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RESEARCH ARTICLE

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How gamifying AI shapes customer motivation, engagement, and purchase behavior

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Abstract

Recently, firms started to gamify conversational artificial intelligence (AI) agents, such as chatbots, to improve purchase outcomes. This article explores strategies for incorporating gamification into AI systems by investigating the impact of utilitarian and hedonic motivations facilitated by gamified chatbots on various dimensions of customer engagement (cognitive, emotional, and behavioral), as well as the subsequent effects of these dimensions on customers' purchase behavior. By conducting one cross-sectional and two experimental studies involving real interactions with gamified chatbots, this research identifies two crucial paths that warrant attention: an optimal path from hedonic motivation to behavioral engagement, resulting in enhanced purchase, and a detrimental path from utilitarian motivation to emotional engagement, which reduces purchase. Furthermore, the research compares the effects of two types of gamified chatbots and reveals that a game-of-chance-based chatbot, as opposed to a knowledge-sharing gamified chatbot, aligns with the optimal path, leading to higher purchasing while at the same time avoiding that customers feel obligated to play the game. Based on these findings, the article provides actionable insights for eliciting favorable psychological and behavioral responses through gamified AI interactions.

KEYWORDS

artificial intelligence, customer engagement, gamification, gamified chatbots, perceived autonomy, purchase behavior, utilitarian and hedonic motivations

1 | INTRODUCTION

With the rapid advancements in natural language processing and machine learning technologies, companies are increasingly replacing human frontline service employees with artificial intelligence (AI) agents to offer real-time support during purchase transactions (Belanche et al., 2020; Belk et al., 2023; Flavián et al., 2023). AI technologies are frequently used for enhancing sales, and chatbots have become a prominent application of AI in marketing. While some research indicates that chatbot interactions during the shopping process can foster customer satisfaction and positive word-of-mouth (WOM) (Chung et al., 2020), recent studies suggest that consumers are still hesitant to use chatbots for purchase-related tasks or discontinue using these technologies after the initial experience

(Crolic et al., 2022). To enhance engagement with AI agents and stimulate purchases, firms are increasingly adopting gamification as a popular marketing instrument to "upgrade" these agents. Several retailers have started to gamify their conversational AI tools (Natanson, 2021). For example, with the AliExpress chatbot, owned by the Alibaba Group, shoppers can gamble to earn discounts or digital coins (Natanson, 2021). As another example, Aerie, an American lingerie company, introduced a chatbot that engages customers to explore different product alternatives through a chat game that awards points and badges (Ruby Garage, 2017). By combining two powerful and up-to-date strategies, AI and gamification, retailers hope to provide more enjoyment during conversational encounters, unfold customers' motivational energy to engage with the chatbot, and ultimately increase purchases (Schepers et al., 2022).

Despite recent calls for examining the implications of AI gamification (e.g., Ciuchita et al., 2023; Janson et al., 2023; Wittmann & Morschheuser, 2022), no research has yet examined whether this strategy produces the favorable psychological responses that marketers expect. On the one hand, recent studies on gamification in the service context have argued that incorporating game elements such as point systems, challenges, virtual badges, or avatars can trigger both utilitarian motivation by providing economic benefits such as discounts to be used while purchasing (Werbach & Hunter, 2020), and hedonic motivation by entertaining users during their customer journey (Hsu & Chen, 2018). Triggering both utilitarian and hedonic motivations through gamification seems to enhance customer engagement (Eisingerich et al., 2019), and be a superior instrument for firms to drive purchase outcomes in turn (Krishna et al., 2023). On the other hand, recent studies alert that utilitarian motivation tied to economic rewards can lower users' engagement which negatively impacts behavioral responses (Bauer et al., 2020), casting doubt on whether boosting such motivational drivers through gamification is indeed a panacea for enhancing engagement. For example, in the gamified mobile app context, Wolf et al. (2020) found that some motivational drivers (e.g., social comparison) negatively affect engagement responses. Additionally, enhancing certain dimensions of engagement with gamified devices may backfire and negatively affect economic outcomes (Grewal et al., 2019; Hollebeek et al., 2019). In this context, Eisingerich et al. (2019) acknowledge that game rewards, such as points, reduce purchases through enhancing compulsion in terms of an uncontrollable desire to engage in the game repetitively.

Given these inconclusive findings regarding the effectiveness of gamified technologies in the service context, it is pressing to examine whether leveraging gamification for AI represents a promising strategy. Specifically, two research gaps exist. First, firms need to understand which motivational responses elicited by gamified AI, such as chatbots, are most effective in achieving desired engagement and purchase consequences. Second, firms must determine which specific gamification style is best suited to trigger favorable motivational paths. To this end, firms must be knowledgeable about the categorization of games and the potential motivational and behavioral outcomes of every category (Sjöblom & Hamari, 2017).

To address these research gaps, our first research objective is to examine the effects of the two motivational responses to gamified chatbots (utilitarian and hedonic motivations) on behavioral intentions and actual behavior, considering the mediating role of customers' chatbot engagement in terms of volitionally investing resources into the interaction with the gamified chatbot. To achieve this, and in line with recent calls in the literature (Hollebeek et al., 2021), we adopt a multidimensional perspective of customer engagement and explore how the two motivation types influence cognitive, emotional, and behavioral engagement. As a second research objective, we examine the effects of two different gamification styles. One style is purposive, utilizing a knowledge-sharing game, while the other style is reward-based, employing a game of chance that relies on a randomized algorithm and predetermined probabilities of certain outcomes (Gokcesu & Kozat, 2018). By doing so, we reveal whether the integration of diverse gamification styles in chatbots can activate motivational paths to different extents.

To achieve our research objectives and test the proposed model, we conducted one survey (Study 1) and two experiments (Studies 2 & 3). Study 1 compares the impact of two types of gamified-chatbot triggered motivations on purchase intention, considering their distinct influence on dimensions of customer engagement. The findings show that the path from hedonic motivation to purchasing via behavioral engagement is the most profitable route, while the path from utilitarian motivation to purchasing via emotional engagement is detrimental. Study 2 demonstrates that the two focal gamification styles activate different motivational paths, resulting in varying purchase outcomes. Specifically, the game-of-chance style proves most effective in initiating the optimal path identified in Study 1. Additionally, Study 2 tests an additional mediator, perceived consumer autonomy, thereby reinforcing implications for the best gamification style. It shows that the game of chance better preserves high autonomy and prevents feelings of compulsory play which could counteract the beneficial effects of the motivational route. Finally, Study 3 examines whether the suggestions on the optimal gamification style are robust if actual choice behavior is considered.

This research contributes to understanding customers' psychological and behavioral responses to gamified AI. First, it highlights that not all motivation-driven improvements in engagement lead to increased profitability. While augmenting behavioral engagement with gamified AI through hedonic motivation pays off, enhanced emotional engagement driven by higher utilitarian motivation reduces purchase outcomes. Second, it demonstrates that the incorporation of chance-based game mechanisms into chatbots aligns with the optimal psychological path, thereby enhancing purchase outcomes. Conversely, gamifying chatbots through knowledge-sharing elements triggers the detrimental path, resulting in adverse effects on purchase behavior. Furthermore, this research reveals that game-of-chance chatbots outperform knowledge-sharing chatbots not only in terms of eliciting favorable motivational responses but also by decreasing the sense of obligation to participate in gameplay with the latter often undermining the beneficial consequences of

gamification (Eisingerich et al., 2019). Building on these theoretical contributions, from a managerial perspective, we caution against a simplistic and overly optimistic view that assumes any improvement in customer engagement automatically translates into improved metrics such as customer spending. We suggest that increasing sales through gamified AI agents should involve informed decision-making regarding the enhancement of specific engagement dimensions while considering the impact of different motivational drivers on each dimension. Moreover, we recommend the use of less complex games, such as a game of chance, compared to more complex ones like knowledge sharing, as only the former enhances the optimal path from motivations to purchase, and also nurtures consumer autonomy, thereby further enhancing purchase behavior.

2 | THE PATHS FROM GAMIFIED CHATBOT-RELATED MOTIVATIONS TO PURCHASE

2.1 | Gamified chatbots

The adoption of chatbots has been fueled by the rapid advancements in AI, leading firms to recognize their potential to improve customer engagement and enhance firm-beneficial outcomes (Flavián et al., 2023). To further enhance the performance and benefits of such AI agents, firms explore ways to enrich the interaction between users and these agents. One such way is to gamify AI agents. Gamification refers to incorporating game elements such as points, levels, leaderboards, virtual badges, and avatars into interactions as well as reward systems (Eppmann et al., 2018). Game elements can trigger utilitarian as well as hedonic shopping motivation (Wolf et al., 2020). Previous research on the gamification of mobile apps (Berger et al., 2018), e-commerce websites (Krishna et al., 2023), and social media platforms (Hollebeek & Belk, 2021) indicate that gamification can also enhance customer engagement by facilitating interactive and challenging experiences.

To capitalize on this promising potential, firms are increasingly incorporating game features into interactions with AI agents as a means of stimulating customer engagement and subsequently increasing beneficial outcomes, such as purchase (Ciuchita et al., 2023). Chatbots are particularly well-suited for incorporating game features as the "natural" flow of chatbot conversations allows users to effortlessly interact with these features (Janson et al., 2023; Wittmann & Morschheuser, 2022).

However, to the best of the authors' knowledge, there is a lack of research examining whether incorporating game elements into conversational agents used for service or purchase-related tasks can lead to motivational responses that indeed enhance customer engagement. Additionally, it remains unclear how customer engagement with gamified AI agents impacts important firm performance metrics such as purchase, and whether the effects are consistently positive across all engagement dimensions. Therefore, investigating how motivational responses elicited by interactions with gamified AI agents influence purchase outcomes through customer engagement dimensions represents a crucial research gap.

2.2 | Customer engagement

Vivek et al. (2012, p. 127) define customer engagement as "the intensity of an individual's participation in and connection with an organization's offerings and/or organizational activities, which either the customer or the organization initiate." In specifying this broad definition, Hollebeek et al. (2021) relate customer engagement to the intentional allocation of resources such as cognitive, emotional, and behavioral resources during their interaction with a particular object provided by an organization (e.g., a gamified chatbot). Engagement is a fundamental driver of various outcomes, including sales and positive WOM (Kumar & Pansari, 2016) as well as satisfaction, loyalty, and brand equity (Vivek et al., 2012; Weiger et al., 2017).

