

Gamification in the Tourism and Hospitality Sector: A Narrative Literature Review and Research Directions

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This paper represents a narrative literature review on gamification within tourism and hospitality sector (T&H). Out of 61 studies, 55 papers examined the importance of adopting gamification in this industry but failed to acknowledge the role of motivational affordances that are responsible for invoking gameful experiences in tourism apps and promoting sustainable travel practices which benefits all gamification parties specifically app designers, core service providers, third party service providers, and tourists or players. Motivational affordances are crucial for the fulfilment of basic psychological needs for relatedness, autonomy, mastery, and purpose, that in turn induces further behavioural outcomes reflected in achieving meaningful users' interaction, engagement, and loyalty in addition to potentially achieving rewards. Hence, the researchers have searched in a number of databases including Elsevier, ResearchGate, Routledge, Springer, and Scopus to reveal whether gamification literature within T&H sector provided enough examinations for motivational affordances and their ultimate effects on psychological and behavioural outcomes. Finally, the researchers elaborated on specific future research directions.

Keywords: gamification, tourism and hospitality sector, hospitality and tourism review platforms, motivational affordances.



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Introduction

Gamification has been considered as a powerful tool to provide an appealing environment through game elements (Bravo et al., 2021) and the gamification market is estimated to grow to USD 30.7 billion by 2025 (Markets and Markets, 2020). It has been applied in various game contexts (Bravo et al., 2021; Bitrian et al., 2021; Moro et al., 2019; Sigala et al., 2015); Xu et al., 2017; Yoo et al., 2017), and non-gaming contexts (De-terding et al., 2011; Robson et al., 2015). Particularly,

the existing gamification literature has focused on various domains such as education and learning (Bonde et al., 2014; De-Marcos et al., 2014; Denny, 2013), crowdsourcing and health (Eickhoff et al., 2012; Jones et al., 2014; Lee et al., 2013), commerce (Hamari, 2013; 2015), fitness and exercise (Bitrian et al., 2020; 2021); environmental behaviour (Lee et al., 2013; Miao et al., 2022; Shahzad et al. 2023); and government services and public engagement (Bista et al., 2014; Tolmie et al., 2014).

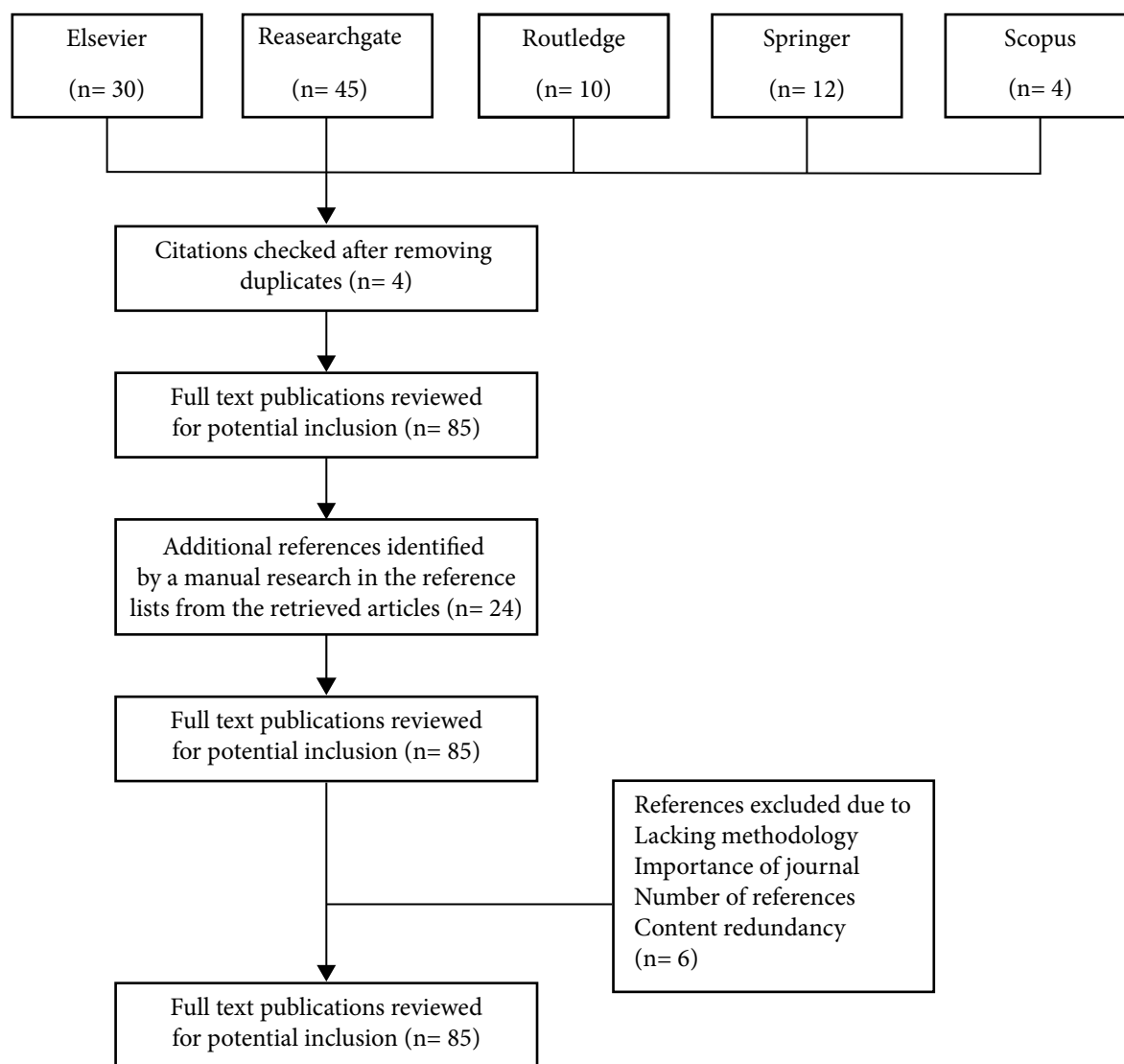


Figure 1 Flow Chart of the Literature Selection Process for the Present Article.

