Leveraging gamification for tourism marketing activities: Towards a comprehensive conceptual model

Abstract

Gamification has become one of the most effective ways to generate customer engagement. However, there needs to be more structured research on the drivers of the adoption and sustained use of gamification in travel and tourism research. Drawing upon the uses and gratifications theory and the technology acceptance model, this research examines the individual motivational drivers for adopting gamification in the context of tourism services. We employed a combination of partial least squares - structural equation modeling and fuzzy set qualitative comparative analysis on the data gathered from 680 users of various online travel agencies. Our findings show that individual motivational dimensions of uses and gratifications significantly influence perceived usefulness and ease of use in gamified marketing activities. Our analysis demonstrates five configurations leading to a high level of adoption of gamified marketing activities. This study extends the use of gamification in the tourism industry, offering insights into enhancing customer motivations for adopting and effectively utilizing game mechanics and dynamics in marketing activities. Furthermore, through a novel framework, this study advances the uses and gratification theory at the intersection of gamification research and tourism literature.

Keywords: Gamification, gamified tourism activities, destination marketing organization, uses and gratifications theory, technology acceptance model

Introduction

Over the years, gamification has become an important marketing activity (Hsu & Chen, 2018; Buhalis & Weber, 2017) to foster customer engagement in travel and tourism. Ever since its emergence in 2008 (Deterding et al., 2011), gamification has gained immense popularity in various fields of business (Epstein, 2013). Firms increasingly use gamification - an infusion of game-like elements, mechanics, and dynamics into non-game contexts to differentiate themselves in a crowded and competitive market (Hsu & Chen, 2018; Gatautis et al., 2016).

The global gamification market stood at $9.9 billion in 2020 and is expected to reach $95.5 billion by 2030 (Allied Market Research, 2021). Gamification involves applying elements of "gamefulness, gameful interaction, and gameful design with a specific intention" (Deterding et al., 2011, p.10). The extant literature has investigated the impact of gamification on brand attitude, brand awareness, brand engagement, brand equity, and brand co-creation (Abou & Soliman et al., 2021; García et al.,2021; Yang et al., 2017) in various sectors. Gamification dynamics and mechanics employ game-specific elements in existing web applications (Hamari, 2017; Xin et al., 2023; Pradhan et al., 2023).

In the tourism sector, gamification is an emerging strategy used by Destination Marketing Organizations (DMOs), online tourism services providers, and tourist operators for sustainable and versatile engagement with tourists (Mistilis et al., 2014; Imbert & Bouchard Ribera, 2021; García-Milon et al., 2021). Some of the noteworthy applications of gamification can be found in Thailand (Smile et al., 2012), Cape Town (The Real Time Report, 2012), Ireland (Tourism Island, 2011), and Nanjing, China (People, 2013). These applications are crafted to increase the destination's visibility, fostering more significant interaction with the destination (Pradhan et al., 2023), enhancing the overall tourism experience, and engendering customer engagement. Although prior studies have highlighted the importance of gamification in the tourism sector (Buhalis et al., 2023; Pasca et al., 2021) and the intention to adopt gamification (Abou

&Soliman et al., 2021; Parapanos & Michopoulou, 2022), not much is known regarding motives behind the adoption and continuous usage of the gaming elements in tourism (Huotari & Hamari, 2017; Lucassen & Jasen, 2014).

To this end, we integrate the uses and gratifications (U&G) theory and the technology acceptance model (TAM) to understand why people adopt gamified marketing activities offered by online travel agencies (OTA). While U&G theory helps us explore individual motives, such as entertainment and information-seeking, TAM assesses how easy and valuable users find these activities. This mix gives us a well-rounded view, helping explain and improve the adoption of OTA's gamified marketing strategies. Moreover, this research addresses gaps in the current literature on gamification and tourism by investigating the present dynamics and individual motives for adoption. In sum, this study investigates the following research questions (RQs) in the context of gamified marketing activities initiated by OTA brands.

RQ1: What is the motivation behind OTA customers' adoption of gamified tourism activities?

RQ2. How do the dimensions of the U&G theory generate the adoption of gamified tourism activities at the intersection with the perceived ease of use and usefulness of OTA?

To address these research questions, we employed a combination of partial least square structural equation modeling (PLS-SEM) and fuzzy-set qualitative comparative analysis (fsQCA) methodologies to elucidate how the motivational factors derived from U&G theory, as well as ones derived from TAM, influence the adoption of gamified tourism activities. This study makes several key contributions to travel research. This research presents a robust model by integrating U&G theory and TAM to explain gamified marketing activities' adoption and sustained use. Using the lens of U&G theory, this study advances tourism research by probing the role of technology gratification, a new form of gratification in the adoption of gamified tourism activities. Furthermore, this study demonstrates the positive effect of hedonic,

utilitarian, technological, and social gratification on the intention to adopt gamified marketing activities. Our findings resonate with past research underscoring the positive roles of personal motives in adopting gamification in online shopping (Wu et al., 2016) and gamified mobile applications (Wut et al., 2021). Moreover, our research needs to include a more studied correlation between individual motives and the adoption of gamified marketing activities offered by OTAs. We employ a combination of PLS-SEM and fsQCA approaches to offer critical insights into existing knowledge on technological, hedonic, utilitarian, social gratification, and behavioral intention driving the adoption of gamified marketing activities.

2. Gamification in the Tourism Industry

Technological innovation has changed the tourism sector irrevocably in recent decades. The growth of information and communication technologies (ICT) has altered how the tourist industry is structured, impacting both the supply and demand for travel-related services. Digital platforms have revolutionized how businesses and customers engage by altering the roles of suppliers and consumers and by expanding and improving the diversity of available services and experiences (Tobon et al., 2020). However, amidst this dynamic environment, the tourism industry faces several challenges. One significant challenge is continuously innovating and differentiating in a crowded market to attract and retain customers. This is where gamification emerges as a crucial strategy and valuable tool in the tourism sector, aiming to enhance the overall tourist experience and foster long-term engagement (Buhalis, 2020; Garcia et al., 2019; Shi et al., 2022). Such destinations incorporate Museum Hill using GPS Adventure Maze in Iowa, Fantastic Race of the location-based game in Los Angeles, "MuseumStars - The Challenge for at Home" in Austria, and "Smiled Land" in Thailand. By employing an innovative method to provide these experiences with excitement, it presents unique memories to its clientele. The Tourism Authority of Thailand (TAT) has included this in its digital marketing strategy, focusing on the many tourist sites in Thailand.

