

## Gamification in tourism context: a systematic literature review

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**Abstract.** Gamification has been adopted in multidisciplinary areas to achieve business goals. This tool attracts tourists and improves the engagement on co-creation experiences, training employees, increase brand awareness and loyalty to the destination. Despite the wide diffusion of gamification in the tourism industry, the phenomenon is still understated. Therefore, our systematic literature review provides the state of the art on gamification usage in the tourism sector. We focus on existing contributions in business management highlighting the main key themes, advantages of gamification and research gaps. Seventeen studies were reviewed. Our findings evidence the crucial role of gamification and the necessity to differentiate gamified systems and full-fledged games. Moreover, the implications related to the tourism management were identified as well as useful insights for future researches.

**Keywords:** Gamification, Tourism and Hospitality, Sharing Economy, Systematic Literature Review

### 1 Introduction

Since 2011, there has been significantly increased interest in gamification topic among academics and practitioners [13]. From the literature review by Koivisto & Hamari [18] since 2015 emerges 900 hits from Scopus and AISel databases. However, in October 2019 in the same databases, there are over 6000 hits. Gamification is a new tool applied in non-gaming contexts able to create and increase user engagement and to guide user behaviour [9].

It allows companies to achieve specific objectives by planning experience for users. Gamification as a service packaging which supports the customers' value creation [15]. Several studies highlighted that the gamification is a persuasive strategy that utilizes points, leaderboards, achievement, badges, levels, feedback to change user behaviour [3,12,26]. Indeed, users' engagement through game mechanisms affords extrinsic motivations as badges, points and rewards and/or intrinsic motivations as well as relation, autonomy and competence. The benefits of gamification, operational-

ized in utilitarian, hedonic and social, depend on the context in which it is applied as well as on the users who use it [13]. What emerges from the gamification theme derives from fragmented and contextualized research. In particular, the existing literature is focused on the domains of education and learning, crowdsourcing and health [18]. The game-play mechanics, identified as affordances, generates psychological and behavioural outcomes [18,19,39] and drive intrinsic motivation [30]. The following study focuses on the use of gamification in the tourism and hospitality industry. Vargo & Lusch [43] described the tourism industry as a field that provides service characterized by experiences co-created by tourists. Among the game mechanisms used in the tourism context, there are the frequent player programs [47] which are a means of collecting points that can be exchanged for bonuses or rewards [33]. The rapid growth of the sharing economy impacted the tourism industry. Sharing economy changed traditional market behaviour through technology and meet current needs based on lower costs, social interaction and environmental sustainability. This economic model allows to trade, rent or share access to products and services for a limited time, through community-based online services [4]. Indeed, the peer-to-peer markets changed the dynamic of the tourism industry allows for users to share their home, car, experiences. These platforms utilize business models that are based on a customer-centric strategy, which facilitates interactions with companies and users. Social and economic motivations drive the rise of sharing economy in the accommodation market [42]. The sharing economy offers a wider range of alternatives, proposing alternative and personalized tourist services/products, at more advantageous prices and promoting social encounters [10,17,41]. The tourism and hospitality industry to influence consumer engagement, loyalty, satisfaction and user experience applied gamification mechanisms [47]. This tool aims to increase the motivation and involvement of tourists and employees to have a behavioural change (such as product purchases, efficient work) and generates an intrinsic motivation co-creating value [14,15]. Airbnb, a peer-to-peer platform, adopts badges to guide users on how to use the service and how to improve the quality of the service offered and create trust between host and guest [11,16,23,29]. Gamification creates interaction between the user and the system by increasing loyalty [6,8]. Schuckert, Liu & Law [32] highlighted that there are few studies on gamification on websites and digital platforms in the context of tourism and hospitality. In general, academic research in this field is still limited [24], and there aren't systematic literature reviews on gamification in the tourism industry. However, Lee [20] evidences the potential and usefulness of game mechanics in this context.

The study presents a systematic literature review of existing studies that highlights the crucial role of gamification in the tourism and hospitality context. The paper is organized as follows. Section 2 describes the systematic review procedure. The results are shown in Section 3. Section 4 provides findings and discussion and Section 5 concludes the work along with research implications and future research.

