

## INVESTIGATING THE EFFECTIVENESS OF APPLYING GAMIFICATION ON TOURISM WEBSITES FROM THE CUSTOMERS' PERSPECTIVE: AN EXPLORATORY STUDY

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**ABSTRACT:** *Gamification is the new trend that has been speedily expanding over the past few years and still developing in various fields including tourism, especially in marketing. Despite that, information about the effectiveness of tourism gamification applications in motivating and engaging the customers is limited. This study provides a quantitative exploration of the consumers' perception towards using gamification applications on tourism websites. It examines its effectiveness from the customers' perspective as a marketing strategy applied by tourism websites to engage customers. Findings show that gamification cannot yet be considered an effective strategy for engaging customers with tourism websites from the customers' perspective due to the low level of participation in gamification activities on tourism websites, the big percentage of customers unaware of its existence on tourism websites and the opinion of both those who use it and those who do not concerning its efficiency in engaging customers with tourism websites.*

**KEYWORDS:** Gamification, customers, tourism websites, players

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### INTRODUCTION

In the past few years, gamification has emerged as a trend and has been widely adopted by various fields including science, business, education and training (Swacha, 2014; Xu, Weber & Buhalis, 2014; Martens and Muller, 2015). Organizations are trying to benefit from gamification by applying it on more than one level in their business, ranging from marketing to human resources (Robson, Plangger, Kietzmann, McCarthy & Pitt, 2014; Chen, 2015). The worldwide gamification market is estimated to reach \$11.10 billion in 2020 with the USA forming 46.3% of this amount (Markets and Markets, 2015). Experts argue that Gamification will have a significant impact on businesses including tourism where gamification is indeed gaining great importance within tourism enterprises seeking to apply it in many areas (Egger and Bulencea, 2015). In the marketing area specifically, gamification is thought to form the next marketing generation due to the great benefit achieved from applying it to attract and persuade customers (Mcnulty, 2011; Sigala, 2015a). Gamification has been applied in tourism marketing for years even before the concept has been identified as 'gamification'. Loyalty cards and frequent flyer programs are a simple gamification approach based on collecting points to redeem it for a bonus (Hennigan, 2013; Xu *et al.*, 2014). Nevertheless, the popularity of traditional loyalty programs is slowly decreasing because customers, the younger ones in particular, are leaning towards using the new technological methods that would facilitate their engagement through the virtual world (Xu, Tian, Buhalis, Weber & Zhang, 2016).

Researchers claim that gamification is about pleasure and pleasure is the new dominant marketing feature. Thus, Gamification is the innovative, powerful marketing method that can engage the customers within the virtual environment in an amusing and rewarding manner, increasing by this their loyalty and encouraging their sharing of travel suggestions, reviews and

feedback with the tourism enterprise and with the existing and potential customers (Kazak, 2016, Xu, *et al.* 2016).

On the other hand, despite the great expectations for gamification to be the widely adopted trend and the increase in firms' spending on gamifying their marketing efforts, estimates show that many of these firms would fail in achieving their marketing objectives from gamification unless a good design and strategy are followed in applying it and the real impact of these applications on the customers'/players' experiences is measured (Robson *et al.*, 2014, Sigala, 2015b). Thus, examining the effectiveness of gamification applications employed by tourism firms and to what extent these applications succeed in engaging customers is essential.

Recently, gamification has gained the attention of academics (Harami *et al.*, 2014; Seaborn and Felsb; 2015). It is considered an emerging research topic in many fields, however, studies concerned with gamification applications in different tourism sectors and the effectiveness of these applications on motivating and engaging customers are limited (Sigala, 2015a; Xu *et al.*, 2017).

Furthermore, the majority of the existing studies that discuss gamification in tourism are descriptive in nature pointing out success stories and best practices (Hamari, Koivisto & Sarsa, 2014; Martens and Muller, 2015). They concentrate on reviewing the literature for identifying gamification and its applications in the hospitality and tourism industry (Xu *et al.*, 2014; Negruşa, Toader, Sofică, Tutunea & Rus, 2015; Sigala, 2015b; Pace and Dipace, 2015; Sever *et al.*, 2015; Pamfilie, Vasilcovschi & Bumbac, 2016). Few qualitative studies involved case studies (Linaza *et al.*, 2014; Corrêaa and Kitanoa, 2015) or used focus groups (Xu *et al.*, 2016) and hardly any used the survey method excluding Sigala (2015a). Hence, the quantitative empirical research regarding gamification and its application in tourism remains scarce.

Additionally, many of the above mentioned studies focus on using gamification from the tourism organization perspective, discussing the use of gamification for marketing destinations (Linaza *et al.*, 2014; Kiráľová , 2015; Corrêaa and Kitanoa, 2015) or the employment of some of its applications like augmented reality in museums, heritage sites, theme parks and zoos (Nicholson, 2012; De Freitas, 2013; Jung *et al.*, 2015; Webber, 2015) only a minimal number ( Sigala, 2015a; Xu, *et al.*, 2016) tried to explore the gamification impact on customers or users.

Sigala (2015a) used the survey method to explore the experiential values perceived by gamification users, investigating the impact of using the TripAdvisor's funware, as an application of gamification, on its users' experiences and behavior. Thus, despite that the study has involved gamification in tourism from the consumer perspective and has used the survey method to assess his gamified experience, results cannot be generalized as the study has focused on a specific successful tourism website , TripAdvisor, as a study context, besides being one of the pioneer major online tourism business models adopting gamification. In addition, the sample used is considered purposive as it features only "travelers with experience on using the TripAdvisor's funware" (Sigala, 2015a, p.200). Thus, the study did not involve other tourism websites applying gamification and did not include users of other tourism websites or tourism consumers in general to measure their perception of using gamification applications for tourism purposes. Consequently, a sample that represents the larger population of tourism consumers still needs to be addressed to provide clear evidence regarding the effectiveness of gamification as a tourism marketing tool for motivating and engaging

customers. Besides, Sigala's (2015a) claim that marketers in the tourism business are interested to know whether gamification can drive benefits to their organizations and her recommendation concerning the need for more research in this area to better match gamification design with the users' characteristics and needs to maximize the marketing effectiveness of gamification applications.

On the other hand, Xu *et al.* (2016), used focus groups in their study to explore the various motivations that drive tourists to play games using their mobile devices specifically, to explore the potential that gamification offers for tourism marketing in general and for experience development in particular. They suggested that a larger scale of quantitative sample would be conducted as a next stage to their study. Furthermore, Xu *et al.* (2017) recommended that future studies should involve the tourists' preferences on tourism gamification from a user perspective.

In light of the above mentioned gaps and the suggestions of sigala (2015a) and Xu et al., (2016; 2017) regarding future research, the current study aims to provide an empirical quantitative exploration of the consumers' perception towards using gamification applications on tourism websites in general investigating their opinion concerning the efficiency or effectiveness of gamification as a strategy used for engaging customers with the tourism websites.

To this extent, the study aims to achieve the following objectives: 1) Measure the popularity of using gamification applications on tourism websites among customers in general. 2) Identify some of the demographics and characteristics of the tourist players such as age, gender, education, employment, beside their travel experiences, business/leisure, purchased online mostly. 3) Identify the most popular tourism sector in applying gamification from the tourist players' perspective. 4) Explore the preferred time for customers to play a game on a tourism website, before, during or after the purchase/trip. 5) Investigate the tourist players' motivations when playing a game on a tourism website. 6) Discover which incentives, intrinsic or extrinsic; motivate the tourist players more to play a game on the tourism website. 7) Asses the effectiveness of gamification as a marketing strategy for engaging customers from the consumers' perspective.

Accordingly, the current study provides first a theoretical review about the concept and components of gamification and a brief history regarding its emergence. Then, it sheds light on the gamification applications in tourism illustrating the gamification models that can be applied within the tourism field and some examples for the major tourism corporations that employ gamification in their business. The study even explores the options available for small and medium tourism businesses for applying gamification. In addition, it discusses the benefits and challenges of applying gamification in tourism and then, it outlines some of the needs and motivations of the tourism consumer when playing a game within a tourism context and the importance of investigating this area for succeeding in designing and implementing tourist games. Furthermore, the study use the survey method to explore of the consumers' perception towards using gamification applications on tourism websites in general investigating their awareness, level of practice and opinion concerning the effectiveness of gamification as a strategy used for engaging customers with the tourism websites.

Findings from the survey show that gamification cannot yet be considered an effective strategy for engaging customers with tourism websites from the customers' perspective due to the low level of participation in gamification activities on tourism websites, the big percentage of

customers unaware of its existence on tourism websites and the opinion of both those who use it and those who do not concerning its efficiency in engaging customers with tourism websites.

Finally, it concludes by suggesting future research that can advance and develop the research related to this topic.

## LITERATURE REVIEW

### **The Gamification concept and components:**

There has been no accepted definition for gamification, yet, it is widely recognized as the use of game design mechanics and elements in non-game contexts aiming to influence behavior, create enjoyment, improve motivation and enhance engagement (Dale, 2014; Swacha, 2014; Sigala, 2015a,b; Egger and Bulencea, 2015; Királová, 2015).

In other words, gamification is a modern business practice that uses game mechanics and game elements in business activities, procedures and services to measure, influence and reward the intended user behavior aiming at improving user skills, experience, engagement, effectiveness, and productivity on the employee side and creating more engagement, more influence and more social interaction on the customer side. A well designed, sustainable gamification system can be used to achieve a variety of strategic business objectives (Robson, Plangger, Kietzmann, McCarthy & Pitt, 2014; Cynthia & Kitanoa, 2015; Uskov & Sekar, 2015; Bunchball, 2016).