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Leading OTAs employ gamification to boost customer enjoyment and engagement. For instance, MakeMyTrip.com has recently adopted gamification approaches. The gamification campaign for India's most extensive reality program, Big Boss, uses the hashtag#makemytrip platform and generates much excitement. This campaign combines reality TV's excitement with gamification's effectiveness in engaging participants. Contestants are engaged in a series of tasks, each designed to bring them closer to the grand prize - a stay in the hashtag#BiggBoss's house. This gamified strategy is not solely focused on achieving victory but aims to generate a remarkable and engaging user experience. Similarly, Booking.com utilizes a gamification element called the "Genius" loyalty program. This program offers regular users incentives through discounts and privileges, such as complimentary breakfast or upgrades to better rooms. Expedia employs gamification as a strategy in its "Expedia+ Rewards" program. Users accumulate points through their bookings, which can be used for discounts on subsequent travel. Similarly, Airbnb incorporates gamification features, such as the "Superhost" award. Hosts can acquire this badge by consistently maintaining exceptional ratings and delivering outstanding guest experiences. The Superhost badge enhances the host's visibility on the site and offers concrete benefits such as travel vouchers.

Gamification engages travelers by stimulating their creativity and delight, improving their experiences by immersing them in a virtual travel world, leading to more emotive and captivating experiences (Xu, 2011; Sigala, 2015). Conversely, Gamification uses points, prizes, levels, and leaderboards to make consumer experiences more immersive and engaging (Hofacker et al., 2019). The points, badges, and leaderboards are frequently used to encourage tourists to investigate various attractions and complete challenges, fostering a sense of competition and accomplishment. Second, interactive mobile applications and augmented reality (AR) technologies allow visitors to access real-time information, historical facts, and virtual tours, transforming their voyage into an educational and entertaining experience.

Thirdly, personalized rewards and incentives, such as discounts, upgrades, and exclusive experiences, further encourage visitors to actively participate and share their experiences, producing valuable user-generated content and social media buzz. Lastly, storytelling and thematic narratives create a captivating atmosphere that helps visitors connect emotionally with the destination and its cultural heritage, resulting in a more memorable and significant trip. By combining these elements, gamification in the tourism industry provides a dynamic and enriching experience that increases visitor engagement, loyalty, and sustainable development for businesses and destinations. (Refer to Table 1).

<Insert Table 1 about here>

2.1 Integration of Uses and Gratifications Theory (U&G) and Technological Acceptance Model(TAM)

Extant Literature focused on the adoption of technological services, particularly those enabled by IT, employing various theories such (TRA; Fishbein & Ajzen, 1975), technology acceptance model (TAM; Davis et al., 1989), theory of planned behavior (Ajzen, 1991), innovation diffusion model (Hsu et al., 2007), task technology fit (Junglas et al., 2008), expectation-confirmation model (ECM; Oliver, 1980) and unified theory of acceptance and use of technology (Venkatesh et al., 2012). These theories study customers' acceptance of new technology or technology-enabled services. The TAM by Davis (1989) represents the most established and substantial foundation of technology acceptance (kamal et al., 2021). The main objective of the Technology Acceptance Model (TAM) is to predict the adoption of new technology by users and identify any design issues with the information system before it becomes widely used (Huang &Chang, 2019). The TAM consists of two primary constructs - perceived usefulness and perceived ease of use- used in numerous technological contexts (Rafique et al., 2020; Sancho-Esper et al., 2023).

TAM serves as a valuable framework for understanding the adoption of gamification elements or gamified tourism activities within the tourism sector by assessing users' perceptions of the usefulness and ease of use of these dynamic and innovative activities. U&G theory is another important theory on which this study is based. It is thought to be one of the best ways to determine why people use media in mass communication studies (Halaszovich & Nel, 2017). Apart from the field of communication, its applications have been published in education (Menon, 2022), retail (Boudkouss & Djelassi, 2021), hospitality (Choi et al., 2016), health care (Zhang et al., 2021), and IT enables services (Ray et al., 2019; Alhassan et al., 2020) outlets. More recently U&G theory emphasizes the connection between user gratification and engagement based on the intrinsic motivations of consumers that promote their acceptance and utilization. U&G theory aims to discern cognitive and affective requirements that can be satisfied through the utilization and interaction with specific media platforms and material (Park et al., 2009; Ruggiero, 2000; Tsao & Steffes-Hansen, 2008). Individuals proactively choose the media and participate in content that best fulfills their desires and assists them in accomplishing their objectives (Ko et al., 2005; Urista et al., 2009).

U&G theory is a widely employed theoretical framework for understanding the diverse motives and rationales underlying the use of various media (Gan, 2017). U&G theory offers valuable insights into the motivations behind tourists' engagement with gamified tourism activities (Geng et al., 2024). Applying U&G theory, this study utilizes gamified elements within tourism marketing platforms to fulfill specific gratifications, such as technology, hedonic, social, and utilitarian. At the same time, TAM is a relevant framework for investigating tourists' attitudes toward gamified applications and platforms in gamification and tourism marketing. This framework applies to tourism services delivered through both mobile applications and websites. Considering the relevance and applicability of the above two frameworks, this research integrates the U&G theory with TAM to examine the intentions

behind adopting gamified tourism activities. In the proposed conceptual framework, technological gratification does not directly influence the perceived usefulness but indirectly through perceived ease of use. Similarly, Chunmei and Hongxiu (2018) demonstrated that technology gratification significantly impacts continuance intentions through perceived enjoyment and ease of use rather than perceived usefulness. By integrating U&G theory and TAM, we aim to offer a holistic framework capable of effectively elucidating users' intentions to adopt gamified tourism activities via mobile apps and OTA websites.

3. Research Framework and Hypotheses Development

This research model (illustrated in Figure 1) integrated two theories to understand the tourist approach toward gamification. Firstly, the U&G theory (Katz et al., 1974) is used to assess the individual motivation to adopt the gamified tourism activities offered by online travel agencies. Given the importance of the adoption of gamification in tourism, four types of gratification, including hedonic, utilitarian, technological, and social gratification, and eight different U&G sought for OTA users in the context of gamification, namely (intelligence, convenience, entertainment value, exposure, social interaction, social presence, information seeking and escape). The gratification is derived from many theories, including motivation theories and communication theory, to capture the different types of gratification. In addition, the proposed model has been supplemented with TAM (Davis, 1989) is applied in order to assess the perceived usefulness (PU) and perceived ease of use (PEOU) of gamified marketing activities that are utilized by tourism organizations in order to engage with their respective tourists (refer to Figure 2). The combination addresses the limitations of TAM while incorporating users' motives and maintaining its parsimonious features. Furthermore, the integration enables us to predict the inclination toward gamified tourism activities.

