Gamification Impact on Enhancing Visiting Entertainment Destination: The Case of Siwa Oasis

Sarah Abd Elrahman Ali
Cairo Higher Institute Mokattam

Abstract

In order to anticipate, address and overcome the new challenges and trends of the Tourism sector, the World Tourism Organization is currently focusing on a strategy on Innovation and Digital Transformation. Gamification can be a key element Digital Transformation and one of AR (Augmented Reality) and VR (virtual reality) applications. gamification has gained up growing attention from researchers of multiple fields including health care, education, marketing, and tourism. It is believed that gamification of tourism can contribute to a richer experience and higher level of satisfaction.

This paper discusses how game designs elements can be enhancing destination visiting process (before, during and after the visit) through 6D framework design (it is a design process with 6 steps including, define business objectives, delineate target behavior, describe your players, devise activity loops, do not forget the fun, and deploy appropriate tools).

This study consolidates three dimensions of gamification elements (game design, brand app experience, and consumer–brand satisfy

aaaction) to explore the impact of gamification at purchase intentions. The results indicated that there is no correlation between the mentioned dimensions and gender. It also indicated that game design, and brand applications experience were critical factors for influencing the purchase intention of clients while consumer–brand satisfaction has no influence on purchase intention.

Keywords: Gamification, Game Design Elements, Purchase Intention, Entertainment Destination.

Introduction

Digital realities, such as virtual reality (VR), Augmented-Mixed Reality (AR-MR), Physical, broadband, cloud, and gamification combined with the development of online customized platforms are decisive developments that dominate in contemporary technological trends (Kotsopoulos et al., 2019; UNWTO, 2020). Indeed, the convergence of these technologies on mobile devices with the development of location-based services (LBS) and Global Positioning System (GPS) have directly connected the real world with the virtual world and allows communication between them in real-time (Yoo et al., 2017; Huang and Gao, 2018). According to a recent estimate by Goldman (2016), AR and VR are expected to grow into a $95 billion market by 2025. According to Hall and Takahashi (2017) the largest demand for the technologies currently comes from industries in the creative economy-specifically, gaming, live events, video entertainment, and retail. In addition, technological advances and demographic changes have led to changes in consumption and production patterns, leading to the growth of gamification applications (Huber and Hilty, 2015; Lee and Jin, 2019).

Indeed, the convergence of these technologies on mobile devices with the development of location-based services (LBS) and Global Positioning System (GPS) called paradigm of marketing which provide a remarkable experience for customers through directly connected the real world with the virtual world (Sever, 2015; Souza et al., 2017; Yoo et al., 2017).

The objective of this study was to explore the impact of gamification on consumer purchase intentions. The research questions were focused on how different gamification elements can affect consumers' intention to buy and how customers of different gender may moderate the

effect on the relationship between the gamification elements and purchase intensions. To answer the question, the study reviewed first the literature of gamification, Brand app experiences, game design elements, classified various player into the taxonomy of gamification design and shed light on different kind of gamification app. Then the study tested the gamification marketing tool on 30 items based on three job facets: game design elements, brand app experience, and consumer–brand satisfaction.

The study proposed a relationship between gamification marketing tools based on the three previous dimensions and purchase intention which contained 10 items influenced consumer intention to purchase. The study selected participants as college and graduate students (N=250), who were very familiar with the Smartphone and digital environment.

The study examines the impact of gamification on consumer intention to buy and further analyzes the effects of consumer gender on the three previous dimensions. It aims to address the question of how the destinations can leverage gamification properly to enhance visiting in the three phases of the trip.

According to Hamari (2019) gamification is the "process of enhancing a service with affordances for gameful experiences in order to support users' overall value creation" this means that gamification in-entertainment destination can be a possible tool for creating and adding value to purchase intension in the three phases of the trip (before, during and after).

Literature review
Gamification Theory
Gamification is a relatively new concept, only gaining traction in the 21st century (Christians 2018). It is beginning from the digital media industry, it was already coined in 2002 by a British programmer and inventor, Nick Pelling, but only entered widespread adoption in the second half of 2010, when several industry players and conferences popularized it (Deterding2011). First utilized by Terrill (2008), he defined gamification as "taking game mechanics and applying them to other web properties to increase engagement." Which means that game and game principles can serve more serious goals than just entertainment (Cunha and Manuela, 2012). Some factors like; smartphone, tablet, and cheaper technology, have played a great role in re-emerging of gamification (Nelson, 2012).

"Gamification refers to the use of game design elements like rewards, missions, rankings, and fun in non-game contexts". Thus, gamification makes use of game mechanics to motivate consumers more, to solve certain problems, and to design the necessary tasks in a more interesting way (Robsona et al., 2015; Cynthia and Kitanoa, 2015; Uskov and Sekar, 2015; Bunchball, 2016). While, game dynamics represent the outcome of the game, like emotion, storytelling, development, both game dynamics and mechanics were realized through the game component which can be perceived by all players (Werbach, 2012; Hamed, 2017; and Zhuowei,2019). Robson et al. 2015 mentioned that a well-designed gamification experience should have a blend of game mechanics that focus on both extrinsic and intrinsic factors.

According to Chang (2014) and Sailer (2016), most gamification mechanisms have been used to encourage repeat purchasing, increase motivating, engagement, and support learning and interaction. It based on achievement of short term and long-term goals and usually contains challenge competitive, feedback, rewards in return for frequent visits and purchases, free airline tickets, or virtual (points, badges, levels, and so on) launching unique interactive games, and implementing various interactive features of game design to gain customer access, which motivate players to actualize wanted behaviors (Shang et al., 2013; Duggan and Shoup,2013; Dale, 2014; Uskov and Sekar 2015; Sigala, 2015).