The game mechanics are simply referred to the rules and modes of interacting with the game while the game elements are the tools that address basic human desires motivating users to take specific actions and to return more frequently (Martens and Muller; 2015; Bunchball, 2016).

The game mechanics may be based on achievement of short term and long term goals, competition, collaboration, challenge, discovery or exploration and time or speed (Dale, 2014; Uskov & Sekar, 2015; Sigala, 2015b). Different game mechanics provide different game elements that express the effect or the result of playing. These elements can focus on the intrinsic emotions of the player or the user such as achievement, self-expression, competition and socialization or it can concentrate on the extrinsic emotions such as gaining reward, points, badges, leaderboard, virtual goods and levels (Xu *et al.*, 2014; Sigala, 2015a; Királová, 2015; Jenkins, 2015; Bunchball, 2016) The widely used gamification applications are those concentrating on the extrinsic elements, however, using a blend of game mechanics that focus on both the users' intrinsic motivation and the extrinsic incentives can further enhance the user engagement (Xu, *et al.*, 2014; 2016; Sigala, 2015b).

The current study focuses on using gamification by tourism firms to increase customers' engagement through their websites. Thus, From all what is mentioned above and for the purpose of the current research gamification definition can be modified to be the use of game design mechanics and elements on behalf of the tourism organizations or institutions to enhance the customer's engagement and loyalty.

### **Gamification brief history:**

As mentioned previously, gamification is much older than the term that describes it. The travel industry was one of the earliest fields that used gamification in business even before it has taken its official name. In 1980s, gamification has been practiced by airlines, subsequent to

other retail industries, in the form of frequent flyer programs (McNulty, 2011; Dale, 2014, p.84) gradually, other travel and tourism firms adopted the same path of applying loyalty programs, such as hotel loyalty and car rental programs, to attach customers to their companies (Hennigan, 2013; Xu *et al.*, 2014, Meder, Jain, Plumbaum & Hopfgartner, 2015).

The term ‘gamification’ was first used by Nick Pelling in 2002 to describe his work as a consultant for making hardware more fun, then, in 2005 the American company Bunchball produced the first modern gamification-system with gamification elements like points, leaderboards and badges (Dale, 2014,p.84; Meder *et al.*, 2015, p.244 ).

The term started to emerge in 2008 and gained its popularity in 2010 (Dale, 2014, p.85; Xu, *et al.*, 2014, p.225; Pace and Dipace, 2015, p.4). In 2011, the concept began to receive more attention from academia and related definitions were established (Dale, 2014, p.85, Meder *et al.*, 2015, p.244). Global revenue in 2011 from gamification marketing, software, and consulting reached nearly \$100 million (Dale, 2014, p.85). Today, businesses and tourism among them are using social media, smartphones, tablets and other innovative technology to take gamification to higher levels (Hennigan, 2013).

### **Gamification in tourism:**

Business firms generally, use gamification to achieve either internal goals associated with human resource, training and productivity enhancement or external goals related to marketing and sales. The first practice needs implementing an inward application that focuses on increasing employees’ motivation, engagement and productivity; improving inner communication and enhancing work efficiency (Xu, *et al.*, 2014; Dale, 2014). While the second practice needs employing an external application that can encourage customers’ engagement, enhance their experience and increase their loyalty (Huotari and Hamari, 2012; Sigala, 2015b).

Tourism firms focus on using gamification specifically in marketing. A well implemented gamification system can make the marketing practices more interesting to the customer by adding motivational incentives that would enhance his enjoyment, engagement and consequently his loyalty (Sigala, 2015b).

Gamification can be used by all tourism sectors; airlines, hotels, travel agents, car rental companies and destination marketing organizations [DMOs]. It can even be utilized in the three phases of travelling; pre, during and post trip. For example, tourists can virtually explore destinations in the pre-phase; be engaged on-site and learn information about the place during the trip; remember the experience and share their stories with others in the post-phase (Corrêa and Kitano, 2015; Xu, *et al.*, 2014; Linaza, *et al.*, 2014).

Essential gamification applications used in the tourism field include location-based augmented reality, gamified tours for urban and rural areas, gamification in theme parks, storytelling, virtual cultural heritage, gamified restaurant experience, gamification in hotels, gamified flying experience and gamified virtual travel experience (De Freitas, 2013; Corrêa and Kitano, 2015; Polater, 2015; Chung, Han & Joun, 2015).

Gamified tours that involve playing games connected to the destination or the tourist site such as on-site location-based games, augmented reality and storytelling; enhance the visitor’s experience in a new, lively way. It creates a playful interaction between the visitor and the tourist site leading to higher rates of satisfaction, return visits and user generated promotions

and word of mouth through social media (De Freitas, 2013, Kiráľová, 2015, Weber, 2015). Cities like London, Barcelona, Stockholm and Berlin, already use these applications to increase the tourist's interest and pleasure while discovering the destination's history, events, people and social life (Weber, 2015; Negruşa *et al.*, 2015).

Tours for urban and rural environments have become more gameful. Gamified walking themes may involve criminal investigations, literature walks or exploring site secrets. Other gamified tours may allow tourists to participate in activities that they cannot practice in real life like hiking and cycling and they may even compete with others (Negruşa *et al.*, 2015; Weber, 2015).

Gamification is also applied now in heritage sites, museums, art exhibitions and castles. The game concept in these places combines education with entertainment allowing tourists' engagement with the history and culture (De Freitas, 2013; Le, 2014; Weber, 2015).

Theme parks, zoos and aquariums are great places to implement gamification, as they are already considered places for all who seek entertainment and playful experiences. Augmented reality and storytelling applications create more engaging and joyful experience to the visitors of these places (Jung, Chung & Leue, 2015; Negruşa *et al.*, 2015; Weber, 2015).

Countries like England, USA, Canada, China, Japan, Korea and Australia have implemented the above applications in various places and sites (De Freitas, 2013; Negruşa *et al.*, 2015; Jung *et al.*, 2015; Chung *et al.*, 2015; Webber, 2015).

On the other hand, International hotels such as InterContinental Hotels Group, Starwood Hotels and Resorts have integrated game mechanics into their loyalty programs to retain their customers and even attract new segments like young consumers who are not normally recognized with brand loyalty (Meldrum, 2013; Negruşa *et al.*, 2015; Weber, 2015).

Airlines such as KLM, Lufthansa, JetBlue, The US Virgin America, air Canada and Turkish Airlines also added gamification applications to their loyalty programs and connected them with social networks. Game rewards include earning prizes, points and badges that can allow passengers to visit new cities and attend special events. Additionally, the game platform may involve a social component by sharing badges and achievement through social media and allowing competition between participants on leaderboards (Sever, Sever & Kuhzady, 2015; Sigala, 2015b; Weber, 2015; Hennigan, 2013; Meldrum, 2013).

The Mega players' tour operators and travel agents have entered the gamification field as well. American Express Business Travel, BCD Travel, Carlson Wagonlit Travel, Travel and Transport and World Travel Inc. are among those agencies that have switched their loyalty programs into a gamification platform to retain their customers' loyalty, especially the business travelers. Rewards include leaderboards for demonstrating ranks and progress, badges, points and perks that allow hotel upgrades and free nights. Some of these agencies like Carlson Wagonlit Travel use gamification both outward application for customers and inward application for employees (Jonas, 2014; O'Brien, 2014; Schaal, 2016). Despite all that, travel agencies, even those major players, are still considered in the first stages of applying gamification (Schaal, 2016).

Online travel agents have accomplished great progress in applying gamification. Expedia's gamified program "Around the World in 100 Days" has achieved a great success and popularity among customers. It is a fun, engaging application that allows Expedia Rewards members to

earn more points, learn more about Expedia and explore interesting destinations around the world. It enables customers or players to gain points by visiting new travel destinations virtually. Each player chooses an avatar that travels around the world on a virtual tour. The more the avatar travels the more points the player gain. These points can be redeemed later on travel bookings and the various tourism products provided by Expedia (Gillespie, 2011; DeLuna and Campbell; 2013; Sever *et al.*, 2015; Weber; 2015).

The famous online travel portal TripAdvisor is also one of the best-known examples of gamification in tourism. Through a gamified platform, tourists can gain various rewards for posting their reviews on TripAdvisor's website regarding different destinations, hotels, restaurants and other tourism products. The application creates an engaging, gameful user experience that addresses both the intrinsic motivation of the player such as achievement, competence and competition, and the extrinsic motivation by offering badges, levels and awards for generating the users' engagement and maintaining their loyalty (Sigala, 2015a; Negruşa *et al.*, 2015; Pamfilie *et al.*, 2016).

### **Benefits and challenges of applying gamification in tourism firms:**

As mentioned previously, gamification creates pleasurable experiences that can lead to numerous marketing benefits. A well designed and implemented gamification application can significantly increase the outcomes of marketing efforts leading to enhanced customers' brand awareness, purchase intentions and sales. Tourism firms apply gamified marketing applications in the hope of enhancing the customers' engagement, building lasting relationship with them and maintaining their loyalty in the first place. They aim to reach the stage where the customer would be fully attracted to their website and applications rather than their competitors' as a result of enjoying playing, interacting with the game and with other users and the desire to earn points, badges or achieve higher levels or ranks (Hamari, *et al.*, 2014; Xu *et al.*, 2017; Sigala, 2015a; Negruşa *et al.*, 2015).