< Insert Figure 1 about here>

3.1 Hypotheses development

Previous studies suggest that individuals with higher levels of intelligence often exhibit a superior ability to understand and engage with information technology-based systems such as Chabot's Internet of Things (Dong et al., 2017; Balakrishnan et al., 2021). When it comes to gamified marketing activities, which frequently incorporate interactive gameplay elements, those with higher intelligence may find it more straightforward to navigate and grasp the fundamental mechanics and dynamics (Moussawi et al., 2021). The favorable correlation between intelligence and perceived ease of use may be explained by the cognitive capacities that expedite comprehension of game mechanics. Previous literature indicates a positive correlation between technology gratification and continuance intention (Gan & Li, 2018). In this study, intelligence refers to the capacity of gamified marketing activities that tourism companies employ to consistently acquire and apply knowledge through self-learning processes across mobile applications and websites (Ritter et al., 2011). This inherent smartness and intelligence, exhibited by gamified activities, is something that users actively assess and appreciate (Xie et al., 2024). Regarding the technical benchmarks that users consider, gamified activity systems should fulfill users' technology gratification expectations, particularly in perceived intelligence. Accordingly, we offer the following hypotheses:

H$_{1a}$. Intelligence positively influences the perceived ease of use of gamified tourism activities.

H$_{1b}$: Intelligence positively influences the intention of adopting gamified tourism activities.

Convenience refers to the ease with which users can obtain what they need using a system (Khrais, 2017). Convenience value is derived from accomplishing a task quickly, efficiently, and effortlessly (Chiu et al.,2014). This value of convenience is recognized as a principal driving force behind internet usage (Kim et al., 2007). Gamified marketing activities that prioritize convenience through intuitive interfaces, simple instructions, and easy accessibility

tend to resonate more positively with users. This alignment between convenience and perceived ease of use contributes significantly to user satisfaction, engagement, and the overall effectiveness of gamified marketing strategies in capturing and retaining audience attention. In service-oriented research, different aspects of convenience have been recognized and discussed in the existing literature (e.g., Berry et al., 2002). Convenience has been empirically validated as a significant motivation for mobile media usage (Thaneshan et al., 2020), mobile games apps (Yang & Lin, 2019), and the use of tourism mobile apps (Xu et al., 2019). Therefore,

H2a: Convenience positively influences the perceived ease of use of gamified tourism activities.

H2b: Convenience positively influences the intention of adopting gamified marketing tourism activities.

Information seeking is the purposeful seeking of information in one's daily routine to solve problems unrelated to one's occupation or specific performance (Savolainen, 1995). Within the scope of this study, individuals who use online travel agencies (OTAs) actively seek information by participating in gamified marketing activities. They do this to acquire the necessary knowledge, gain specific skills, and stay updated on the newest news on their social networks, families, and general events. Moreover, information seeking is one of the main U&Gs for social media (Kim et al., 2013), mobile applications (Tan & Goh, 2015), and chatbots (Lin et al., 2023). Therefore, based on the above arguments, we hypothesize:

H3a: Information-seeking positively influences the perceived usefulness of gamified tourism activities.

H3b: Information-seeking positively influences the intention of adopting gamified tourism activities.

The act of evading the challenges and concerns of one's existence is called "escape" (Kaur

et al., 2020). Previous research has established that escape has a positive impact on intentions to continue using a particular activity (Melodia et al., 2020; online gaming); it also has an indirect effect on intentions to use the activity (Joo & Sang, 2013); and it has a direct effect on behavior (Pang, 2016; weekly WeChat usage). Gamified marketing activities allow individuals to escape the monotony and repetition of their daily lives. Through active participation in gamified content, users can completely engross themselves in a captivating and amusing encounter, fostering a constructive affective bond. The increased degree of involvement enhances the perceived efficacy of the marketing endeavors. Thus, based on above discussed rationale, the following is hypothesized:

H4a: Escape is positively associated with the perceived usefulness of gamified tourism activities.

H4b: Escape positively influences the intention of adopting gamified tourism activities.

Gamified marketing strategies that facilitate meaningful social interactions, such as sharing achievements, collaborating with others, or competing with friends, tend to enhance the perceived utility of the overall experience (Dikcius et al., 2021; Raman, 2021). This association is grounded in the idea that social elements contribute to a sense of community and shared enjoyment, amplifying the perceived value of gamified marketing content. When individuals perceive gamified marketing as a social experience involving interactions with peers, sharing achievements, and participating in communal challenges, their intention to adopt and engage in these activities is heightened (Kusumawardani et al., 2023). The social dimension introduces an element of enjoyment and camaraderie, making the adoption of gamified tourism marketing more appealing as users seek to be part of a shared experience. Thus, the following hypotheses are proposed:

H5a: Social interaction is positively associated with the perceived usefulness of gamified

marketing tourism activities.

H5b: Social interaction positively influences the intention of adopting gamified tourism activities.

Social presence or co-presence refers to the "sense of being with another" (Biocca et al., 2003, p. 456) and depends on the ease with which one perceives to have "the access to the intelligence, intentions, and sensory impressions of another" (Biocca, 1997, p. 22). When gamified marketing incorporates a robust social presence, involving meaningful interactions and a sense of community, users are more likely to perceive the activities as applicable and express greater intention to adopt them. The feeling of being socially connected within the gamified environment enhances the perceived value of the content, influencing users to view it as an experience worth adopting. This positive relationship underscores the importance of social presence in shaping both perceived usefulness and the behavioral intention to embrace gamified marketing, making it a more compelling and adoption-friendly strategy.

H6a: Social presence positively influences the perceived usefulness of gamified tourism activities.

H6b: Social presence influences the intention of adopting gamified tourism activities

Entertainment U&G refers to the perceived entertainment, fun, and enjoyment experienced by the users due to their media use. Entertainment is among the most significant predictors of new technology use and social commerce (Zhao, 2021). When individuals find entertainment value in gamified elements incorporated into tourism marketing, their overall perception of these activities is enhanced. The immersive and enjoyable nature of gamification adds a layer of appeal, making tourists view these experiences as entertaining and beneficial (Ali, 2020; Çeltek, 2021). In terms of the adoption of gamified marketing activities in tourism, incorporating entertaining elements into promotional strategies not only grabs the attention of

tourists but also cultivates a deep sense of engagement. This interaction, in return, encourages tourists to engage actively and enthusiastically embrace the gamified element. Based on this, we consequently hypothesized the following.

H7a: Entertainment positively influences the perceived usefulness of gamified tourism activities.

H7b: Entertainment positively influences the intention of adopting gamified tourism activities.