While certain researchers have treated customer engagement as a unified construct, chiefly referring to behavioral engagement, numerous investigations call to regard engagement as a multi-dimensional construct that encompasses cognitive, emotional, and behavioral elements (Hollebeek et al., 2014; Kumar et al., 2019). Such studies suggest that each dimension of engagement may be motivated by distinct factors. Our approach aligns with this perspective and considers three dimensions of engagement where (1) cognitive engagement refers to the degree of psychological effort invested during an interaction with an object, (2) emotional engagement entails the degree of affective attachment dedicated to a focal object, (3) behavioral engagement captures the degree to which customers invest behavioral resources during their interaction. Based on that, cognitive engagement with a gamified chatbot entails the allocation of mental resources, such as attention, concentration, and absorption. Emotional engagement refers to devoting resources such as enthusiasm, dedication, and affective attachment toward the chatbot. Behavioral engagement encompasses the temporal and energetic investments made in fulfilling the interaction, as well as actions taken to support the chatbot and influence other actors' perceptions and behaviors toward it.

A comprehensive understanding of how chatbots drive the three dimensions of engagement necessitates an appreciation of the customer motivations that arise during interactions with them (Ciuchita et al., 2023). This is because motivation represents the impetus for the subsequent investment of cognitive, emotional, and behavioral resources by customers—an aspect that we discuss next.

2.3 | Utilitarian and hedonic motivations as predictors of engagement dimensions

From a marketing and consumer research perspective, the most established categorization of motivational drivers involves utilitarian and hedonic motivations (e.g., Akdim et al., 2022; Babin et al., 1994). Utilitarian motivation is characterized as instrumental, task-oriented,

and focuses on the effective acquisition of goods, whereas hedonic motivation is experience-oriented and emphasizes the value that consumers derive from the imaginative and multisensory aspects of shopping (Babin et al., 1994). In this study, we utilize this classification of motivations for two primary reasons: (1) Individuals may engage with a gamified chatbot to both obtain information and a discount for the featured product that can be used later (utilitarian motivation) and to satisfy their curiosity or obtain fun achievements like virtual badges (hedonic motivation). (2) Although one type of motivation may dominate in shaping subsequent outcomes, in a retail experience context, both utilitarian and hedonic motivational drivers are critical and can enhance the dimensions of customer engagement, particularly in the case of novel technologies utilized for retailer-customer interactions like chatbots (Hepola et al., 2020).

The motivational responses that are activated through the frisky experience of interacting with a gamified chatbot are decisive for their subsequent investment of resources into chatbot interactions (Hollebeek et al., 2019). Woodruff and Gardial (1996) argue that consumers take actions that aim to achieve favorable outcomes or avoid unfavorable ones, and therefore, their customer engagement investments in a particular object, activity, or brand are influenced by their motivational drivers. Hence, motivational responses to a particular object (like a conversational agent) work as predictors of customer engagement with this object (Rutz et al., 2019). Utilitarian motivation reflects the achievement of a desired goal or fulfillment of a pragmatic need (Babin et al., 1994). Consequently, such motivation plays a crucial role in assessing the perceived value of a product or service interaction from a functional perspective, and hence it is an important antecedent for cognitive and behavioral resources customers invest in such interactions. Utilitarian motivation is, therefore, expected to drive the cognitive and behavioral dimensions of customer engagement. However, although one may argue that utilitarian motivation may have a weaker influence on emotions compared to hedonic motivation (Tamir et al., 2007), marketing research has shown that perceiving an interaction with a service provider as economically beneficial enhances shoppers' inclination to invest positive emotional effort in the interaction as positive emotional energy also results from perceiving accomplishment or achievement (Weiner et al., 1979).

Hedonic motivation is conceptualized as the result of assessing the experiential and entertaining benefits of a product or service interaction (Hsu & Chen, 2018), including the pleasure and fun associated with it (Hirschman & Holbrook, 1982). As a result, interactions that trigger hedonic motivation are expected to lead users to invest resources into the activity to participate more fully in those experiences (Hsu & Chen, 2018). Therefore, it is reasonable to suggest that hedonic motivation is a driver of emotional and behavioral engagement efforts. In the context of gamified-chatbot interactions, we argue that hedonic motivation also enhances cognitive engagement because feeling absorbed by a gamified retail experience can lead shoppers to appraise this experience, which may promote greater cognitive engagement. This is consistent with previous research in psychology suggesting that hedonic benefits are linked to the perception of time passing more quickly as a key element of cognitive engagement (Sackett et al., 2010). Based on the above discussions, both utilitarian and hedonic motivations are likely to be positively associated with the customer engagement dimensions while these engagement dimensions are key determinants of purchase behavior. We, therefore, posit that engagement plays a mediating role in the path from motivations to purchase, and we develop formal hypotheses for these mediated relationships in the following section.

2.4 | Linking motivations to purchase outcomes through engagement

Marketers strive to enhance customer engagement, believing that it consistently enhances firm performance, particularly by increasing sales-related outcomes such as purchase behavior (Kumar & Pansari, 2016). While some studies have shown a positive association between aggregate engagement and behavioral intentions in general (Schepers et al., 2022), there is limited empirical evidence on the relationship between engagement and purchase intentions for the distinct engagement dimensions (e.g., Prentice et al., 2019). Moreover, recent studies have raised concerns regarding the positive influence of technology-induced engagement on monetary returns, suggesting that it may have a negative impact. This can be attributed to factors such as customer fatigue and exhaustion (Hollebeek et al., 2019). As a further argument, Grewal et al. (2019) underline that engagement with a tech brand could often fulfill customers' needs associated with product ownership or consumption and, thus, be a substitute for purchasing (and hence owning) a product or service. Similarly, Wolf et al. (2020) acknowledge that certain interactive experiences related to cognitive engagement processes negatively influence firm-beneficial outcomes.

We believe these arguments on the dark side of engagement are particularly relevant to cognitive and emotional engagement processes during gamified chatbot interactions. These novel conversational technologies have an immersive and exciting character hence cognitively and emotionally engaging with them may provide customers with sufficient rewards so that they forego purchasing the displayed product in favor of continuing the interaction and receiving more benefits (Elmashhara & Soares, 2022). In fact, engaging with chatbot games by answering questions or collecting virtual badges may put customers in a "serendipitous journey" that makes them feel sufficiently fulfilled, resulting in the completion of their journey without proceeding to the purchase stage (Xu et al., 2017). This is in line with the conclusions by Holbrook and Hirschman (1982) who indicate that the customer could experience satisfaction through cognitive and emotional involvement during the conversation, and if the experience is satisfying enough, the customer might be less inclined to translate that connection into a transaction. Based on that, we contend that high cognitive attachment and high emotional bonding arising from interacting with a gamified chatbot may backfire in the sense of reducing the urgency to buy. By building

on the premise that motivations serve as predictors of customer engagement as discussed in the previous section, we consequently propose the following mediation hypotheses:

H1. Cognitive engagement negatively mediates the relationship between gamified-chatbot related (a) utilitarian and (b) hedonic motivations, and purchase outcomes.

H2. Emotional engagement negatively mediates the relationship between gamified-chatbot related (a) utilitarian and (b) hedonic motivations, and purchase outcomes.

We argue that allocating behavioral resources into a chatbot interaction, including information-seeking and product promotion endeavors, is likely to enhance purchase outcomes. These investments exhibit a rational and purposeful nature, prioritizing the achievement of the primary objective, which is making a purchase (Prentice et al., 2019). In other words, while augmenting cognitive and emotional engagement has the potential to impede users' attainment of the objective of making a purchase, promoting behavioral engagement is anticipated to bring users closer to the ultimate goal of making a purchase. This positive impact of actual engagement behaviors is expected to be particularly pronounced in the context of gamified chatbots. In this context, concrete and simple retailer activities are gamified (like promoting the product by providing a discount), hence, it is likely that behavioral engagement related to such activities facilitates elaboration about the offering, without entailing significant cognitive challenge or emotional satisfaction that could substitute for the need for purchasing the product (Grewal et al., 2019; Hirschman & Holbrook, 1982). Based on this expected positive impact of behavioral engagement on purchase and under the notion that motivations are predictors of engagement, we propose the following hypothesis:

H3. Behavioral engagement positively mediates the relationship between gamified-chatbot related (a) utilitarian and (b) hedonic motivations, and purchase outcomes.

Figure 1 illustrates our proposed research framework.

3 | STUDY 1: IDENTIFYING THE OPTIMAL PATH FROM MOTIVATIONS TO PURCHASE

3.1 | Research setting, procedure, and participants

The purpose of Study 1 is to understand the engagement and purchase consequences of motivational responses elicited by interactions with a gamified chatbot in a retail shopping context, to test H1–H3. Particularly, based on the results, this study seeks to identify the motivation that leads to those engagement responses that are most favorable for purchase outcomes (i.e., the "optimal path").

We employed Chatfuel, an online tool designed for the creation of a chatbot within the Facebook Messenger app (accessible at www.chatfuel.com). This tool facilitated the development of a fully functional chatbot that represents a fictitious online retailer specializing in the sale of suitcases under its unique brand. This chatbot was capable of independently guiding users and completing

