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## Article

# The impact of consumer engagement with gamified branded apps on gameful experience in emerging markets: An empirical study

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# The Impact of Consumer Engagement with Gamified Branded Apps on Gameful Experience in Emerging Markets: An Empirical Study

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**Abstract.** *Drawing on social exchange theory, this article examines how consumers' engagement with gamified branded mobile apps impacts different aspects of their gameful experience, which comprises accomplishment, competition, challenge, immersion, guidance, playful experience, and social experience. We test the proposed conceptual model by drawing on data collected from 319 adult gamified app users from the emerging market of Pakistan, which was analyzed by using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that consumers' engagement with gamified branded mobile apps in the emerging market context impacts each of the studied gameful experience dimensions, raising important theoretical and practical implications, as discussed in the article's final section.*

**Keywords:** *gamification, consumer engagement, gameful experience, social exchange theory, gamified mobile apps, branded mobile apps, emerging markets*

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## 1. Introduction

The video-gaming sector has seen rapid growth in recent years (Högberg et al., 2019a), including in emerging markets (Abbasi et al., 2023). Prior research suggests the capacity of video-games to engage their users, ranging from children to teenagers, and adults (Altimira et al., 2017). Though consumers' engagement with different objects (e.g., social media or video-games) has received prior investigation (e.g., Bozkurt et al., 2024), the dynamics characterizing users' engagement with gamified apps and its consequences remain nebulous, particularly in the emerging market context (Abbasi et al., 2021a/b), exposing an important literature-based gap. As consumers in emerging (vs. more developed) markets are expected to see important differences in their engagement with particular objects (e.g., brands or video-games), further exploration of the identified gap is warranted (Hollebeek, Muñoz-Martínez et al., 2022; Skudiene et al., 2021), as therefore undertaken in this research.

Brands are increasingly employing gamification, “a process of enhancing a service with affordances for gameful experiences to support users' overall value creation” (Huotari & Hamari, 2012, p. 19) to boost customer metrics, including enjoyment, satisfaction, and wellbeing (e.g., Li et al., 2024). Recently, gamification has gained traction through its growth in companies in the public and private sectors (Hollebeek et al., 2021), including through the adoption of gamified branded apps, or apps that adopt game elements to promote, market, or build relationships with a brand's customers (Tseng et al., 2021). For example, while the U.S. States Army uses a gamified recruitment tool that enables users to assess their readiness for service in a multi-player strategic combat environment, gamified apps have also been useful in educating adult drivers regarding road safety issues. Other examples include Nike Run Club, which translates running into a motivational, challenging experience characterized by relevant milestones or achievements, Starbucks Rewards, which utilizes points, badges, and rewards to inspire engagement, repeat purchases, and brand loyalty (Bhutani & Behl, 2023; Hsu, 2023), and Fitbit, which combines challenges and social leaderboards to motivate

users to reach their fitness goals (Huang et al., 2019). Overall, these apps demonstrate how gamification can augment user engagement and foster stronger brand connections.

The efficacy of gamification in engaging users and driving desirable (e.g., purchase) behavior is well-established in the literature (e.g. purchases, referrals, quality of life, and well-being; Li et al., 2024; Feng et al., 2020). However, despite recent advances in gamification research (e.g., Leclercq et al., 2020), insight into the effect of consumers' engagement with gamification on their broader gameful experience with specific products remains tenuous (Sharma et al., 2024; Hassan et al., 2020), exposing an important gap in the literature. In particular, despite the rapidly rising rates of mobile app usage (Bapat & Hollebeek, 2023), including in emerging markets (Ferdous et al., 2024), acumen of consumers' engagement with gamified branded mobile apps lags behind, as therefore explored further in this research.

Gamified or game-like elements help create users' *gameful experience*, technology's transformation to become more game-like, to evoke similar positive experiences and motivations affecting user behavior (Högberg et al., 2019a). Prior literature suggests that gameful experience comprises consumers' game-related accomplishment, challenge, competition, guidance, immersion, playful experience, and social experience (Hassan et al., 2020). Gameful experience-building tools include gamification-based badges, points, rewards, and leaderboards (Högberg et al., 2019a), which can be used to facilitate consumer learning (e.g. through gamified factory tours), entertainment (e.g. gamified quests or contests), or social interactions (e.g. gamified socializing; Matallaoui et al., 2017). In addition, 3D serious games may be used to implement gamification (e.g., to enhance managerial skill and knowledge development).

While *engagement*, a consumer's investment of cognitive, emotional, and behavioral resources in their brand interactions (Hollebeek et al., 2019), is expected to impact the individual's experience with a particular game (Lemon & Verhoef, 2016; Thadikaran & Singh, 2024), the subtleties characterizing this association remain nebulous, particularly in emerging markets, exposing an important knowledge gap. Specifically, understanding the dynamics characterizing the effect of particular engagement dimensions on specific experience dimensions in the gamification context lags behind (e.g., Hollebeek & Macky, 2019), as therefore explored in this article. To the best of our knowledge, no prior studies have examined the impact of users' engagement with gamified branded mobile apps on their gameful experience, leading us to explore this association.

Our analyses extend prior research that addresses the interface of engagement and gamification (e.g., Hsu, 2023; Leclercq et al., 2020), as applied to the context of emerging markets (e.g., Bakhsh et al., 2023; Gopane & Ravhura, 2024). For example, while Thomas and Baral (2023) suggest that learners' engagement and flow are facilitated by gamified instructional designs, Ouyang et al. (2022) explored the effect of gamified Annual Physician badges (provided to doctors) on patients' engagement in their online health communities. We extend the work of these authors by quantitatively testing the effect of users' engagement with gamified branded mobile apps on their gameful ex-

perience, which comprises accomplishment, challenge, competition, guidance, immersion, playful experience, and social experience (Eppman et al., 2018) in the emerging market context of Pakistan, thus making an important contribution to the gamification, engagement, and emerging markets literature. Overall, our study answers the following main question: How does users' engagement with gamified branded mobile apps impact their gameful experiences in the emerging market context?

To explore this question, we adopt a social exchange theory (SET) perspective that posits that users invest in their interactions and relationships with specific objects (e.g., a gamified branded mobile app) to extract future benefits from the relationship (Blau, 1964; Degutis et al., 2023). While users will tend to view their resource investments (i.e., engagement, e.g., investment of time) as perceived costs, their attained benefits (e.g., the attainment of a high ranking, badges, or rewards) are seen as benefits (Hollebeek, 2011). If a user's perceived benefit of interacting with a gamified branded mobile app outweighs the perceived cost (e.g., if they are enjoying playing the game), the theory predicts that the individual will continue using the gamified app.

This study makes the following main contribution to the gamification, engagement, and emerging markets literature. Taking a social exchange theory perspective, we explore the effect of users' engagement with gamified branded mobile apps on their gameful experience in the emerging market of Pakistan. While social exchange theory has been adopted in prior engagement research (e.g., Lin et al., 2018; Wong et al., 2023), it remains unclear how consumers' gameful experience develops from their engagement with gamified branded mobile apps (Streukens et al., 2019), particularly in emerging markets, meriting further exploration. In particular, we argue for social exchange theory's relevance in exploring the effect of users' engagement on their gameful experience, as users will tend to continue using gamified apps that are perceived as valuable (Blau, 1964). Overall, our empirical results corroborate that consumers' engagement with gamified branded mobile apps impacts their gameful experience in the emerging market context, thus contributing to the gamification, engagement, and emerging markets literature.

