2017) and an additional dimension developed by Rodrigues et al. (2021a). The QTAM is designed to assess the level of perceived acceptance by the application users and encompasses seven dimensions: (1) perceived usefulness (PU; three items); (2) perceived ease of use (PEU; three items); (3) perceived social influence (PSI; five items); (4) perceived enjoyment (PE; four

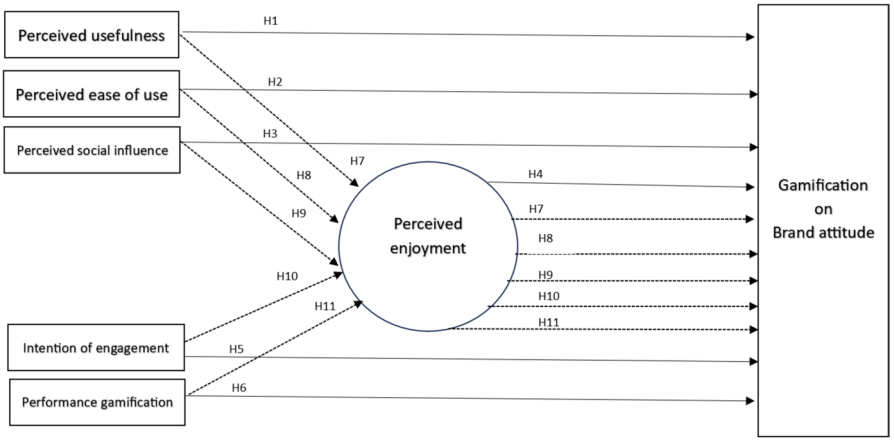


Fig. 1 Research model—gamification on brand attitude. Note: Direct effects (→) and mediating effects (----▶)

items); (5) intention of engagement (IOE; three items); (6) gamification on brand attitude (GBA; eight items); and performance gamification (PG; six items. The GBA dimension was defined as the dependent variable and the other dimensions as independent variables. All items are answered using a 5-point Likert scale, ranging from *strongly disagree* (1) to *strongly agree* (5). In the current study, Cronbach's alpha values of these dimensions ranged from 0.72 (PU) and 0.90 (GBA).

Procedures

The QTAM items were translated from English to European Portuguese and back-translated to confirm the content correspondence of each item (Erkut, 2010). The research team completed the translation, and a native speaker completed the back-translation. As an additional procedure to assess the items' intelligibility and comprehensibility, a pilot study was conducted on 12 undergraduate students. These participants did not report difficulties in understanding the items' content. The International Test Commission (2017) guidelines were considered. The study was disseminated through social media platforms such as WhatsApp, Facebook, and Instagram. A link on the Google Forms platform made access to the study protocol. All participants were informed about the study's objectives. Participation in the study was voluntary, informed consent was mandatory, and anonymity and confidentiality of the data were ensured. The data collection took place between June 2020 and June 2021.

Statistical Analysis

Data were analyzed using the IBM Software *Statistical Package for Social Sciences* (SPSS v.28) (IBM Corp. Released, 2022) and the JASP software package version 0.16.4 (JASP Team, 2022). Participants' mean age and standard deviation were calculated, and frequencies and percentages were computed for sex and education level.

To examine whether the Portuguese version of QTAM would fit the 7-factor model, a CFA was conducted using the Weighted Least Square Mean and Variance (WLSMV) estimation method (Li, 2016). The model fit was evaluated using the following goodness-of-fit indices: CMIN/*df* (values ranging from 1 to 2 indicate good fit); the Comparative Fit Index (CFI), the Tucker and Lewis Index (TLI) (CFI and TLI values between 0.90 and 0.95 denote a good fit); and the Standardized Root Mean Square Residual (SRMR) (values < 0.08 demonstrate an acceptable fit) (Hu & Bentler, 1999). The Root Mean Square Error of Approximation (RMSEA) (90% confidence intervals, values between 0.05 and 0.10 suggesting a good fit) (Marôco, 2010). Standardized regression weights and squared multiple correlations were used to examine items' local adjustment. Standardized regression weights higher than 0.40 and squared multiple correlations higher than 0.25 are considered adequate (Tabachnick et al., 2013). Cronbach alpha was computed to address the QTAM reliability. According to Field (2013), values higher than 0.70 indicate good reliability. Discriminant validity was assessed by the computation of the average variance extracted (AVE) (Fornell & Larcker, 1981).