## 2 Systematic review procedure

The literature search was conducted in the Scopus database between July-September 2019. We have chosen Scopus database because of indexes other databases with relevant content from a managerial perspective (e.g. ACM, IEEE, Springer, AIS Electronic Library, DBCP Computer Science Bibliography).

The search was conducted on one database for purposes of clarity and rigour (Parè et al., 2015). The search for the literature in the Scopus database was conducted using the following search query:

TITLE-ABS-KEY (gamif\* AND touris\*OR travel\* OR accommodation OR hospitality OR “sharing economy” OR “peer-to-peer platform”)

The search considered the terms gamif\*, touris\* and travel\* to include all the possible forms deriving from the root. The literature search resulted in a total of 154 records. Following the PRISMA guidelines of Moher et al. [22] 154 records were inspected for the following inclusion criteria regarding the *characteristics of the publications*:

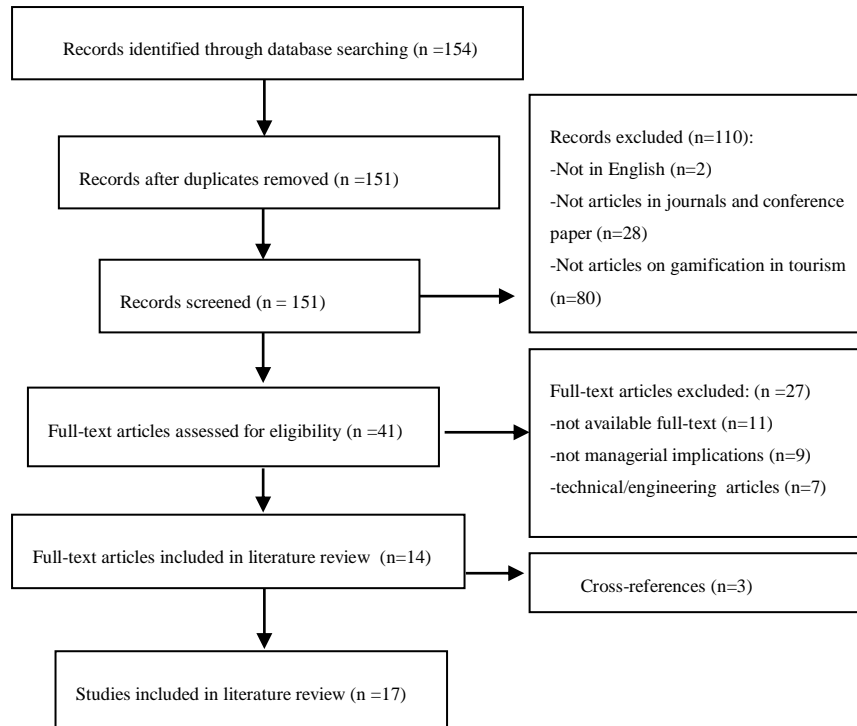
- 1) The search was limited to include conference papers and articles;
- 2) The research paper was written in English;
- 3) The research includes articles published since 2011.

While considering the *characteristics of primary studies*, these inclusion criteria have been established:

- 1) Studies that mainly focus on gamification in the tourism industry;
- 2) Papers available in full text;
- 3) Studies focusing on gamification topic from a managerial perspective. Technical and engineering papers are excluded.

Furthermore, 3 duplicate studies were identified and 110 hits have been excluded because the articles weren't consistent with the defined criteria. We have evaluated the studies by reviewing the title and abstract to ensure quality and relevance.

The number of articles selected for eligibility for full-text analysis was 41 hits. 27 articles were excluded: 11 papers were not available in full text; 9 studies had no managerial implications and 7 researches were analysed from a technical/engineering perspective. After selecting the 14 references, the cross-reference [7] was carried out, which added 3 papers to the selected records. The final body of literature consists of 17 articles. The steps that document the systematic literature review procedure is reported in Figure 1 with the PRISMA flow diagram [22].