We next review key gamification, engagement, and experience literature in Section 2, followed by the development of the proposed conceptual model and its associated research hypotheses in Section 3. Section 4 outlines the adopted methodology, followed by an overview of the main results in Section 5. In Section 6, we discuss our main findings, followed by an overview of key implications that arise from this research in Section 7.

## **2. Literature Review**

### ***2.1 Social Exchange Theory in Gamified Environments***

To explore our research objective, we employ social exchange theory, which suggests that individuals will engage in interactions with an object for as long as they perceive re-

ceiving value from these interactions (Yuen et al., 2023). The theory suggests that users decide whether to continue engaging with particular gamified content based on the balance or ratio of their perceived costs (i.e., time and effort invested) and their perceived rewards (e.g., game-related incentives, badges, social interactions, or status) attained from these interactions (Blau, 1964; Degutis et al., 2023; Urbonavicius et al., 2021). Specifically, when their perceived benefits or rewards exceed their perceived cost of interacting with the gamified content (e.g., through a gamified branded mobile app), they are predicted to continue engaging with the object (Ciuchita et al., 2023).

In other words, social exchange theory posits that consumers will reciprocate positive thoughts, emotions, and behavior toward a focal object (e.g., a gamified branded app) when they receive specific benefits from interacting with it (Pervan et al., 2009). Social exchange therefore comprises unspecified obligations, whereby stakeholders may do one another a favor with the expectation of some future return (e.g., users: a pleasurable usage experience; providers: profit; Rousseau, 1989). The theory suggests that exchange partners aim to achieve balance in their interactions and, if imbalance occurs, balance restorative attempts will be undertaken (Hollebeek, 2011). For consumers, in exchange, what they give will be perceived as a cost (e.g., spending time and effort on using gamified apps), while what is received (e.g., game-related badges or rewards) will be seen as a reward, and the individual's behavior is modified as the difference between the two (profit) changes (Homans, 1958; Hollebeek, 2011).

## 2.2 Gamification

Gamification, which has attracted considerable scholarly and managerial interest (e.g., Eppmann et al., 2018; Ouyang et al., 2022), has been deployed across contexts, including education, recruitment, psychology, communication, and marketing, among others. However, debate still surrounds its definition. For example, while Deterding et al. (2011a, p. 3) define gamification as “the introduction of game mechanics and elements (vs. full-fledged games) [in] non-game contexts,” Högberg et al. (2019a) view the concept as the process of adding game-like elements in non-gaming contexts in order to evoke gameful user experiences that lead to a particular behavior change and positive engagement with the gamified platform.

Despite this dissent, we identify several commonly agreed-upon hallmarks of gamification. First, gamification incorporates game-like elements into non-gaming contexts (e.g., brand-based marketing stimuli; Vesa & Harviainen, 2019). For example, gamification can be used to reward gym users to complete physical exercises on their fitness app (Van Roy & Zaman, 2019), helping users fulfil their objectives (e.g., getting fit) and boosting their wellbeing (Wolf et al., 2021; Hollebeek & Belk, 2021).

Second, gamification applications can be used to influence user behavior (Deterding et al., 2011a). For example, gamified apps may seek to engage users, elongating their game usage and creating flow by using game-like elements (e.g., badges, points,



rewards, or leader boards; Högberg et al., 2019a). Third, gamification is deployed across platforms, including mobile apps, laptops, desktops, or tablets, thus offering myriad engagement opportunities and revealing its strategic relevance (Ouyang et al., 2022). Fourth, gamification has been shown to pay off for firms, including by raising users' purchase intentions and loyalty to specific brands, boosting firm profitability (Berger et al., 2018; Högberg et al., 2019b; Hofacker et al., 2016).

### 2.3 Engagement

*Engagement* has been defined as a consumer's cognitive, emotional, and/or behavioral resource investment in their brand interactions (e.g., Hollebeek et al., 2019; Hollebeek, Kumar & Srivastava, 2022). Though gamification is designed to foster engagement (e.g., Leclercq et al., 2020), acumen of how specific gamified applications impact engagement and its effects remains tenuous, limiting insight into gamification's effectiveness (Liu et al., 2017). The engagement literature suggests that consumers who make greater investments in their interactions with gamification (thus displaying higher engagement) are predicted to exhibit more favorable brand-related outcomes (e.g., greater referrals or loyalty).

Engagement can manifest itself positively or negatively (Clark et al., 2020). While positive engagement supports the brand (e.g., through users' positive word-of-mouth or purchase of the brand), negative engagement is detrimental to it (e.g., through users' brand sabotage or negative word-of-mouth; Bowden et al., 2017). In line with prior gamification research, which has focused on users' positive engagement (Hollebeek & Chen, 2014), this article focuses on positively valenced engagement (Hollebeek et al., 2014) with gamified branded mobile apps.

Engagement is typically viewed as a multi-dimensional concept (Vivek et al., 2014). For example, Hollebeek et al.'s (2014) influential three-dimensional model includes the following engagement facets. First, cognitive processing refers to "a consumer's level of brand-related thought processing and elaboration of a particular consumer/brand interaction" (p. 154). Second, affection denotes "a consumer's degree of positive brand-related affect in a particular interaction," and activation is the "consumer's level of energy, effort, and time spent on a brand in a particular consumer/brand interaction" (p. 154). Third, *activation* is "a consumer's level of energy, effort, and time spent on a brand in a brand interaction" (p.154). We next review the gameful experience concept.

### 2.4 Gameful Experience

*Gameful experience*, "the positive emotional and involving qualities of using a gamified application" (Eppman et al., 2018, p. 100), is a multi-dimensional concept comprising the following dimensions. First, *accomplishment* reflects the user's need to attain, achieve, and be recognized for a specific feat (Deterding et al., 2011b). Second, *challenge* denotes the user's need to exercise innate faculties of contest, defiance, and com-

petition for a potential reward or incentive (Hamari et al., 2016). Third, the *competition* represents a user’s perceived rivalry on or related to a gaming platform (Hsu & Chen, 2018). Fourth, *guidance* encompasses the individual’s desire to receive direction or instruction for certain tasks and to feel supported in their endeavors (Rapp, 2013).

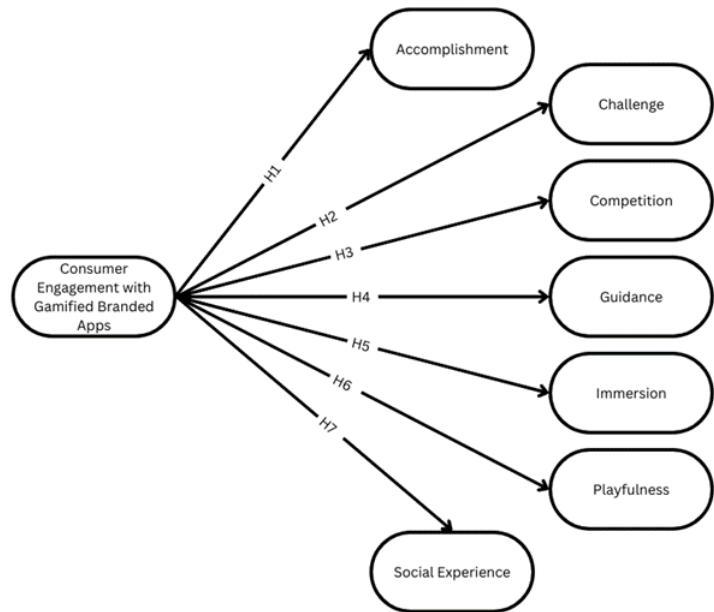
Fifth, *immersion* is a user’s absorption in a gamified platform (Högberg et al., 2019a). Sixth, *playfulness* is an experience involving pleasurable behaviors that are voluntarily invoked by users under a set of loosely-built or absent rules, stimulating creativity and spontaneous imagination. Seventh, *social experience* refers to having an interaction directly or indirectly with other people or service-created social actors (Högberg et al., 2019a).