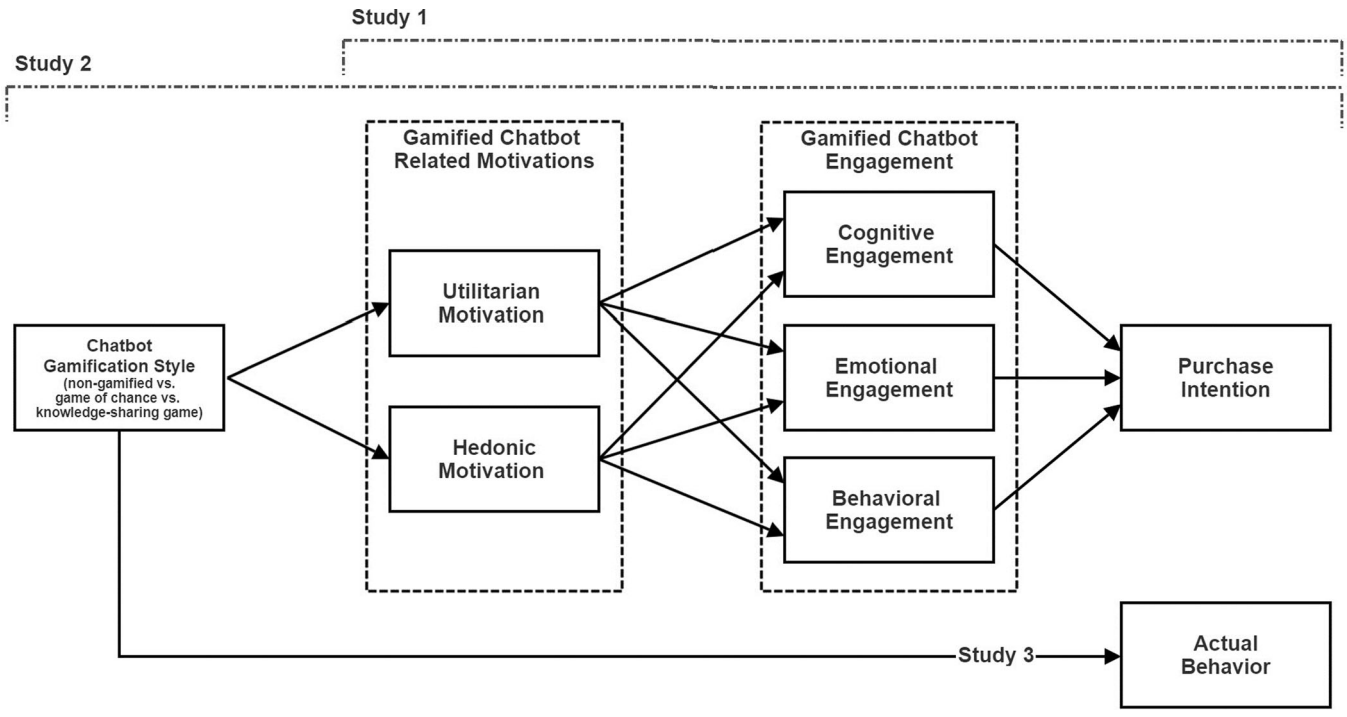

FIGURE 1 Research framework.

their interactions. The selection of suitcases as the primary product aligns with previous empirical research in the conversational commerce setting that also uses this product (e.g., Flavián et al., 2023). Most people are familiar with suitcases and can readily understand the product characteristics. In addition, suitcases are neutral items that avoid cultural biases as this product category is not intertwined with specific cultures. The user–chatbot interaction experience was facilitated by a block builder function, which allowed users to click and choose from predefined categories.

The selection of the appropriate set of game features to gamify the chatbot interactions was informed by insights on creating effective gamification experiences by Morschheuser et al. (2018) and Werbach and Hunter (2020), as well as the findings from the GAMEX scale by Eppmann et al. (2018). We opted to incorporate multiple game features into the chatbot to assure the elicitation of both utilitarian and hedonic motivations. The final game elements included a challenge in the form of a quiz, consisting of four questions related to the showcased products. Additionally, a "spot the differences" game was included to provide participants with a recognition badge and an opportunity to win a discount. Each question presented three alternative answers, and participants were required to select one. The questions were designed with varying levels of difficulty to instill a sense of progression and challenge (Tobon et al., 2020). Upon answering a question correctly, participants were rewarded with a discount and advanced to the next game level. Furthermore, a symbolic badge was awarded to visually acknowledge the achievement (Hamari, 2017). In the event of an incorrect answer, participants were provided with a discount code associated with the level reached and directed back to the displayed products. We conducted a qualitative prestudy involving 30 individuals and the feedback was carefully considered to enhance the gamification experiences elicited by the chatbot and to ensure that the gamified chatbot addresses both utilitarian and hedonic motivations.

3.2 | Data collection

In line with previous studies examining gamified interactions (Bekk et al., 2022; Berger et al., 2018), we adopted a multistage approach involving a sequence of stimuli for data collection. This methodological choice allowed us to draw causal inferences and gain insights into the mediating role of engagement, specifically as a psychological process that elaborates the impact of motivations on purchase behavior. Before being assigned to engage with the gamified chatbot, participants were instructed to view a video showcasing an interaction with the designed chatbot. The purpose of this video was to familiarize participants with the chatbot and serve as a stimulus for eliciting motivational responses toward the gamified chatbot (Ciuchita et al., 2023). After watching this video, participants were requested to rate the extent to which they perceived chatbot interactions as addressing their utilitarian and hedonic motivations. Following this assessment, participants were instructed to engage in personal interaction with the chatbot and complete a shopping activity, providing them with the opportunity to allocate various engagement resources during the interaction. The design of the interaction aimed to facilitate the shopping process by guiding users through a range of available products from which they were able to make their own choices. Subsequently, participants were directed to proceed to the second part of the questionnaire, which encompassed inquiries regarding three dimensions of engagement, and the intention to purchase one of the featured products. Additionally, the questionnaires included statements used to characterize the samples under study.

A snowball sampling technique was employed, resulting in a total of 205 participants engaging with the gamified chatbot and completing the study questionnaire. All respondents were European consumers who frequently used Facebook Messenger. However, we eliminated 28 respondents from the analysis due to incomplete questionnaire responses, failure to pass attention checks embedded within the questionnaire items, or an implausibly short completion time. The final sample consisted of 177 participants (55% female, average age 27). Around 93% of participants reported engaging in online shopping activities at least once per month.

3.3 | Scales

We adapted established scales from previous literature to assess the constructs. We used items by Babin et al. (1994) for measuring utilitarian and hedonic motivational drivers, while the items for measuring the three dimensions of engagement (cognitive, emotional, and behavioral) were adapted from Dessart et al. (2016) and Hollebeek et al. (2019, 2022). Finally, to measure purchase intention, three items from Lepkowska-White et al. (2003) were employed. Before the main survey, a pretest involving 12 volunteers with prior chatbot experience was conducted to identify and address any potential issues related to comprehension and survey improvement. Some items underwent slight revisions in wording, while others were eliminated based on suggestions provided by the pretest participants. All items were measured using a 7-point Likert scale (1 = "strongly disagree"; 7 = "strongly agree"). Supporting Information: Web Appendix 1 provides all final measurement items along with reliability measures.

3.4 | Assessment of the measurement model

Before testing the hypotheses, a range of statistical analyses were conducted to evaluate the measurement model. First, Cronbach's α was utilized to confirm internal consistency, while Composite Reliability and Average Variance Extracted (AVE) were employed to assess scale reliability and convergent validity respectively. The findings indicate that all corresponding values exceed the threshold of 0.7 for Cronbach's α and Composite Reliability (Netemeyer et al., 2003), as well as 0.5 for AVE (Fornell & Larcker, 1981).

Second, Tolerance and Variance Inflation Factors (VIF) were computed to investigate multicollinearity. Tolerance values are all above 0.1, and VIFs are below 5, thus supporting the absence of multicollinearity issues in the analyzed data according to Hair et al. (2011) recommendations. Third, following the criterion set by Fornell and Larcker (1981), discriminant validity is established by demonstrating that each square root of AVE exceeded the corresponding correlations. Finally, Confirmatory Factor Analysis of the final set of items indicates an acceptable fit of the model, in accordance with Hu and Bentler (1999): $\chi^2 = 428.29$, $df = 232$, $\chi^2/df = 1.85$, CFI = 0.96, TLI = 0.95, IFI = 0.96, SRMR = 0.04, RMSEA = 0.07 (90% confidence interval [CI] = 0.06; 0.08). Complete information on factor loadings, Cronbach's α, AVE, and composite reliability can be found in Supporting Information: Web Appendix 1, while Supporting Information: Web Appendix 2 presents the collinearity diagnostics and discriminant validity analysis.

3.5 | Results

To analyze the data and test hypotheses H1–H3, we employed AMOS 28.0 and implemented Structural Equation Modeling (SEM), including the mediation effect model. The sample size is adequate for applying SEM, as many studies recommend at least five observations per variable (e.g., Worthington & Whittaker, 2006) which is exceeded in our case. The structural model demonstrates an acceptable level of fit, in accordance with Hu and Bentler (1999): $\chi^2 = 497.91$, $df = 235$, $\chi^2/df = 2.12$, CFI = 0.94, TLI = 0.93, IFI = 0.94, SRMR = 0.05, RMSEA = 0.08 (90% CI = 0.07; 0.09). Regarding the direct effects (reported in Table 1), we found that utilitarian motivation triggered by interaction with a gamified chatbot positively influences the emotional and behavioral aspects of customer engagement, while no significant effect is observed on cognitive engagement. Hedonic motivation exhibits positive and significant effects on the cognitive and behavioral dimensions of engagement, whereas its impact on the emotional dimension is deemed insignificant. Finally, the analysis reveals that only behavioral engagement has a positive and significant influence on purchase intention. In contrast, cognitive customer engagement does not exhibit a significant effect on purchase intention, and the emotional dimension displays a notable negative impact on purchase intention.

TABLE 1 Results for direct effects—Study 1.

Path	Coefficient	SE
Utilitarian Motivation → Cognitive Engagement	−0.06	0.06
Utilitarian Motivation → Emotional Engagement	0.86**	0.08
Utilitarian Motivation → Behavioral Engagement	0.68**	0.07
Hedonic Motivation → Cognitive Engagement	0.93**	0.09
Hedonic Motivation → Emotional Engagement	0.04	0.05
Hedonic Motivation → Behavioral Engagement	0.18**	0.06
Utilitarian Motivation → Purchase Intention	0.13	0.10
Hedonic Motivation → Purchase Intention	0.79**	0.09
Cognitive Engagement → Purchase Intention	0.01	0.06
Emotional Engagement → Purchase Intention	−0.29**	0.08
Behavioral Engagement → Purchase Intention	0.26**	0.08

Abbreviation: SE, standard error.

**$p < 0.01$.

To assess the proposed hypotheses (H1–H3), the mediation effect model was employed. The findings (presented in Table 2) show that cognitive engagement does not act as a mediating factor between any type of motivation and purchase intention. Similarly, emotional engagement does not mediate the relationship between hedonic motivation and purchase intention. Hence, H1a, H1b, and H2b are not supported. Concerning the remaining indirect hypotheses, the results demonstrate that emotional engagement plays a negative mediating role in the relationship between utilitarian motivation and purchase intention. Specifically, utilitarian motivation increases emotional engagement, which subsequently harms purchase intention. Consequently, H2a is supported, indicating a significant negative indirect effect. Furthermore, the findings indicate a significant and positive mediating role of behavioral engagement between both types of motivational drivers and purchase intention. Thus, H3a and H3b are supported.