Exposure refers to broadening one's thinking and obtaining information related to various relevant issues. OTA users seek exposure to U&G by obtaining a wide variety of information, knowing about destinations, and participating in creative tourism programs (Högberg et al., 2019; Vashisht, 2023). Exposure enables tourists to engage with and encounter the gamified aspects, resulting in a more comprehensive comprehension of the advantages and principles provided (Fernández-Ruano et al., 2022; Aguiar-Castillo et al., 2019). Consequently, people are more inclined to acknowledge the tangible benefits of gamified tourism marketing efforts, such as increased involvement, better retention of information, or a more customized experience. As tourists become more familiar with these interactive and entertaining elements, their positive experiences during exposure can lead to a desire to actively incorporate such gamified approaches into their tourism-related decisions. Thus, the following hypothesis has been proposed:

H8a. Exposure positively influences the perceived usefulness of gamified tourism activities.

H8b. Exposure positively influences the intention of adopting gamified tourism activities.

3.7 Perceived Ease of Use

Perceived Ease of Use (PEOU) is the extent to which a person thinks a system is easy to use (Davis, 1989). PEOU significantly impacts the desire to accept new technology-enabled services (Dutot et al., 2019; Rafique et al., 2020). Tourist access to technology allows service

providers to offer virtual reality, augmented reality, and gamified marketing activities requiring knowledge and skill. PEOU could influence customers' intention to use such technology. (Alalwan et al., 2016; Dehghani et al., 2018; Lee, 2016). The simplicity of use is irrelevant in gamification, despite the widespread consensus on the impact of technology's usability on attitudes and behaviors (Benbasat & Barki, 2007; Nangin, 2020; Özekici & Küçükergin, 2022).

Gamification is an emerging concept that many tourist companies employ to engage clients on their websites. These games are (pre-during-post) journeys that vary in accessibility, simplicity, comprehension, and involvement. In general, customers have a preference for games that are straightforward, easy to comprehend, and readily accessible. This study proposes that game simplicity influences consumers' desire to adopt gamified marketing. Thus, perceived ease of use may positively affect the adoption of gamified marketing activities.

H9a: Perceived ease of use positively affects the intention of adopting gamified tourism activities.

H9b: Perceived ease of use positively affects the perceived usefulness of gamified tourism activities.

Perceived Usefulness (PU) is a crucial driver of usage behavior and intention. PU is "the degree to which a person believes that using a particular system would enhance his or her performance" (Davis, 1989, p. 114). Users who perceive their activities as applicable are likelier to adopt gamified marketing activities (Yang et al., 2017; Dhahak & Huseynov, 2020; Raman, 2021). Incorporating game design elements into tourism marketing has been shown to influence people's decisions when considering the adoption of gamified activities. PU is crucial in determining whether one is likely to engage with such offerings. Companies offering gamified services on their platforms or sites should remember that simply having these features does not make the site or platform a gamified website. Hence, it is hypothesized:

H₁₀: Perceived usefulness will positively affect the intention to adopt gamified tourism activities.

4. Research Methodology

4.1 Research Measures

All the exogenous and endogenous constructs were adapted from prior literature on gamification and information technology and modified to fit the research context of gamified tourism activities. The items of entertainment and exposure were adapted from (Dhir et al. (2017). Two item scales for measuring social interaction and social presence were adapted from Zhou et al. (2014). Dhir et al. (2017) adopted the information-sharing and escape items. The items of intelligence and convenience were taken from Bartneck et al. (2009) and Ko et al. (2005). Three items were adapted from Wu & Wang (2005) to measure the perceived ease of use, while the three-item scale for perceived usefulness was adapted from Bhattacherjee (2001). The behavioral intention items were taken from Abou-Shouk et al. (2019). Each construct is assessed using multiple items and seven-point Likert scales that are thoroughly anchored. The scales range from "strongly agree" to "strongly disagree."

4.2 Sampling Design and Data Collection

The study employed the quantitative method of online (through mail) and physical distribution of questionnaires to gather primary data from the respondents. The data was collected from India's emerging economy, a strategic choice given the anticipated growth of the Indian internet travel industry. It is forecasted to surge from 1,519 billion rupees in the fiscal year 2023 to a projected 2,491 billion rupees by the fiscal year 2026. This research used two different sample methods: judgment and snowball sampling. Using a judgment sampling method, a group of respondents was chosen at the first stage of the process. Based on the following criteria, a list of respondents (from the participants who had been identified) was

chosen for the following phase.

Awareness of the game design elements used by online tourism companies.

- Prior online tourism service experience.

- The respondent must have used gamified tourism activities at least once in the last three months.

Respondents who have availed of the tourism services but have yet to use any gamification features of the OTA website, like points/storytelling, blog writing/badges/experience sharing/ranking /leaderboard, were not included in the dataset. The survey was conducted from October to mid-November 2023. The online survey was done by creating a Google link to the questionnaire through Google Forms, which the respondents may use anytime to access the online survey questionnaire from customers across India. Firstly, the survey's cover page briefly explains the importance of gamified tourism activities in the OTA platform for marketing purposes. The confidentiality of the collected data is assured. The questionnaire consists of two parts. The first part includes a filter question about the responder's familiarity with gamification, followed by demographic questions covering the gender, age, experience, and qualifications of the participants. It also has questions about the ways that tourism websites use game-like features. The second part of the questionnaire is all the questions about the study constructs used in the conceptual framework.

The pilot study was carried out with 32 people who had a fair idea about gamified tourism activities of tourism companies. All 32 respondents were requested to express their valuable comments on the instrument scales' length, statements, and format. The pilot study led to minor yet necessary changes in the wording of some statements. After receiving constructive feedback, the final research questionnaire was distributed to 760 respondents. This distribution resulted in 680 completed questionnaires, representing an 89.47% response rate. The

completed questionnaires included all the responses to the research questions with details of demographic information from the respondents. The sample included respondents of various ages, education, income, gender, and socio-demographic features (Table 2).

<Insert Table 2 about to here>

4.3 Analysis

We employed PLS-SEM and fsQCA methodologies in data analysis to assess our research model. PLS-SEM was used to test the hypothesized relationships. At the same time, fsQCA was utilized as a complementary approach to identify the combination of antecedent variables that significantly influence the intention of online tourism service providers to adopt gamified tourism activities. For PLS-SEM, we used a two-step process. First, we looked at the measurement model's psychometric traits, such as its validity and reliability (Hair et al., 2010). After that, we used the structure model to test the proposed relationship.