Gamification in tourism and hospitality sector refers to “a process that uses motivational affordances to enhance services by creating experiences similar to those created by games” (Bravo et al., 2021, p. 1). Due to technological developments, this industry has rapidly evolved in recent years and many firms have started to incorporate gamification to future-proof their businesses (Sharma et al., 2024), whether offline through business training, productivity in the workplace, collaboration and healthy competition, etc., or online through the creation of a digital app.

As today’s digital landscape is constantly evolving, gamification is heavily applied to tourism mobile apps; and users are becoming co-creators of value by sharing information and creating content (Bitrian et al., 2021; Sigala, 2007). The most widely used tourism and hospitality review platforms are as follows: (1) TripAdvisor.com, recognized as an American company that deals with online travel agencies, shopping websites, and mobile apps in order to increase content generation of users; (2) TripIt, being an American award-winning travel organizing app that provides

features for customers with supportive notifications and warnings during their trip; (3) Yelp, serving as an American one-stop travel, local, and delivery of food app that allows tourists to explore find places and businesses; (4) Airbnb, operating as an online marketplace that connects people who are looking for accommodations and short stays; and (5) Qunar travel, a company that allows travellers to book and purchase various travel products including flights, hotels, train and bus tickets, travel routes, and car rentals. These gamified apps create opportunities to interact with the tourist destination (Aebli, 2019) and to transmit knowledge (Lee, 2019). For example, the 'PBL triad' (points, badges, leaderboards) is widely adopted in most gamified platforms (Bitrian et al., 2021), and is exchanged for bonuses or rewards (Zhou et al., 2023).

Numerous studies have noted that gamification is a tool used to enhance a service that includes affordances within gameful experiences for the purpose of supporting users' overall value creation (Anagnostopoulou et al., 2018; Deterding et al., 2011; Hamari et al., 2014; Huotari & Hamari, 2017; Shneiderman, 2004). Affordances are defined as "various elements and mechanics that structure games and aid in inducing gameful experiences within the systems" (Koivisto & Hamari, 2019, p. 193). Based on the conceptualization of gamification by Koivisto and Hamari (2019), motivational affordances consist of achievement/progression elements (badges, medals, points, leaderboards, rankings, progress bars), social elements (competition, cooperation, social networking, teammates), and immersion elements (avatars, storylines, narratives).

Subsequently, the affordances included in a service result in psychological outcomes (engagement, loyalty), and drive intrinsic motivation as well as psychological needs of users, namely, competence, autonomy, relatedness (Bitrian et al., 2020; 2021; Rigby & Ryan, 2011; Ryan & Deci, 2000; Xi & Hamari, 2019), and purpose (Bravo et al., 2021; Pink, 2009), which in turn lead to behavioural outcomes such as continued use intention, word of mouth (WOM) intention, and user-generated content (Bitrian et al., 2021; Deterding, 2015; Hamari et al., 2014; Huotari & Hamari, 2017).

However, it has been declared that 'motivational effects have yet to be fully explored in a psychologi-

cal perspective, while some features (e.g. technology, apps) continue to evolve' (Ratinho & Martins, 2023, p. 3). In addition, tourism and hospitality are considered a frontline service industry which include technological advancements in strategic processes (Pasca et al., 2021). Therefore, scholars should examine the way gamification motivates a new generation, contributes to innovative tourism and hospitality platforms, and affects the way reviewers, users, service providers, game designers, and communities think and act.

In light of this, the study's objective is to review the current state of gamification within the hospitality and tourism sector and identify a direction for gamified tourism platforms moving forward because as far as the researchers know, no narrative literature review has been developed before on gamification within this sector.

Methods

An analysis of peer-reviewed scientific literature was performed throughout June and July 2024 with the purpose of identifying studies for a narrative review of gamification in the tourism and hospitality sector. This paper consists of a narrative review inspired by the authors' collective interest in incorporating gamification into the tourism and hospitality fields from 2010 to 2024. As shown in figure 1, the literature review included five databases: Elsevier, ResearchGate, Routledge, Springer, and Scopus with the following gamification terms: achievement/progression elements, social elements, immersion elements, self-expression affordances, identity affordances, motivational affordances, game design elements, gameful experience, video games, serious games, gamified service, gamified mobile experience, applications, and players. These search keywords were also supported by other keywords: intrinsic motivation, extrinsic motivation, relatedness, autonomy, mastery, purpose, competence, awareness, visitors' loyalty, TripAdvisor, Airbnb, online travel agencies (OTA), tourists, customer engagement, app rating, continued use intention, WOM intention, tourists' destinations, autonomous motivation, controlled motivation, augmented reality, narratives, fun, reviewer trustworthiness, review use-

fulness, enjoyment, tourism destination reputation, and the degree of tourists' attractiveness.

Based on the literature, the most commonly used database in this paper is ResearchGate ($n=45$), which appeared as a widely accepted professional network for scientists and researchers in 2008; it provides various features related to social networks and bibliographic databases that permits its subscribers to share and discover research (Singh et al., 2022). In addition, it has a very wide scope, including most of the peer-reviewed online academic journals, books, conference papers, dissertations, theses, technical reports, preprints and many other types of scholarly literature.

The full-text publications reviewed for potential inclusion criteria were many types of articles related to gamified tourism; and the exclusion criteria for the disqualified studies were all types of articles with missing texts or grey literature, published in a language other than English, and published before 2010. In addition, additional references were recognized by traditional research in the reference lists from the collected articles.