In line with the customer experience literature, gameful experience covers the user’s *entire* gamification process or journey (Lemon & Verhoef, 2016; Thadikaran & Singh, 2024). We thus view gameful experiences, which transcend users’ interactions with a gamified branded mobile app, as a consequence of their *intra*-interaction engagement with the app.

3. Conceptual Model and Hypothesis Development

Based on our review, we develop a model based on social exchange theory that explores the effect of consumers’ engagement with gamified branded mobile apps on their gameful experience (see Figure 1).

Figure 1  
Conceptual Model





Users' resource investments in their interactions with (i.e., engagement with) gamified branded mobile apps often transpire to attain, achieve, or be recognized for a specific feat, reflecting the *accomplishment* facet of gameful experience (Deterding et al., 2011a). Prior gaming research demonstrates that accomplishment offers a key motivating force for users (Kankanhalli et al., 2012), which we also expect to have an effect in the emerging market context. In other words, most users have specific targets against which they gauge their game-related progress and accomplishments. When users complete a game module, gamified platforms typically reward them by signaling the achievement of a milestone, yielding a sense of perceived accomplishment. Therefore:

**H1:** *Consumer engagement has a positive effect on gamified app-related accomplishment in the emerging market context.*

Second, *challenge* reflects a consumer's need for contest, defiance, or competition for a potential reward or incentive (Hamari et al., 2016). Gamified apps typically provide users with differing impediments, which can persuade users to compete in the pursuit of specific goals, including game related learning or skill development (Vesa & Harviainen, 2019), including in emerging markets. Therefore, the more consumers in emerging markets invest in interacting with gamified branded mobile apps, the more they are likely to be motivated by challenge. We postulate:

**H2:** *Consumer engagement has a positive effect on gamified app-related challenge in emerging markets.*

Third, *competition* denotes a user's perceived rivalry on or related to a gaming platform (Hsu & Chen, 2018). It transpires when one player poses a challenge that another perceives to undermine them or the attainment of their game-related objectives (Li et al., 2024). Consumer-perceived competition may arise after winning a mission or completing a task in record time, as noticed (for instance) by referring to leader-board scores, including in emerging markets. Therefore, consumers' emotional, behavioral, and/or cognitive investment in their interactions with gamified branded mobile apps are conducive to cultivating users' game-related competition (Marache-Francisco & Brangier, 2013). Thus:

**H3:** *Consumer engagement has a positive effect on gamified app-related competition in emerging markets.*

Fourth, *guidance* is the consumer's experience of feeling guided or instructed about specific tasks and perceived by individuals as support in their pursuits (Högberg et al., 2019a). The more of their cognitive, emotional, and/or behavioral resources consumers invest in their interactions with gamified branded mobile apps, the higher their expected guidance level (Rapp, 2013). For example, through their app-related engagement, consumers are likely to learn that a gamified app provides relevant user instructions or information (Sheth et al., 2012), including in emerging markets. We posit:

**H4:** *Consumer engagement has a positive effect on gamified app-related guidance in emerging markets.*

Fifth, *immersion* reflects a user's absorption in a gamified platform. When immersed, users dissociate from their surroundings, lose their sense of time and space, and forget everything around them (Högberg et al., 2019a). Immersed users thus approximate flow, which Csikszentmihalyi and Csikszentmihalyi (1992) define as an "optimal experience that implies focused attention, effortless concentration, and loss of self-consciousness." Hamari and Koivisto (2014) add that flow represents an experience that occurs when individuals perform at the height of their skills, where a task is optimally challenging. We suggest that users' investment of their personal (e.g., cognitive) resources in their gamified app interactions [i.e., gamified app engagement] is conducive to immersion (Xi & Hamari, 2019), including for users in emerging markets, as follows:

**H5:** *Consumer engagement has a positive effect on gamified app-related immersion in emerging markets.*

Sixth, *playfulness* is a pleasurable behavior that users display under loosely-held or absent rules (Tarka et al., 2022). It includes consumers' spontaneous imagination, free expression, and creativity (Högberg et al., 2019a). Prior research reveals the importance of playfulness in gamification performance (Deterding et al., 2011a; Eppmann et al., 2018; Fuchs et al., 2015), revealing its strategic importance. Consumers' emotional, behavioral, and/or cognitive resource investment in their gamified app interactions (i.e., engagement) is likely to exhibit an element of playfulness by virtue of gamification's nature (Banfield & Wilkerson, 2014), including in emerging markets. We postulate:

**H6:** *Consumer engagement has a positive effect on gamified app-related playfulness in emerging markets.*

Finally, we reveal an important social motive for video-game play, including the desire to connect or bond with like-minded others (Högberg et al., 2019a). For example, while females have been found to mainly play video-games for socializing and sharing purposes (Koivisto & Hamari, 2014), which is expected to also apply to gamified apps, this expected association is still subject to empirical testing and confirmation (Giannetto et al., 2013). Through their emotional, behavioral, and cognitive investment in their gamified app interactions with gamified branded apps, users are likely to develop a sense of bonding or connection to the brand and their fellow users (Silpasuwanchai et al., 2016), in line with social exchange theory's *relatedness*, including in the emerging market context. We postulate:

**H7:** *Consumer engagement has a positive effect on gamified app-related social experience in emerging markets.*

## 4. Methodology

### 4.1 Data Collection and Sampling Procedures

The data was collected between November 2019 and December 2019 from adult users of gamified branded video-gaming apps in the emerging market context of Pakistan through a cross-sectional survey, in which consumer engagement is expected to exhibit unique dynamics (vs. in more developed markets; Hollebeek, Muñiz-Martínez et al., 2022). We selected the emerging market context of Pakistan, given its high internet and mobile app usage rates (Statista, 2024) and its significant and further forecast growth in recent years (IntentaDigital, 2024). We excluded children to minimize questionnaire comprehension issues. The data was collected using purposive sampling, as we sought participants who had gamified app usage experience and knowledge. Prior to data collection, we requested their consent to participate in the survey. We also used screening questions to filter our regular (i.e., weekly, or more frequent) gamified app users. To ensure the respondents' appropriate understanding of the topic, we presented respondents with the following definition: "*Gamification refers to the incorporation of game elements into non-game settings (e.g., an advertisement for a brand).*"

The self-administered survey, which was offered to the target population of experienced gamified app users, requested the participants to choose a gamified app aligned with their interests. Surveys were distributed in person (e.g., by communicating the research objective, obtaining the participants' informed consent, and resolving any of the respondents' inquiries). Through this approach, we were able to connect with the participants, yielding increased response rates and more reflective responses.