Furthermore, fsQCA is utilized to extend the findings of PLS-SEM from an alternative perspective. PLS-SEM is a method predominantly grounded in linear algebra; similar to traditional approaches such as linear regression, it encounters challenges in addressing issues like cause symmetry and net effect (Pappas & Woodside, 2021). Since fsQCA is based on Boolean Algebra instead of linear algebra, it can measure causal asymmetry and complex effects (Russo & Rihoux, 2023). Before conducting the data analysis, a preliminary examination was undertaken to assess the presence of missing values, outliers, measures of central tendency (mean and median), standard deviation, and the normality of the data. The analysis above is presented in Table 3.

<Insert Table 3 about here>

4.3.1 Common Method Bias (CMB)

Harman's single-factor test was carried out in this study to analyze common method bias. An

unrotated factor solution was used to establish the number of factors needed to explain variance for all eight latent variables. According to the test results, a single-factor solution only explained 22.61 percent of the total variance, significantly lower than the cutoff value of 50 percent (Podsakoff et al., 2003). We used a random dependent variable and the collinearity test for cross-validation. The variance inflation factor (VIF) values ranged from 1.432 to 2.314, below the cutoff 3 (Koch & Lynn, 2012). The fact that these outcomes were attained shows that information from CMB issues is available.

.4.3.2 Measurement Model

Construct reliability and validity are initially evaluated in PLS-SEM by assessing the measurement model. All the constructs' discriminant and convergent validity were evaluated, and their reliabilities were measured by Cronbach's alpha and composite reliabilities (CR). Consequently, we evaluated the factor loadings, composite reliability (CR), and average variance extracted (AVE). Table 3 displays the reliability and validity indicators and the item outer loading values for the constructs. The Cronbach's Alpha, AVE, and CR values in Table 4 are all in the acceptable range according to the threshold values 0.7, 0.5, and 0.7 (Manley et al.,2021; Fornell & Larcker, 1981).

Next, discriminant validity was evaluated using the Fornell-Larcker criterion and HTMT, as Hair et al. (2010) stated. In addition, the HTMT ratio, which is a more conservative approach, revealed values lower than the acceptable threshold of 0.90 (Henseler et al., 2015), indicating the presence of discriminant validity. The findings demonstrate that the constructs have been validated for their ability to differentiate from one another since the square root of the average variance extracted (AVE) for each construct exceeds the correlation with all other constructs. Tables 4 and 5 summarize these results.

<insert Table 4 and 5 here>

4.3.3 Structural Model

The structured model was analyzed after the relevant results were obtained from the measurement model evaluation. The structured model was analyzed to evaluate the hypothesized causal relationships in the research model. The R^2 value for the endogenous construct BI (latent variable) is 0.624, indicating that the model can accurately predict 62% of the strength. The R^2 related to other constructs are PEOU (0.534) and PU (0.512).

Next, the F^2 effect size was estimated for exogenous constructs ranging from small to medium effect. The individual motivational dimensions of U&G have emerged as essential factors that significantly influence PU and PEOU in the context of gamified marketing activities. IS on PU (0.0041) and ES (0.0064), SI on PU (0.2341) and SP (0.2564), EV on PU (0.0934) and EXP (0.0437), Int on PEOU (0.3046) and Con (0.0567). The conceptual relationships were tested based on the 5,000 bootstrapping PLS-SEM algorithm. The results of the hypothesis are presented in Table 6. The result was not found the support of H8, Exp-> PU ($\beta = 0.019$, t = 1.007, p = 0.673) and H4a, ES -> BI ($\beta = 0.161$, t = 1.133, p = 0.784) rest of all the other hypotheses were also positive and significant. Regarding control variables, age and frequency of bookings significantly affect tourism companies' intention to adopt gamified marketing activities. However, the result indicates no confounding effects of gender and education in the intention to adopt gamified marketing activities.

The proposed relationship between individual motives and the adoption of gamified tourism activities offered by OTA is essential to understanding the success of the implementation of gamified marketing in the tourism sector. For instance, individuals with higher levels of motivational strength were more likely to adopt gamified marketing activities. (Hsu & Chen, 2018; Zhang & Anwar, 2023; Moon & An, 2022). Therefore, this evidence supports the proposed relationship in the conceptual framework.

<insert Table 6 about here>

4.4 Fuzzy –Set Qualitative Analysis

This study used fsQCA analysis to better understand the causal complexity of study variables. More specifically, the study sought to find the independent variable combinations needed to modify the dependent variable significantly (Kang & Shao, 2023). The fsQCA analysis includes data calibration, necessity analysis, sufficiency analysis, and solution generation. (Ragin, 2009). Data were translated from a 7-point Likert scale to a three-point scale with maximum values representing full-set membership, minimum values representing non-membership, and mean values representing crossover values, using fsQCA 3.0 software.

4.4.1. Data Calibration

Prior to fsQCA, data calibration is crucial (Ragin, 2008). The calibration method turns raw data into fuzzy sets with membership values between 0.0 and 1.0. A score of 0.0 denotes a whole set of non-memberships, whereas 1.0 implies full membership. At the crossover point, membership ambiguity is highest at 0.5 (Rihoux, 2006). Using the quartile technique, each construct's 75th, mean, and 25th percentiles were set as a full membership, crossover point, and full non-membership (Pappas & Woodside, 2021; Olsen, 2022).

4.4.2. Necessity Analysis

The necessity analysis determined that adopting gamified marketing activities required a specific causative condition (e.g., Int, Con, IS, ES, SI, SP, EV, EXP, PU, and PEOU). Ragin (2009) states that fsQCA literature requires a conditional variable for the result variable if the consistency threshold exceeds 0.9. Further analysis used two cases: the recommended condition's presence and absence. Table 7 indicates that all evaluated situations had consistency below the acceptable criterion (<0.9). This shows that none of the evaluated constructs are necessary for OTA use.

<<Table 7 Insert here>>

4.7.3. Analysis of Sufficient Conditions

The truth table is used to analyze requirements, according to Ragin (2008). To generate a 2k-row truth table (where k is the number of criteria and each row is a possible combination), we used the fuzzy set technique in fsQCA 3.0. Then, we followed Fiss's (2011) lead and culled rows from the truth table that did not have at least three occurrences across more than 150 samples. The consistency threshold was set at 0.75, as Rihoux (2006) proposed, and configurations that still needed to meet it were discarded. Solutions ranging from complex to parsimonious to intermediate were discovered by the fsQCA. Since the intermediate solution is more complete and understandable, it was used for this analysis (Ragin, 2008).