**Fig. 1.** A flowchart describing the literature search procedure.

In Appendix A, we provide a summary for all selected papers. We extracted and synthesized aims and results of the reviewed articles.

### 3 Analysis

The relevant papers were analyzed, firstly, author-centrally and then concept-centrally in order to extract the relevant information. As suggested by Webster and Watson [44], the main results of the core of this review were comprised into frequency tables. The gamification phenomenon spread in 2011 [9,13] but the literature search hits by year evidence that the academic interest in gamification in the tourism industry has developed since 2015 (Table 1). In 2013, only one conceptual study [47] emerged. In particular, 11 studies dating back to the last three years in the period between 2017-2019. The interest on gamification in the tourism and hospitality context is rapidly increasing. In 2018 there is only one study. The lack of references in that period is generated by the exclusion of other research not consistent with the inclusion criteria considered. In particular, in 2018, the engineering conference papers emerged

that presented prototypes of gamified applications for the tourism industry, without managerial implications.

**Table 1.** Hits by year

Year	Paper	Number of hits
2011		0
2012		0
2013	[47]	1
2014		0
2015	[25][35][36]	3
2016	[32][46]	2
2017	[21][34][40][45][48]	5
2018	[38]	1
2019	[1][2][20][24][37]	5

All research papers (17), were published in Journal. Our study shows a counter-trend regarding the more generic gamification research (17 papers published in journals). It emerges that a majority of research are papers published in journal that analyzing gamification mechanisms from a managerial perspective in the tourism industry. As shown in Table 2, 17 papers included in the analysis review were categorized based on the type of research conducted. However, 13 researches are empirical studies and 4 studies are conceptual papers.

**Table 2.** Types of papers

Type of study	Paper	Frequency
Empirical	[1][2][20][21][24][25]	13
	[32][34][35][36][45][46][48]	
Conceptual	[37][38][40][47]	4

The empirical research most frequently adopted quantitative research methods (Table 3). In particular, our study reports that 8 studies employed a quantitative approach and 5 researches were reported qualitative analyses.

**Table 3.** Types of empirical research

Empirical type	Paper	Frequency
Quantitative	[2][20][21][24][32]	8
	[35][36][48]	
Qualitative	[1][25][34][45][46]	5

To extract, summarize and analyze the results of the studies, MAXQDA11 was used to identify the main key themes in tourism industry.

MAXQDA is a qualitative tool that codifies the contents of the papers by tracing the codes that require interpretation and comparison to the text of the papers. More specifically, we identified 5 codes, namely 5 key themes. To identify the codes we considered the context of the study, the research gap and the results.

The analysis of the selected papers showed the following 5 key themes (Table 4):

- Studies focused on *online travel platforms*, including 5 empirical research [21][24][32][35][36] and a conceptual study [37];
- 4 studies with implications for *tourism marketing*: 3 conceptual papers [38][40][47] and a qualitative empirical research [45];
- Studies that analyze the *drivers of tourists to adopt gamified applications* [1][46][48];
- 2 studies that explore the theme of *sustainability* through the use of gamification mechanisms in the *tourism industry* [2][25];
- 2 research on *education in tourism* [20][34].

**Table 4.** Key themes in papers

Key themes	Paper	Frequency
Online platform	[21][24][32][35][36][37]	6
Tourism marketing	[38][40][45][47]	4
Drivers for gamified technology use	[1][46][48]	3
Sustainability in tourism	[2][25]	2
Education in tourism	[20][34]	2

Below, we better explained the contents of each key-theme. The key theme "*Online platform*" includes studies on online travel platforms such as TripAdvisor and Airbnb in order to understand how users' behaviour changing through gamification features. These platforms adopt a gamified system to increase the interest and engagement of users by motivating them to contribute with reviews or improving the quality of the service offered.

"*Tourism marketing*" includes events and promotional activities that are used by the various players in the sector to attract new customers or keep current ones in the different travel phases (before, while and after the visit). Gamification has the potential to involve tourists in the co-creation of personalized services.