To determine the minimum sample size required to conduct PLS-SEM, we used the G\*Power tool (Erdfelder et al., 1996; Faul et al., 2007), which is widely-used in social/behavioral research (Hair et al., 2021). Entering the input parameters (e.g., power=95%, effect size=0.15, and predictors=1), a minimum sample size of 89 was attained. We distributed a total of 408 surveys to gamified app users, of which 374 were returned. After checking these, we removed 20 incomplete and 35 biased responses (e.g., those displaying straight-lining tendencies), yielding a total of 319 valid responses. We next report on the data analysis.

Table 1 presents the respondents' demographic profile, which is somewhat male dominated (60.2%) (females 39.8%). Most of the participants were relatively young: 27.0% were aged 19–22, 21.0% fell within the range of 23–27; 34.5% hold a Bachelor's degree, 56.4% are (other) graduates, while 9.1% hold Postgraduate degrees. Moreover, 71.2% were employed (28.8% unemployed), with an annual income of >Pkr75,000 (30.4%), Pkr60,000-Pkr75,000 (20.7%), and 13.8% earn Pkr45,000-Pkr60,000. The data also reveals that 41.4% of respondents utilize gamified apps daily, 33.5% use them weekly.

**Table 1***Respondent Profile*

<b>Respondent Demographic/Psychographic</b>	<b>%</b>
<b>Gender</b>	
• Male	60.2
• Female	39.8
<b>Age</b>	
• 19-22	27
• 23-27	21
• 28-35	13.5
• 36-40	16.9
• 41 and above	21.6
<b>Qualification</b>	
• Bachelors	34.5
• Graduate	56.4
• Postgraduate	9.1
<b>Employment</b>	
• Employed	71.2
• Unemployed	28.8
<b>Income</b>	
• 30,000-45,000	6.3
• 45,000-60,000	13.8
• 60,000-75,000	20.7
• 75,000 and above	30.4
• None	28.8
<b>Time Spent on Gamified App</b>	
• 0-30 min. per day	27.9
• 31 to 60 min.	45.5
• 1hr to 2hrs	17.9
• above 2hrs	8.8
<b>Frequency of App Usage</b>	
• Every day	41.4
• Once a week	33.5
• A few times a week	25.1
<b>Most Used Apps</b>	
• Duolingo	5.6
• Udemy	3.2
• Forest	0.5

• <i>Fabulous</i>	0.9
• <i>Thinkup</i>	0.5
• <i>Walkr</i>	0.6
• <i>Habitica</i>	8.4
• <i>ClassCraft</i>	0.6
• <i>Remente</i>	0.8
• <i>Fitocracy</i>	12.9
• <i>ZombiesRun</i>	11.3
• <i>Khan_Academy</i>	14.5
• <i>EpicWin</i>	0.5
• <i>Mi_Fit</i>	13.2
• <i>Fit_Pro</i>	13.6
• <i>Islamic_360_app</i>	1.4
• <i>Other</i>	11.7

## 4.2 Measures

The questionnaire comprised two parts. First, we gauged respondents' engagement with gamified mobile apps in the emerging market context (Abbasi et al., 2019a). Following these authors, we operationalized engagement as a higher-order formative construct. The concept's first-order dimensions included absorption, conscious attention, dedication, enthusiasm, social connection, and interaction, which were measured reflectively. Its second-order dimensions included the three formative dimensions (e.g., affective, behavioral, and cognitive engagement; Hollebeek et al., 2014). Collectively, these indicators were used to gauge consumers' engagement with gamified apps.

An overview of the study items is provided in the Appendix. *Cognitive engagement* reflects a consumer's cognitive investment in their interactions with a gamified branded app (Hollebeek et al., 2014). A sample item states: "I pay a lot of attention to anything about brand's gamified app." *Affective engagement* measures the extent to which users feel positive about using a brand's gamified app (e.g., Abbasi et al., 2020a). A sample item includes: "I am enthusiastic about using the brand's gamified app." *Behavioral engagement* gauges the consumer's time, effort, and energy spent on interacting with a brand's gamified app and/or other users through the app (Hollebeek et al., 2014). A sample item states: "I enjoy using the brand's gamified app with my friends."

We also measured *gameful experience* by administering Högberg et al. (2019a) GAMEFULQUEST scale, which comprises consumer-perceived accomplishment (sample item: "The gamified app makes me feel that I need to complete things"), challenge (sample item: "The gamified app drives me in a good way to the brink of wanting to give up"), competition (sample item: "The gamified app makes me feel like participating in a competition"), guidance (sample item: "The gamified app makes me feel guided"), immersion

(sample item: “*The gamified app gives me the feeling that time passes quickly*”), playfulness (sample item: “*The gamified app gives me an overall playful experience*”), and social experience (sample item: “*The gamified app gives me the feeling that I’m not on my own*”).

Finally, the questionnaire requested respondents’ demographics (i.e., gender, qualification, monthly income, age, and employment status). We also gauged participants’ branded gamified app consumption pattern, including their most frequently used gamified app, app use frequency, and the average weekly amount of time spent using the app.

## 5. Results

To analyze the data, we used Partial Least Squares-based structural equation modeling (PLS-SEM) with WarpPLS 7.0, which permits the assessment of mixed models containing reflective and formative constructs (Hair et al., 2019). SPSS v22.0 was used to enter data and derive descriptive statistics. We adopted Anderson and Gerbing’s (1988) two-step data-analytical procedure by first evaluating the measurement model to determine construct reliability and validity, followed by an assessment of the structural model to test the hypotheses.

### 5.1 Measurement Model Assessment

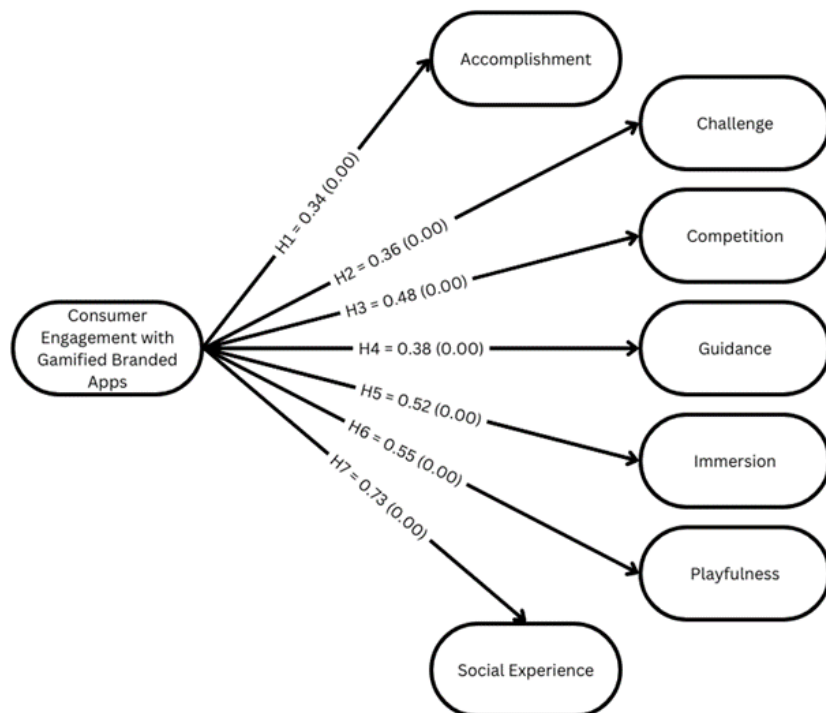
The conceptual model (Figure 2) depicts the relationship between users’ engagement with gamified branded mobile apps and their gameful experience. As noted, we modeled engagement as three second-order formative constructs (e.g. affective, behavioral, and cognitive engagement). Here, cognitive engagement includes two first/lower-order reflective measures (conscious attention/absorption), while affective engagement involves two first/lower-order reflective measures (e.g. dedication and enthusiasm; Abbasi et al., 2016). Behavioral engagement incorporates two lower-order reflective dimensions (e.g. social connection and interaction).