3.6 | Discussion

The results of Study 1 indicate that cognitive engagement does not play a significant mediating role between motivational drivers stemming from interactions with a gamified chatbot and intention to purchase via the chatbot. On the other hand, behavioral engagement demonstrates a significant and positive mediating role for both motivations, suggesting the importance of focusing on enhancing this engagement dimension. However, particular caution should be given to enhancing the emotional dimension of engagement. This type of engagement exhibits a negative effect on purchase intention and hence serves as a negative mediating factor in the path from utilitarian motivation to purchase. Thus, while utilitarian motivation increases behavioral engagement and purchase in turn, at the same time, it also heightens emotional engagement which ultimately reduces purchase behaviors. So, utilitarian motivation entails two counteracting paths which, ultimately, might neutralize its impact on purchase. In contrast, hedonic motivation triggers an unanimously beneficial path to purchase through only enhancing behavioral engagement. In summary, the findings of Study 1 suggest that within the context of a gamified chatbot, the optimal path to achieving the highest purchase intention begins with hedonic motivation. Conversely, the less desirable path involves the activation of utilitarian motivation.

Based on the findings of Study 1, a significant challenge for managers lies in identifying the specific gamification elements that

TABLE 2 Results for indirect effects—Study 1.

Path	Coefficient (SE)	LLCI	ULCI	Hypothesis test
Utilitarian Motivation → Cognitive Engagement → Purchase Intention	−0.01 (0.01)	−0.02	0.01	H1a: NS
Hedonic Motivation → Cognitive Engagement → Purchase Intention	0.01 (0.09)	−0.15	0.14	H1b: NS
Utilitarian Motivation → Emotional Engagement → Purchase Intention	−0.25 (0.10)**	−0.52	−0.11	H2a: S
Hedonic Motivation → Emotional Engagement → Purchase Intention	−0.01 (0.02)	−0.06	0.02	H2b: NS
Utilitarian Motivation → Behavioral Engagement → Purchase Intention	0.18 (0.09)*	0.07	0.37	H3a: S
Hedonic Motivation → Behavioral Engagement → Purchase Intention	0.05 (0.02)**	0.02	0.10	H3b: S

Abbreviations: LLCI, 95% lower level confidence interval; NS, hypothesis not supported; S, hypothesis supported; SE, standard error; ULCI, 95% upper level confidence interval.

**$p < 0.01$; *$p < 0.05$. Number of bootstrap samples 5000.

can effectively activate the optimal route, thus maximizing customer buying behavior. These insights are critical for achieving a balanced and realistic understanding of the economic implications of AI gamification. Hence, in the upcoming section, we theoretically elaborate on the influence of two very popular games that can be readily integrated into chatbots. Then, in Study 2, we first test whether we can confirm the findings of Study 1 and then empirically investigate how each chatbot gamification style affects the pathways from motivation to purchase. Furthermore, we conduct additional analysis to examine how the gamification styles influence consumer autonomy (i.e., whether consumers feel a compulsory need to play the game) as maintaining high autonomy during gameplay has been emphasized as a key prerequisite for enhancing purchase intentions. Finally, in Study 3, we empirically bridge the intention-actual behavior gap.

4 | THE GAME THAT WORKS

While gamification entails incorporating game elements to create a customer experience that seeks to support user motivations and engagement, it is important to acknowledge that games come in different forms and can exhibit significant variations (Xi & Hamari, 2020), hence, produce different outcomes (Sjöblom & Hamari, 2017; Tondello et al., 2019). In this vein, Marczewski (2015) introduced the Hexad model, a widely recognized approach for implementing gamification, sometimes referred to as the "gold standard" in the field (Klock et al., 2020). The Hexad model categorizes games into distinct groups: mastery, change, autonomy, relatedness, reward, and purpose games.

Several game categories of the Hexad model are presently inappropriate for implementation in AI service tools such as shopping chatbots. For instance, games of mastery or change necessitate larger screens and involve more intricate design processes. Additionally, games centered around relatedness require the existence of social networks or multiple players (Klock et al., 2020). Conversely, Ciuchita et al. (2023) and Tondello et al. (2019) assert that two game elements from the Hexad model, namely the reward and purpose elements, hold relevance and feasibility for integration into service technologies. Consequently, games of chance that offer discounts (reward category) and games that incentivize sharing knowledge (purpose category) are highly suitable options for gamifying chatbots within the domain of online shopping. Accordingly, in our investigation, we consider two distinct games with each incorporating one of these fundamental features. Specifically, we use a game of chance in the form of a spin-the-wheel for implementing the reward element, while a knowledge-sharing game in the form of a multiple-choice quiz represents the embodiment of the purpose feature. Spinning the wheel and quizzes are frequently employed games in retail and service contexts and have been applied by many firms (e.g., Star Alliance, Pepsi).

We suggest that a game of chance is particularly potent in activating the optimal path, hedonic motivation → behavioral engagement → purchase outcomes, identified in Study 1, while avoiding the detrimental path triggered by utilitarian motivation. Conversely, we anticipate that a knowledge-sharing game will not activate the optimal hedonic path, but rather it will particularly stimulate the unfavorable utilitarian path. We base this expectation on several arguments. Frisky, fun-oriented games, such as games of chance, elicit higher levels of hedonic motivation because users who invest their time in these games are primarily driven by intrinsic enjoyment and immediate rewards (e.g., discounts) associated with the present experience (Lowry et al., 2013). The expeditious nature of games of chance necessitates minimal cognitive and sentimental resources, allowing for swift and effortless execution of behaviors associated with exploring the offerings presented by the chatbot. The obtained information directly contribute to the primary objective of facilitating a purchase (Prentice et al., 2019). Thus, the anticipation of rewards generated by games of chance promptly triggers behavioral engagement, which is particularly advantageous for driving purchase outcomes as observed in Study 1.

On the other hand, purposive or mission-based games, such as knowledge-sharing games, generate pronounced utilitarian motivation as users anticipate external benefits, such as acquiring new knowledge or experiencing a high level of competitiveness. This is because knowledge-sharing games not only provide enjoyment but primarily fulfill utilitarian

needs by showcasing abilities and opportunities for competition. Knowledge-sharing games require proactive decision-making, profound cogitation, and the practical application of expertise. Employing these abilities fosters a heightened emotional connection as players become immersed in the exhilaration of victory and the desire to avoid the disappointment of defeat (Olson, 2010). Deci and Ryan (2013) also document that especially utilitarian motivation variables, such as the level of challenge, potential for skill development, and sense of achievement—variables associated with knowledge-sharing games—lead to high emotional involvement in a game. Therefore, knowledge-sharing games often evoke a high degree of emotional engagement, a form of engagement that we found in Study 1 to have a significantly detrimental effect on purchase outcomes.

In sum, we argue that a game of chance yields greater profitability due to its expeditious nature, which enhances the inclination to invest in behaviors that directly engage with the chatbot and its offerings, thereby resulting in a higher likelihood of purchase. In contrast, a knowledge-sharing game, such as a quiz with multiple answers, is more intricate, requiring the formulation of queries and corresponding responses. This intricacy potentially fosters a deeper sense of emotional attachment that may divert attention from, or even act as a substitute for, purchase behavior. Based on the above discussion, we propose the following:

H4a. Game-of-chance chatbots (compared to knowledge-sharing chatbots) activate the "optimal path." That is, game-of-chance chatbots produce higher hedonic motivation, higher behavioral engagement, and hence higher purchase outcomes.

H4b. Knowledge-sharing chatbots (compared to game-of-chance chatbots) activate the "detrimental path." That is, knowledge-sharing chatbots produce higher utilitarian motivation, higher emotional engagement, and hence lower purchase outcomes.

5 | STUDY 2: IDENTIFYING THE GAME THAT ACTIVATES THE OPTIMAL PATH

5.1 | Research setting, procedure, and scales

The first goal of Study 2 is to replicate the findings for the motivational paths from Study 1 (H1–H3) in a more realistic setting by utilizing more specific gamified chatbots, each incorporating one specific game. The second goal is to examine the impact of these different types of gamified chatbots on the motivational paths to test H4. The results will be used to determine the gamification style that is most effective in stimulating the optimal motivational path. The third goal of this study is to test an additional mediator (perceived autonomy) to bolster our conclusions regarding the ideal game to be employed in chatbots. This is crucial as diminishing a user's sense of autonomy when playing a particular game could countervail the beneficial motivational impact of a game. Hence, only when a specific game demonstrates a favorable impact on purchase behavior by triggering the appropriate motivations and promoting a heightened sense of autonomy, can it be considered the preferred game.

In addition to using Chatfuel to create the chatbots, as described in Study 1, we developed two specific games (a game of chance; a knowledge-sharing game), based on the theoretical implications of the Hexad model mentioned above. To validate the appropriateness of the two games, we sought input from six experts, including two chatbot designers and four experts in online consumer behavior. The goal was to confirm the technical feasibility and logical suitability of applying these games in the context of a chatbot interaction. In aligning the theoretical considerations and the technical feedback from the experts, we designed three distinct chatbots that represented three experimental conditions (chatbot type: nongamified; game of chance; knowledge-sharing gamified) in a between-subjects design. The first nongamified chatbot served as a control condition and solely offered a discount to users. The second chatbot utilized a spin-the-wheel game, allowing participants to spin an animated wheel and receive a reward contingent on the game outcome. The third chatbot featured a knowledge-sharing game, which involved posing several questions with multiple answer options. Upon completing the chatbot interaction, all participants received a discount that could be used in a future purchase. Similar to Study 1, we also conducted a qualitative prestudy involving 32 consumers to ensure that the chatbots addressed utilitarian and hedonic motivations. In the subsequent main study, participants were allocated randomly to one of the three conditions and in all conditions, we assured a game outcome that entitled them to the reward (in the form of the discount). In all conditions, a discount rate of 30% was applied to ensure that any differences in the results across the conditions were not influenced by variations in the discount amount. Exemplary extracts of the three chatbot types are presented in Supporting Information: Web Appendix 3.

The same multistage procedure for data collection and the questionnaire used in Study 1 were implemented for this study. In addition, the Study 2 survey included items for perceived autonomy used for the robustness analysis. Participants in Study 2 were recruited through Prolific and received compensation for completing the questionnaire. The data cleansing process followed the same methodology as applied in Study 1, with the addition of employing the Mahalanobis *d*-square test to eliminate outliers. Based on that, 37 responses were excluded from the analysis in Study 2. The final sample size was 275 (52.7% female, average age 37). More than 96% of the participants reported prior experience with chatbots, while at least 93% had engaged in online shopping activities regularly.

5.2 | Assessment of the measurement model and data analysis

The measurement model evaluation followed the same procedure as in Study 1, using identical cut-off values. Complete information on

factor loadings, Cronbach's α, composite reliability, and AVE can be found in Supporting Information: Web Appendix 1. To analyze the gathered data, we utilized a series of analysis of variances (ANOVAs) and *t*-tests to examine the direct relationships, while indirect paths and mediation effects were examined through the utilization of Hayes' PROCESS Macro (Models No. 4 & 6).