When customers participate and engage with the tourism firm through its gamification application, this gives the opportunity to provide them through the game with more information about the company's products, services, offers, new programs and hence, keep its brand always on the core of their mind (Makanawala, Godara, Goldwasser & Le, 2013; Bunchball, 2016).

Moreover, customers would start promoting the firm and its products to family, friends and peers through user generated content. In this manner, gamification assists in turning the company's customers into fans and fans into promoters. The importance of this is that user generated content has become an essential persuading and trustworthy factor to others more than any other marketing effort. Thus, new customers would be encouraged to try the firm and its products and get connected with it (Bunchball, 2016; Sever *et al.*, 2015).

Gamification can also be used in advertising, either for brand awareness or for promoting a tourist product or service. A good example for this is "Advergaming" (Xu *et al.*, 2014, p.533; Sever *et al.*, 2015, p.195) when a game is specially designed for the purpose of branding and advertisement aiming for a strong outcome or response on behalf of the addressees. In this case, gamification can motivate customers to try a new tourist product or service or visit a new destination or a tourist site (Xu *et al.*, 2014; Negruşa *et al.*, 2015).

Another advantage of gamification is boosting the tourist experience through implementing game design elements that provide social play, challenge, fantasy and fun in any or all of the

three stages of travelling: before, during and after the tourism trip (Xu *et al.*, 2017; Negruşa *et al.*, 2015; Chen, 2015; Pace and Dipace, 2015).

In the same vein, gamification can help in product diversification and value adding. Certain gamification applications allow the customer to create his own unique, customized tourist product or experience by choosing the suitable services for him and reshaping them in the way that matches his needs and desires (Negruşa *et al.*, 2015).

Hence, gamification can engage tourists in a fun, informative and memorable way through their entire travel experience before, during and after the trip (Xu *et al.*, 2016).

Even Small and medium tourism enterprises [SMTEs] (Buhalis and Cooper, 1998, p.331) can benefit from gamification in their business according to their needs and capabilities by using one of the available options for SMEs. Some technology companies started to offer SMEs the same gamification techniques that a large enterprise would use but on a Pay-As-You-Go (PAYG) basis to reduce the budget needed for applying these solutions. Others introduced simple gamification applications that can be developed quickly and easily and would meet the SMEs' needs including challenges, videos, photos, quizzes, predictions, tracking actions and social sharing. Another option available now for SMEs is the cloud-based gamification solutions. The existence of these solutions on cloud will help SMEs to adopt gamification without increasing their expenses (Tan, 2015; Markets and Markets, 2016; Revelian, 2017).

Despite all the above mentioned advantages of gamification, tourism firms have to be aware that gamification can fail in fulfilling their intentions if it is not implemented in the right manner. Failure to meet business objectives can happen due to poor design, high expectations, unclear objectives or confused ones and system mismatch to the firm size, objectives or capabilities (Iosup and Epema, 2013; Dale, 2014).

Failure can also happen if the company is using gamification only to give the impression of being up to date in applying new technology without appointing "SMART goals" for this application that are: Specific, Measurable, Attainable, Relevant, and Time-bound (Conley and Donaldson, 2015, p.675) and without following a real, sustainable strategy. The company in this case may lose its brand image and fail in retaining its customers (Herzig, Ameling, Wolf & Schill, 2015; Negruşa *et al.*, 2015; Bunchball, 2016).

Additionally, depending only on extrinsic incentives like earning points and badges is not enough to maintain the success of the gamified system. Customers may get bored from collecting points. Instead, the application needs to involve fun, challenges, choices, loss and gain, elements that focus on the customer's intrinsic motivation to keep him engaged with the system and connected to the company (Makanawala, *et al.*, 2013; Xu, *et al.*, 2014; Sigala, 2015; Kiráľová, 2015).

On the other hand, over-gamification and sophistication can lead to the system failure. Gamification applications may also pose challenges on the firm if they require huge budget, time and mastery of many technical protocols and experience to operate. Several technological issues may arise in addition to the needed regular maintenance, security monitoring and training. Tourism institutions have to keep it simple and gradually develop their gamification system according to the company's needs and capabilities (Iosup and Epema, 2013; Chen, 2015; Negruşa *et al.*, 2015; Jenkins, 2015).



**The gamification player in tourism:**

In order to achieve the various benefits of gamification, tourism firms need to pay good attention to the players' motivations in general and tourist players' motivations in particular. Both the tourism organization and the game developer should work jointly to obtain a deep understanding of the tourist player's motivations for playing a tourism related game before the trip, during the trip and after the trip (Sigala, 2015a; Vorlová, 2016).

Previous studies pointed out the importance of researching players' motivations, however, the majority of these studies focused on players of traditional games (Xu *et al.*, 2016).

Research on traditional game players' motivations is not enough to apply on the tourist player. It is critical to investigate the essential motivations that induce tourists to play games, the type of games that encourage them to play and the time they prefer to play. This will help in designing games that can succeed in fulfilling the tourist player's desires and at the same time meets the objectives of the tourism organization (Xu, *et al.* 2016; Vorlová, 2016).

Xu *et al.* (2016) focused on identifying some of the tourist player's motivations that differ from those related to the traditional game player. For example, the information need, the enhancement of the tourist trip or experience, the expectations from playing a marketing based game whether it is earning upgrades, extra services, loyalty points or others.

Furthermore, some of these studies indicated that designing games that can serve the tourism field is considered more challenging than designing traditional games due to its novelty. They demystify certain requirements related to the design of tourist games such as considering that these games should be less challenging, especially the location- based tourist games, as the tourist usually has limited time and is not familiar with the location. Thus, simplifying the location-based game will fulfill the goal behind it by enhancing the tourist experience and providing him with the expected edutainment (Yovcheva, Buhalis, Gatzidis & van Elzakker, 2014; Xu *et al.*, 2016).

Moreover, they stressed on that designing tourist games needs profound knowledge of very specific information about destinations, locations, history or other information that can be required for the design and success of a certain tourist game according to the tourism organization objectives (Xu, *et al.*, 2016).

**THE STUDY: METHODOLOGY**

Despite the wide expansion of gamification in business, research investigating its impact and efficiency especially in tourism is scarce. Besides that, most of these studies are descriptive in nature. Thus, it is crucial to conduct more research based on quantitative clear methods to examine the effectiveness of applying gamification by tourism enterprises and to better judge its potential in the tourism industry (Sigala, 2015a; Xu, *et al.*, 2016).

The current research presents an explorative study involved with this new emerging trend in tourism. It aims to explore the effectiveness of gamification applied on tourism websites from the customers' perspective.

In this context, the study proposes one hypothesis to be evaluated: that gamification cannot yet be considered from the customers' perspective an effective strategy for engaging the customer with the tourism website.

Martens and Muller (2015) stated that the number of scientifically valid approaches to evaluate the effectiveness of gamification is still low. They suggested that studies in general may be classified into approaches to prove benefits or effectiveness of gamification with respect to: Increase of motivation and increase of participation.

Accordingly, the current study will follow the second approach mentioned by Martens and Muller (2015) that depends on the increase of participation aspect besides investigating the customers' opinion to explore the efficiency of gamification applied on tourism websites in engaging customers.

On the other hand, Xu *et al.* (2016), as mentioned previously, recommended that a larger scale of quantitative sample would be conducted as a next level of their study; in addition to Sigala's (2015a) suggestion that a sample representing the larger population of tourism consumers still needs to be addressed to provide clear evidence regarding the effectiveness of gamification as a tourism marketing tool for motivating and engaging customers. Consequently, the current study provides an empirical quantitative research where the survey method is used to identify the consumers' perception towards using gamification applications on tourism websites.

### **Measurement:**

To achieve the study objectives, a survey has been developed to measure the perception of tourism customers in using the gamification applications integrated in different tourism websites.

The research questionnaire was given to three academic experts to ensure the validity and accuracy of its constructs. Then a pre-test was performed with ten US travelers at the Cleveland Hopkins International Airport to identify any issue that needed to be clarified or modified.

The questionnaire is divided into three sections. Section one is addressed to all participants. It encompasses three constructs: The first construct involves demographic information; the second construct is a 5-point Likert scale ranging from always (1) to never (5) and the third construct is a filtering yes/no question that leads to either section two or section three in the survey. Section two is directed only to the respondents who use gamification applications on tourism websites. It consists of six constructs where all are measured on a 5-point Likert scale that ranges from always (1) to never (5) excluding the fifth and the sixth constructs that their scale ranges from strongly agree (1) to strongly disagree (5). Finally, section three which is addressed only to the respondents who do not use gamification applications on tourism websites. It includes two constructs, the first takes the multiple choices form while the second is a 5-point Likert scale that ranges from strongly agree (1) to strongly disagree (5).

The constructs composing the research questionnaire in details are as follows:

Section one: All participants:

Demographic factors: Vorlová (2016) stressed on the need to research the demographic factors and their impact on the tourist player. Xu, *et al* (2016) also agreed with other research that motivation to play games can be influenced by many demographic factors such as gender, age,

education and employment. Thus, the first construct in the current survey involved these demographic characteristics to identify the relationship between them and the consumers' perception towards playing games on tourism websites: Birth date range, gender, education and employment.

Online travel purchase experience: This construct aims to identify the main tourism type that the participants purchase or reserve online, *Business/leisure*, to infer which travelers, business or leisure travelers, should be addressed first when applying a gamification strategy on a tourism website.