To inspect differences between men and women, independent samples t-tests were calculated. Cohen's d effect sizes were computed ($d = 0.01$ are considered very small, $d = 0.20$ as small, $d = 0.50$ as medium, d = 0.80 as large, $d = 1.20$ as very large, and $d = 2.00$ as huge) Sawilowsky (2009). As a preliminary analysis for performing multiple linear regression, Pearson correlations were calculated and considered as small ($r = 0.10$ to 0.29), moderate ($r = 0.30$ to 0.49), large ($r = 0.50$ to 0.69), very large ($r = 0.70$ to 0.89), nearly perfect ($r \geq 0.90$), and perfect ($r = 1$) (Cohen, 1992). The gamification brand attitude (GBA) was considered the dependent variable for the regression analysis. In multiple linear regression, the strength of the prediction was indicated by the adjusted R-squared (Hays, 1963). Adequate sample size and multicollinearity were confirmed as regression assumptions. The absence of multicollinearity was confirmed by the computation of the Variance Inflation Factor (VIF) (VIF < 5) (Tabachnick et al., 2013). Multiple regression analyses were computed using the six QTAM dimensions to predict GBA. A path analysis was conducted to test for the mediator effects. This is an example of structural equation modeling (SEM) and studies hypothetical causal relations between variables that have been stated. The SEM procedure estimates the optimal effect of one set of variables on another set of variables in the same equation, controlling for error (Byrne, 2016; Kline, 2023). A bootstrap resampling method was used to test the significance of the mediational paths, using 5000 bootstrap samples and 95% confidence intervals (Kline, 2023). The significance level defined was < 0.05 for all the analyses.

Results

A confirmatory factor analysis was conducted to test the adequacy of the measurement model. This model revealed a good fit to the data: CMIN/$df = 1.47$; $\chi^2_{(94)} = 137.89$, $p = 0.002$; CFI = 0.97; TLI = 0.96; RMSEA = 0.05 [0.03—0.06]; SRMR = 0.04. Standardized regression weights ranged from 0.56 (item PU_ 3) to 0.97 (item PSI_8), and squared multiple correlations ranged from 0.37 (item PU_3) to 0.73(item PSI_8) (Table 1).

To estimate the reliability of each dimension, Cronbach's alpha was calculated. Values found for the different dimensions were as follows: PU = 0.72; PEU = 0.70; PSI = 0.85; PE = 0.81; IOE = 0.76; GBA = 0.90 and GP = 0.78. The AVE results ranged from 0.53 (PEU) to 0.79 (PSI). The squared correlations between the factors ranged from 0.06 to 0.32, and AVE results were higher than these squared correlations.

Table 2 presents the correlations between the dimensions of gamification, and all were statistically significant. Correlations were positive between GBA and PU ($r = 0.54$; $p < 0.001$), PEU ($r = 0.52$; $p < 0.001$), PSI ($r = 0.54$; $p < 0.001$), PE ($r = 0.65$; $p < 0.001$), IOE ($r = 0.68$; $p < 0.001$), and PG ($r = 0.59$; $p < 0.001$). The variance inflation factor (VIF) analysis was calculated, and values ranged from 1.36 (PG) to 5.51 (PE). All VIF values are below 5. It suggests that a multiple regression model can proceed.