5.3 | Results

5.3.1 | Replication of Study 1 results on the motivational paths

First, to complement the results of Study 1 regarding H1, H2, and H3, we employed Hayes' PROCESS Model No. 4 with 5000 bias-corrected bootstraps. The results (presented in Table 3) indicate that cognitive engagement does not act as a mediator in the relationship between utilitarian motivation or hedonic motivation and purchase intention. However, the findings reveal that emotional engagement negatively mediates the influence of utilitarian motivation on purchase intention; yet it does not significantly mediate the path from hedonic motivation to purchase intention. Moreover, the results indicate that behavioral engagement is the sole dimension that positively mediates the relationship between hedonic motivation and purchase intention, while this mediating effect is not significant for utilitarian motivation. These findings are consistent with the results of Study 1 for hypotheses H1a, H1b, H2a, H2b, and H3b. Although H3a was not supported in Study 2, this finding does not alter the overall conclusions regarding the optimal and detrimental paths regarding purchase outcomes.

5.3.2 | The impact of gamification styles

To test H4, first, a series of ANOVAs was conducted to compare three distinct experimental conditions: nongamified, game-of-chance, and knowledge-sharing chatbot conditions. The findings show a significant main effect of the chatbot conditions on utilitarian motivation: $F(2,274) = 22.36$, $p < 0.001$, partial $\eta^2 = 0.14$, revealing that the utilitarian motivation value is significantly lower for the game-of-chance chatbot, compared to the nongamified chatbot, $t(180) = 3.05$, $p < 0.05$, and knowledge-sharing chatbot, $t(184) = 6.63$, $p < 0.05$, which elicits higher levels of utilitarian motivation compared to the nongamified one, $t(180) = -3.71$, $p < 0.05$. Additionally, the results demonstrate a significant main effect of the chatbot conditions on hedonic motivation: $F(2,274) = 9.78$, $p < 0.001$, partial $\eta^2 = 0.07$, revealing that although the game-of-chance chatbot does not trigger significantly higher levels of hedonic motivation compared to the nongamified chatbot, $t(180) = -1.39$, $p = 0.17$, it scores significantly higher compared to the knowledge-sharing chatbot, $t(184) = -4.38$, $p < 0.05$.

TABLE 3 Results for direct and indirect effects—Study 2.

Path	Coefficient (SE)	LLCI	ULCI	Hypothesis test
Direct effects				
Utilitarian Motivation → Cognitive Engagement	−0.05 (0.06)	−0.17	0.06	---
Utilitarian Motivation → Emotional Engagement	0.44 (0.05)***	0.33	0.55	---
Utilitarian Motivation → Behavioral Engagement	0.66 (0.06)***	0.54	0.78	---
Hedonic Motivation → Cognitive Engagement	0.12 (0.06)*	0.01	0.24	---
Hedonic Motivation → Emotional Engagement	0.09 (0.06)	−0.04	0.21	---
Hedonic Motivation → Behavioral Engagement	0.45 (0.05)***	0.34	0.55	---
Cognitive Engagement → Purchase Intention	−0.15 (0.07)*	−0.29	−0.01	---
Emotional Engagement → Purchase Intention	−0.25 (0.06)***	−0.34	−0.13	---
Behavioral Engagement → Purchase Intention	0.47 (0.06)***	0.35	0.60	---
Indirect effects				
Utilitarian Motivation → Cognitive Engagement → Purchase Intention	0.01 (0.01)	−0.01	0.04	H1a: NS
Hedonic Motivation → Cognitive Engagement → Purchase Intention	0.03 (0.02)	−0.08	0.06	H1b: NS
Utilitarian Motivation → Emotional Engagement → Purchase Intention	−0.09 (0.03)**	−0.14	−0.03	H2a: S
Hedonic Motivation → Emotional Engagement → Purchase Intention	−0.02 (0.02)	−0.06	0.01	H2b: NS
Utilitarian Motivation → Behavioral Engagement → Purchase Intention	0.07 (0.05)	−0.16	0.03	H3a: NS
Hedonic Motivation → Behavioral Engagement → Purchase Intention	0.21 (0.05)***	0.13	0.30	H3b: S

Abbreviations: LLCI, 95% lower level confidence interval; NS, hypothesis not supported; S, hypothesis supported; SE, standard error; ULCI, 95% upper level confidence interval.

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$. Number of bootstrap samples 5000.

The results also indicate a significant main effect of the chatbot conditions on cognitive engagement: $F(2,274) = 9.02$, $p < 0.001$, partial $\eta^2 = 0.06$. In terms of the impact of each chatbot on cognitive engagement, the nongamified and knowledge-sharing chatbots do not exhibit significant differences in cognitive engagement levels, $t(180) = 0.55$, $p = 0.59$. However, the game-of-chance chatbot elicits significantly lower cognitive engagement compared to both the nongamified condition, $t(180) = 3.74$, $p < 0.05$, and the knowledge-sharing condition, $t(184) = 3.86$, $p < 0.05$. Importantly, the ANOVA tests also reveal a significant main effect of the chatbot conditions on emotional engagement: $F(2,274) = 25.98$, $p < 0.001$, partial $\eta^2 = 0.16$. The game-of-chance chatbot demonstrates lower emotional engagement compared to the nongamified, $t(180) = 2.56$, $p < 0.05$, and knowledge-sharing chatbots, $t(184) = 7.40$, $p < 0.05$, implying that the knowledge-sharing chatbot has a more significant effect on emotional engagement compared to the nongamified one, $t(180) = -4.26$, $p < 0.05$. Furthermore, the results show a significant main effect of the chatbot conditions on behavioral engagement: $F(2,274) = 8.49$, $p < 0.001$, partial $\eta^2 = 0.06$. Both gamified chatbots, the game of chance, $t(180) = -3.85$, $p < 0.05$, and knowledge-sharing chatbots, $t(180) = -3.02$, $p < 0.05$, trigger higher levels of behavioral engagement compared to the nongamified chatbot. However, there was no significant difference between the two gamified chatbots in terms of their effectiveness in enhancing the behavioral engagement dimension, $t(184) = -1.51$, $p = 0.13$. Finally, the ANOVA tests also record a significant main effect of the chatbot conditions on purchase intention: $F(2,274) = 19.95$, $p < 0.001$, partial $\eta^2 = 0.13$. The game-of-chance chatbot emerged as the most effective purchase enhancer when compared to both the nongamified, $t(180) = -6.04$, $p < 0.05$, and knowledge-sharing chatbots, $t(184) = -4.90$, $p < 0.05$. It is important to note that the nongamified and knowledge-sharing chatbots do not exhibit significant differences in terms of purchase intention, $t(188) = -0.95$, $p = 0.34$.

Altogether, these findings provide comprehensive support for hypotheses H4a and H4b, indicating that a game-of-chance chatbot evokes higher hedonic motivation and higher behavioral engagement and at the same time lower utilitarian motivation and lower emotional engagement which all leads to higher purchase intention compared to a knowledge-sharing chatbot. Conversely, a knowledge-sharing chatbot triggers higher utilitarian motivation, higher emotional engagement, and lower purchase intention compared to a game-of-chance chatbot. The means and standard deviations of the ANOVA analysis are presented in Table 4.

To provide additional support for H4, we employed Hayes' PROCESS Model No. 6 with 5000 bias-corrected bootstraps to conduct serial mediation analysis. This analytical approach allows for the simultaneous examination of multiple mediators in assessing the indirect effects (Hayes, 2017). The results demonstrate that the game-of-chance chatbot (vs. knowledge-sharing chatbot) positively affects hedonic motivation ($b = 0.62$, 95% CI [0.15, 0.90], $p < 0.05$), which positively influences behavioral engagement ($b = 0.11$, 95% CI [0.01, 0.36], $p < 0.05$), which, in turn, has a positive impact on purchase intention ($b = 0.31$, 95% CI [0.07, 0.60], $p < 0.05$). These results indicate a complimentary significant serial mediation effect. Consequently, the mediation analysis provides additional support for H4a. Our results also reveal that a knowledge-sharing chatbot (vs. game-of-chance chatbot) positively affects utilitarian motivation ($b = 0.34$, 95% CI [0.13, 0.55], $p < 0.05$), which positively influences emotional engagement ($b = 0.43$, 95% CI [0.32, 0.54], $p < 0.05$), which, in turn, has a negative impact on purchase intention ($b = -0.17$, 95% CI [−0.31, −0.02], $p < 0.05$). Consequently, these results provide support for H4b.

5.4 | Additional analysis: Perceived consumer autonomy

While game elements can enhance user motivations and engagement in turn, they may also lead to the feeling of being coerced into particular actions, diminishing the user's sense of autonomy (Teng et al., 2022). Consumer autonomy refers to the ability to exercise independent decision-making in service interactions (Anker, 2020). This concept holds considerable importance in shaping customer choices and their level of satisfaction with service providers. In the contemporary digital era characterized by an increasing reliance on digital devices and online interactions, consumers are increasingly subjected to pressures to engage in obligatory activities, thereby experiencing a reduction in their autonomy and decision-making capabilities. This issue becomes particularly relevant due to the widespread adoption of AI and its associated algorithmic personalization mechanisms (Wertenbroch et al., 2020). Consequently, previous research has emphasized the need to check the impact of

TABLE 4 Means (standard deviations) across the three chatbot conditions—Study 2.

Construct	Nongamified chatbot	Game-of-chance chatbot	Knowledge-sharing chatbot
Utilitarian Motivation	4.89 (1.38)	4.22 (1.63)	5.55 (1.07)
Hedonic Motivation	5.15 (1.41)	5.44 (1.34)	4.56 (1.39)
Cognitive Engagement	4.38 (1.68)	3.59 (1.15)	4.27 (1.24)
Emotional Engagement	4.14 (1.46)	3.64 (1.15)	5.06 (1.44)
Behavioral Engagement	3.80 (1.07)	4.64 (1.78)	4.31 (1.19)
Purchase Intention	3.66 (1.59)	5.07 (1.56)	3.89 (1.71)

AI applications on consumer autonomy before deriving conclusions on the optimal design (Belanche et al., 2020).