Player or nonpayer: The third construct involved a filtering yes/no question to identify travelers who use gamification applications on tourism websites and those who do not. If the participant response is 'yes', then he is asked to fill out section two in the questionnaire and if the participant response to this question is 'no', then he is asked to answer section three instead.

Section two: Players only:

As mentioned before, this section is directed only to the respondents who use gamification applications on tourism websites. It involves the following constructs:

Tourism websites: This construct encompasses the different tourism sectors that apply gamification on their websites; *I play games on the following tourism websites*: airlines, hotels/resorts, restaurants, traditional travel agents, destination marketing sites, Virtual travel agents such Expedia and recommendation travel sites such as TripAdvisor. This construct helps in exploring which tourism sector succeeds the most and which of them is the least in attracting their customers to play games on their websites and engage with them through the gamification applications.

Time of playing: *I play a game on the tourism website*: Before purchasing, during purchasing, after purchasing, before carrying out the trip, during the trip, after returning from the trip. Sigala (2015b) stressed on the importance of studying the influence of gamification on all the stages of consumer behavior; before, during and after the purchase/ consumption of the tourism experience. Furthermore, Xu, *et al.* (2016) used this construct in their study to identify the time preferred by the focus groups' participants to play games on their mobiles within the tourism context. Hence, it is important to use the same construct in the current study to explore the best time for playing tourism games from the consumers' perspective using a larger sample that would well represent the tourists' population.

The purpose of playing: *I play a game on the tourism website to*: Gather information, explore trips/destinations, earn points/ rewards, get discounts, get extra free services during the trip, enhance my travel and fun experience, express opinion, share reviews/news with peers, recommend the trip/website to peers. This construct examines specifically the needs that drive the tourist in particular to play games on a tourism website. The featured needs include the main items identified by Xu *et al.* (2016) as those needs related to the tourist player specifically that differ from other needs associated with the traditional game player. These items include: the information need, the enhancement of the tourist trip or experience, the expectations from playing a marketing based game such earning upgrades, extra services, loyalty points or others.

The motivation for playing: *What motivates me to play a game on the tourism website is*: Curiosity, exploration, live the virtual experiences through the game, fun, experience the challenge and achievement, socialize with others, collaborate/ compete with others, gain instant

rewards, gain instant discounts, gain free services, gain up grades, earn points that can be used later, status on leaderboards/ earning trophies.

Yee (2007) presented the main motivations for game players while Xu *et al.* (2016) identified six types of motivations that reflect the tourist needs in particular as a game player. These types are: Curiosity, exploration, the mixture of virtual experience and reality, socialization, fun and challenge/achievement. The current study used the same types of motivations in this construct including several items to investigate, on a larger scale, which of these intrinsic motivations attract the customer to play games on a tourism website. In addition, other items that present the extrinsic motivations, featured in the literature review of Dale (2014), Xu *et al.* (2017), Sigala (2015b) and Uskov and Sekar (2015), were added to identify which extrinsic motivations encourage the tourists to play.

The third and the fourth constructs in this section together help in distinguishing the power of intrinsic and extrinsic motivations on influencing the customers to engage with the tourism enterprises through gamification.

The impact of gamification: *Playing games on a certain tourism website made me:* More engaged with this website, more loyal to this tourism enterprise/website; recommend the website/enterprise to others. This construct examines the impact of playing games on the tourism websites on the engagement and loyalty of the customer to the tourism enterprise.

Players' general impression regarding gamification: *I think gamification on tourism websites is a successful strategy to attract/ engage customers.* This construct here investigates the players' or the gamification application users' opinion regarding the efficiency of applying gamification on tourism websites as a marketing strategy to attract and engage customers.

Both the fifth and sixth constructs in this section gives a clear vision concerning the effectiveness of applying gamification by tourism enterprises on their websites to enhance customers' engagement and loyalty. It reinforces all the other constructs in revealing the real customers' perception towards using gamification on tourism websites.

Section three: Non players only:

As mentioned previously, this section is directed only to the respondents who do not use gamification applications on tourism websites and it involves the following constructs:

The reason for not using gamification applications on tourism websites: this construct aims to explore the reasons of the non players or the non users for not using the gamification application on tourism websites giving them the following answers to choose from: *I do not play games on the tourism websites because:* I don't know there are games on these websites ; I have no interest ; I have no time; I am afraid there would be spam; No specific reason; Others (please specify).

The non players' general impression regarding gamification: *I think gamification on tourism websites is a successful strategy to attract/ engage customers.* This construct here inquires about the general opinion of the non players concerning the effectiveness of applying gamification on tourism websites as a marketing strategy to attract and engage customers.

**The Sample and Data Collection:**

It was chosen to conduct the current study on the US market for several reasons: First, the USA is the pioneer country in e-business in general and in e-tourism in particular. The digital travel sales are expected to reach \$189.62 Billion by the end of 2017, forming the largest share (30.9%) of worldwide digital travel sales in 2017 (E-Marketer, 2017). Regarding gamification, as mentioned previously, the worldwide gamification market is estimated to reach \$11.10 billion in 2020 with the USA forming 46.3% of this amount (Markets and Markets, 2015). Thus the US market deserves a particular attention in this regard since the USA features the largest share worldwide in both gamification and e-tourism.

A self-administered survey was conducted over a period of four months from July 2017 to October 2017 using a convenient sample of the US population. Questionnaires were distributed in person within two major cities in the State of Ohio: Cleveland and Columbus. A brief description of the study was provided in the cover letter of the survey. The average time to collect questionnaires was 45 days. The completed questionnaires were collected either by mail or in person. A total of 500 questionnaires were distributed, 480 were returned while 470 from them were used for analysis after excluding a number of questionnaires that most of its questions were not answered by the respondents. Thus, questionnaires used for analysis presented a valid response rate of 94%.

**Analysis:**

Percentage, standard deviation [SD] and coefficient of variation [CV] were used in the first stage of the data analysis throughout the three sections of the survey.

The independent sample t-test was utilized in the second stage of the data analysis to investigate if there is a significant difference between certain constructs: The extrinsic and intrinsic factors in motivating customers to play games on tourism websites; the opinion of players and non players concerning the efficiency of using gamification on tourism websites as a strategy to attract and engage customers and if there is a difference between players and non players related to gender or employment regarding their interest or engagement in playing games on these websites. In addition, the ANOVA test was utilized in this stage to investigate if there is a difference between players related to their age group or level of education.

**RESULTS**

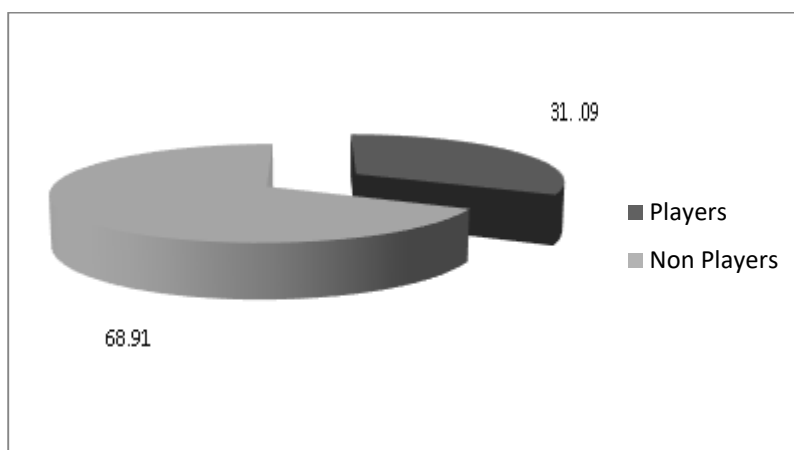
Concerning the demographic factors, analysis revealed that the sample is composed of the following: Respondents that their birth date ranges from 1946 to 1964 are (22.99%) of the total sample, those ranging between 1965–1979 are (26.59%), those ranging between 1980–1999 are (26.81%) and those who were born in the year 2000 or above composes (23.61%) of the total sample. Regarding education, respondents who are in high school or less composes (22.77%) of the total sample, high school graduates are (25.96%), College graduates are (26.80%) and finally, respondents with a Master or Doctorate degree form (24.47%) of the total sample. With regard to employment (54.68%) of the total sample are working while (45.32%) do not work and concerning gender, (49.57%) of the total sample are males while (50.43%) are females.

Thus, it is clear that the sample encompasses the variety and balance needed to accurately represent the population studied in the current research. This will also help in further analysis to explore if there are difference between the respondents who use gamification on tourism websites and those who do not regarding their age group, level of education, employment status or gender.

Regarding the online travel purchase experience, results reveal that the main tourism type that the participants purchase or reserve online is connected to leisure with (91.1%) of the respondents purchase or reserve their leisure trips online and (8.9%) never did that. A standard deviation SD of (29.58) and coefficient of variation CV of (0.31) also shows that there is no big variation between respondents who always reserve leisure online and those who never do it. On the other hand, the respondents who purchase or reserve their business trips online form only (32.1%) of the total sample while (67.9 %) never did that. A standard deviation SD of (59.34) and coefficient of variation CV of (0.63) also shows that the variation between respondents who always reserve business trips online and those who never do it is bigger in this case than in the leisure trips case.

Hence, when applying a gamification strategy on a tourism website, it may be more beneficial to address leisure travelers first as they are more involved with the online travel purchase.