Users’ gameful experience comprised seven first-order reflective constructs of accomplishment, competition, challenge, immersion, guidance, playful experience, and social experience. To assess these constructs, we computed the outer factor loadings, composite reliability (CR), Cronbach’s alphas, average variance extracted (AVE), and discriminant validity. Hair et al. (2016) recommend that while the outer loadings should be equal to or greater than 0.40, Cronbach’s alphas and composite reliability scores should be >0.70. Moreover, while convergent validity, measured by the Average Variance Extracted (AVE) should be > 0.50, VIF values should be at least 5 (Hair et al., 2017). The findings in Table 2 indicate that none of the outer loadings were under 0.40, all Cronbach’s alphas and composite reliability scores surpassed 0.70, and the AVEs of the reflective constructs exceeded the minimum threshold of 0.50. Furthermore, the VIFs of all constructs remained below the value of 5, and below the stricter criterion of 3.3 (Kock, 2015).



**Figure 2**

*Hypotheses Testing Results*



**Table 2**

*Assessment of Reflective Constructs*

Scale	Items	Loadings	Cronbach's Alpha	CR	AVE	FVIF
<b>Accomplishment</b>	Item 1	0.815	0.933	0.945	0.682	1.387
	Item 2	0.855				
	Item 3	0.792				
	Item 4	0.768				
	Item 5	0.876				
	Item 6	0.813				
	Item 7	0.845				
	Item 8	0.837				
<b>Challenge</b>	Item 1	0.795	0.895	0.916	0.578	1.371
	Item 2	0.726				
	Item 3	0.748				
	Item 4	0.782				
	Item 5	0.748				
	Item 6	0.839				

Scale	Items	Loadings	Cronbach's Alpha	CR	AVE	FVIF
<b>Competition</b>	Item 7	0.784	0.917	0.934	0.671	1.455
	Item 8	0.646				
	Item 1	0.855				
	Item 2	0.798				
	Item 3	0.881				
	Item 4	0.89				
	Item 5	0.808				
<b>Guidedness</b>	Item 6	0.712	0.753	0.835	0.504	1.292
	Item 7	0.774				
	Item 1	0.657				
	Item 3	0.679				
	Item 4	0.742				
	Item 5	0.737				
<b>Immersion</b>	Item 6	0.732	0.923	0.935	0.592	1.753
	Item 1	0.807				
	Item 2	0.74				
	Item 3	0.804				
	Item 4	0.773				
	Item 5	0.782				
	Item 6	0.822				
	Item 7	0.784				
	Item 8	0.741				
	Item 9	0.767				
<b>Playfulness</b>	Item 10	0.661	0.855	0.887	0.497	1.832
	Item 1	0.672				
	Item 2	0.685				
	Item 4	0.665				
	Item 5	0.673				
	Item 6	0.728				
	Item 7	0.741				
	Item 8	0.793				
<b>Social Experience</b>	Item 9	0.674	0.847	0.885	0.523	2.579
	Item 1	0.734				
	Item 2	0.754				
	Item 3	0.646				
	Item 4	0.712				

Scale	Items	Loadings	Cronbach's Alpha	CR	AVE	FVIF
<b>Conscious Attention</b>	Item 5	0.715	0.831	0.877	0.545	2.556
	Item 6	0.713				
	Item 7	0.782				
	Item 1	0.778				
	Item 2	0.715				
	Item 3	0.736				
<b>Absorption</b>	Item 4	0.596	0.793	0.859	0.551	1.912
	Item 5	0.815				
	Item 6	0.771				
	Item 1	0.731				
	Item 2	0.598				
	Item 3	0.786				
<b>Dedication</b>	Item 4	0.78	0.934	0.953	0.836	1.213
	Item 5	0.798				
	Item 1	0.876				
	Item 2	0.928				
	Item 3	0.91				
	Item 4	0.941				
<b>Enthusiasm</b>	Item 1	0.833	0.945	0.958	0.821	1.768
	Item 2	0.93				
	Item 3	0.932				
	Item 4	0.922				
	Item 5	0.911				
<b>Social Connection</b>	Item 1	0.933	0.93	0.955	0.877	1.812
	Item 2	0.928				
	Item 3	0.947				
<b>Interaction</b>	Item 1	0.918	0.908	0.934	0.744	2.11
	Item 3	0.919				
	Item 4	0.915				
	Item 5	0.605				

Note. CR=Composite Reliability; AVE=Average Variance Extracted; FVIF=Full variance inflation factor.

Fourth, Table 3 shows the AVE values (diagonal values), suggesting that our deployed scales exhibit discriminant validity (Fornell & Larcker, 1981). Table 4 further substantiates our discriminant validity results using the heterotrait-monotrait ratio of correlations (HTMT; Henseler et al., 2015). The table results reveal that none of the values exceeded the critical value of 0.85, confirming discriminant validity. Overall, Tables 2–4 show that the constructs and their items meet their respective thresholds, corroborating their reliability and validity.

**Table 3***Discriminant Validity*

	Accmp	Chall	Comp	Guide	Immerse	Play	SocExp	ConAtt	Absrpt	Dedi	Enthu	SocCon	Interct
Accmp	<b>0.826</b>												
Chall	0.314	<b>0.76</b>											
Comp	0.216	0.221	<b>0.819</b>										
Guide	0.182	0.149	0.294	<b>0.710</b>									
Immerse	0.415	0.149	0.364	0.354	<b>0.770</b>								
Play	0.308	0.446	0.421	0.275	0.450	<b>0.705</b>							
SocExp	0.227	0.294	0.465	0.362	0.470	0.503	<b>0.723</b>						
ConAtt	0.260	0.214	0.366	0.287	0.470	0.412	0.708	<b>0.740</b>					
Absrpt	0.144	0.185	0.430	0.178	0.420	0.465	0.539	0.520	<b>0.742</b>				
Dedi	0.079	0.098	0.104	0.204	0.080	0.170	0.180	0.070	0.202	<b>0.900</b>			
Enthu	0.198	0.120	0.121	0.130	0.110	0.168	0.140	0.120	0.174	0.300	<b>0.906</b>		
SocCon	0.160	0.155	0.136	0.140	0.120	0.172	0.177	0.130	0.310	0.200	0.556	<b>0.940</b>	
Interct	0.291	0.147	0.230	0.227	0.310	0.305	0.401	0.480	0.322	0.200	0.523	0.530	<b>0.863</b>

*Note.* Square roots of average variances extracted (AVEs) are shown on the diagonal (Fornell & Larcker, 1981).