Table 1 QTAM items factor loadings and squared multiple correlations ($N = 233$)

Items	Standardized factor loadings	Squared multiple correlations
PU_1	0.73	0.52
PU_2	0.69	0.45
PU_3	0.56	0.37
PEU_4	0.71	0.49
PEU_5	0.58	0.42
PEU_6	0.62	0.38
PSI_7	0.85	0.59
PSI_8	0.97	0.73
PSI_9	0.83	0.67
PE_10	0.64	0.53
PE_11	0.65	0.51
PE_12	0.66	0.52
PE_13	0.62	0.41
IOE_14	0.64	0.50
IOE_15	0.71	0.48
IOE_16	0.70	0.52

Table 2 Correlations between the QTAM dimensions and the dependent variable GBA

	PU	PEU	PSI	PE	IOE	PG	GBA	VIF
PU								1.53
PEU	0.46**							2.03
PSI	0.34**	0.51**						1.61
PE	0.57**	0.68**	0.55**					3.51
IOE	0.51**	0.61**	0.54**	0.77**				2.69
PG	0.24**	0.37**	0.40**	0.49**	0.41**			1.36
GBA	0.54**	0.52**	0.54**	0.65**	0.68**	0.49**		

** $p < 0.001$

A multiple linear regression analysis was computed after validating the fulfilment of assumptions (adequate sample size and multicollinearity) to explore the predictors of GBA. The model explained 53% of the total variance of the GBA (Table 3).

The results suggest that four independent variables were significant predictors of the dependent variable (GBA): Intention of engagement (IOE) (ß = 0.94; $p < 0.001$); perceived usefulness (PU) (ß = 0.58; $p < 0.001$); gamification performance (PG) (ß = 0.31; $p < 0.001$) and perceived social influence (PSI) (ß = 0.31; $p = 0.005$).

A bootstrap analysis was further computed to test the relationships defined in the structural model. Table 4 displays the results of estimating indirect relationships between constructs established in the research model. All relationships are statistically significant.

Table 3 Multiple linear regression analysis of predictors of gamification on brand attitude

Predictors	*r*	R^2Adjusted	*F*	*p*	ß	*t*	*p*
Model	0.76	0.58	52.99	< 0.001			
PU					**0.58**	**4.09**	**< 0.001**
PEU					0.23	0.14	0.893
PSI					**0.31**	**2.83**	**0.005**
PE					0.13	0.77	0.442
IOE					**0.94**	**5.05**	**< 0.001**
PG					**0.31**	**4.00**	**< 0.001**

Bold values show the presence of statistical significance

Table 4 Indirect effects on endogenous variables

Indirect effects on endogenous variables	Path (β)	*t* value (bootstrap)	*p*-value	95% Confidence interval		Hypothesis support
				Lower	Upper	
PU → PE → BA	0.121	5.471	< 0.001	0.078	0.164	Yes
PEU → PE → BA	0.160	6.224	< 0.001	0.110	0.210	Yes
PSI → PE → BA	0.087	5.633	< 0.001	0.057	0.117	Yes
IOE → PE → BA	0.950	3.461	< 0.001	0.041	0.149	Yes
PG → PE → BA	0.063	3.461	< 0.001	0.037	0.088	Yes

Perceived usefulness (PU), perceived ease of use (PEU), perceived social influence (PSI), intention of engagement (IOE) and performance gamification (PG), when mediated by perceived enjoyment (PE), positively influence the brand attitude (BA) ($\beta = 1.121$; $p < 0.001$; $\beta = 1.160$; $p < 0.001$; $\beta = 0.087$; $p < 0.001$; $\beta = 0.950$; $p < 0.001$; $\beta = 0.063$; $p < 0.001$).