The key theme "*Drivers for gamified technology use*" investigates the motivations and factors that influence tourists to interact with gamified technology and how this mechanism can contribute before, during and after tourists' visit. It is crucial to understand the motivation of users to use a platform to establish a system of points and incentives suitable for the different types of users. Identifying the factors that influence tourists to use gamified applications is strategic for companies in order to improve the service offered and use this tool to meet users' needs. "*Sustainability in tourism*" analyses and investigates what factors affect the adoption of sustainable

behaviour. In the tourism context, gamification is used to raise tourists' awareness of economic, social and environmental sustainability issues by promoting sustainable tourism practices. These game mechanisms generate information that guides the user/tourist to use resources efficiently.

The key theme "*Education in tourism*" analyses the studies that deepen how it impacts the acquisition of knowledge on tourist attractions. Tourism education enhances tourism activities with educational content that meets the needs of tourists and the motivation to acquire knowledge. This tool influences on knowledge gain about cultural heritage attractions and improves the perception of destinations involving the younger generations. Gamification enhances the tourist attraction visiting process and the destination experience by promoting the continuous development of shared social practices.

## 4 Findings and discussion

Below the main results on the 5 key themes that emerged from the systematic literature review (see Appendix B).

### ***Online travel platform***

Studies about online travel platforms are conducted on TripAdvisor and Airbnb. In particular, the researches on TripAdvisor [24,32,35,36] show that the implementation of gamification encourages the involvement of users and interaction with the platform, encouraging the intervention to write reviews, improving the experience of travel and generating social and emotional benefits. The mechanisms, adopting a user-centred design, are based on intrinsic motivation making the experience more stimulating. Travellers find the platform's gamified activities to be a reliable and fun way to assess the quality of travel information. The badge indicates competence and the user activates on the platform to obtain a "status" in the community. Airbnb [21,37] has also adopted a gamified system that attracts users to provide reviews and incentives for hosts to improve the services offered. The badge provides intrinsic motivation for enhancing the quality of services, as well as obtaining more bookings and positive reviews. In particular, the funware provides the hosts with utilitarian benefits as priority support, discounts.

### ***Tourism marketing***

Gamification mechanisms are a tool to improve and to personalize the travel experience. Many companies use gamification to increase the involvement of tourists and encourage the co-creation of value, stimulating intrinsic motivation [45,47]. Gamification creates a multidimensional experience with the tourist destination through augmented reality (AR) and virtual reality (VR) that immerse the tourist within the destination. For example, some countries have developed AR applications that provide information on accommodation, restaurants and events. Augmented reality tours (e.g. Dublin AR; Father and Son) encourage visitors to interact with the attractions by offering a sensorial immersion with the tourist attraction. Trentino VR is a project that uses VR and through an application the user lives a travel experience. These tools allow promoting local tourism and local culture. In other applications (e.g. Urban

Sleuth) users carry out missions by visiting the city; these missions aim to immerse tourists in real reality to discover tourist attractions. Game mechanisms can be used to improve the experience before, during and after the visit [38, 40]. Before the visit, the games can provide information to potential tourists creating interest. During the visit, these mechanisms generate entertainment, engagement and increase user satisfaction. In the next phase, the gamification favours the memory and the sharing of the experience in one's community.

#### ***Drivers for gamified technology use***

Several studies [1,46,48] show tourists using games or gamified apps due to curiosity, utility (to get information about destinations), to socialize and co-create unique experiences [28]. From the exploratory study of Aebli [1] 4 motivational models emerge for the use of gamified technology during a holiday: success and desire for self-esteem through competition, social recognition, social interaction and connection with others and reminiscence of experiences. Game mechanisms encourage social interactions and improve travel experiences by involving more participants. In particular, the study conducted by Yoo et al. [48] regarding the adoption on gamified smart tourism application shows that the desire for interaction prevails over utilitarian motivations such as gathering useful information for a visit. However, users try, with play, to increase their self-esteem and social recognition within the community [1].