*Accmp*=Accomplishment, *Chall*=Challenge, *Comp*=Competition, *Guide*=Guided, *Immerse*=Immersion, *Play*=Playfulness, *SocExp*=Social Experience, *ConAtt*=Conscious Attention, *Absrpt*=Absorption, *Dedi*=Dedication, *Enthu*=Enthusiasm, *SocCon*= Social Connection, *Interct*=Interaction.

Table 4 provides additional evidence to support the constructs' discriminant validity by utilizing the heterotrait-monotrait ratio of correlations (HTMT; Henseler et al., 2015). The tabulated findings indicate that none of the values surpassed the critical threshold of 0.85, corroborating discriminant validity. Tables 2–4 support that the constructs and their items meet their respective thresholds, confirming their reliability and validity.

**Table 4**

*Discriminant Validity Assessment (HTMT Criterion)*

	Accmp	Chall	Comp	Guide	Immerse	Play	SocExp	CvgE
<i>Accmp</i>								
<b>Chall</b>	0.342							
<b>Comp</b>	0.232	0.244						
<b>Guide</b>	0.214	0.180	0.355					
<b>Immerse</b>	0.446	0.166	0.395	0.426				
<b>Play</b>	0.345	0.512	0.476	0.345	0.505			
<b>SocExp</b>	0.257	0.339	0.524	0.454	0.526	0.592		
<b>CvgE</b>	0.372	0.309	0.458	0.429	0.495	0.581	0.734	

*Note.* (good if < 0.90, best if < 0.85); Accmp=Accomplishment; Chall=Challenge; Comp=Competition; Guide=Guidance; Immers=Immersion; Play=Playfulness; SocExp=Social Experience; ConAtt=Conscious Attention; Absrpt=Absorption; Dedi=Dedication; Enthu=Enthusiasm; SocCon=Social Connection; Interct=Interaction.

## 5.2 Formative Construct Assessment

Figure 1 depicts consumer engagement as a formative construct (Henseler et al., 2015). We used Warp PLS (Kock & Mayfield, 2015) to assess our mixed-model that contains both reflective and formative constructs and to assess the second- and higher-order formative constructs (Hair et al., 2019). We used the software's two-step default procedure to create our second-order and higher-order formative constructs (Becker et al., 2012).

**Table 5**

*Assessment of Formative Constructs (Second-Order Level)*

Construct	Items	Scale type	Weights	Significance	VIF
<b>Cognitive Engagement</b>	Conscious Attention	Formative	0.573	<0.001	1.377
	Absorption	Formative	0.573	<0.001	1.377
<b>Affective Engagement</b>	Dedication	Formative	0.615	<0.001	1.114
	Enthusiasm	Formative	0.615	<0.001	1.114
<b>Behavioral Engagement</b>	Social Connection	Formative	0.572	<0.001	1.385
	Interaction	Formative	0.572	<0.001	1.385

To investigate the validity of our formative constructs, we initially examined the variance inflation factors (VIFs). VIFs quantify the degree of multicollinearity among a construct's independent variables. Generally, greater VIFs indicate higher collinearity.

We followed Kock's (2015) criteria, which suggest that the VIFs should be  $<3.3$ . We also reassessed the indicator weights and significance to evaluate the formative construct's validity and reliability at the second-order and higher-order levels (see Tables 5–6). As shown, all the constructs fulfilled their specific criteria and were thus examined further.

**Table 6**

*Assessment of Formative Construct (Higher-Order Level)*

Construct	Items	Scale type	Weights	Significance	VIF
<b>Consumer Engagement</b>	Cognitive Engagement	Formative	0.376	$<0.001$	1.198
<b>with Gamified Apps</b>					
	Affective Engagement	Formative	0.430	$<0.001$	1.357
	Behavioral Engagement	Formative	0.492	$<0.001$	1.561

Note. VIF=Variance inflation factor.

### 5.3 Structural Model Assessment

We used Warp PLS 7.0 to test the hypotheses. This software allowed us to determine significance levels, path-coefficients, t-values, and effect-sizes. Effect size is a statistical indicator used to determine the strength of the relationship between two variables. The standard criteria for determining effect sizes are as follows: (a) A value of  $> 0.35$  indicates a considerable effect, a value of 0.15 suggests a moderate effect, and a value of 0.02 indicates a modest effect (Hair et al., 2019).

As shown in Table 7, we found that engagement (CE) with gamified branded mobile apps exerts a significant, positive effect on consumer-perceived accomplishment (t: 6.490, p: 0.001, path coefficient: 0.344, F2: 0.118, R2: 0.118, Q2: 0.143), supporting H1. Likewise, engagement with these apps exerted a significant, positive effect on challenge (t: 6.717, p: 0.001, path coefficient: 0.356, F2: 0.127, R2: 0.127, Q2: 0.139), leading us to accept H2. Similarly, engagement with these apps significantly and positively impacted user-perceived competence (t: 9.135, p: 0.001, path coefficient: 0.475, F2: 0.226, R2: 0.226, Q2: 0.233), supporting H3. Fourth, engagement with gamified apps exerts a significant, positive effect on consumer-perceived guidance (t: 7.189, p: 0.001, path coefficient: 0.381, F2: 0.145, R2: 0.145, Q2: 0.164), supporting H4.

Fifth, engagement with gamified branded mobile apps positively impacted immersion (t: 9.961, p: 0.001, path coefficient: 0.518, F2: 0.268, R2: 0.268, Q2: 0.275), supporting H5. Sixth, engagement with these apps exerted a significant, positive impact on playfulness (t: 10.843, p: 0.001, path coefficient: 0.553, F2: 0.306, R2: 0.306, Q2: 0.316). Hence, H6 is also supported. Finally, engagement with these apps exerted a



significant, positive effect on user-perceived social experience (t: 14.660, p: 0.001, path coefficient: 0.733, F2: 0.538, R2: 0.538, Q2: 0.529), supporting H7.

We also calculated six model global fit indices for the study's model and Stone-Geisser Q2, which can be used to assess the predictive relevance of the endogenous variables (Hair et al., 2017), which ought to meet the following criteria: (i) Average path coefficient (APC)=0.480 (p<0.001); (ii) Average R-squared (ARS)=0.247 (p<0.001); (iii) Average adjusted R-squared (AARS)=0.245 (p<0.001); (iv) Average full collinearity VIF (AFVIF)=1.708 (acceptable if < 5, ideally < 3.3); and (v) Tenenhaus GoF (GoF)=0.372 (small > 0.1, medium > 0.25, large > 0.36).

**Table 7**  
*Structural Model Assessment*

	Hypothesis	Path Coef- ficient	SE	F2	T- value	P value	Result	R2	Q2
<b>H1: CE-Gami- fied Apps</b>	<b>Accomplish- ment</b>	0.344	0.053	0.118	6.490	0.001	Sup- ported	0.118	0.143
<b>H2: CE-Gami- fied Apps</b>	<b>Challenge</b>	0.356	0.053	0.127	6.717	0.001	Sup- ported	0.127	0.139
<b>H3: CE-Gami- fied Apps</b>	<b>Competence</b>	0.475	0.052	0.226	9.135	0.001	Sup- ported	0.226	0.233
<b>H4: CE-Gami- fied Apps</b>	<b>Guidedness</b>	0.381	0.053	0.145	7.189	0.001	Sup- ported	0.145	0.164
<b>H5: CE-Gami- fied Apps</b>	<b>Immersion</b>	0.518	0.052	0.268	9.961	0.001	Sup- ported	0.268	0.275
<b>H6: CE-Gami- fied Apps</b>	<b>Playfulness</b>	0.553	0.051	0.306	10.843	0.001	Sup- ported	0.306	0.316
<b>H7: CE-Gami- fied Apps</b>	<b>Social Expe- rience</b>	0.733	0.050	0.538	14.660	0.001	Sup- ported	0.538	0.529

Note. CE=Consumer engagement; VIF=Variance Inflation Factor; SE=Standard error; F2=Effect Size; R2= Coefficient of Determination; Q2 refers to goodness of prediction.