Discussion of Results and Implications

Discussion

This research paper aimed to study the influencers of gamification on brand attitude (GBA) as perceived usefulness (PU), perceived ease of use (PEU), perceived social influence (PSI), perceived enjoyment (PE), intention of engagement (IOE) and performance gamification (PG), according to the association hypotheses included in the research model. This theme is relevant because, nowadays, gamification is a technique used by several marketers to promote customer engagement and increase the customer´s interaction with brands (Rodrigues et al., 2021a; Sari, 2022; Yadav & Chakrabarti, 2022). Consequently, gamification has, simultaneously, benefits for companies because campaigns provide reliable data about consumers' preferences and for customers because it (can) enhance their experience,

motivation and satisfaction with brands (Hofacker et al., 2016; Li et al., 2023b; Rodrigues et al., 2021a).

First, the results of this study demonstrated that GBA is positively influenced by PU, which implies that hypothesis H1 is validated. These results, similar to the past studies of Elareshi et al. (2023), Lee et al. (2020b) and Sandema-Sombe (2019), suggests that customers (sensitive) have a more positive attitude about brand products or services when they perceive their usefulness. Thus, companies must develop products perceived as valuable by the market and concept gamification campaigns that provide useful information about products, such as utility, performance, and impact on the consumer's life (Lai, 2017; Rodrigues et al., 2021a).

Regarding PSI, this study found a positive relationship between GBA and PSI. This evidence supported hypothesis H3, and demonstrated that PSI predicts GBA, as also found in the studies of Hamari et al. (2014), Primack et al. (2019) and Su et al. (2021). This scenario demonstrated that social interaction activities influence gamification and brand attitude (Giles, 2002; Tseng et al., 2022; Zhou & Xiong, 2024). Hence, companies should consider the social context and the influence of some market players on the public´s preference for some brands.

The IOE can positively influence GBA, which supports hypothesis H5. Consequently, experience and identification positively influence brand preference and purchase intention, as argued by Ahmed et al. (2022), Lee et al. (2020a) and Schivinski and Dabrowski (2016). Therefore, using effective and persuasive gamification tools could increase the customer's intention to engage with brands (Xia et al., 2024). Consequently, the more interaction, the more intention to purchase by customers.

It was also found that PG influences GBA and hypothesis H6 is supported, which is in line with other studies (Rodrigues et al., 2021a). This implies that the characteristics of products/services can motivate consumers to discover their performance and values and, so, increase their engagement with brands (Ahmed et al., 2022; Chen & Liang, 2022). Hence, gamification instruments, aligned with branding strategies, could positively influence the behaviour attitude towards the brand and increase its public´s preference.

The results also allowed us to verify that hypotheses H2 and H4 were not validated, as confirmed by the multiple linear regression analysis – low statistical significance. Consequently, PEU and PE seem to not influence GBA. These results are disruptive relatively to other studies about the influence of PEU on gamification and brand attitude (Alam et al., 2022; Kashive & Mohite, 2023; Lai, 2017). Hence, the gamification tools must try, not only to their ease accessing, but also consider innovative features and added value of using. On the other hand, these results differ from the ones found in prior studies about the influence of PE on GBA (Kaur et al., 2023; Van der Kooij et al., 2019; Raman, 2021). Thus, the features and design of digital platforms do not always motivate gamers. A set of motivational factors combined with persuasion and affectivity can promote enjoyment according to each target. The evidence above allows us to verify that different targets have different reactions towards gamification tools, due to social, affective and motivational factors that companies must consider. So, the better the adaptation of gaming, the better the attitude users could develop towards brands (Rodrigues et al., 2021a).

Lastly, our findings pointed to the mediating role that PE has in the relationship between the set of predicted variables PU, PSI, IOE, PG, and the GBA result variable, despite no significance being found in the direct relationship between PE and GBA. This evidence supports hypothesis H7, H8, H9, H10, and H11 and complements the knowledge about the mediators of GBA (Bitrián et al., 2021; Chen & Liang, 2022; Kwak et al., 2019; Lee, 2019; Wu & Santana, 2022), by demonstrating that PE can also influence GBA, but only through its mediating effect. Interesting is to verify the important mediating role that PE has in the influence of IOE on GBA because it reinforces the IOE/GBA relationship. This evidence complements prior research about PE effects on GBA (Bitrián et al., 2021; Li et al., 2023b; Wu & Santana, 2022), evidencing the strong effect of the indirect effect of PE. Therefore, users can first perceive if an activity is enjoyable (PE) and if it stimulates (after) the desire to participate in activities with products (IOE) through gaming experiences for brand (GBA).