Results

Gamification in the Hospitality and Tourism Sector

Gamification has been employed in the hospitality and tourism sector because this process enriches the level of tourists' education, awareness, and satisfaction (Negrusa et al., 2015). Its effectiveness has been the subject of many studies which have examined the effect of gamification on psychological and behavioural outcomes. The majority of articles are associated with gamification in the hospitality and tourism sector, but are not specific to affordances. The following discusses a selection of previous studies related to gamification in general, as well as its application within the hospitality and tourism sector.

The most studied platforms in the T&H sector are: (1) TripAdvisor's funware, which was founded in 2000 in the U.S. and has been gamified by converting the website's functions into play tasks in order to attract audiences and motivate users to remain engaged with these platforms (Sigala, 2015); (2) Airbnb, which started in 2007 in the U.S. and has been applying game mechanics such as badges, travel coupons, discounts

on household effects, invitations to exclusive events, webinars from market experts, and tax services, offering a mixture of social, utilitarian, and hedonic benefits for both hosts and guests or users (Sigala et al., 2019); (3) Geocaching, a notable gamified travel app that started in 2000 in the U.S. It is grouped under three concepts: the treasure hunt, the itinerancy, and the game. It consists of the practice of hiding a container in a specific location, then publishing the latitude and longitude coordinates of the location on a geocaching web in order for 'geocachers' to find it using a GPS device (Machado, 2021). This GPS-enabled treasure hunt boosts the tourists' visit to a destination, which in turn increases their satisfaction and the destination's image.

Users on tourism and hospitality platforms might reveal positive or negative outcomes which have both theoretical and practical significance because they provide a formal knowledge related to the causes of human behaviour and to the design of social environments that increase users' wellbeing. Therefore, research and studies, guided by many theories, have confronted a huge challenge with these issues specifically (Deci & Ryan, 1985).

Accordingly, most of the studies mentioned in the Appendix were rooted in theory. These studies were characterized by theoretical diversity, as shown in Table 2. Literature revealed that certain theories are analysed more heavily than average, namely, Self-determination theory (SDT), the Unified theory of acceptance and use of technology (UTAUT), and the flow theory, while other papers related to gamification were guided by theories whose usage does not exceed the average (see Table 2). In addition, different variables and relationships were examined in the T&H sector such as brand awareness, brand loyalty, users' engagement, intrinsic motivation, extrinsic motivation, satisfaction, fun, flow, enjoyment, co-creation of personal value, customer experience, tourists' interest in the destination, users' green behaviour in tourism, app rating, WOM intention, continued use intention, users' generated content, users' psychological needs for autonomy, competence, relatedness, purpose, mastery, controlled motivation, autonomous motivation, the degree of attractiveness

Table 2 List of Theories Employed in the Literature

Theories	Frequency
Self-determination theory	38
Unified theory of acceptance and use of technology	8
The flow theory	5
Altruism theory	2
Motivation theory	4
Cognitive evaluation theory	3
Source credibility theory	1
Social identity theory	2
Prospect theory	1
Rational action theory	1
Theory of social influence	3
Affordance theory	1

of the tourist destination, and tourism destination reputation.

The findings of all studies highlighted the fact that including gamification in the T&H sector results in favourable outcomes: (1) motivating travellers or tourists to engage with their websites and write reviews; (2) boosting tourists' online experiential values and trip planning processes; and (3) increasing the degree of attractiveness of the tourist destination. The interesting findings were related to the categorization of gamified trip players, which highlighted the importance of designing appealing gamified trips based on various market segments, taking into consideration that it is a costly and difficult process (Coghlan & Carter, 2020; Shen et al., 2020). Other interesting results found that eco-gamification promotes green behaviour, which makes a positive impact on tourism (Souza et al., 2020). Notably, most studies analysed gamification in TripAdvisor; and only a few analysed the gamification tool in the Yelp and Airbnb tourism and hospitality platforms. Results found that travellers perceive the role of reviews of 'Elite' reviewers with the 'Elite' badge on TripAdvisor as valuable, useful, and entertaining. In addition, some studies focused on the positive impact of including rewards in gamified tourism apps on users' participation in that app. Contrary to these results, Zhou et al. (2020) found that users who

are rewarded in an online travel community are not more committed.

Gamification in Tourism and Hospitality Review Platforms

Since gamification has revealed a positive effect on both psychological and behavioural outcomes in the T&H sector, we have sought to evaluate the extent to which gamification affordances within tourism and hospitality review platforms might affect different psychological and behavioural outcomes. Based on the overall literature, it appears that only 6 studies are related to gamification affordances in the realms of tourism and hospitality. Therefore, further research is needed in this area to clarify the crucial role of each game affordance and its impact on psychological and behavioural outcomes.

Many authors suggested compilations of recurring game design elements, which are considered as the basic building blocks in the development of gamification apps (Deterding et al., 2011; Hamari et al., 2014; Koivisto & Hamari, 2019; McGonigal, 2011; Werbach & Hunter, 2012; Zichermann & Cunningham, 2011; Zichermann & Linder, 2010). Game design elements such as points, scores, xp, challenges, quests, missions, tasks, clear goals, badges, achievements, medals, trophies, leaderboards, rankings, levels, performance feedback and stats, progress, status bars, skill trees, quizzes, questions, timers, increasing difficulty, social networking features, cooperation, teams, competition, peer-rating, customization, personalization, multiplayer, collective voting, avatars, character, virtual identity, narratives, storytelling, dialogues, 3D world, in-game rewards, and role play were classified into different categories of motivational affordances such as achievement/progression elements, social elements, and immersion elements.