Concerning the number of respondents who use gamification applications on tourism websites, the first aspect of Martens and Muller (2015), which is the increase of participation, is examined here through the filtering yes /no question revealing that (31.09 %) of the total sample use gamification applications on tourism websites while (68.91%) do not. Thus, the percentage of customers who participate in the gamification applications of different tourism websites is considered small. This shows that gamification on tourism websites is still unpopular among travelers which supports the hypothesis of the current study that gamification is still not considered from the customers' perspective an effective strategy for engaging them to the tourism website.



**Figure (1): Customers using gamification applications on tourism websites**

This filtering question led (68.91%) of the sample, the non players, to skip section two in the questionnaire and answer section three instead while only (31.09 %) of the sample, the players, filled out section two in the questionnaire.

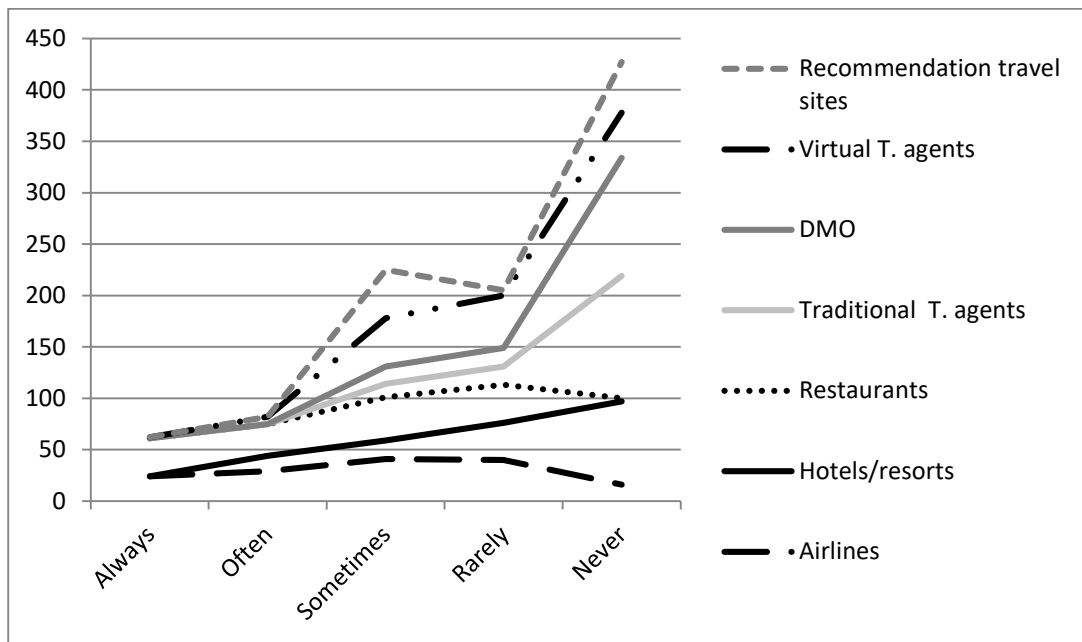
The following part demonstrates the responses of the players only who compose (31.09 %) of the total sample showing their practices on the gamification applications of different tourism websites.

A glance on the demographic factors of players:

- Year of Birth: Players born 1946–1964: (2%) of players, (0.64%) of the whole sample. Players born 1965–1979: (40.67%) of players, (12.98%) of the whole sample. Players born 1980–1999: (39.33%) of players (12.55%) of the whole sample and players born 2000 and above: (18%) of players (5.74%) of the whole sample.
- Level of Education: High school or less (7.33%) of players (2.34%) of the whole sample. High school graduates: (28.67%) of players, (9.15%) of the whole sample. College graduates: (35.33%) of players, (11.28%) of the whole sample and Master/Doctorate: (28.67%) of players, (9.15%) of the whole sample.
- Employment: (60%) of players which is (19.36%) of the whole sample are employed while (40%) of players, (12.77%) of the whole sample are not working.
- Gender: (40%) of players which is (12.77%) of the whole sample are males while (60%) of players, (19.15%) of the whole sample are females.

Regarding the tourism websites, results revealed that restaurants' websites are the most preferred among customers when it comes to using gamification applications as (98%) of customers who use gamification applications on tourism websites indicated that they play games on these websites with an SD of (15.59) and a CV of (0.52) that show the variation between players who always play on restaurants' websites and those who do not. The airlines' websites comes in the second rank with (89.3%) of customers who use gamification applications on these websites with an SD of (10.65) and a CV of (0.36). In the third rank come the virtual travel agents such as Expedia with (70.7%) of players using their gamification applications, an SD of (23.90) and a CV of (0.80). Recommendation travel sites such as TripAdvisor take the fourth rank with (67.3%) of players using their gamification applications, an SD of (27.47) and a CV of (0.92). Fifth rank, hotels and resorts with (46%) of players using their applications, an SD of (31.61) and a CV of (1.05) showing a big variation between players concerning their playing frequency. Destination marketing sites and traditional travel agents come consecutively in the last two ranks, the sixth and the seventh, with (23.3 %) and (20.7%), an SD of (48.32) and (50.38) and CV of (1.61) and (1.68) showing the big variation between players who frequently play on these websites and those who do not.

The variation between players who always or frequently use the gamification application on the different tourism websites and those who rarely or never use it indicates the low participation in gamification activities on tourism websites among players themselves as shown in figure (2) which supports the hypothesis of the current study.



**Figure (2): Variation in frequency among customers using gamification applications on different tourism websites**

Concerning the time preferred by the participants to play games on tourism websites, results showed that (98.7 %) of players in the sample prefer using the gamification application of a certain tourism website before purchasing with a minimum variation, SD (17.39) and CV (0.58), between those who always do it and those who do not. The second time preferred is during purchasing with (98 %) of players prefer playing at this time and an SD of (26.12) and a CV of (0.89). The third preferred time is before carrying out the trip as (97.3%) of players prefer it and the SD and CV values are (17.82) and (0.59), followed by after purchasing with (86.7%) like to play at this time, an SD (10.70) and CV (0.36). Consecutively comes last: during the trip with (66.67%), SD (24.53) and CV (0.82) and after returning from the trip with (60%), SD (28.31) and CV (0.94).

With regard to the purpose of playing, the first reason that players have chosen for using the gamification application on tourism websites was to gather information with (97.3%) of the players choosing it, an SD (16.91) and CV (0.56). The second rank is to get discounts with (78.7%) and a minimum variation between players who always play to get discounts and those who do not SD (5.61) and CV (0.19), followed by to earn points/ rewards in the third rank with (76.7%), SD (6.28) and CV (0.21). To express opinion is in the fourth rank with (68.7%), SD (10.20) and CV (0.34) followed by to get extra free services during the trip in the fifth rank with (52%), SD (24.58) and CV (0.82). Consecutively come to explore trips/destinations, recommend the trip/website to peers, share reviews/news with peers and lastly, enhance the travel and fun experience with low percentage and small variation between players as shown in table (1).

Proceeding with the motivation for playing, results show that fun is the first motive for players to use the gamification application of a tourism website with (98%) of players in the sample choosing it, SD (15.39) and CV (0.51). then comes gaining instant rewards in the second rank with (80.7%) of players in the sample choosing it, an SD (4.74) and CV (0.16) showing the



minimum variation between players who are always motivated with gaining instant rewards and those who are not. In the third rank is gaining upgrades as (79.3%) of players chose it, with an SD (5.48) and CV (0.18). Fourth is exploration with (78.7%), SD (4.64) and CV (0.15) and fifth is gaining instant discounts with (74.7%), SD (6.24) and CV (0.21). The sixth is gaining free services with (73.3%), SD (6.12) and CV (0.20) followed by earning points that can be used later in the seventh rank with (71.3%), SD (7.87) and CV (0.26). Experience the challenge and achievement and curiosity come in the eighth and ninth ranks with (70.7%) and (68%), SD (12.41) and (11.34) and CV (0.49) and (0.38). Collaborate/ compete with others and socialization get the tenth and eleventh ranks with (54%) and (53.3%), SD (24.17) and (26.64) and CV (0.81) and (0.89). Lastly come status on leaderboards/ earning trophies and living the virtual experiences through the game with low percentage of players choosing them as motives for playing games on tourism websites and a high variation among players as shown in table (1).

When combining the results of the two previous points it is observed that the first purpose and first motive for playing that were chosen by players are intrinsic, to gather information and fun, while the second and third are extrinsic, to get discounts, to earn points/ rewards, to gain upgrades; thus, the current study agrees with Xu, *et al.* (2014, 2016) and Sigala (2015b) that the inclusion of both intrinsic and extrinsic incentives in the gamification strategy of the tourism firm is essential.