To address this call and ensure the robustness of our suggestion of the superiority of the game of chance, we incorporated two items from Benita et al. (2014) into the questionnaire of Study 2 to measure perceived consumer autonomy and test its mediating role in the relationship between gamification style and purchase intention. The findings indicate that participants exposed to the game-of-chance chatbot condition exhibited a stronger perception of autonomy while game playing ($M = 4.01$, SD = 1.40) compared to those using the knowledge-sharing chatbot ($M = 2.95$, SD = 1.61), $t(183) = 4.77$, $p < 0.05$, indicating the game-of-chance chatbot reduces consumers' sense of obligation to play the game. Moreover, we employed Hayes' PROCESS Model No. 4 with 5000 bias-corrected bootstraps, to further investigate the mediating relationship. The results show a significant indirect effect of the game-of-chance chatbot (compared to knowledge-sharing chatbot) on purchase intention via perceived autonomy ($b = 0.43$; 95% CI [0.15; 0.86], $p < 0.05$). In other words, consumer autonomy positively mediates the effect of game-of-chance gamified chatbots (compared to knowledge-sharing chatbots) on purchase intention.

5.5 | Discussion

The findings from Study 2 strongly reinforce the inferences drawn in Study 1 regarding the negative mediating role of emotional engagement between utilitarian motivation and purchase intention, as well as the positive mediating role of behavioral engagement between hedonic motivation and purchase intention. Additionally, Study 2 provides valuable insights into the influence of different gamification styles, wherein certain game elements align with previous findings by increasing purchase intention, while others follow a detrimental route and decrease purchase intention. Specifically, the study demonstrates that game elements incorporated in a game of chance (e.g., rewards) follow the identified optimal path by triggering higher levels of hedonic motivation and in turn behavioral engagement, thus increasing purchase intention. This can be attributed to the minimal cognitive exertion and emotional involvement required from customers, as their main task merely involves spinning the wheel and receiving a discount based on luck. Consequently, customers are less likely to be diverted and their engagement remains predominantly directed toward behavioral aspects encompassing information-seeking and assistance-seeking pertinent to the purchase endeavor. Conversely, game elements implemented in the knowledge-sharing game, which entails reading questions, contemplating answers, and actively participating in the game, attenuate purchase behavior by amplifying utilitarian motivation and emotional engagement levels. Finally, the additional examination of perceived consumer autonomy provides further evidence for the superiority of game-of-chance chatbots. Specifically, these chatbots do not evoke pronounced feelings of compulsion that could potentially undermine the intended optimal path for making a purchase, while knowledge-sharing chatbots do so. This finding can be attributed to the additional effort required by the knowledge-sharing game for receiving the discount making the game to be perceived as obligatory. This insight lends additional support for prioritizing a game of chance over knowledge-sharing games when deciding which game to implement in a conversational agent.

6 | STUDY 3: IDENTIFYING THE GAME THAT SPARKS IMMEDIATE ACTION

Managers aspire to gain insights into the effects of marketing interventions on consequential outcomes in terms of tangible behavioral responses (Hulland & Houston, 2021). Hence, it is imperative to ascertain that the gamification style recommended in Study 2 (game of chance) not only improves intentions but also translates into actual behaviors, such as decision-making. This is crucial for bridging the gap between behavioral intention and real behavior (Viglia et al., 2021).

6.1 | Study design and results

Two hundred and eighteen participants (50.9% female, average age 32, 97% indicated they shop online at least once a month) were recruited through Prolific, and randomly allocated to one of the three chatbot conditions used in Study 2. After their interaction with the chatbot in which they received the offer of a 30% discount, the respondents saw a picture of the brand embedded in an online shop environment and were asked about their interest in visiting the brand's online shop where they could utilize the discount. Following the procedure of Holthöwer and van Doorn (2023) and King et al. (2022), we used a binary scale and participants made their decision to visit the online shop by clicking on the button "Yes, I want to visit the online shop" (coded as 1) or "No, I don't want to visit the online shop" (coded as 0). Participants who clicked on the "Yes" button were afterward presented with a message clarifying that their interaction with the chatbot was conducted as part of an academic research project.

We conducted binary logistic regression with chatbot condition (nongamified, game of chance, knowledge-sharing game) as the predictor variable and click behavior (1 = visit; 0 = no visit) as the dependent variable. The findings indicate that participants demonstrated a higher ratio of "Yes" clicks to the total number of interactions in the game-of-chance chatbot condition compared to both the nongamified chatbot condition (game of chance = 78.1%, nongamified = 50.0%, $b = 0.64$, Wald $\chi^2 = 11.42$, $p < 0.001$, Exp(b) = 1.88), and the knowledge-sharing chatbot condition (game of chance = 78.1%, knowledge sharing = 49.3%, $b = 0.55$, Wald $\chi^2 = 10.54$, $p < 0.001$, Exp(b) = 2.73). It is noteworthy that there was no significant difference in the "Yes" clicks between the nongamified chatbot condition and the knowledge-sharing chatbot condition (nongamified = 50.0%, knowledge sharing = 49.3%, $b = 0.14$, Wald $\chi^2 = 0.07$; $p = 0.93$), indicating similar actual decision behaviors.

6.2 | Discussion

While Study 2 revealed that game-of-chance-based chatbots enhance purchase intention compared to nongamified and knowledge-sharing chatbots, Study 3 shows that chance-based chatbots also significantly increase behaviors strongly related to purchase, such as the decision to visit the website and continue shopping. These behaviors act as a link between the intention to purchase and the actual purchase behavior.

7 | GENERAL DISCUSSION

The gamification of AI tools is widely anticipated by numerous firms as a means of significantly enhancing the customer experience. Nonetheless, there is a need to explore effective strategies for gamifying AI tools to achieve higher levels of firm-beneficial outcomes. Accordingly, our research involved designing four fully functional chatbots that allowed customer interactions with a fictitious suitcase brand. These chatbots were used in a cross-sectional survey study and two experimental studies to provide valuable insights into these matters.

The results demonstrate varying influences of utilitarian and hedonic motivational drivers on different facets of customer engagement, leading to distinct pathways where some facets contribute to desirable customer buying behaviors while others have a negative impact on such behaviors. Specifically, hedonic motivation triggered by interaction with a gamified chatbot boosts the behavioral aspect of engagement and positively influences buying behavior. On the other hand, utilitarian motivation not only enhances behavioral engagement but also enhances emotional engagement leading to a negative effect on purchase outcomes. While previous research suggests that utilitarian motivation is less relevant in influencing shoppers' emotional investments compared to hedonic motivation (Tamir et al., 2007), our novel finding of the opposite can be explained by the fact that utilitarian motivation forms emotional attachment because it relates to perceived economic benefits, such as discounts or brand/product-related information, leading individuals to feel enthusiastic in engaging with the brand or its communication tools such as gamified chatbots (Akram et al., 2021). Furthermore, the notable finding that emotional engagement has a negative effect on purchase outcomes challenges prevailing research expectations, albeit in nongamified contexts (Akram et al., 2021). However, it aligns with Hirschman and Holbrook (1982) who indicate that intense emotional involvement has the potential to divert the user's attention from the purchasing process, as they may become increasingly engrossed in the emotional encounter afforded by the experience, thereby attributing lesser significance to the tangible goods showcased. Consequently, this diminished emphasis on the transactional facet may lead to a decline in the individual's intention to make a purchase. Finally, the observed positive purchase effect of behavioral engagement aligns with prior research emphasizing the significance of actual engagement behaviors in nongamified contexts (Grewal et al., 2019), and can be explained by the fact that customers high on behavioral engagement exhibit a reduced propensity for diversion and instead prioritize behavioral aspects associated with the acquisition of information and assistance pertinent to their purchase requirements.

Our subsequent findings shed light on the association between different styles of chatbot gamification and their distinct routes triggered. Specifically, chatbots that prioritize knowledge sharing elicit higher levels of utilitarian motivation, leading to increased emotional engagement. This, in turn, results in a reduction in purchase intention, potentially attributed to customers feeling a sense of satisfaction that replaces the need for entering the purchase stage. Conversely, gamification elements that are swift and require minimal mental and emotional effort, such as a game of chance, leverage hedonic motivation to enhance behavioral engagement, which directly promotes buying behavior. These results align with previous research highlighting the divergent effects of different game elements on behavioral responses (Marczewski, 2015; Tondello et al., 2019), and contribute further insights by elucidating the suitability of specific game elements within the context of shopping chatbots. Additionally, our study provides robust evidence that incorporating a game of chance into chatbots, as opposed to knowledge-sharing elements, mitigates concerns related to consumer autonomy. In other words, the game-of-chance chatbots, when compared to knowledge-sharing chatbots, enhance perceived consumer autonomy, hence buying behavior.

7.1 | Theoretical implications

The present study offers theoretical contributions to marketing and consumer research literature concerning the domains of gamification and AI agents. First, this research represents one of the first attempts to explore the influence of gamified chatbot-related motivations on customer engagement. By building upon prior research on customer engagement in gamified software settings (e.g., Krishna et al., 2023; Tobon et al., 2020), we demonstrate that utilitarian motivation provokes emotional and behavioral customer engagement, while hedonic motives stimulate cognitive and behavioral engagement. Hence, both motivational drivers encourage customers to actively seek assistance and information from a chatbot (behavioral engagement), while utilitarian drivers in addition enhance customers' emotional attachment when interacting with the gamified chatbot, possibly due to the gratification derived from task completion or economic benefits such as discounts. Second, through the examination of the mediating role of engagement dimensions in the proposed model, this study unveils the intricacies involved in managing engagement facets, highlighting that not all enhancements in engagement aspects are conducive to firm profitability. Enhancing engagement represents a double-edged sword for online retailers seeking to gamify their AI agents to drive greater profits. Consequently, our findings elucidate which customer engagement dimensions result in improved return on investment, and present empirical

evidence indicating that augmenting behavioral engagement yields favorable returns, whereas augmenting cognitive engagement may have a limited impact on purchase intention and customer expenditure. However, of utmost significance is our demonstration that investing excessively in fostering emotional engagement of users with gamified chatbots can yield adverse outcomes, resulting in satisfied customers where engagement substitutes their inclination to make a purchase and acquire the showcased product.

Third, this study sheds light on the varying outcomes associated with different styles of gamifying chatbots. Our findings indicate that, in terms of fostering increased purchase behavior as the ultimate desirable outcome, game elements incorporating chance-based mechanisms prove more advantageous as they align with the optimal trajectory from motivational drivers to purchase outcomes. Conversely, gamifying chatbots through knowledge-sharing elements, for instance, may yield adverse effects and impede purchase behavior, as they align with the problematic trajectory, from utilitarian motivation to emotional engagement, that subsequently diminishes purchase outcomes. Finally, our study provides an additional safeguard for the suggested preference of the game of chance and contributes to the existing literature by showing that this type of chatbots (compared to the knowledge-sharing ones) positively enhances perceived consumer autonomy, which in turn boosts purchase behaviors. Specifically, we find that chatbots incorporating game-of-chance elements are associated with a lower perception of obligation to engage in gameplay compared to knowledge-sharing chatbots.