Based on a sample of 312 U.S. TripAdvisor platform users, Abou-Shouk and Soliman (2021) showed that the intention to adopt gamification by online travel agencies (OTA) increased the engagement of users in gamified apps, which subsequently increased users' awareness and loyalty. This article examined the mediation impact of user engagement, but scholars are advised to analyse the moderation impact of corpo-

rate image and/or corporate reputation on the relationship between gamification adoption intention and brand awareness and brand loyalty.

In addition, inspired by user generated content in tourism and hospitality review platforms, and based on a sample of 266 American reviewers using TripAdvisor platform, Bravo et al. (2021) found that different motivational affordances had a positive impact on users' psychological needs for relatedness, autonomy, mastery, purpose which in turn boosts autonomous motivation and user-generated content. Therefore, it would be interesting if future studies investigate the role of the Octalysis framework (Chou, 2019) to strengthen the understanding of motivational effects of gamification and their impact on user-generated content.

Moreover, the implementation of game mechanics within digital platforms results in more satisfied users according to Kim et al.'s (2021) study. They examined the impact of motivational affordances (letterboxing and rewards) on psychological outcomes of 1,203 users (fun, flow, satisfaction, and enjoyment) and revealed that users' flow, level of fun, satisfaction, and enjoyment increased due to the use of gamified apps. The study focused on two gamified elements specifically, letterboxing and rewards; therefore, future studies can further explore other gamified elements such as time and personalization customized to the gamification design processes.

Furthermore, research conducted by Lee (2019) employed a gamified app used by 165 college students interested in tourism and cruise destination. The findings indicated that gamification had a significant effect on knowledge gain related to cultural heritage attractions. However, gamification had a negative direct impact on users' enjoyment and flow experience and a negative indirect impact on loyalty toward cultural heritage attractions, which contradicts with previous findings. For future studies, scholars should examine the role of specific game design elements (e.g. rewards and mission) in promoting visitor motivational behaviour and knowledge gain.

In addition, Shi et al. (2022) assessed the impact of gamification affordances on tourists' value co-creation in online travel agencies' platforms. A total of 317

customers on the OTA platform completed the survey. Results showed that gamification affordances (achievement, identity, competition, and self-expression) increase tourists' functional, social, and emotional values, which in turn increases the intention to purchase during online shopping carnivals as they became key strategy for customer engagement and sales boosting for e-commerce platforms such as online travel agencies platform of Alibaba (i.e., Flypig). Future studies are encouraged to study the impact of different gamification designs on users' value and purchase intention based on users' different personality traits (Octalysis Framework).

Furthermore, a qualitative marketing research conducted by Foris et al. (2024) highlighted the fact that gamification affordances applied within an online promotion app (BrasovTourism app) increase the degree of attractiveness of tourists' destinations. It would be valuable for future studies to examine the moderating effect of demographic variables, specifically age and gender, on the association between gamification affordances and the degree of attractiveness of tourists' destinations.

All studies mentioned in this paper examined the important role of adopting online or offline gamification and revealed that interacting with gamification promotes a diversity of outcomes. The understanding of gamification effects on purchase intention, perceived ease of use, perceived usefulness, user-generated content, and user awareness were frequently used in contrast to other less examined outcomes, namely, tourism destination reputation, degree of attractiveness, review usefulness, perceived enjoyment, online review helpfulness, reviewer trustworthiness, intention to recommend, willingness to buy, active engagement, and the degree of attractiveness of the tourist destination (see Table 3).

All results shown above reveal the fact that the whole process of including gamification elements in hospitality and tourism applications serves as stimuli that give rise to a best experience for tourists. This contradicts with the unexpected findings of Lee's (2019) study that investigated the effect of gamification on tourists' psychological outcome and knowledge gain in light of cultural heritage sites named in the

Table 3 List of Outcomes Studied in the Literature

Outcomes	Frequency
Purchase intention	4
Loyalty	3
Perceived ease of use	5
Perceived usefulness	4
User-generated content	3
Tourism destination reputation	2
Users' awareness	4
The degree of attractiveness	2
Review usefulness	2
Perceived enjoyment	3
Online review helpfulness	1
Reviewer trustworthiness	1
Intention to recommend	2
Willingness to buy	1
Active engagement	1
The degree of attractiveness of the tourist destination	2

study as popular cruise tourism destinations and found that the use of a Korean gamified app for cruise tourism destinations called 'Gyeongbok Palace in My Hand' had negatively affected users' flow ($\beta = -0.106$, $p < 0.05$), enjoyment ($\beta = -0.404$, $p < 0.05$), and loyalty, as those assigned to the gamification user group were, on average, 0.694 units lower in their flow than those belonging to the non-gamification group, and non-users of gamification showed higher levels of enjoyment than users of gamified elements. However, findings revealed a positive impact on users' level of knowledge gain ($\beta = 0.021$, $p < 0.05$) which is a strong factor that encourages visitors to use cultural heritage sites.

Discussion

Based on the literature, it is evident that most existing research is based on theoretical papers and quantitative studies; as for game-related motivational affordances, it is relatively apparent that few gamification studies specifically examined the role of motivational affordances on users' psychological out-

comes in the tourism and hospitality fields and are limited by small sample sizes. Researchers noticed that most studies mentioned in China, Japan, Spain, Korea, and the U.S.A. dominated the literature. The general results of gamification in the T&H sector are supported by the recent systematic review conducted by Pasca et al. (2021), which has revealed that both tourists and service providers gain value from T&H services that include gamification because it has been deemed an innovative tool that promotes the interaction of consumers and their participation in the co-creation of experiences or services. Gamification has also enabled service providers to identify innovative tools and develop new strategies to remain the leaders in the market. Many studies examined in this paper showed notable findings. For example, results of previous studies highlighted the role of gamification in raising awareness of sustainable development goals (SDGs). For example, gamified items are used in mobile apps to educate users on social equality, climate change and, clean water. This technique educates users about SDGs and encourages them to step forward in achieving sustainable development in their local areas. Another contribution lies in combining gamification and innovation culture as powerful tools for tourism destination. Moreover, this interesting finding was related to specific gamified tourism activities that were designed based on the travelling habits and lifestyles of Millennials in order to improve the overall tourist experience. Based on the literature, scholars mentioned 6 books related to: (1) gamification as a tool for marketing communication in tourism; (2) gamification as a tool in new market research and in tourism; (3) game principles and elements leading to effective gamification in tourism; (4) digital gamification apps in the tourism industry; (5) the application of gamification mechanisms and social media tools in the promotion of tourism regions and enterprises and (6) game experiences as enhancing engagement in tourism.