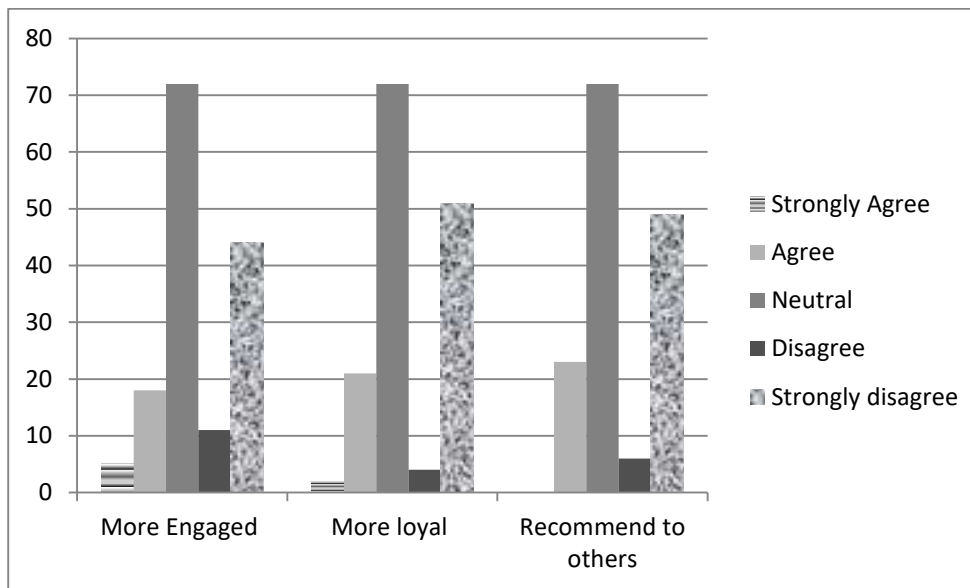
With regard to the impact of gamification on players, (15.3 %) agreed that gamification helps in getting them more engaged with the tourism website while (36.7%) disagreed and (48%) were neutral with an SD (27.79) and CV (0.93) showing the variation between the players who strongly agree; agree and those who strongly disagree; disagree and those who are neutral. Again (15.3%) agree that gamification helps in making them more loyal to the travel enterprise/website while (36.7%) disagreed and (48%) were neutral. The SD and CV values, (30.60) and (1.02), also show the big variation between the players who agree and those who disagree.

Lastly, the same percentage (15.3%) agreed that gamification can lead them to recommend certain tourism website/enterprise to others, however, (36.7%) disagreed and (48%) were neutral, with an SD (30.21) and CV (1.01).

It is obvious here the low participation in gamification activities that reflect engagement and loyalty to the tourism website in the low percentage of players agreeing with the previous statements and the big variation among players who strongly agree; agree and those who strongly disagree; disagree and those who are neutral, as illustrated in figure (3), which again supports the hypothesis of the current study.

The final part in section two in the questionnaire is concerned with the players' general impression regarding gamification, (24.7%) of players agreed that gamification on tourism websites is a successful strategy to attract and engage customers while (31.3%) disagreed and (44%) were neutral, with SD (20.60) and CV (0.69).

Both previous points clearly express the players' view concerning the effectiveness of applying gamification by tourism enterprises on their websites to enhance customers' engagement and loyalty. It reveals that gamification is still not considered from the customers' perspective an effective strategy for engaging them to the tourism website even for those who practice it; hence, the hypothesis of the current study is again confirmed.



**Figure (3): Variation in the impact of gamification on players**

The following part demonstrates the responses of the non players only who compose (68.91%) of the total sample showing their reasons for not using the gamification applications of different tourism websites and their general impression regarding gamification as a strategy for engaging customers with tourism websites.

Concerning the reason for not using gamification applications on tourism websites, (44.38%) of the non players that compose (30.21%) of the whole sample said that they do not know there are games or gamification applications on these websites, (24.06%) of the non players composing (16.38%) of the whole sample said they have no time while (22.5%) of non players composing (15.32%) of the whole sample admitted that they have no interest. At the same time (3.75%) of non players or (2.55%) of the sample said they are afraid there would be spam while (5.31%), (3.62%) gave no specific reason. the SD and CV values, (52.99), (0.83) where the mean  $\bar{x}$  is 64 and confidence Level 95%, 1.960, also show the great variation between the non players reasons for not using gamification on tourism websites with not knowing about its existence is the highest and being afraid from spam is the lowest. This shows the unpopularity of gamification on tourism websites among consumers in general supporting the hypothesis of the current study.

Finally, The non players' general impression regarding gamification: (11.88%) of the non players agreed that gamification on tourism websites is a successful strategy to attract and engage customers while (38.13%) disagreed and (50%) of non players were neutral, with SD (68.93) and CV (1.08) demonstrating the big variation among the non players who agree and those who disagree and those who are neutral. This also confirms the hypothesis of the current study that gamification is still not considered from the customers' perspective an effective strategy for engaging them to the tourism website.

**Table (1): Attitudes of customers who use gamification applications on tourism websites**

	<b>%</b>	<b>SD</b>	<b>CV</b>
<b>I play games on the following tourism websites:</b>			
Airlines	89.3	10.65	0.36
Hotels/resorts	46	31.61	1.05
Restaurants	98	15.59	0.52
Traditional travel agents	20.7	50.38	1.68
Destination Marketing sites	23.3	48.32	1.61
Virtual travel agents such as Expedia	70.7	23.90	0.80
Recommendation travel sites such as TripAdvisor	67.3	27.47	0.92
<b>I play a game on the tourism website:</b>			
Before purchasing	98.7	17.39	0.58
During purchasing	98	26.12	0.89
After purchasing	86.7	10.70	0.36
Before carrying out the trip	97.3	17.82	0.59
During the trip	66.67	24.53	0.82
After returning from the trip	60	28.31	0.94
<b>I Play a game on the tourism website to:</b>			
Gather information	97.3	16.91	0.56
Explore trips/destinations	40.7	33.04	1.10
Earn Points/ rewards	76.7	6.28	0.21
Get discounts	78.7	5.61	0.19
Get extra free services during the trip	52	24.58	0.82
Enhance my travel and fun experience	17.3	53.19	1.77
Express opinion	68.7	10.20	0.34
Share reviews/news with peers	38	35.44	1.18
Recommend the trip/website to peers	38.7	36.41	1.21

<b>What motivates me to play a game on the tourism website is:</b>			
Curiosity	68	11.34	0.38
Exploration	78.7	4.64	0.15
Live the virtual experiences through the game	44	29.77	0.99
Fun	98	15.39	0.51
Experience the Challenge and Achievement	70.7	12.41	0.49
Socialize with others	53.3	26.64	0.89
Collaborate/ Competite with others	54	24.17	0.81
Gaining instant Rewards	80.7	4.74	0.16
Gaining instant discounts	74.7	6.24	0.21
Gaining Free Services	73.3	6.12	0.20
Gaining Up grades	79.3	5.48	0.18
Earning points that can be used later	71.3	7.87	0.26
Status on leaderboards/ earning trophies	45.3	31.14	1.04
<b>Playing games on a certain tourism website has led me to:</b>			
Be more Engaged with this website		27.79	0.93
Be more loyal to this tourism enterprise/website		30.60	1.02
Recommend website/enterprise to others		30.21	1.01
<b>I think games on tourism websites is a successful strategy to attract/engage customers</b>		20.60	0.69

\*Mean  $\bar{x}$ : 30.

The second stage of the data analysis in the current study investigated differences between certain constructs.

First, it investigated if there is a significant difference between the extrinsic and intrinsic factors in motivating customers to play games on tourism websites. For this reason the independent sample t-test was used to examine both constructs: the purpose of playing and the motivation for playing. Results revealed that there is no significant difference between the extrinsic and intrinsic factors in motivating customers to play games on tourism websites as the t-test for the purpose of playing was not statistically significant, where P-value = 0.3177,  $t = 1.0758$ ,  $df = 7$ , confidence level: 95%, standard error of difference: 26.802. It was also not statistically significant for the motivation for playing where  $p$ -value = 0.1775,  $t = 1.4409$ ,  $df = 11$ , confidence level: 95%, standard error of difference: 12.770.

Thus, both the extrinsic and intrinsic factors are important for motivating customers when using the gamification application on tourism websites.

The independent sample t-test was again used to explore if there is a significant difference between the opinion of players and non players concerning the efficiency of using gamification on tourism websites as a strategy to attract and engage customers. Results showed that there is no significant difference between customers who play games on tourism websites and customers who do not regarding their opinion about the effectiveness of gamification in

attracting or engaging customers as  $p$ -value= 0.3215, where  $t=1.0567$ ,  $df= 8$ , confidence level: 95%, standard error of difference: 32.175.

Both groups agreed that gamification is not considered an essential or a main factor that would lead them to be more engaged to a certain tourism website. Therefore, the hypothesis of the current study that gamification is still not considered from the customers' perspective an effective strategy for engaging them to the tourism website is clearly confirmed.

To examine if the difference in a demographic factor has an effect on the customers' interest in practicing gamification on tourism websites or not, either the ANOVA test or the independent sample t-test was applied to explore if there is a difference related to age range:

The ANOVA test was used to show if there is a difference among the four age groups composing the sample regarding their interest or engagement in playing games on tourism websites. The ANOVA test revealed that there is no significant difference statistically among the four age groups at  $p < .05$ , where the  $f$ -ratio value is 0.02535 and  $p$ -value is .993699.

Thus, this result shows that not only the new generation, 'Generation G' born after 1998, as named by some researchers (Zichermann & Linder, 2010, p.163; Xu *et al.*, 2016, p.1134) or 'Generation Z' born 2000 or after, as named by others (Cooper 2012) should be the more addressed age group with gamification. Instead, if the tourism enterprise decides to apply a gamification strategy, it should promote it to all generations like generation X and generation Y.

To explore if there is a difference related to the level of education:

The ANOVA test was used to show if there is a difference among the four levels of education composing the sample regarding their interest or engagement in playing games on tourism websites. The ANOVA test revealed that there is no significant difference statistically among the four groups at  $p < .05$ , where the  $f$ -ratio value is 0.03446 and  $p$ -value is .990153.

Thus, this result shows that there is no relation between the customers' level of education and their interest in engaging with the tourism websites through gamification.