In resume, our findings relate that the most direct antecedents of the GBA are, firstly, IOE, then the PU, and finally, the PSI and PG. Also, our findings show that PE reinforces the motivation of users to participate in activities with products promoted by gaming experiences for brands.

Theoretical Implications

This study has several implications for the theory related to gamification on brand and marketing strategy. First, the model proposed provides a systematized analysis of several mechanisms that explain the principal direct influencers of GBA, such as PU, PSI, IOE, and PG, and extends the knowledge about the dynamic of digital gamification platforms on brand behavior. Also, our findings increase the knowledge about the effects generated by the influencers of GBA by demonstrating that PE predicts GBA but only through its mediating effect – highlighting the (only) mediating role of perceived enjoyment. In this regard, this study also contributes to a better understanding of how gamification contributes to engagement with brands and purchase intention (Ahmed et al., 2022; Camisón-Haba et al., 2024; Lee et al., 2020a; Yang et al., 2017; Zhou & Xiong, 2024) demonstrating that the perception and desire of users about enjoyable digital gaming platforms can have a positive impact on brand attitude.

Secondly, this study also contributes to a better understanding of the relationship between brand theory and marketing performance, identifying what gamification mechanisms positively impact on brand attitude (Li et al., 2023b; Sari, 2022; Xi & Hamari, 2020). It was identified that IOE and PU are the principal direct influencers of the users' engagement on GBA, and the mediating effect of PE is responsible for generating the greatest gamification effect of IOE.

Also, as a third implication, this study contributes to the knowledge about innovative marketing communication processes regarding the gamification mechanisms to which consumers are (more) sensitive to engagement with a brand (Rodrigues et al., 2021a) and improves the knowledge about innovative information technologies applied to marketing, in accordance to the theory of rational action (Taherdoost,

2018). It seems that the enjoyable digital gaming platforms applied to marketing improve users' engagement with brands (Xia et al., 2024; Zhou & Xiong, 2024). Thus, this study provides insights into how innovative digital platforms enhance marketing relationship capabilities, which can contribute to the development of global business. The knowledge about digital platforms can provide insights to researchers about what gamify mechanisms positively influence the brand attitude with the use of mobile apps (Jang et al., 2024) and promote the diffusion of technology and information across the digital ecosystem of gaming users. Moreover, it lays a dynamic perspective between the technological knowledge application, the innovative marketing communication processes, and the consumer behavior.

Lastly, this study provides a perspective about the influence of social groups on the greater propensity to brand attitude. A greater impact of social groups and access to digital platforms can improve the gamer´s attitudes towards a brand (Daim et al., 2014; Hamari et al., 2014; Tseng et al., 2022).

Practical Implications

Regarding practical contributions, this study has several implications for brand developers, marketers, companies and users, and the economy as a whole. It pointed out the principal factors that may influence the users´ relationship with brands. The IOE has a strong effect on brand attitude, and gamification can create a great enjoyable experience and engagement in their users (Ciuchita et al., 2023; Yang et al., 2017; Zhou & Xiong, 2024). Hence, brand developers and marketers should develop innovative and enjoyable digital gaming apps that induce positive users' behavior toward brands (Daim et al., 2014; Xi & Hamari, 2020; Xia et al., 2024). Regarding gaming technology, brand developers and marketers can incorporate digital technologies in knowledge management activities to continuously develop innovative game platforms and improve their firm´s digital marketing orientation to increase competitiveness. These facts have implications on brand purchase intentions (Lee et al., 2020a; Schivinski & Dabrowski, 2016) and on the increase of business, due to the capability to management-oriented knowledge of innovative technologies applied to marketing.