Concerning the findings generated from tourism and hospitality review platforms studies, the motivational potential of gamification mechanics is recognized by self-determination theory (Deci and Ryan, 1985), and the drive framework of motivation (Deci

et al., 1999; Bravo et al., 2021). Moreover, a few studies developed different theoretical models based on UTAUT to investigate whether demographic variables, specifically age and gender, have a moderation effect on the relationship between gamified elements and various psychological outcomes especially that minimal focus has been given to the role of gender and age in the gamified online marketplace (Koivisto & Hamari, 2014; Zhang et al., 2020).

Our analysis revealed stronger dominance of SDT theory and UTAUT usage within specific streams of gamification as compared to gamified tourism platforms which revealed a lack of a core in terms of game elements. It was clear in the literature that TripAdvisor.com platforms are more popular than any other tourism and hospitality review platform. However, there is still a need for explaining the success of other gamified tourism platforms, especially in the form of qualitative studies to address the 'how' and 'why' in order to enable a deeper understanding of users' experiences in tourism platforms. Researchers found that the effects of affordances on different psychological outcomes vary based on the elements and mechanics that structure the game. Consistently, achievement affordances are mostly adopted in gamified activities; the second most common provision of affordances is social affordances; thirdly come the immersion-oriented affordances, which are not as frequently used as achievement and social properties (Koivisto & Hamari, 2019). Future studies should respond to the calls for larger conceptualization of gamification research within tourism and hospitality review platforms.

Limitations

Our narrative review is limited to specific peer-reviewed publications within specific databases which are Elsevier, ResearchGate, Routledge, and Springer. Authors interested in examining another narrative literature review related to gamification in the tourism and hospitality sector could use data collected by other databases such as JSTOR, Google Scholar and many others. In addition, given the massive employment of elements of game mechanics recently in training, education, health, marketing, and wellness initiatives, case studies on gamification in the T&H sector are

important to examine. Findings also point to the need for longitudinal studies that are sensitive to differences emerging over time on users' lasting behaviour and loyalty to game elements within tourism apps. It is also of great importance to take into consideration the impact that gamified elements exert on users' different psychological needs that are likely to change based on the type of motivational affordances users engage with; because different types of motivational elements lead to alteration in users' psychological needs. In addition, it is imperative to shed light upon the 'Octalysis Framework' (Chou, 2019) to analyse the motivational effects of gamification in hospitality and tourism review platforms. Researchers wish that this consolidation of the research evidence will help refine research questions and theory used for gamification within tourism and hospitality sector. While gamification holds great potential to enhance effectiveness in the tourism and hospitality sector, investigations are required in the tourism and hospitality industry as a whole, as well as on specific platforms within the field.

Conclusion

In sum, previous studies have indicated that gamification represents a pivotal and attractive strategy for app designers, managers, and service providers in the T&H sector, especially during this time of fierce competition, as service providers are seeking innovative tools and strategies not only to grow better but also to make a significant contribution in the world of tourism.

Although numerous studies have explored gamification in the T&H sector, our review of current literature provides suggestions for further studies on motivational affordances applied in tourism and hospitality review platforms and more robust assessment of the permanent impact of this gameful thinking on standardized outcomes. Further studies must also focus on theoretical foundations which open up scientific discussions and deeper exploration of the theoretical frameworks that underpin gamification's impact. Pertaining to this, this narrative review showed that studies on gamification in the tourism and hospitality sector have so far used a variety of different theories. Based on the literature, some theoretical foundations

were considerably more popular than others, of which the most popular ones are self-determination theory, utilized in 38 studies, and unified theory of acceptance and use of technology, utilized in 8 studies; in contrast, the least popular ones are source credibility theory, prospect theory, rational action theory, affordance theory, and social identity theory (Table 2).

Finally, gamification aids to change from a business-centric perspective to a truly sustainable perspective as many touristic practices analysed included players' or users' intrinsic motivation in the game mechanism (Negrusa et al., 2015). Therefore, game designers should be able to design gamified touri-

sm mobile apps that bring fun, engagement, and satisfaction to users based on three inclusions: (1) the incorporation of achievement/progression elements related to earning points and getting rewards; (2) the incorporation of social elements where app designers should consider creating a community of users within the app; and (3) the incorporation of immersion game elements related to customizing avatars and interacting with the avatars of other users. Everything aforementioned aspires to a sustainable approach and provides a new research direction.