To investigate if there is a difference related to gender:

The independent sample t-test showed no significant difference related to gender between customers who play games on tourism websites and customers who do not as  $p$ -value= 0.9889, where  $t = 0.0157$ ,  $df = 2$ , confidence level: 95%, standard error of difference: 63.506, thus, not statistically significant.

Finally, to explore if there is a difference related to employment:

The independent sample t-test showed no significant difference between customers who play games on tourism websites and customers who do not related to being employed or working or not as  $p$ -value= 0.7396, where  $t = 0.3814$ ,  $df = 2$ , confidence level: 95%, standard error of difference: 60.308, hence, not statistically significant.

## DISCUSSION AND IMPLICATIONS

The current study reveals that gamification is still not considered from the customers' perspective an effective strategy for engaging them to the tourism website with only (31.09 %) of the total sample use these applications on tourism websites while (68.91%) do not. When it comes to using gamification applications on tourism websites, the most preferred websites among customers who use these applications are: restaurants' websites then airlines' websites, followed by virtual travel agents and recommendation websites consecutively with a wide variation between players who always or frequently use the gamification application on these websites and those who rarely or never use it. This gives an indication that gamification has not yet passed the initial phases of development among tourism firms and that restaurants and airlines are still pioneering this field. It also indicates the low participation in gamification activities on tourism websites among players themselves.

The time preferred by the players to play games on tourism websites are before purchasing and during purchasing, followed by before carrying out the trip then after purchasing. This affirms what Sigala (2015b) stressed on concerning the importance of studying the influence of gamification on all the stages of consumer behavior; before, during and after the purchase/consumption of the tourism experience. On the other hand, it directs the tourism firms to focus their gamification efforts first on the before and during purchase/ consumption stages.

The main purposes and the main motives for using gamification applications on tourism websites that were chosen by players in this study confirms what Sigala (2015b) and Xu *et al.* (2014) have mentioned about the importance of including both intrinsic and extrinsic incentives in the gamification strategy, however, the current study stresses on the vital role the extrinsic incentives still plays in attracting and engaging customers with a certain tourist websites.

The final part in the section specified for players only in the survey confirms the hypothesis of the current study, showing a small percentage of players agreeing that gamification has a positive impact or is an effective strategy for engaging customers with tourism websites.

Results of the third section specified for non players only in the survey also confirms the hypothesis of the current study as it shows the unpopularity of gamification on tourism websites among consumers with (44.38%) of the non players that compose (30.21%) of the whole sample not knowing about its existence. The non players' general impression regarding gamification also confirms the hypothesis of the current study as a very small percentage of non players agreed that gamification can be an effective strategy for engaging customers with tourism websites.

The independent sample t-test also endorsed that there is no difference between both groups, players and non players, concerning their opinion about gamification being an inessential factor in engaging customers with tourism website.

The analysis also revealed no difference related to age, gender, employment or level of education and using gamification applications on tourism websites.

From all what is mentioned above, it is clear that the hypothesis of the current study was confirmed through both: the low level of participation in gamification activities on tourism websites among customers in general and among users or players in particular, beside the opinions of players and non players concerning the efficiency of gamification in engaging customers with tourism websites.

On the other hand, the study shed light on some important points that if taken into consideration by tourism firms might help them in achieving some of their objectives from applying gamification on their websites, these points include that the reason behind the unpopularity of gamification among customers as an efficient marketing strategy in engaging them with tourism websites might be that it is still not applied on wide ranges on tourism websites and when it is present, it is not promoted enough to notify customers about its existence or the benefits they can get from using it in engaging with the tourism firm or website, thus, it is not sufficiently practiced by customers and even those who use it do not get the most out of it. Accordingly, tourism firms may need to consider including promotion tactics within the gamification strategy to better introduce it to their customers before measuring its efficiency in engaging them or its impact on fulfilling the objectives behind implementing it.

Another issue is that since there is no difference related to age, gender, employment or level of education and using gamification applications on tourism websites, the tourism enterprises that decide to apply a gamification strategy can promote it to all customers without focusing on a certain segment based on age, gender, employment or level of education as it has not yet been clear who would be more interested in being engaged with the firm through this new concept. However, it may be more beneficial to address leisure travelers first as they are more involved with the online travel purchase.

## **CONCLUSION AND FUTURE RESEARCH**

This paper discussed gamification as one of the latest trends adopted by various business fields among them tourism. It reviewed the gamification concept and components and provided a brief history about its emergence. It also shed light on the gamification applications in tourism illustrating the gamification models that can be applied within the tourism field and some examples for the major tourism corporations that employ gamification in their business. The study even explored the options available for small and medium tourism businesses for applying gamification. In addition, it discussed the benefits and challenges of applying gamification in tourism and then, it outlined some of the needs and motivations of the tourism consumer when playing a game within a tourism context. Furthermore, the study explored the effectiveness of gamification applied on tourism websites from the customers' perspective depending on the customers' level of participation in the gamification activities available on tourism websites and the opinion of customers. Findings revealed that gamification cannot yet be considered from the customers' perspective an effective strategy for engaging the customer with the tourism website. However, since gamification can be considered an emerging trend for the coming years as indicated in the literature review, tourism firms might achieve some of their objectives from applying gamification on their websites if they consider increasing the customers' awareness about its presence on their websites through promoting it as a marketing tool for engaging them with the firms' websites and emphasizing the benefits the customers can get from using this tool. In addition, the tourism firm should promote the gamification strategy to all customers without focusing on a certain segment based on age, gender, employment or level of education. However, it may focus on the leisure travelers first as they are more involved with the online travel purchase.

Similar to all studies, the current study has some limitations. First, it focused only on the US market; future research might address other regions to be able to generalize results. The

findings are also restricted by the convenience sample which put another limitation to generalize the results of the study.

Future research may involve investigating the actual expansion of the gamification applications use among tourism enterprises, to identify to what extent it is really employed and/or accepted among these firms. Future studies should also concentrate on the application of gamification in specific tourism institutions such as traditional travel agents versus online travel agents and the benefits and challenges for both.

## REFERENCES

- Buhalis, D. and Cooper, C. (1998) *Competition or co-operation? Small and medium sized enterprises at the destination*, In Embracing and managing change in Tourism: International case studies. (Eds, Laws, E. et al.) Routledge, London, pp. 329-354.
- Bunchball (2016) *Gamification 101: An Introduction to Game Dynamics*, Retrieved from: [www.bunchball.com](http://www.bunchball.com), accessed on 23/04/2017.
- Chen, E.T. (2015) *The gamification as a resourceful tool to improve work performance*, In Gamification in Education and Business. (Eds, Reiners, T. and Wood, L.C.) Springer International Publishing 2015, Switzerland, pp.473-488.
- Chung, N., Han, H. and Joun, Y. (2015) *Tourists' intention to visit a destination: The role of augmented reality application for a heritage site*, Computers In Human Behavior, 50 588-599.
- Conley, K. and Donaldson, C. (2015) *Gamification: The measurement of benefits*, In Gamification in Education and Business. (Eds, Reiners, T. and Wood, L.C.), Springer International Publishing, Switzerland, pp.673-688.
- Cooper, R. (2012) *The millennial generation Research review*, The National Chamber Foundation and U.S. Chamber of Commerce.
- Corrêaa, C. and Kitanoa, C. (2015) *Gamification in tourism: Analysis of Brazil quest game*, In Proceedings of ENTER 2015, The National Council for Scientific and Technological Development, Retrieved from: [http://ertr.tamu.edu/files/2015/02/SP0s\\_Mobile\\_Session\\_Correa.pdf](http://ertr.tamu.edu/files/2015/02/SP0s_Mobile_Session_Correa.pdf), accessed on 15/03/2017.
- Dale, S. (2014) *Gamification: Making work fun, or making fun of work?*, Business Information Review 31(2) 82-90.
- De Freitas, S. (2013) *What can gamification add to cultural heritage?*, Coventry University, The Serious Games Institute, London.
- DeLuna, J. and Campbell, J. (2013) *Google, Concur work to 'Gamify' compliance*, The Beat, Retrieved from: <http://www.thebeat.travel/post/2013/04/30/Google-Concur-Gamify-Compliance.asp>, Accessed on 09/01/2017.
- Egger, R. and Bulencea, P. (2015) *Gamification in tourism: Designing memorable experiences*, Books on Demand, Norderstedt.
- E-Marketer (2017) *Worldwide Digital Travel Sales: E-Marketer's Estimates for 2016-2021*, E-Marketer Report, Retrieved from: <https://www.emarketer.com/Report/Worldwide-Digital-Travel-Sales-eMarketers-Estimates-20162021/2002089>, accessed on 11/08/2017.
- Fumagall, S. (2015) *Pay and benefits on gamification; Case study*, Retrieved from: <http://gamificationplus.uk/pay-benefits-on-gamification/>. 26/11/201524/11/2015, accessed on 09/03/2017.