7.2 | Managerial implications

While combining gamification with the deployment of AI agents has the potential to offer numerous advantages to service providers and online retailers by motivating the customer to engage more (Prentice et al., 2019), we warn managers from a naively optimistic perspective that assumes any enhancement in customer engagement through gamified AI agents directly translates into improved metrics such as customer spending. Managers should acknowledge the multidimensional nature of customer engagement with AI agents (Hollebeek et al., 2021) and recognize that enhancing certain dimensions of engagement entails drawbacks that have the potential to impair profitable outcomes. Therefore, a comprehensive assessment of each engagement dimension is necessary to determine its potential impact on desired final goals. When the positive effects on desirable outcomes outweigh any negative effects, the engagement dimension should be maximized. However, if a dimension exhibits both positive and negative effects, a certain level of enhancement should be pursued, avoiding a threshold that activates the downsides associated with that particular engagement dimension.

To clarify, based on our findings, we provide evidence that cognitive customer engagement does not exhibit significant effects, either positive or negative, on purchase behavior. Therefore, investing resources in enhancing this dimension is unlikely to yield substantial benefits for retailers. On the other hand, we find a positive association between behavioral engagement and purchase outcomes. In light of these findings, managers are advised to allocate their investments toward enhancing the behavioral dimension of customer engagement when implementing gamified AI agents. Finally, and equally important, our findings reveal a significant negative impact of emotional customer engagement on firm-beneficial outcomes. Hence, emotional engagement might create what Xu et al. (2017) coin "micro-moments" that turn customers from goal-oriented shoppers into discovery-oriented browsers which makes them forget about a purchase. Therefore, managers must recognize that excessive investment in fostering heightened emotional engagement with gamified chatbots can ultimately diminish users' inclination to make purchases through the AI channel.

We show that activating both utilitarian and hedonic motivational drivers through gamified chatbots can effectively enhance this engagement dimension. However, an excessive emphasis on utilitarian experiences may, in addition to stimulating the desirable behavioral engagement, inadvertently stimulate emotional engagement in a manner that detrimentally affects purchase intention. Thus, managers should carefully balance the activation of the different motivations to ensure optimal outcomes for customer engagement and purchase. To achieve this, the initial step involves the careful selection of appropriate gamification styles, considering that different game elements have a differential impact on motivational drivers. In line with this perspective, we propose that the choice of chatbots incorporating game-of-chance elements may be more effective in enhancing hedonic motivation, thereby stimulating greater behavioral engagement and favorable purchasing behavior. Moreover, we advise managers to exercise caution when employing gamified chatbots that focus on knowledge sharing, as they may inadvertently intensify emotional engagement, resulting in less favorable purchase behaviors.

Finally, we offer valuable insights to practitioners regarding the influence of different gamification elements on the sense of autonomy to engage in gameplay. Specifically, we found that certain gamification elements like the game of chance, do not elicit the feeling of compulsory play, which would negatively influence purchase intention. Therefore, practitioners should be mindful of these findings when designing gamified chatbots to ensure optimal outcomes in terms of customer engagement and purchase intention.

7.3 | Limitations and future research

Notwithstanding the advancements made in our study, certain limitations warrant future investigation. First, while the study participants engaged in genuine interaction with a real gamified chatbot, surpassing the limitations associated with the use of chatbot interaction scenarios, it is worth noting that respondents only took part in a simulated purchase task. Hence, to enhance external validity,

future research could examine gamified chatbot shopping experiences in the field. Second, our study focused exclusively on suitcases as the product of interest. To enhance the generalizability of our findings, we recommend replicating the proposed model across various product categories. By conducting similar analyses on different product levels, researchers can ascertain the applicability and validity of the model in broader contexts. Third, the current study focuses on purchase intention and buying behavior as the sole ultimate firm-beneficial outcomes. However, companies may utilize gamified chatbots not only to enhance customer spending but also to foster other desirable outcomes, such as loyalty and positive WOM. Fourth, the model employed in this study could be replicated by considering different typologies of motivational drivers (see e.g., Deci & Ryan, 2000), diverse customer engagement concepts (Kumar et al., 2019), or by testing other gamification styles. Such investigations would yield valuable complementary insights. Fifth, future research could incorporate moderators into our model. For example, the need for human interaction, personality traits like speciesism toward nonhuman entities, or algorithm aversion might differentiate the effects of motivational drivers on engagement. These variables could also serve as moderating factors between engagement dimensions and desirable outcomes. Finally, it would be of interest to explore whether different AI settings (e.g., chatbots vs. voice assistants, touch screen gaming vs. keyboard gaming) would yield similar results (Elsharnouby et al., 2023). Additionally, the communication style of the AI agent could potentially play a significant moderating role and warrant further examination (Schwede et al., 2022).

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

Available at request.

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REFERENCES

Akdim, K., Casaló, L. V., & Flavián, C. (2022). The role of utilitarian and hedonic aspects in the continuance intention to use social mobile apps. *Journal of Retailing and Consumer Services*, *66*, 102888.

Akram, U., Junaid, M., Zafar, A. U., Li, Z., & Fan, M. (2021). Online purchase intention in Chinese social commerce platforms: Being emotional or rational? *Journal of Retailing and Consumer Services*, *63*, 102669.

Anker, T. (2020). Autonomy as license to operate: establishing the internal and external conditions of informed choice in marketing. *Marketing Theory*, *20*(4), 527–545.

Babin, B. J., Darden, W. R., & Griffin, M. (1994). Work and/or fun: Measuring hedonic and utilitarian shopping value. *Journal of Consumer Research*, *20*(4), 644–656.

Bauer, J. C., Linzmajer, M., Nagengast, L., Rudolph, T., & D'Cruz, E. (2020). Gamifying the digital shopping experience: Games without monetary participation incentives increase customer satisfaction and loyalty. *Journal of Service Management*, *31*(3), 563–595.

Bekk, M., Eppmann, R., Klein, K., & Völckner, F. (2022). All that glitters is not gold: An investigation into the undesired effects of gamification and how to mitigate them through gamification design. *International Journal of Research in Marketing*, *39*(4), 1059–1081.

Belanche, D., Casaló, L. V., Flavián, C., & Schepers, J. (2020). Service robot implementation: A theoretical framework and research agenda. *The Service Industries Journal*, *40*(3–4), 203–225.

Belk, R. W., Belanche, D., & Flavián, C. (2023). Key concepts in artificial intelligence and technologies 4.0 in services. *Service Business*, *17*(1), 1–9.

Benita, M., Roth, G., & Deci, E. L. (2014). When are mastery goals more adaptive? It depends on experiences of autonomy support and autonomy. *Journal of Educational Psychology*, *106*(1), 258–267.

Berger, A., Schlager, T., Sprott, D. E., & Herrmann, A. (2018). Gamified interactions: Whether, when, and how games facilitate self–brand connections. *Journal of the Academy of Marketing Science*, *46*(4), 652–673.

Chung, M., Ko, E., Joung, H., & Kim, S. J. (2020). Chatbot e-service and customer satisfaction regarding luxury brands. *Journal of Business Research*, *117*, 587–595.

Ciuchita, R., Heller, J., Köcher, S., Köcher, S., Leclercq, T., Sidaoui, K., & Stead, S. (2023). It is really not a game: An integrative review of gamification for service research. *Journal of Service Research*, *26*(1), 3–20.

Crolic, C., Thomaz, F., Hadi, R., & Stephen, A. T. (2022). Blame the bot: Anthropomorphism and anger in customer–chatbot interactions. *Journal of Marketing*, *86*(1), 132–148.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268.

Deci, E. L., & Ryan, R. M. (2013). *Intrinsic motivation and self-determination in human behavior*. Springer Science & Business Media.

Dessart, L., Veloutsou, C., & Morgan-Thomas, A. (2016). Capturing consumer engagement: Duality, dimensionality and measurement. *Journal of Marketing Management*, *32*(5–6), 399–426.

Eisingerich, A. B., Marchand, A., Fritze, M. P., & Dong, L. (2019). Hook vs. hope: How to enhance customer engagement through gamification. *International Journal of Research in Marketing*, *36*(2), 200–215.

Elmashhara, M. G., & Soares, A. M. (2022). Linking atmospherics to shopping outcomes: The role of the desire to stay. *Journal of Retailing and Consumer Services*, *64*(1), 102744.

Elsharnouby, M. H., Jayawardhena, C., & Saxena, G. (2023). Avatar taxonomy: new technological tool to enhance the consumer-brand relationships. *Management & Sustainability: An Arab Review*, *3*, 1–28.

Eppmann, R., Bekk, M., & Klein, K. (2018). Gameful experience in gamification: Construction and validation of a gameful experience scale [GAMEX]. *Journal of Interactive Marketing*, *43*, 98–115.

Flavián, C., Akdim, K., & Casaló, L. V. (2023). Effects of voice assistant recommendations on consumer behavior. *Psychology & Marketing*, *40*(2), 328–346.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50.

Gokcesu, K., & Kozat, S. S. (2018). An online minimax optimal algorithm for adversarial multiarmed bandit problem. *IEEE Transactions on Neural Networks and Learning Systems*, *29*(11), 5565–5580.

Grewal, L., Stephen, A. T., & Coleman, N. V. (2019). When posting about products on social media backfires: The negative effects of

consumer identity signaling on product interest. *Journal of Marketing Research*, *56*(2), 197–210.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139–152.

Hamari, J. (2017). Do badges increase user activity? A field experiment on the effects of gamification. *Computers in Human Behavior*, *71*, 469–478.

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Publications.

Hepola, J., Leppäniemi, M., & Karjaluoto, H. (2020). Is it all about consumer engagement? Explaining continuance intention for utilitarian and hedonic service consumption. *Journal of Retailing and Consumer Services*, *57*, 102232.

Hirschman, E. C., & Holbrook, M. B. (1982). Hedonic consumption: Emerging concepts, methods and propositions. *Journal of Marketing*, *46*(3), 92–101.

Holbrook, M. B., & Hirschman, E. C. (1982). The experiential aspects of consumption: Consumer fantasies, feelings, and fun. *Journal of Consumer Research*, *9*(2), 132–140.

Hollebeek, L. D., & Belk, R. (2021). Consumers' technology-facilitated brand engagement and wellbeing: Positivist TAM/PERMA-vs. Consumer Culture Theory perspectives. *International Journal of Research in Marketing*, *38*(2), 387–401.