Appendix

Authors Country	Purpose	Type of source	Summary points
Abou-Shouk and Soliman (2021) UAE	To investigate the antecedents and consequences of gamification's adoption intention by tourist organizations, and to examine customer engagement's mediating effect.	Quantitative research	Tourism organizations opt to adopt gamification in order to boost the engagement of customers and to attain brand awareness and increase loyalty for tourist destinations.
Aebli (2019) Germany	To explore tourists' motives for engaging with gamified technology during a pleasure vacation.	Qualitative research	Gamified elements help tourists in achieving numerous motivational goals and enhance their communications throughout the vacation destination.
Aguiar-Castillo et al. (2019) Spain	To verify if the WasteApp can be a successful tool to foster recycling and to improve tourism destination reputation.	Quantitative research	WasteApp is a gamified application that increases tourists' behaviour of recycling and enhances the destination image that embraces it.
Alčaković et al. (2017) Serbia	To examine the role of Millennials within the tourism industry, to figure out the significant role of gamification as an emerging tool that creates a memorable tourism experience, and to generate various benefits to customers' destinations within tourism.	Theoretical paper	Millennials are expected to reshape future tourist demand, and tourist destinations will target emerging target segments, utilizing information technologies and the diverse benefits of gamification.
Banerjee et al. (2017) India	To estimate and predict reviewer trustworthiness.	Quantitative research	Trustworthy reviewers could be identified and ranked using reviewer characteristics.

Authors Country	Purpose	Type of source	Summary points
Bravo et al. (2021) Spain	To analyse (1) the impact of gamification on users' psychological need for relatedness. Autonomy, mastery, and purpose; (2) the impact of autonomous and controlled motivation on content creation.	Quantitative research	Using gamified elements boosts psychological need satisfaction and controlled motivation; feelings of mastery and purpose foster autonomous motivation; in addition, autonomous motivation has a significant impact on content creation.
Bulencea and Egger (2015) Germany	To understand why game experiences are so engaging.	Book	Linking gamification to experience design might offer an unparalleled formula for crafting transformative experiences.
Celtek (2010) Turkey	To understand the characteristics and abilities of the mobile advergaming as an advertising and marketing tool for the tourism industry.	Quantitative research	Games were successful in branding but ineffective in viral marketing because devices needed to play these games are expensive.
Coghlan and Carter (2020) Australia	To explore the process of developing a serious game as an interpretive tool for the Great Barrier Reef, Australia.	Qualitative research	Games can be designed to represent a complex and threatened ecosystem and reveal positive feelings among tourists, specifically curiosity and delight.
Correa and Kitano (2015) Brazil	To analyse the structure of the game Brazil Quest, an app developed to harness the potential of gamification in tourism.	Theoretical paper	The game Brazil Quest can be classified as an entertainment or a hobby game, able to entertain tourists for a short period.
Filieri et al. (2019) France and Italy	To reveal the factors that moderate the influence of extremely negative reviews on review helpfulness.	Quantitative research	Reviews with extremely negative ratings are more likely to be helpful when the review is longer and easier to read and when the reviewer is an expert or discloses his identity.
Foris et al. (2024) Greece	To identify the necessity and the usefulness of implementing gamification within the online tourism promotion application in Brasov County: the Brasov Tourism App.	Conference paper	The adoption of the gamification functionality, within the online promotion application, increases the degree of attractiveness of the tourist destination.
Garcia et al. (2018) Spain	To present gamified mobile experiences as valid tools for DMOs to improve the experience of tourists, and to present the benefits provided to DMOs by analytics tools included in gamified mobile experiences.	Quantitative research	Both DMOs and tourists can profit from gamified mobile experiences.
Hlee et al. (2019) Korea	To identify a heuristic processing of content richness and source credibility and to apply both for utilitarian and hedonic evaluations.	Quantitative research	The impact of content richness and source credibility on utilitarian evaluations is likely to be higher for a casual restaurant than for a luxury restaurant, whereas only the number of content-rich images had a greater effect on hedonic evaluations of a casual restaurant.

Authors Country	Purpose	Type of source	Summary points
Hu and Chen (2016) Taiwan and United States	To address three hidden assumptions: (1) all reviews are visible equally to online users; (2) review rating (RR) and hotel star class (HSC) affect review helpfulness individually with no interaction; and (3) characteristics of reviews and reviewer status are constant.	Quantitative research	Three review visibility indicators (including days since a review was posted, days since a review has remained on the home page, and number of reviews with the same rating at the time a review was written) had a varied and strong effect on review helpfulness.
Huang and Lau (2020) Hong Kong	To understand the aspirations of people with visual impairments in terms of tourism and to explore how smart tourism destinations could potentially enhance the tourism experience they offer.	Qualitative research	Participants showed positive attitude towards autonomy, achievement needs, and socializing with other individuals. They also revealed their desire to play games on their phones.
Kachniewska (2015) Poland	To present the application of gamification mechanisms and social media tools in the promotion of tourism regions and enterprises as well as the promotion of tourism activity itself.	Book	Gamification helps in improving visitation, demonstrating the destination's values, motivating users to engage in the long-term, creating awareness, boosting visitors' loyalty, helping visitors interact, learn, and share opinions, helping explore the destination, and finding brand ambassadors.
Kawanaka et al. (2020) Japan	To investigate the effects of gamification on tourist behaviour and satisfaction.	Experimental study	Tourist behaviour changes due to the specific design of gamification.
Kim et al. (2021) Korea	To test the impacts of two-game features: (1) letterboxing; and (2) external rewards, in order to understand the effects of gamification on tourist psychological outcomes in a maze park.	Quantitative research	The main effects of letterboxing that trigger intrinsic motivations appear to be significant on tourist psychological outcomes. Moreover, there are important interaction effects between letterboxing and rewards on tourist flow.
Kwok et al. (2020) USA	To discover the main elements of home-sharing products' marketing mix that are appreciated most by travellers, allowing practitioners to draw insightful business intelligence.	Quantitative research	Listings managed by hosts with the 'Superhost' badge are likely to receive more reviews and more positive comments.
Kwok and Xie (2016) USA	To examine the factors contributing to the helpfulness of online hotel reviews and to measure the impact of manager response on the helpfulness of online hotel reviews.	Quantitative and qualitative research	The rating and the number of sentences in a review negatively affect helpfulness of online hotel reviews. In addition, manager response and reviewer experience in terms of reviewer status, years of membership, and number of cities visited positively affect helpfulness of online hotel reviews. Manager response moderates the influence of reviewer experience on the helpfulness of online hotel reviews.