## 6. Discussion

Drawing on social exchange theory, this study elucidates the effect of users' engagement with gamified branded mobile apps on their gameful experience in the emerging market context (Hollebeek, Muñoz-Martínez et al., 2022), thus addressing our research question. The findings show that when users invest their cognitive, emotional, and/or behavioral resources in their interactions with gamified branded mobile apps, they expect to receive specific benefits from these investments (Blau, 1964; Urbonavicius et al., 2021). Our empirical results support each of the hypotheses, confirming the positive effect of users' engagement with gamified branded mobile apps on their gameful experience in the emerging market context of Pakistan.

First, the findings demonstrate engagement's positive effect on user-perceived accomplishment in the emerging market context (H1). This finding is interesting, as app users in emerging markets tend to exhibit more collectivistic cultural profiles (vs. those in developed markets, which tend to be more individualistic). In this vein, Hollebeek (2018) suggests that collectivist users tend to prioritize the needs and interests of the group (vs. their own). This finding matters, as it highlights that users in emerging, more collectivist markets *also* value accomplishment, *like* those in more developed, more individualistic markets.

In a nutshell, this finding suggests that the more of their cognitive, emotional, and/or behavioral resources consumers invest in their interactions with gamified branded mobile apps, the greater their sense of game-related accomplishment. For example, the more time and effort that users commit to using a gamified app, the greater their perceived (and likely, actual) sense of game-related skills and consequently, achievement. Therefore, gamified apps that include game milestones or rewards are expected to not only to raise users' engagement, but also maintain it for longer (Hassan et al., 2019, 2020). Game-related milestones can also stimulate consumers to display more risk-taking game-related behaviors to attain their desired reward, particularly when players are ranked against one another (Eseryel et al., 2014).

Second, the association of users' engagement with gamified branded mobile apps and user-perceived challenge in emerging markets (H2) was also supported. Thus, when consumers invest more of their resources in their interactions with gamified apps, they tend to progress further in the game, maintaining and elongating their perceived game-related challenge as they continue to advance in the game. Like for fear or humor appeals in advertising (Strong et al., 1993), we expect a curvilinear association for challenge effectiveness: While users tend to remain unmotivated to engage with the game at low challenge levels, excessively high game-related challenge levels can foster user frustration or deter some users' engagement. Therefore, gamified branded mobile apps should feature appropriate user-perceived challenge levels to optimize their engagement. Relatedly, Hollebeek (2018) suggests that customers in more collectivistic (including emerging) markets tend to be more forgiving of brand-related errors or (e.g., service failure) issues. When the level of game-related challenge is perceived as being too high, consumers may choose to invest less in or abandon the game, which based on Hollebeek (2018), would more readily occur for consumers in more developed, more individualistic (vs. more collectivist, emerging) markets. Therefore, the incorporation of game-related challenge is more likely to pose a risk for consumers in more developed, more individualistic (vs. emerging, more collectivist) markets.

Third, we found a positive role of engagement with gamified apps on user competence (H3), suggesting that users learn as their usage of gamified branded mobile apps increases. We also confirmed engagement's positive effect on user-perceived guidance in the emerging market context (H4). Thus, the more of their personal resources the users invest in interacting with gamified branded mobile apps, the higher their perceived

guidance offered by the app. This suggests that users' (cognitive) engagement is conducive to the development of their perceived guidance or support offered by the app. This finding implies an opportunity for brands to potentially cut customer support costs for those users who display high engagement.

Moreover, engagement with gamified branded mobile apps was found to favorably affect game-related immersion in the context of emerging markets (H5). This makes sense, in particular, with reference to users' cognitive resource investments in their interactions with these apps. Specifically, their investment of extensive brand-related cognitive processing is likely to see them forget their surroundings and be immersed in the gamified activity (Hamari et al., 2016).

We also substantiated the positive effect of users' engagement with these apps on their playfulness experience in the emerging market context (H6). Thus, by investing their personal resources in their interactions with gamified apps, users feel *at home* on these platforms, leading them to let their guard down and be playful (Högberg et al., 2019a). While playfulness may be primarily associated with hedonic apps, more functional (e.g., instructive) apps can also be designed to include playful elements (e.g., personalized avatars or fun challenges; Wang & Hsu, 2016).

Finally, we attained a significant, positive effect of users' engagement on their social experience of gamified branded mobile apps (Leclercq et al., 2020; Hassan et al., 2020). That is, the more of their personal resources users invest in interacting with such an app, the more people they are likely to meet through the app, raising their social experience of the gamified app (Xi & Hamari, 2020). We next discuss key implications that arise from our work.

## **7. Implications, Limitations, and Further Research**

### **7.1 Theoretical Implications**

We explored the effect of users' engagement with gamified branded mobile apps on their gameful experience in the emerging market context, which warrant further exploration (Hollebeek, Muñoz-Martínez et al., 2022). We attained empirical support for each of the hypotheses, raising important theoretical implications. First, confirmation of the hypotheses reveals engagement's strategic importance in fostering users' gameful experience in the context of emerging markets, which has been linked to greater purchase (intentions), brand equity, and loyalty in prior research (Högberg et al., 2019c; Li et al., 2020). Our findings therefore fit in the growing corpus of engagement literature in the context of gamified mobile apps (e.g., Hollebeek et al., 2021; Viswanathan et al., 2017), as applied to the context of emerging markets in this article. By confirming the effect of users' engagement with gamified branded mobile apps on their gameful experience in this context, our analyses corroborate engagement's strategic value.

Second, we explored the modeled associations in the context of gamified branded mobile apps. Despite the growing importance and adoption of mobile app marketing (Viswanathan et al., 2017; Bapat & Hollebeek, 2023), its dynamics remain tenuous, as therefore addressed in this article. Our findings highlight the key role of branded gamified mobile apps in the development of users' engagement and gameful experience in the emerging market context, thus extending existing acumen, which has either tended to be conceptual in nature (e.g., Landers et al., 2019) or which has focused on more developed markets (e.g., Habachi et al., 2022). Therefore, by reporting on an empirical investigation that explores these associations, our work extends prior literature-based insight.

## 7.2 Managerial Implications

The findings also raise pertinent managerial implications. First, given the identified effect of users' engagement with gamified branded mobile apps on their gameful experience in the video-game sub-sector in the emerging market context of Pakistan, our analyses substantiate the strategic importance of gamified mobile apps in this context (Abbasi et al., 2019a). Based on the findings, we thus recommend managers to deploy gamified branded mobile apps to immerse their customers in branded virtual environments, raise their brand familiarity and associations, and drive customers' positive behavioral outcomes (e.g., purchase/referrals), which we expect to be applicable beyond the studied video-gaming context. In emerging markets, gamified branded apps are also expected to be particularly useful to engage users in remote (e.g., rural) areas, who have limited opportunity to physically visit stores (Ferdous et al., 2024).