Table 8 displays the particular results. The overall solution coverage is 0.891, and the overall solution consistency is 0.898, indicating that the comprehensive effect of these five configurations has a high capacity for explanation and consistency. The first configuration (S1) exhibits high consistency (0.967) and substantial coverage (0.884), making it the optimal choice for achieving a high rate of adoption of gamified marketing activities in the context of tourism services. The second configuration (S2) also demonstrates strong consistency (0.876) and reasonable coverage (0.534). The third configuration (S3) maintains high consistency (0.86) and offers significant coverage (0.452). The fourth configuration (S4) displays high consistency (0.889) and suitable coverage (0.767). The last configuration also presents an excellent high consistency (0.867) and suitable coverage (0.756) towards reaching a high level of adoption of gamified activities, although slightly lower than S1. Considering the consistency and coverage of all five configurations, S1 emerges as the best choice for maximizing the adoption of gamified marketing activities offered by OTA.

<<Table 8 Insert here>>

5. Discussion and Implications

When using gamified marketing activities to create experiential value for tourists in the tourism sector, companies should take into account several factors, such as individual motives (Jo, 2023; Rather et al., 2023) and the ease of playing games (Ozkul & Kumlu, 2019) on the site/applications. The advent of the internet and its integration with other technologies has uniquely affected tourism. By integrating the U&G into TAM, the primary objective of this study was to develop a robust model to explain the adoption and sustained use of gamified marketing activities.

Our research uncovered a correlation between individual motives and the adoption of gamified marketing activities offered by OTA. Overall, our results support each of our hypotheses, thus confirming the positive effect of technological, hedonic, utilitarian, and social gratification on the intention to adopt gamified marketing activities except H8 and H4a. These findings corroborate earlier research highlighting the impact of personal motives of the adoption of gamification in the context of over platforms (Sadana et al., 2021), online shopping (Wu et al., 2016), and gamified mobile applications (Wut et al., 2021). The findings also revealed a negative association between exposure motives and perceived usefulness, as well as escape motives and behavioral intention to adopt gamified activities of tourism companies. In sum, according to the findings of the fsQCA study, five configurations were discovered that could enhance the adoption of gamified marketing activities, each of which combines a distinct set of parameters. This is because attaining a high adoption rate needs the interaction of several factors. According to the information presented in Table 8, configurations S1 and S5 emphasize the critical roles that PU, PEOU, Ent, IS, SP, Con, and IS play in significantly boosting the adoption of OTA's gamified tourism activities to satisfy travelers' requirements.

5.1. Theoretical Contributions

The present study makes some significant theoretical contributions to tourism literature. First, the main contribution of this paper is the theoretical framework, which integrates U&G theory and literature related to TAM for OTA users to adopt gamified tourism activities. The integrated framework indeed remedies some of TAM's limitations. Previous research using the U&G theory has primarily concentrated on social, utilitarian, and hedonic gratifications and their impact on the adoption and diffusion of IT-enabled services. There has been limited emphasis on the influence of technical gratification. This study expands the application of U&G theory in tourism by examining the impact of a new form of gratification (i.e., technology gratification), and it also deepens our understanding of the factors influencing user adoption behavior in the context of gamified tourism activities. This study revealed that technology gratification has the most significant influence on the acceptance of gamified tourism activities.

Third, this study provides new insight into the adoption of gamified tourism activities from the configuration perspective; it shows explicitly how different configurations of antecedents can stimulate the adoption of gamified tourism activities. Combining PLS-SEM and fsQCA, two complementing approaches, this study adds to existing knowledge on the impacts of technological, hedonic, utilitarian, and social gratification on behavioral intention. Specifically, we contribute to travel research by identifying five configurations leading to the high adoption of gamified tourism activities. The complex interactions of these antecedents and how they interact to improve the adoption of gamified activities have never been studied academically. Our research demonstrates that no single factor can achieve a high level of adoption, nor is there only one causal configuration that can lead to outcomes. This study instead shows that U&G motives and TAM factors interact in novel ways, offering unique solutions for the adoption of gamification.

5.2 Practical Implications

The findings of this study offer valuable insights for OTA platform designers and managers responsible for the implementation of gamification on OTA sites. This research validates a theoretical framework that integrates TAM and U&G theory to understand the users' motivations for adopting gamification. From a practical perspective, this study suggests that intrinsic motivations and extrinsic perceptions are essential considerations for designing gamified tourism activities for OTA websites and apps. Therefore, decision-makers who emphasize using gamified marketing activities must provide demonstration videos to aid implementation (Dubois & Gibbs, 2019), drawing on the implementation intention research stream (Upadhye, 2021). Concurrently, designers and developers must enhance the user-friendliness of the gamified marketing environment as part of experiential services, particularly the resolution of issues, to promote its long-term use (Simoes et al., 2015; Xu et al., 2021). Our findings can assist tourism service providers and game designers in redesigning their programs and introducing new game elements that can capture the attention of individuals and align with their motives for adopting and using the game design elements. Tourists must also be provided with specific VR and AR knowledge and expertise to use these new virtual environments (Tsang & Au, 2023; Yung & Khoo, 2019). OTA managers should leverage social, technical, hedonic, and utilitarian techniques to discern trending topics in the context of gamified tourism activities that support individual motives for adoption. By integrating compelling functions and features into their services, managers can tailor offerings to specific traveler segments such as families, solo travelers, business travelers, and adventure seekers. To optimize targeting, OTA brands may to select the appropriate social media platform for implementing gamified marketing activities for each segment. For instance, platforms like Instagram and Pinterest may excel in showcasing visually appealing travel content and eye-catching infographics. At the same time, LinkedIn might be more effective for reaching business travelers.

6. Limitations and Opportunities for Future Research

Despite its contribution to the existing literature, this study is not free of limitations. The respondents of this study resided in Indian cities. Consequently, the findings can be applied to urban-dwelling visitors in emerging markets. This research explores the motives behind the intent to adopt gamified tourism activities on OTA platforms. However, it does not consider personality descriptors and player types. Therefore, future research should include respondents from semi-urban markets (tier 2 and tier 3 cities) to compare the differences in their personality descriptors and player categories concerning the adoption of gamified marketing activities. This study used a cross-sectional survey and did not involve field studies. Thus, our findings refer to tourists' behavioral intention toward gamified marketing activities, not actual behavior. Thus, future researchers should perform field studies with tourists to examine their behavior and test whether our findings are generalizable.

In addition, this study shows that travelers express a desire to use gamified marketing activities with specific game design elements. However, each game design element has a unique implementation and design. For example, the design of the insignia may vary between service providers. Therefore, additional research is needed to generalize our results. Another study limitation is related to additional constructs as we did not consider any moderators in the proposed framework to understand OTA customers' behavior toward gamification. Future research could explore and verify whether other variables, such as self-efficacy and internet literacy, impact the adoption of gamified tourism activities offered by OTA.