Hollebeek, L. D., Das, K., & Shukla, Y. (2021). Game on! How gamified loyalty programs boost customer engagement value. *International Journal of Information Management*, *61*, 102308.

Hollebeek, L. D., Glynn, M. S., & Brodie, R. J. (2014). Consumer brand engagement in social media: Conceptualization, scale development and validation. *Journal of Interactive Marketing*, *28*(2), 149–165.

Hollebeek, L. D., Sprott, D. E., Sigurdsson, V., & Clark, M. K. (2022). Social influence and stakeholder engagement behavior conformity, compliance, and reactance. *Psychology & Marketing*, *39*(1), 90–100.

Hollebeek, L. D., Srivastava, R. K., & Chen, T. (2019). SD logic–informed customer engagement: Integrative framework, revised fundamental propositions, and application to CRM. *Journal of the Academy of Marketing Science*, *47*(1), 161–185.

Holthöwer, J., & van Doorn, J. (2023). Robots do not judge: Service robots can alleviate embarrassment in service encounters. *Journal of the Academy of Marketing Science*, *51*(4), 767–784.

Hsu, C. L., & Chen, M. C. (2018). How gamification marketing activities motivate desirable consumer behaviors: Focusing on the role of brand love. *Computers in Human Behavior*, *88*, 121–133.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55.

Hulland, J., & Houston, M. (2021). The importance of behavioral outcomes. *Journal of the Academy of Marketing Science*, *49*, 437–440.

Janson, A., Schmidt-Kraepelin, M., Schöbel, S., & Sunyaev, A. (2023). Special issue editorial: Adaptive and intelligent gamification design. *AIS Transactions on Human-Computer Interaction*, *15*(2), 136–145.

King, D., Auschaitrakul, S., & Lin, C. W. J. (2022). Search modality effects: Merely changing product search modality alters purchase intentions. *Journal of the Academy of Marketing Science*, *50*(6), 1236–1256.

Klock, A. C. T., Gasparini, I., Pimenta, M. S., & Hamari, J. (2020). Tailored gamification: A review of literature. *International Journal of Human-Computer Studies*, *144*, 102495.

Krishna, K., Sivakumaran, B., Maheswarappa, S. S., & Jha, A. (2023). Mind the game you set for better website patronage. *European Journal of Marketing*, *57*(5), 1560–1590.

Kumar, V., & Pansari, A. (2016). Competitive advantage through engagement. *Journal of Marketing Research*, *53*(4), 497–514.

Kumar, V., Rajan, B., Gupta, S., & Pozza, I. D. (2019). Customer engagement in service. *Journal of the Academy of Marketing Science*, *47*(1), 138–160.

Lepkowska-White, E., Brashear, T. G., & Weinberger, M. G. (2003). A test of ad appeal effectiveness in Poland and the United States—the interplay of appeal, product, and culture. *Journal of Advertising*, *32*(3), 57–66.

Lowry, P., Gaskin, J., Twyman, N., Hammer, B., & Roberts, T. (2013). Taking 'fun and games' seriously: Proposing the hedonic-motivation system adoption model (HMSAM). *Journal of the Association for Information Systems*, *14*(11), 617–671.

Marczewski, A. (2015). *User types. Even ninja monkeys like to play: Gamification, game thinking & motivational design* (pp. 69–84). CreateSpace Independent Publishing Platform.

Morschheuser, B., Hassan, L., Werder, K., & Hamari, J. (2018). How to design gamification? A method for engineering gamified software. *Information and Software Technology*, *95*, 219–237.

Natanson, E. (2021, June 6). *Play to pay: Gamification is the future of retail apps*. Forbes. https://www.forbes.com/sites/eladnatanson/2021/06/01/play-to-pay-gamification-is-the-future-of-retail-apps/

Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). *Scaling procedures: Issues and applications*. SAGE Publications.

Olson, C. K. (2010). Children's motivations for video game play in the context of normal development. *Review of General Psychology*, *14*(2), 180–187.

Prentice, C., Han, X. Y., Hua, L. L., & Hu, L. (2019). The influence of identity-driven customer engagement on purchase intention. *Journal of Retailing and Consumer Services*, *47*, 339–347.

Ruby Garage. (2017). "Why Retail Should Start Using Chatbots". https://rubygarage.org/blog/why-retail-should-use-chatbots

Rutz, O., Aravindakshan, A., & Rubel, O. (2019). Measuring and forecasting mobile game app engagement. *International Journal of Research in Marketing*, *36*(2), 185–199.

Sackett, A. M., Meyvis, T., Nelson, L. D., Converse, B. A., & Sackett, A. L. (2010). You're having fun when time flies: The hedonic consequences of subjective time progression. *Psychological Science*, *21*(1), 111–117.

Schepers, J., Belanche, D., Casaló, L. V., & Flavián, C. (2022). How smart should a service robot be? *Journal of Service Research*, *25*(4), 565–582.

Schwede, M., Zierau, N., Janson, A., Hammerschmidt, M., & Leimeister, J. M. (2022). "I Will Follow You!" – How recommendation modality impacts processing fluency and purchase intention. *Proceedings of the International Conference on Information Systems*, *44*, 1–17.

Sjöblom, M., & Hamari, J. (2017). Why do people watch others play video games? An empirical study on the motivations of twitch users. *Computers in Human Behavior*, *75*, 985–996.

Tamir, M., Chiu, C. Y., & Gross, J. J. (2007). Business or pleasure? Utilitarian versus hedonic considerations in emotion regulation. *Emotion (Washington, D.C.)*, *7*(3), 546–554.

Teng, C. I., Huang, T. L., Yang, Z. H., Wu, W. J., & Liao, G. Y. (2022). How strategic, offensive, and defensive engagement impact gamers' need satisfaction, loyalty, and game usage. *International Journal of Information Management*, *66*, 102515.

Tobon, S., Ruiz-Alba, J. L., & García-Madariaga, J. (2020). Gamification and online consumer decisions: Is the game over? *Decision Support Systems*, *128*, 113167.

Tondello, G. F., Mora, A., Marczewski, A., & Nacke, L. E. (2019). Empirical validation of the gamification user types hexad scale in English and Spanish. *International Journal of Human-Computer Studies*, *127*, 95–111.

Viglia, G., Zaefarian, G., & Ulqinaku, A. (2021). How to design good experiments in marketing: Types, examples, and methods. *Industrial Marketing Management*, *98*, 193–206.

Vivek, S. D., Beatty, S. E., & Morgan, R. M. (2012). Customer engagement: Exploring customer relationships beyond purchase. *Journal of Marketing Theory and Practice*, *20*(2), 122–146.

Weiger, W. H., Wetzel, H. A., & Hammerschmidt, M. (2017). Leveraging marketer-generated appeals in online brand communities: An individual user-level analysis. *Journal of Service Management*, *28*(1), 133–156.

Weiner, B., Russell, D., & Lerman, D. (1979). The cognition–emotion process in achievement-related contexts. *Journal of Personality and Social Psychology*, *37*(7), 1211–1220.

Werbach, K., & Hunter, D. (2020). *For the win: The power of gamification and game thinking in business, education, government, and social impact*. Wharton School Press.

Wertenbroch, K., Schrift, R. Y., Alba, J. W., Barasch, A., Bhattacharjee, A., Giesler, M., Knobe, J., Lehmann, D. R., Matz, S., Nave, G., Parker, J. R., Puntoni, S., Zheng, Y., & Zwebner, Y. (2020). Autonomy in consumer choice. *Marketing Letters*, *31*, 429–439.

Wittmann, M., & Morschheuser, B. (2022). What do games teach us about designing effective human-AI cooperation? A systematic literature review and thematic synthesis on design patterns of non-player characters. *Proceedings of the 6th International GamiFIN Conference*, *6*, 95–104.

Wolf, T., Weiger, W. H., & Hammerschmidt, M. (2020). Experiences that matter? The motivational experiences and business outcomes of gamified services. *Journal of Business Research*, *106*, 353–364.

Woodruff, R. B., & Gardial, S. (1996). *Know your customer: New approaches to understanding customer value and satisfaction*. Wiley.

Worthington, R. L., & Whittaker, T. A. (2006). Scale development research: A content analysis and recommendations for best practices. *The Counseling Psychologist*, *34*(6), 806–838.

Xi, N., & Hamari, J. (2020). Does gamification affect brand engagement and equity? A study in online brand communities. *Journal of Business Research*, *109*, 449–460.

Xu, K., Chan, J., Ghose, A., & Han, S. P. (2017). Battle of the channels: The impact of tablets on digital commerce. *Management Science*, *63*(5), 1469–1492.

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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QUESTIONNAIRE ITEMS

Utilitarian Motivation—Adapted from Babin et al. (1994)

1. I think I can accomplish what I want when interacting with the chatbot.
2. I feet the experience is successful.
3. I think I can find what I am looking for when interacting with the chatbot.
4. Interacting with the chatbot seems to offer good economic value.

Hedonic Motivation—Adapted from Babin et al. (1994)

1. Interacting with the chatbot seems fun.
2. I feel I will enjoy interacting with the chatbot.
3. The experience provided by the chatbot seems entertaining.
4. I feel I would be immersed in the chatbot experience.

Cognitive Customer Engagement—Adapted from Dessart et al. (2016) and Hollebeek et al. (2022)

During chatbot usage, I …

1. … invested a lot of concentration.
2. … fully attached myself to the chatbot.
3. … had difficulties to detach myself.
4. … forgot everything around me.

Emotional Customer Engagement—Adapted from Dessart et al. (2016) and Hollebeek et al. (2022)

During chatbot usage, I …

1. … devoted a lot of enthusiasm.
2. … devoted a lot of dedication.
3. … was emotionally attached.
4. … was emotionally satisfied.

Behavioral Customer Engagement—Adapted from Dessart et al. (2016) and Hollebeek et al. (2019)

During chatbot usage, I …

1. … spent a lot of time seeking ideas and information from the chatbot.
2. … sought help from the chatbot.
3. … I thought of promoting the chatbot.
4. … I thought of getting others interested in the chatbot.

Purchase Intention—Lepkowska-White et al. (2003)

1. If I were looking for this type of product, my likelihood of purchasing the displayed product would be high.
2. If I were to buy this type of product, the probability that I would consider buying the displayed product would be high.
3. If I had to buy this type of product, my willingness to buy the displayed product would be high.

Consumer Autonomy—Benita et al. (2014)

1. I felt forced to play the game.
2. I felt I could choose whether to play the game.