#### ***Sustainability in tourism***

The use of gamification in the tourism industry has the potential for achieving the objectives of economic, social and environmental sustainability. Budeanu [5] argues that users are adverse to changing their behaviour to promote sustainability, particularly on holiday [25]. Gamification is a tool through which companies in the tourism sector can awareness users and change their behaviour.

Gamification enhances the efficient use of resources and promotes sustainable behaviours such as waste sorting [2]. These mechanisms strengthen economic sustainability by increasing customer loyalty and brand awareness and creating interactions involving users in charitable acts.

#### ***Education in tourism***

Lee [20] has shown that game mechanisms increase interest and have a positive effect on acquiring knowledge about a tourist destination. Gamification favours learning and education by transmitting all information and curiosity before visiting, positively influencing user expectations [34]. The study [20] shows that gamification has negative effects on the fun if users perceive the activities (quizzes, missions) as stressful and difficult compared to their level of knowledge. The study conducted by Seraphin et al. [34] confirmed the crucial role of gamification as a useful means of providing information on post-colonial, post-conflict and post-disaster (PCCD) destinations. Through the gamification mechanisms, the tourist is instructed in a pre-visit phase, improving the perception of the destination and contrasting the negative preconceptions about it. In fact, in the pre-visit phase, technology can play a crucial role in transmitting knowledge through visual online learning materials (VOLM).



## 5 Conclusions

The research shows the state of the art of the existing literature on gamification use in the tourism and hospitality industry. The findings demonstrate that there is a limited number of studies addressing on gamification in the tourism industry. From the literature analysis, a confusion emerged between "gamification" and "serious games". Subjectivity and contextuality make it difficult to understand whether a system is a full-fledged game or a gamified system. Moreover, the research conducted has the limitation of not having included in the review some studies for the confusion between the two concepts and full-text studies not available. Our research has highlighted the crucial role of gamification in the tourism industry. In particular, through these game mechanisms, users are more informed, involved and participate in the co-creation of value. Gamification in tourism is used as an innovative marketing tool in the various phases of travel, creating benefits for the consumer and for the company and improves knowledge about a destination. Sustainable behaviour can be promoted by educating and transmitting rules through games. The gamified system brings benefits to the user by creating personalized, entertaining experiences and providing useful information to the company, increasing brand awareness and strengthening customer loyalty. The main motivations for consumers to use gamified applications are: interaction, socialization for co-creating experiences and connecting with others. Funware must include game elements that stimulate intrinsic and extrinsic motivation and game mechanics must be built based on user profiles, motivations and objectives. Regarding the calls for further research for the theme *"Online travel platform"* emerges the necessity to analyse different platforms in which gamification is applied, collecting gamification outcomes from different countries. Further researches need to explore if culture, technology attitude and personality are mediators in influencing the user through gamification mechanisms. For the *"Tourism marketing"* theme, further research could include the outcomes of gamification in different sectors of tourism, the implications for the company and for the user of gamification, and improve empirical research on how gamification contributes to tourist experience and customer loyalty. It's necessary to analyse and explore the proposed techniques for enhancing the tourist attraction visiting process, for each of the phases of the visiting process (before, during and after the visit). The researches could include empirical studies that explore tourists' *"Drivers for gamified technology use"* Further studies (with quantitative analyses and experiments) should compare results from different countries to confirm the key factors that motivate users. For the theme *"Sustainability in tourism"* other studies must be developed, also in various sectors, on how gamification promotes ethical and correct practices (recycling behaviour, limiting the refusal of excess tourism in saturated destinations). Call for further studies on *"Education in tourism"* should adopt empirical studies to test the effectiveness of specific game design mechanism that educate the tourist.

In general, further studies need to discuss the affordances applicable in the tourism industry and identify benefits and risks for any stakeholder.

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## Appendices (A,B)

Appendices are available as online source at the following link:  
[https://www.dropbox.com/s/yri2knwye4l49px/Appendix\\_paper%2011.pdf?dl=0](https://www.dropbox.com/s/yri2knwye4l49px/Appendix_paper%2011.pdf?dl=0)