- Gillespie, S. (2011) *Travel booking tool goes gaming*, The Beat, Retrieved from: <http://www.thebeat.travel/post/2011/04/29/Travel-Booking-Tool-Goes-Gaming.aspx>, accessed on 08/01/2017.
- Gunnoltz, J. (2015) *Supporting German SMEs to adapt to current educational innovations* In: Hochschule für Wirtschaft und Recht Berlin Conference: INTED 2015, Volume 9, Madrid.
- Hamari, J., Koivisto, J. & Sarsa, H. (2014) *Does gamification work? A literature review of empirical studies on gamification*, System Sciences 2014- 47th Hawaii International Conference (HICSS). IEEE, pp. 3025-3034.
- Hennigan, A. (2013) *Gamification: Is it good for the travel business?*, Eye for travel. Retrieved from: <http://www.eyefortravel.com/mobile-and-technology/gamification-it-good-travel-business>, accessed on 02/02/2017.
- Herzig, P., Ameling, M., Wolf, B. & Schill, A. (2015) *Implementing gamification: Requirements and Gamification Platforms* In Gamification in Education and Business. (Eds, Reinert, T. and Wood, L.C), Springer International Publishing, Switzerland, pp.431-450.
- Huotari, K. and Hamari, J. (2012) *Defining gamification: a service marketing perspective*, In Proceeding of the 16<sup>th</sup> International Academic Mind Trek Conference, pp.17-22.
- Iosup, A. and Epema, A. (2013) *On the Gamification of a graduate course on cloud computing*, Denver, CO, USA.
- Jenkins, P. (2015) *Gamification is the key to mobile customer engagement*, 3Radical Inc., Retrieved from: <https://gamificationplus.uk/wp-content/uploads/2015/08/3radical-WP-Gamification-is-the-key-.pdf>, accessed on 27/02/2017.
- Jonas, D. (2014) *Loyalty games: Big TMCs beginning implementation*, The Beat, Retrieved from: <http://www.thebeat.travel/post/asp.aspx>, accessed on 22/02/2017.
- Jung, T., Chung, N. & Leue, M.C. (2015) *The determinants of recommendations to use augmented reality technologies: The case of a Korean theme park*, Tourism Management, 49 75-86.
- Kazak, L. (2016) *Gamification and loyalty programmes in the tourism industry*, Retrieved from: <https://www.linkedin.com/pulse/gamification-loyalty-programmes-tourism-industry-liudmila-kazak>, accessed on 17/03/2017.
- Kiráľová, A. (2015) *The place of gamification in tourism destinations' marketing*, In Information Technology and Society – Interaction and Interdependence 23rd Interdisciplinary Information Management Talks. (Eds, Petr, D. et al.), 9-11 Sep. 2015, Czech Republic, pp.201- 206.
- Le, T.V.N. (2014) *Technology enhanced tourist experience: Insights from tourism companies in Rovaniemi*, Thesis, School of Tourism and Hospitality Management, Degree Programme in Tourism.
- Linaza, M. T., Gutierrez, A. & Garcia, A. (2014) *Pervasive augmented reality games to experience tourism destinations* In Information and Communication Technologies in Tourism 2014, (Eds, Xiang, Z. and Tussyadiah, I.), Proceedings of the International Conference in Dublin, Ireland, January 21 – 24, 2014, Springer, pp. 497–509.
- Makanawala, P., Godara, J., Goldwasser, E. & Le, H. (2013) *Applying gamification in customer service application to improve agents' efficiency and satisfaction* In: DUXU/HCI2, Part II, (Ed, Marcus, A.), LNCS 8013, pp. 548–557.
- Markets and Markets (2015) *Gamification market worth 11.10 Billion USD by 2020*, Retrieved from: <http://www.marketsandmarkets.com/PressReleases/gamification.asp>, accessed on 15/03/2017.

- Martens, A. and Muller, W. (2015) *Gamification In Science + Business Media; Handbook of digital games and entertainment technologies*. (Eds, Nakatsu, R. et al.), Springer, Singapore, DOI 10.1007/978-981-4560-52-8\_66-1.
- Meder, M., Jain, J.B., Plumbaum, T. & Hopfgartner, F. (2015) *Gamification of workplace activities* In Smart information systems: Advances in computer vision and pattern recognition. (Ed, Hopfgartner F.), Springer International Publishing, Switzerland, pp: 239-268.
- Meldrum, S. (2013) *The rise of gamification in hospitality and travel*, Retrieved from: <https://www.tnooz.com/article/the-rise-of-gamification-in-hospitality-and-travel/>, accessed on 16/04/2017.
- Negruşa, L.A., Toader, V., Sofică, A., Tutunea, M.F. & Rus, R.V. (2015) *Exploring gamification techniques and applications for sustainable tourism*, Sustainability, 7 11160-11189.
- O'Brien, J. (2014) *Business travel gamification rewards both employees and companies*, Retrieved from: <http://www.forbes.com/sites/united/2014/01/24/how-millennials-are-shaping-the-future-of-business-travel/#18b9264b1e4f>, accessed on 25/03/2017.
- Pace R. and Dipace A. (2015) *Game-based learning and lifelong learning for tourist operators* In Cultural Tourism in a Digital Era. (Ed, Katsoni, V.), Springer Proceedings in Business and Economics, Springer International Publishing, Switzerland, DOI 10.1007/978-3-319-15859-4\_16.
- Pamfilie, R., Vasilcovschi, A. & Bumbac, R. (2016) *A new possible way of promoting tourist packages: Gamification*, Cactus Tourism Journal, 13(1) 5-10.
- Polater, L. (2015) *Transcript of gamification in tourism*, Master Thesis Presentation, Retrieved from: [https://prezi.com/u1qkub9utw\\_e/gamification-in-tourism/](https://prezi.com/u1qkub9utw_e/gamification-in-tourism/), accessed on 08/03/2017.
- Revelian (2017) *5 ways gamification works for SME recruitment*, Retrieved from: <http://www.revelian.com/5-ways-gamification-works-for-sme-recruitment/>, accessed on 19/03/2017.
- Robson, K., Plangger, K., Kietzmann, J., McCarthy, I. & Pitt, L. (2014) *Understanding gamification of consumer experiences*, Advances in Consumer Research, 42 352-357.
- Schaal, D. (2016) *The coming death of business travel as we know it*, Retrieved from: <https://skift.com/2016/05/09/best-hotels-customer-satisfaction-skift-business-traveler/>, accessed on 20/01/2017.
- Sever, N.S., Sever, G.N. & Kuhzady, S. (2015) *The evaluation of potentials of gamification in tourism marketing communication*, International Journal of Academic Research in Business and Social Sciences, 5 (10) 188-202.
- Sigala (2015a) *The application and impact of gamification funware on trip planning and experiences: the case of TripAdvisor's funware*, Electron Markets, 25 189–209.
- Sigala. (2015b) *Gamification for crowdsourcing marketing practices: Applications and benefits in tourism* In: Advances in crowdsourcing. (Eds, Garrigos-Simon, F. J. et al.), Springer International Publishing, Switzerland, pp.129-145.
- Swacha, J. (2014) *An architecture of a gamified learning management system*, In ICWL 2014 Workshops. (Eds, Cao, Y. et al.), LNCS 8699, pp195–203.
- Tan, A. (2015) *24 Awesome HR tools for entrepreneurs and SMEs*, Retrieved from: <https://www.linkedin.com/pulse/24-awesome-hr-tools-entrepreneurs-smes-adrian-tan>, accessed on 16/03/2017.
- Uskov, A. and Sekar, B. (2015) *Smart gamification and smart serious games* In Fusion of smart, multimedia and computer gaming technologies. (Eds, Sharma, D. et al.), Intelligent Systems Reference Library 84, DOI 10.1007/978-3-319-14645-4\_1, pp.7-36.

- Vorlová, N. (2016) *Gamification in Tourism: Study of the motivation of the Chinese tourist players*, Retrieved from: [https://www.academia.edu/26786928/Gamification\\_in\\_Tourism\\_Study\\_of\\_the\\_motivation\\_of\\_the\\_Chinese\\_tourist\\_players](https://www.academia.edu/26786928/Gamification_in_Tourism_Study_of_the_motivation_of_the_Chinese_tourist_players), accessed on: 02/05/2017.
- Weber (2015). *Gaming and gamification in tourism; 10 ways to make tourism more playful best practice report*, The Digital Tourism Think Tank, Retrieved from: [thinkdigital.travel/wp-content/uploads/.../Gamification-in-Tourism-Best-Practice.pdf](http://thinkdigital.travel/wp-content/uploads/.../Gamification-in-Tourism-Best-Practice.pdf), accessed on: 09/04/2017.
- Webber, S. (2015) *Design and evaluation of interactive technology for human-animal encounters at the zoo*, ACE '15, November 16-19, 2015, Iskandar, Malaysia.
- Xu, F., Weber, J. & Buhalis, D. (2014) *Gamification in tourism* In Information and Communication Technologies in Tourism 2014. (Eds, Xiang, Z. and Tussyadiah, I.), Springer International Publishing, Vienna, pp. 525-537.
- Xu, F., Tian, F., Buhalis, D., Weber, J. & Zhang, H. (2016) *Tourists as mobile gamers: Gamification for tourism marketing*, Journal of Travel and Tourism Marketing 33(8) 1124-1142.
- Xu, F., Buhalis, D. & Weber, J. (2017) *Serious games and the gamification of tourism*, Tourism Management 60 244-256.
- Yee, N. (2007) *Motivations of play in online games*, Journal of Cyber Psychology and Behavior 9 772-775.
- Yovcheva, Z., Buhalis, D., Gatzidis, C. & van Elzakker, C. (2014) *Empirical evaluation of smartphone augmented reality browsers in urban tourism destination context*, International Journal of Mobile Human Computer Interaction 6 (2) 10-31.
- Zichermann, G., & Cunningham, C. (2011) *Gamification by design: Implementing game mechanics in web and mobile apps*, O'Reilly Media, Inc.