Authors Country	Purpose	Type of source	Summary points
La Cuadra et al. (2019) Spain	To analyse the effects of the experience when visiting a zoo on our emotions and the way they influence our behaviours and to examine whether gamification programs could be used to boost the relations suggested.	Quantitative research	There is a predisposition of the visitors to the adoption of new gamified technologies that enrich the experience.
Lee (2019) Korea	To investigate the impact of gamification on tourist psychological outcome and knowledge gain in light of cultural heritage sites known as cruise tourism destinations.	Quantitative research	The usefulness of gamified apps conveys memorable and real-time information and knowledge to users in cultural heritage sites.
Lent and Marciniak (2020) Spain	To examine the impact of gamification and augmented reality technology on tourist attractiveness.	Quantitative research	The foreign tourists tend to demonstrate a positive attitude towards mobile tourism games that apply gamification techniques and use augmented reality technology.
Li et al. (2019) China	To examine the effects of temporal, explanatory, and sensory cues on customers' perceived usefulness and enjoyment in restaurant online reviews.	Quantitative research	Reviewers from among 'Elite' reviewers are perceived as more useful.
Li et al. (2017) United States and Spain	To examine the factors that influence the peer evaluation of hotel online reviews.	Quantitative research	Consumers' review evaluation is not independent or solely relevant to text features, but is socially included and influenced by the online reviewer's social network and social identity.
Liang et al. (2017) China, United States and Hong Kong	To examine the gamification design developed by Airbnb that awards a 'Superhost' badge to hosts who receive good reviews and observes how this can impact an accommodation's review volume and ratings.	Quantitative research	An accommodation with the 'Superhost' badge result in more reviews and higher ratings. In addition, guests are willing to spend more on 'Superhost' accommodations.
Linaza et al. (2014) Switzerland	To explore how pervasive augmented reality games can be used to deliver an engaging tourism experience.	Qualitative research	The game provides a fun and interactive way to guide participants through different PoIs. It allows them to search for unique QR codes, unlock clues, answer quiz questions, and expand buildings.
Liu and Park (2015) China	To identify the factors affecting the perceived usefulness of online consumer reviews.	Quantitative research	The perceived usefulness of reviews is positively affected by messenger and message characteristics.
Liu et al. (2019) Taiwan	To conceptualize festival gamification through intrinsic motivation of SDT and psychological needs' for competence, autonomy, and relatedness.	Quantitative research	A five-dimensional, 16-item festival gamification scale (FGS) was developed, which includes dimensions of relatedness, mastery, competence, fun, and narratives.

Authors Country	Purpose	Type of source	Summary points
Machado (2021) Portugal	To identify how the development of the gamification concept, specifically geocaching, can contribute to attracting more tourists and to reinforce the destination image of Madeira.	Quantitative research	Destination Management Organizations (DMOs) should include in their official web pages some specific information that helps with finding geocache places, alongside photographs of geocaching experiences, and develop apps and games in an accessible format.
Meenakshy et al. (2020) India	To understand the effect of the varied game-related motivational affordances in the online context on consumer intent to write reviews on online tourism sites.	Quantitative research	Intrinsic motivational affordance of enjoyment had a significant effect on tourist intention to write reviews compared to extrinsic factors like achievement and rewards.
Mileva (2023) Bulgaria	To research the impact of innovativeness and innovation culture as premises for effective gamification at destination level.	Theoretical paper	Innovation culture and gamification are power tools for tourism destination management.
Moro et al. (2019) Portugal	To raise and develop research hypotheses related to the influence of gamification features on the written online reviews about hotels.	Quantitative research	Three badge items were most applicable, involving the total number of badges, the passport badges, and the explorer badges, highlighting the relation between gamification affordances and travellers' behaviour when writing reviews.
Negrusa et al. (2015) Romania	To highlight the role of gamification in the tourism and hospitality industry and further, in the larger context of sustainable development.	Case study	Tourism products include economic objectives with social and environmental positive externalities so the training environment becomes more engaging and the tourists discover the history.
Nunes and Mayer (2014) Italy	To test the acceptance of a smartphone game which would support the tourism experience of visitors to an island with tourism.	Quantitative research	An updated tourist profile of a more connected and technologically sophisticated public includes interest in interaction with mobile technologies that assist tourists even on trips where they want to experience nature, adventure, social interaction and relaxation.
Ozkul et al. (2020) Turkey	To explore the digital gamification apps in the tourism industry based on some parameters.	Book	Digital gamification activities are mostly used as a contribution to promote and market the destinations.
Pamfilie et al. (2016) Romania	To offer a contribution to the research in the field of gamification, to show some of the revolutionary solutions found by top organizations, based on gaming techniques, and to suggest a model related to gamification in a tourism organization.	Theoretical paper	The paper brings benefits for both the user and the organization, from financial advantages, to social gain, promoting sharing knowledge and acting as a leisure activity.
Park and Nicolau (2015) UK and Spain	To assess the effect of review ratings on usefulness and enjoyment.	Quantitative research	The size of the effect of online reviews depends on whether they are positive or negative.