Furthermore, this study influences the companies' communication strategy. It helps marketers define the dynamic elements of digital campaigns according to the sensitive factors that influence the user's engagement with brands (Hofacker et al., 2016; Milanesi et al., 2022; Xia et al., 2024), for example, the several interconnections between different digital marketing channels (Zhou & Xiong, 2024). It can include a set of game elements that allow companies to consider the better enjoyable gamification platforms which can be used in marketing to stimulate customer interest in brands and boost purchases.

Companies need to focus on the development of marketing strategies that, simultaneously, achieve business objectives and raise customers' expectations about experience, satisfaction and enjoyment (Milanesi et al., 2022; Xu, 2015). Companies can improve social interactions through gamification platforms as consumers are more engaged with gaming apps. These gamify technology should promote dynamic

interactions within the economic environment (Fathollahi et al., 2017), through the diffusion of technology and information about products and services, which can induce consumer behavior and increase economic development across the global market (Jang et al.). Moreover, gamification platforms are an excellent marketing resource to collect information about customers' preferences and to develop retention campaigns (Dwivedi et al., 2023; Hofacker et al., 2016). Hence, companies need to find out what kind of games are more interactive, persuasive and affective, to leverage the user's interaction.

Gamification can also contribute to innovation and knowledge generation. Digital platforms can encourage users to participate in problem-solving by suggesting new ideas (Camisón-Haba et al., 2024; Rodrigues et al., 2021a). Therefore, gamification can be a great opportunity for users to enlarge their interactive experience with brands. Moreover, gamification can promote a culture of sharing and diffusion of knowledge with users (Lopes et al., 2024) through innovative gaming services used to promote the global offer of companies. This certainly implies greater economic development because users have access to innovative communication channels that promote more shopping frequency.

Limitations and Future Research

The current study pointed out several theoretical and practical implications but has limitations. First, this study was conducted in a sample of participants that used a specific application – a sports app – which implies that the results cannot be generalized to the public. So, future studies can be conducted in other settings to verify whether these results can be replicated.

Another limitation is the sample size, as this study does not analyze the general population but merely verifies the existence of significant effects in the variables included in the research model applied to a specific reality. Thus, future studies that aim to enlarge statistical evidence can use (more) large samples.

Furthermore, this research is limited to analyzing users (upstream analysis). Hence, future studies could analyze companies' perspectives on their relationships with suppliers, which can contribute to diversifying the sample and providing a supply chain analysis. Future studies can also include other sample elements, such as stores or suppliers, which can contribute to obtaining other results using diversified samples.

Conclusion

Nowadays, technological tools are fundamental drivers to leverage economic growth. The digital transformation created new opportunities in several industries that contribute to a more interconnected, dynamic, and inclusive economy. Accordingly, the knowledge-based of digital technologies allows companies to boost their growth and competitiveness and so promote wider economic expansion (Fathollahi et al., 2017; Shahabadi et al., 2018; Zhou & Xiong, 2024). Hence, the adoption of

innovative technology systems seems to be crucial to companies improving their business and capacity to face the new market challenges. The digital tools play a fundamental role by improving the efficiency of communication and increasing the engagement between organizations and their stakeholders, which results in the diffusion of knowledge about businesses (Camisón-Haba et al., 2024; Jnr & Petersen, 2023). In this domain, gamification can bring several benefits to businesses, by transforming traditional communication processes into new modern business concepts, with impacts on increasing efficiency, process innovation, and engagement between business partners (Xi & Hamari, 2020; Yang et al., 2017). Consequently, the economy can benefit from gamification through the greater diffusion of information about businesses, which can increase consumption, and the higher relationship between economic agents, which encourages the creation of new business opportunities for companies, market brokers, and brands (Jang et al.; Zhou & Xiong, 2024). In the specific context of marketing strategies, the growing discussion about gamification allows to understand how gamification can improve customers' attitude about brands. Hence, this research aimed to analyse the effect of the gamification mechanisms on customers' engagement with brands and how gaming technologies influence customers' attitude toward the brands. This study was supported by a research model to test the statistical significance of the 11 hypotheses that represent the gamification mechanisms. The field research was conducted with participants who used the Nike Run Club application.