While gamification may in some cases be used to entertain consumers (e.g., by generating their playful experience), in others it can be used to facilitate consumer learning in emerging markets (e.g., by tapping into their accomplishment experience). For example, serious games are increasingly used for recruitment, training, or medical purposes (e.g., by teaching employees how to respond during crises or to overcome phobias). Gamified branded mobile apps can be used to educate users (e.g., by teaching them how to use the brand), thus not only engaging them with the gamified branded mobile app but also with the brand.

To design effective gamified branded mobile apps, we encourage managers to make gamified content available at different levels to accommodate players of differing experience and skill levels. To boost the user experience in emerging markets, we recommend offering user tutorials and onboarding sessions. Given competition's role as a key driver of game-related behavior, we recommend players of equivalent skill levels to compete or collaborate in the game, fitting with the predominant collectivist stance in many emerging markets (Hollebeek, 2018).

### 7.3 Limitations and Further Research

Despite its contribution, this study also incurs several limitations that raise opportunities for further research. First, the proposed model includes the key concepts of user engagement and gameful experience in the emerging market context, which while important, may also be supplemented with other or additional constructs. For example, by adopting self-determination theory, future researchers may explore consumers' need for autonomy, competence, and/or relatedness in shaping their engagement (Hollebeek et al., 2021). Moreover, while we focused on the association of engagement and gameful experience, engagement also has specific drivers (e.g., consumer motivations), which may also be explored further. Moreover, the effects of related constructs (e.g., brand love or commitment) also merit further scrutiny.

Second, our cross-sectional data were collected at a single point in time, from one city. Future researchers may therefore wish to replicate the proposed study design across different (e.g., cultural) contexts, as consumers of differing cultural backgrounds have been shown to engage differently with brands (Hollebeek, 2018). Moreover, longitudinal analyses that track the evolution of our modeled constructs over time are of significant interest (Viswanathan et al., 2017).

Third, while we adopted Högberg et al.'s (2019) video-game-based gameful experience scale and Abbasi et al.'s (2019) engagement scale, the relative recency of these instruments implies their limited empirical application and validation to date. Therefore, further researchers may wish to compare our findings with those deploying different scales to measure the respective modeled constructs (e.g., Hollebeek et al.'s (2014) engagement scale).

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## Appendix. Survey Items

Construct	Items
<b><i>Accomplishment</i></b>	The gamified app makes me feel that I need to complete things.
	The gamified app pushes me to strive for accomplishments.
	The gamified app inspires me to maintain my standards of performance.
	The gamified app makes me feel that success comes through accomplishments.
	The gamified app makes me strive to take myself to the next level.
	The gamified app motivates me to progress and get better.
	The gamified app makes me feel like I have clear goals.
	The gamified app gives me the feeling that I need to reach goals.
<b><i>Challenge</i></b>	The gamified app makes me push my limits.
	The gamified app drives me in a good way to the brink of wanting to give up.
	The gamified app pressures me in a positive way by its high demands.
	The gamified app challenges me.
	The gamified app calls for a lot of effort for me to be successful.
	The gamified app motivates me to do things that feel highly demanding.
	The gamified app motivates me to do things that feel highly demanding.
	The gamified app makes me feel like I continuously need to improve in order to well.
<b><i>Competition</i></b>	The gamified app makes me work at a level to what I am capable of.
	The gamified app makes me feel like participating in a competition.
	The gamified app inspires me to compete.
	The gamified app involves me in its competitive aspects.
	The gamified app makes me want to be in the first place.
	The gamified app makes victory feel important.
	The gamified app makes me feel like being in a race.
	The gamified app makes me feel that I need to win to succeed.
<b><i>Guidedness</i></b>	The gamified app makes me feel guided.
	The gamified app gives me a sense of being directed.
	The gamified app gives me the feeling that I have an instructor.
	The gamified app gives me the sense I am getting help to be structured.
	The gamified app gives me a sense of knowing I need to do better.
	The gamified app gives me useful feedback so I can adapt.
<b><i>Immersion</i></b>	The gamified app gives me the feeling that time passes quickly.
	The gamified app grabs all my attention.
	The gamified app gives me a sense of being separated from the real world.

Construct	Items
	The gamified app makes me lose myself in what I am doing.
	The gamified app makes my actions seem to come automatically.
	The gamified app causes me to stop noticing when I am tired.
	The gamified app causes me to forget about my everyday concerns.
	The gamified app makes me ignore everything around me.
	The gamified app gets me emotionally involved.
<b>Playfulness</b>	The gamified app captivates me.
	The gamified app gives me an overall playful experience.
	The gamified app leaves room for me to be spontaneous.
	The gamified app taps into my indignation.
	The gamified app makes me feel that I can be creative.
	The gamified app gives me a feeling that I explore things.
	The gamified app feels like a mystery to reveal.
	The gamified app gives me the feeling that I want to know what comes next.
<b>Social experience</b>	The gamified app makes me feel like I discover new things.
	The gamified app appeals to my curiosity.
	The gamified app gives me the feeling that I'm not on my own.
	The gamified app gives me a sense of social support.
	The gamified app makes me feel I am socially involved.
	The gamified app gives me a feeling of being connected to others.
	Using the gamified app feels like a social experience.
	The gamified app influences me through its social aspects.
	The gamified app gives me a sense of being noticed for what have achieved.
<b>COGNITIVE ENGAGEMENT with Gamified Branded App</b>	
<b>Conscious attention</b>	I like to learn more about the brand's gamified app.
	I notice information related to the brand's gamified app.
	I pay a lot of attention to anything about the brand's gamified app.
	I keep up with things related to the brand's gamified app.
	Anything related to this brand's gamified app grabs my attention.
	I concentrate on the brand's gamified app for a long time.
<b>Absorption</b>	When I'm using the brand's gamified app, I forget everything else around me.
	Time flies when I'm using the brand's gamified app.
	When I am using the brand's gamified app, I get carried away.
	When I am using the brand's gamified app, I feel immersed.
	I feel happy when I am using the brand's gamified app intensely.



Construct	Items
<b><i>AFFECTIVE ENGAGEMENT with Gamified Branded App</i></b>	
<b><i>Dedication</i></b>	This brand's gamified app inspires me.
	I am enthusiastic about using the brand's gamified app.
	I find this brand's gamified app full of meaning and purpose.
	I am excited when using the brand's gamified app.
<b><i>Enthusiasm</i></b>	I spend a lot of my discretionary time using this brand's gamified app.
	I am heavily into using this brand's gamified app.
	I am passionate about using this brand's gamified app.
	I enjoy spending time using this brand's gamified app.
	I try to fit using this brand's gamified app into my schedule.
<b><i>BEHAVIORAL ENGAGEMENT with Gamified Branded App</i></b>	
<b><i>Social connection</i></b>	I love using the brand's gamified app with my friends.
	I enjoy using this brand's gamified app more when I am with others.
	Using this brand's gamified app is more fun when other people around me play it, too.
<b><i>Interaction</i></b>	In general, I like to get involved in the discussion about this brand's gamified app.
	I am someone who enjoys using this brand's gamified app with other like-minded app users.
	I am someone who likes actively participating in the discussions about this brand's gamified app.
	In general, I thoroughly enjoy exchanging ideas on this brand's gamified app with other app users.
	I often participate in activities related to the brand's gamified app.