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Table 1: Elements of gaming design

Mechanics	Dynamics
"Points – They are the heart of each game, and it is a reward for the players to accomplish some action."	"Status - Most people need to have status, fame, distinctive element, prestige ... to the respect of others. Status can be acquired by a player when performing certain activities"
"Levels – They indicate the player's professionalism for a certain time in his game experience."	"Cooperation – It also gives the entire gaming community to work together to solve a mystery, problem, or challenge."
"Bonus – Bonuses are rewards for completing a series of tasks or basic features."	"Success – Reward for completing the desired goal completely"
"Badges - There is another option for rewards for goals that go beyond the main activities of the service."	"Challenges - The ability to challenge another player"
"Leader table – Recording and viewing required activities used to stimulate the challenges and desires of players."	"Altourism – This is a virtual endowment to strengthen relationships between users (players)."
"Virtual goods – Non-physical and therefore intangible objects that can be traded"	"Self-expression – It results from the desire to express their autonomy, identity, originality, or to mark their person as unique."

Source: Thiebes, Lins Basten, 2014

Table 2: Preliminary Analysis.

Items	Mean	Median	Scale min	Scale max	Observed min	Observed max	Standard deviation	Excess kurtosis	Skewness
Int1	3.526	3	1	5	1	5	1.028	-0.926	0.005
Int2	3.531	3	1	5	1	5	1.035	-0.834	-0.109
Int3	3.457	3	1	5	1	5	1.008	-0.745	-0.005
Con1	3.489	3	1	5	1	5	1.068	-0.969	-0.056
Con2	3.548	4	1	5	1	5	1.008	-0.718	-0.138
Con3	3.56	3	1	5	1		1.045	-1.111	0.066
IS1	3.34	3	1	5	1	5	0.842	0.365	0.278
IS2	3.271	3	1	5	1	5	0.767	-0.015	0.145
IS3	3.374	3	1	5	1	5	0.979	-0.801	0.121
EXP1	3.215	3	1	5	1	5	1.106	-0.875	-0.125
EXP2	3.209	3	1	5	1	5	1.256	-0.768	0.078
EXP3	3.217	3	1	5	1	5	0.678	-0.256	0.678
SI1	3.303	3	1	5	1	5	1.115	-0.861	0.007
SI2	3.203	3	1	5	1	5	1.028	-0.599	0.046
SP1	3.447	3	1	5	1	5	1.012	-0.516	-0.161
SP2	3.707	3	1	5	1	5	1.009	-1.037	-0.245
EV1	3.46	3	1	5	1	5	1.195	-0.661	-0.453
EV2	3.406	3	1	5	1	5	1.066	-0.098	-0.598
EV3	3.542	3	1	5	1	5	0.874	-0.017	-0.067
ES1	3.311	3	1	5	1	5	0.878	-0.331	0.459
ES2	3.396	3	1	5	1	5	0.966	-0.509	0.198
ES3	3.357	3	1	5	1	5	0.879	-0.051	0.496
PU1	3.291	3	1	5	1	5	1.106	-0.863	0.026
PU2	3.2	3	1	5	1	5	1.094	-0.654	0.056
PU3	3.222	3	1	5	1	5	1.145	-0.65	-0.007
PEOU1	3.325	3	1	5	1	5	1.119	-0.704	-0.12
PEOU2	3.425	3	1	5	1	5	1.049	-0.595	-0.076
PEOU3	3.394	3	1	5	1	5	1.025	-0.845	0.002
BI1	3.474	2	1	5	1	5	1.008	-1.015	0.135
BI2	3.443	2	1	5	1	5	1.014	-1.08	0.143

Note: Int: Intelligence; Con: Convenience; IS: Information Sharing; EXP: Exposure; SI: Social Interaction; SP: Social Presence; EV: Entertainment Value, ES: Escape; PU: Perceived Usefulness; PEOU: Perceived Ease of Use; BI: Behavioural intention

Table 3: Measurement Model

Construct and measures	Standardized loading	References
Intelligence (AVE=0.63, CR=0.91, α=0.91)		
My interaction with GMA for OTA brand is competent.	.81	Bartneck et al. (2009)
My interaction with GMA for OTA brand is competent is sensible.	.85	
My interaction with GMA for OTA brand is competent is smart.	.89	
Convenience (AVE=0.78, CR=0.94, α=0.88)		Ko et al. (2005)
I can interact with OTA brands anywhere using gamified activities.	.89	
I have found GMA convenient for my interaction with OTA brand.	.87	
GMA is convenient to use for OTA.	.83	
Information Sharing (AVE=0.74, CR=0.92, α=0.91)		
Through gamification, I can get the required information.	.84	(Dhir et al., 2017)
Through gamification, I can learn how to do certain things.	.89	
Through gamification, I learn about the latest happening of OTA brand.	.87	
Exposure (AVE=0.77, CR=0.93, α=0.92)		
Gamification has broadened my thinking and lifestyle.	.88	(Dhir et al., 2017)
One can learn about learning opportunities towards new destinations using gamification.	.85	
Gamification provides a wider range of exposure (lots of information).	.84	
Social Interaction (AVE=0.76, CR=0.86, α=0.88)		
I want to give my friends positive support for interaction with GMA for OTA	.85	Zhou et al.,(2014)
I want to give my friends positive replies in the context of GMA for OTA.	.87	
Social Presence (AVE=0.73, CR=0.85, α=0.84)		
There is a sense of human contact on OTA platform.	.84	
There is a sense of human sensibility on OTA platform.	.83	
Entertainment Value (AVE=0.77, CR=0.93, α=0.92)		
I use gamified elements on OTA because it is entertaining.	.85	(Dhir et al., 2017)
I use gamified elements on OTA because it is fun.	.90	
I use gamified elements on OTA because I enjoy it.	.86	
Escape (AVE=0.77, CR=0.84, α=0.93)		
I use gamified OTA to play roles different from those played in real life.	.89	(Dhir et al., 2017)
I use gamified OTA to put off something I should be doing.	.80	
I use gamified OTA to get away/escape from what I am doing.	.88	
Perceived Usefulness (AVE=0.73, CR=0.95, α=0.88)		

The gamified activities effectively made me think about the OTA brand.	.87	Bhattacherjee (2001 b)
The gamified activities increased my familiarity with the OTA brand.	.86	
I found the game useful in the branding of OTA.	.85	
Perceived Ease of Use (AVE=0.75, CR=0.91, α=0.92)		
It is easy to learn the use of gamified marketing activities.	.89	Wu & Wang (2005)
It is easy to use gamified marketing activities efficiently.	.89	
Overall using games and gamified activities is not difficult for OTA.	.82	
Behavioural intention (AVE=0.78, CR=0.91, α=0.88)		
Assuming that I have access to gamified marketing activities offered by OTA, I intend to use them	.84	Abou-Shouk et al.,2019
I intend to increase my use of gamified marketing activities on OTA in the future.	.89	