The results demonstrated that perceived usefulness (PU), perceived social influence (PSI), intention of engagement (IOE), and performance gamification (PG) are the direct influencers of gamification on brand attitude (GBA), and perceived enjoyment (PE) plays a mediator role in GBA interaction.

In line with these results, it was found a correlation between PU and GBA. This evidence, supported by the responses of participants in this study, reveals that Nike sports are useful for promoting brand affection. Hence, companies should consider the design and performance of the gaming apps used in marketing promotion to stimulate the user's interaction with brands. Thus, the better the design and performance of the gamification tools, the better brand engagement is possible. These results complement Yang et al. (2017) study by presenting a contrary view about the influence of PU on GBA.

Also, this study showed a positive relationship between PSI and GBA. Therefore, social interaction positively influences gamification and, consequently, interaction with brands. Thus, the success of the digital gaming tolls can depend on their agility to promote the interaction between "communities" of users (Zhou & Xiong, 2024) to share contents and solve task problems. This interaction eventually enlarges the gamification effect, due to the intention of social presence in a digital environment and, consequently, increases the engagement with brands. The efficient gamification tools are those that promote the sharing of information and knowledge through the interconnectivity of contents and dialogues (Camisón-Haba et al., 2024; Xia et al., 2024) to foster collaboration between the community of users.

Regarding IOE, this study found its strong influence on GBA. This was noted through the participant's responses, which demonstrated a willingness to contact again with the functionalities of the Nike sports application, which reflects that

better IOE improves the interaction with brands. In this context, the gaming apps that motivate the re-engagement or long-term retention may have more success in the (positive) attitude of the public towards the brand, which can lead to purchase intentions. Gamification platforms should be dynamic, cognitive and affective (Ciuchita et al., 2023) to attract the public and stimulate the engagement with brands.

Moreover, this study pointed a correlation between GBA and PG. This significance, which is in line with prior studies (Rodrigues et al., 2021a, 2021b), allowed us to conclude that the efficacy of the gaming applications promotes interest and engagement with brands. The more alignment of the gamification tools features with brand values and their ability to establish several interconnections with the users, in different marketing channels, the greater the perception of users as good engagement tools.

The present research allowed to observe that PEU and PE do not influence directly GBA. Regarding PEU, technological features and innovation should also be considered in the design of gamification tools because attractive and objective promotion tools could increase motivation to use them. Also, advantages and added value for users of gamification tools must be considered by marketers. Additionally, the development of gamification tools to promote brands must contemplate the different expectations of the users. Hence, more innovative and effective tools must allow different tasks and high connections between different channels to increase the diffusion of business information, promoting a more positive experience, enjoyment, and motivation for engagement.

Finally, this study showed the important mediator role that PE has on GBA. In particular, the results pointed out that PE reinforces the IOE/GBA relationship. Perceived enjoyment is an affective, cognitive, and active leveraging of GBA, while gaming app features, design, and functionality can improve users' attraction. Therefore, the pleasure and the enjoyment associated with gaming applications have a positive effect on motivation and intention to engage with brands. Hence, PE reinforces the user's motivation to participate in activities about products through gaming apps for brands.

In summary, the main results of this study allow us to conclude that customer engagement towards a brand is positively affected by the enjoyable interactions generated during a gaming experience, which may result in active and improved brand engagement and eventual purchase intentions. Hence, through the development of innovative gaming platforms companies can promote a culture of knowledge sharing and diffusion about their products and services, and thus strengthen their competitiveness, with an impact on the global economy resulting from a greater (probability) frequency of shopping from users.

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Data Availability The data presented in this study are available on request from the corresponding author.

Declarations

Competing Interests The authors declare no conflicts of interest.

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