Authors Country	Purpose	Type of source	Summary points
Pasca et al. (2021) Italy	To synthesize and conceptualize the current state of gamification knowledge in the tourism and hospitality sector.	Systematic literature review	Through gamification, T&H services create value for app users and service providers.
Pradhan et al. (2023) India	To identify key issues, offer insights into the potential of gamification in tourism, and recommend areas for future research.	Systematic literature review	Including machine learning techniques, EEG, eye-tracking method, and experimental research in order to gain a nuanced understanding of gamification in tourism.
Roinioti et al. (2022) Switzerland	To discuss the gamification strategies and methodologies used by TRIPMENTOR, a game-oriented cultural tourism application.	Theoretical paper	Gamification boosts tourism marketing strategy and serves as a tool for encouraging users to share their experiences, and discovering areas in a way designed to meet their personal needs, interests, and habits.
Schuckert et al. (2015) China	To examine how virtual badges affect the online behaviour of reviewers and readers based on status-seeking theory in an online environment.	Quantitative research	Online readers prefer low ratings reviews; however, reviewers with high-level badges tend to post moderate ratings and avoid extreme ratings.
Sever et al. (2015) Turkey	To evaluate the potential of gamification in online tourism marketing.	Theoretical paper	Gamification boosts online advertising activities.
Shen et al. (2020) Canada	To examine visitors' motivations for taking a gamified trip.	Qualitative research	Not all players are keen to share trip experiences on social media, compete with others, or receive badges.
Shi et al. (2022) China	To examine the emerging phenomenon of gamified technology use in the tourism context and to provide valuable implications for designing appealing gamified online travel agency platforms.	Mixed methods	The four key gamification affordances, namely, achievement affordance, identity affordance, competition affordance, and self-expression affordance contribute to tourists' diverse value perceptions on the online travel agency (OTA) platform, which boosts their purchase intention during an online shopping carnival.
Sigala (2015) Greece	To investigate the use and the impacts of gamification in a specific tourism context in the case of TripAdvisor's funware.	Quantitative research	Users logging into the TripAdvisor's platform with their Facebook account, engage significantly more with demanding website tasks; gain significantly higher experiential values in terms of social-emotional benefits; claim significantly greater impacts of TripAdvisor on making their trip planning more interactive and social; and report significant associate destinations with specific groups.
Sigala (2015) Greece	To identify the game principles and elements that can lead to effective gamification in tourism.	Book	Gamification is a significant tool used for crowdsourcing any marketing practice and influencing customer behaviour at any stage of the consumer behaviour process.

Authors Country	Purpose	Type of source	Summary points
Skinner et al. (2018) USA	To examine how organizations in the tourism sector could meet the needs of Millennials and Generation Z through engaging with the existing gamified location-based practice of geocaching as an information and communication technology-enabled gamified enhancement to the destination experience.	Qualitative research	Through engaging with geocaching smaller entrepreneurial businesses can reap the benefits associated with employing the principles and practices associated with smart tourism to meet the needs of this new generation of tourism consumers who seek richer digital and often gamified tourism experiences.
Soro and Thibault (2020) Italy	To investigate the relationship between gamification and the latest digital marketing approaches within the tourism and travel industry.	Theoretical paper	Tourism and gamification generate diverse synergies, many of which are already being explored by professionals and firms to boost and sell both touristic services and games.
Souza et al. (2020) Portugal	To examine specific stakeholders and their perspectives concerning not only the benefits, but also the challenges of (eco)gamification.	Qualitative research	Eco-gamification promotes 'green' behaviour, transmits complex information through entertainment, rewards users for good practices, strengthens engagement and avoid tourism overcrowding.
Stadler and Bilgram (2016) USA	To investigate the way gamification is employed in a new market research and in a tourism industry which boosts consumers' experience and generates desirable results.	Book	The concept of gamification may be conceived as a powerful enabler and amplifier of individual value co-creation.
Tomej and Xiang (2020) China	To examine whether the concept of affordance helps in aligning the elements of a tourism service with intended service experiences.	Case study	The affordance-based framework helps tourism designers to disentangle the complex relationships that exist in the interactions of tourists with their environments and therefore to guide and facilitate the creative process.
Xu et al. (2013) China	To discuss the concept of how game design elements and game thinking can be applied in a tourism context.	Theoretical paper	Gamification is a significant, emerging trend for the coming years.
Xu et al. (2015) China	To explore the gamification trend and its potential for experience development and tourism marketing.	Qualitative research	Tourists' game playing motivation is multidimensional. Players tend to start with purposive information seeking, then move on to an intrinsic stimulation.
Xu et al. (2017) China	To examine gaming in general terms and the application of it in specific tourism areas.	Theoretical paper	Drawn on the MDA model, the study demonstrates that gamification is a significant tool for business in general, and it is also emerging as a future trend for tourism.
Yang et al. (2018) Taiwan	To construct a behaviour model for Pokémon Go users by consideration of motivation, and tourism benefit.	Quantitative research	The tourism industry should highlight users' attraction with Pokémon-related products and events to boost the motivation of Pokémon Go users.

Authors Country	Purpose	Type of source	Summary points
Yilmaz and Coskun (2016) Turkey	To explore the use of gamification as a tool for marketing communication in tourism.	Book	The new generation of tourists are investigators more than learners because they tend to discover the facilities and the touristic products and services on their own.
Yoo et al. (2017) Korea	To examine the factors responsible for the adoption of smart tourism applications which include game elements, using the Google Maps tourist guide program.	Quantitative research	Individuals regard a gamified smart tourism app as a low-level game tool.
Zhang et al. (2020) China	To collect the profiles of elite reviewers in Yelp and analyse their behavioural changes from the year before being elites to the first year of being elites and then to the second year of being elites.	Quantitative research	'Elite' reviewers increase their contributions and the readability of their reviews and become more conservative in the short term, while in the long term their rating behaviours stabilize.
Zhou et al. (2020) USA	To test the moderating role of advertising towards the impact of Online Travel Community commitment on products/services-related behavioural intentions.	Quantitative research	Users rewarded in an online travel community are not more committed.
Zhou and Guo (2017) China	To investigate whether, how, and why the order of a review will affect review helpfulness from a social influence perspective.	Quantitative research	The negative effect of review order on review helpfulness is not significant when the reviewer has more social connectedness or higher level of expertise, or when the review is negatively assessed or recently posted.

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