Note: α: Cronbach's alpha; CR: Composite reliability; AVE: Average variance extracted. GMA: gamified marketing activities

Table 4: Discriminant Validity -Fornell Lacker Criteria

Constructs	Int	Con	IS	EXP	SI	SP	EV	ES	PEOU	PU	BI
Int	0793										
Con	0.444	0.883									
IS	0.458	0.248	0.860								
EXP	0.159	0.097	0.142	0.877							
SI	0.513	0.215	0.145	0.112	0.871						
SP	0.189	0.121	0.218	0.743	0.128	0.854					
EV	0.225	0.103	0.106	0.191	0.171	0.169	0.877				
ES	0.378	0.316	0.191	0.215	0.253	0.196	0.258	0.866			
PU	0.488	0.728	0.185	0.131	0.261	0.168	0.163	0.197	0.854		
PEOU	0.488	0.154	0.362	0.172	0.177	0.226	0.521	0.365	0.213	0.866	
BI	0.786	0.145	0.267	0.178	0.534	0.238	0.432	0.534	0.432	0.532	0.883

Table 5: Discriminant Validity: HTMT

Constructs	Int	Con	IS	EXP	SI	SP	EV	ES	PEOU	PU	BI
Int											
Con	0.509										
IS	0.444	0.559									
EXP	0.215	0.181	0.182								
SI	0.411	0.371	0.187	0.236							
SP	0.256	0.223	0.281	0.032	0.178						
EV	0.276	0.265	0.222	0.296	0.561	0.294					
ES	0.647	0.585	0.282	0.315	0.434	0.293	0.596				
PU	0.588	0.064	0.315	0.232	0.431	0.183	0.463	0.649			
PEOU	0.365	0.328	0.085	0.131	0.061	0.127	0.163	0.197	0.441		
BI	0.488	0.154	0.362	0.172	0.177	0.226	0.521	0.365	0.213	0326	

Note: Int: Intelligence; Con: Convenience; IS: Information Sharing; EXP: Exposure; SI: Social Interaction; SP: Social Presence; EV: Entertainment Value, ES: Escape; PU: Perceived Usefulness; PEOU: Perceived Ease of Use; BI: Behavioural intention

Table 6: Hypothesis Testing Results

Hypothesis	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Results
Int -> PEOU	0.419	0.131	0.116	3.612	0.005	S
Con -> PU	0.389	-0.078	0.051	7.627	0.057	S
IS -> PU	0.488	-0.078	0.075	6.506	0.036	S
ES-> PU	0.388	-0.078	0.085	4.564	0.036	S
SI -> PU	0.797	0.499	0.165	4.830	0.000	S
SP -> PU	0.116	0.021	0.062	1.870	0.058	S
EV -> PU	0.234	-0.033	0.043	5.441	0.005	S
EXP -> PU	0.129	0.002	0.128	1.007	0.673	NS
PEOU -> PU	0.255	0.05	0.046	5.543	0.054	S
Int -> BI	0.476	0.468	0.058	8.206	0.000	S
Con -> BI	0.577	0.581	0.036	16.027	0.000	S
IS -> BI	0.414	-0.133	0.087	4.758	0.009	S
ES-> BI	0.161	0.027	0.142	1.133	0.784	NS
SI-> BI	0.299	0.099	0.067	4.462	0.036	S
SP->BI	0.123	0.194	0.055	2.236	0.000	S
EV->BI	0.309	0.311	0.053	5.830	0.021	S
EXP->BI	0.378	0.379	0.157	2.407	0.001	S
PEOU -> PU	0.326	0.321	0.041	7.951	0.000	S
PEOU->BI	0.373	0.384	0.090	4.144	0.000	S
PU->BI	0.821	0.119	0.129	6.364	0.000	S
Age->BI	0.298	0.043	0.032	9.312	0.005	S
Gender->BI	0.101	0.451	0.056	1.803	0.085	NS
Education->BI	0.078	0.342	0.041	1.902	0.002	NS
Booking Frequency->BI	0.578	0.369	0.105	5.504	0.001	S

Note: S: Supported, NS: Not Supported

- Int: Intelligence; Con: Convenience; IS: Information Sharing; ES: Escape; SI: Social Interaction; SP: Social Presence; EV: Entertainment Value: EXP: Exposure; PU: Perceived Usefulness; PEOU: Perceived Ease of Use; BI: Behavioural intention

Table 7: Analysis of Necessary Conditions for Predicting the Gamified Marketing Activities

Antecedents Conditions	Consistency	Coverage
Int	0.76	0.80
~Int	0.56	0.62
Con	0.77	0.82
~Con	0.54	0.77
IS	0.58	0.65
~IS	0.53	0.67
EXP	0.63	0.46
~EXP	0.67	0.56
SI	0.66	0.77
~SI	0.57	0.78
SP	0.67	0.86
~SP	0.78	0.87
EV	0.57	0.65
~EV	0.59	0.70
ES	0.80	0.87
~ES	0.54	0.65
PU	0.57	0.83
~PU	0.44	0.64
PEOU	0.76	0.63
~PEOU	0.81	0.65
BI	0.67	0.83
~SBP	0.54	0.64

Note: Int: Intelligence; Con: Convenience; IS: Information Sharing; EXP: Exposure; SI: Social Interaction; SP: Social Presence; EV: Entertainment Value, ES: Escape; PU: Perceived Usefulness; PEOU: Perceived Ease of Use; BI: Behavioural intention

Table 8: Main Configurations for High level of adoption of Gamified Marketing Activities

Configurations	Solutions				
	S1	S2	S3	S4	S5
Int	●	●	●	●	●
Con	●	⊗	●	●	●
IS	●		●	●	⊗
EXP	●	⊗	●	⊗	⊗
SI	●	●	⊗	●	
SP	●	●	⊗	●	●
EV	●	●	●	●	●
ES	●	●	⊗	●	●
PU	●	●	⊗	⊗	●
PEOU	●	●	●	●	●
Unique coverage	0.884	0.534	0.452	0.767	0.756
Coverage consistency	0.967	0.814	0.776	0.889	0.667
Solution Coverage	0.891				
Solution consistency	0.898				

Note: ●indicate the presence of a condition, and ⊗ indicate its absence.

Int: Intelligence; Con: Convenience; IS: Information Sharing; EXP: Exposure; SI: Social Interaction; SP: Social Presence; EV: Entertainment Value, ES: Escape; PU: Perceived Usefulness; PEOU: Perceived Ease of Use; BI: Behavioural intention