Carreño (2018) and Odincova (2017) mentioned that gamification contains 6D principles which comprise the gamification process: Define business objectives, delineate target behaviors, describe wanted player, devise activity cycles, do not forget fun and deploy the appropriate tools. Although tourist destination experiences are full of individual significance and can be very subjective, but design frameworks could be very instructive at the early stage of gamification in the tourism industry (Zhuowei, 2019).

Recently the integrated of game design elements with brand applications experiences and consumer brand satisfaction deliver to consumers a brand-related online experience to communicate effectively, and efficiently, with them and influence customers and drive motivations to purchase intention (lee and Jin, 2019).

Brand Applications Experience

The widespread utilize of smartphones has cleared the way for gamification and has driven to the development of apps planned to be viewed and worked on phones, expanding companies intrigued in app marketing strategies (lee and jin,2019). It has been defined as software that's downloadable to a mobile which noticeably shows a brand character, frequently through the title of the app and the appearance of a brand logo or icon (Bellman et al., 2011).It empower users to create completely new purchasing experiences and interaction models, with a comparing set of capabilities, including location awareness, context detecting, and product customization (Zhao and Balague, 2015).

To create effective brand apps and gain benefits from them, companies should first analyze desires and lifestyles of smartphone users and create applications that customers can utilize helpfully in their daily lives (Kuo and Chuang, 2016; Maican et al., 2016; Seixas et al., 2016). Concerning gamification brand app user experience, it is defined as "process of enhancing a service with affordances for gamifying experiences in order to support users' overall value creation" (Huotari and Hamari, 2017). This means that - gamifying app can be a possible tool for creating a great value for customers during the purchase journey. Therefore, it will improve the whole customer experience (Högberg et al., 2019).

Game Design Elements

In order to further understand the consumer behavior and influence on purchase intention through gamification, we used the MDA framework (Mechanics-Dynamics-Aesthetics) which was used for analyzing and explaining game design (Hunicke et al., 2004). It divided the game system into three different components that were mechanics, dynamics, and aesthetics.

According to Dicheva et al., (2015) mechanics were the way that gamification system converted specific inputs into outputs, which included things like points, badges, virtual items, levels, cards, ranking achievements, collections etc (Zimmerlig et al., 2016).

According to Kuo and Chuang (2016) the main elements of the game were a collection of all the relevant virtual information that may change when the game start. All these game elements were used to create a meaningful game experience (Hamari, 2013), and it was the predefined behavior that was called game dynamics. Zimmerlig et al., (2016) suggested that dynamics drive the behavior of the user and specifically how the user and the game mechanics interact during the game. Dynamics set the rules and challenges that the user must respect and overcome to achieve the game elements (Xu et al., 2017). Moreover, Leimeister (2013) suggested that game dynamics were the experience of exploration, collaboration, competition, challenge, organization, collection, and the freedom of making choices.

According to Suh and Wagner (2017) these mechanics and dynamics show people their achievement and help them to experience a sense of fun and satisfaction or in other words,

aesthetics which describe emotional responses from the player, like emotions, feelings, and fun. The MDA works together towards through a set of carefully designed game mechanics, game designers to create a meaningful game experience for players (Xu et al., 2017).

Zichermann (2011) points out some commonly used rewards, such as money, can de-motivate the player. Moreover, Werbach and Hunter (2012) criticize rewards may increase activity, while intrinsic motivation contributes to engagement.

and enjoyment. Hamari (2013) reports that extrinsic motivation like reward has no effect on increased playing activity. Researcher suggested that all MAD components need to be considered to create a meaningful gamification experience for players.

Types of Players in Gamification

Kumar and Herger (2019) and Koivisto and Hamari (2014) mentioned that, to design an effective gamification strategy, understanding the motivates of people (player) is important and it's fundamental to know who the players will be, for instance, cultural and demographic aspects have great influence. Domínguez et al., 2013 proposed that meaningful gamification focuses on the hedonic function of gaming, addresses the intrinsic motivation of a person, leading to deep engagement and great satisfaction. Bartle (2003) has established theories for classification of player types of segmentation. This segmentation was first developed to describe video game players yet has proven to be generally used in the game design. And was able to group them into four categories:

• killers who value competition against other players, victory is their goal.

• Achievers who focus on attaining status and achieving goals, want to collect points, and level up, want to be the best or the first.

• Socializers who focus on socializing and community is their goal.

• Explorers who want to explore the rules, ideal strategies, mechanisms, and secrets of the game.

However, the game should not focus on just one player-type to be successful. In fact, shares of all four categories can be found in each player. The goal of segmenting is the realization that more than one player-type exist and that each of these types requires its own approach (Zichermann and Cunningham, 2011). Moreover, Sigala (2015b) stressed on Both the tourism organization and the game developer ought to work mutually to get a deep understanding of the tourist player's motivations for playing a tourism-related game in destination.

Application of Gamification in Tourism Industry

Applying gamification in tourism sector has found a great acceptance in both literature and practice (Swacha and Ittermann, 2017). Caused by increasingly complex and sophisticated tourists' expectations, gamification in the tourism industry expected to increase tourists' satisfaction levels, which provides better access to desired services and additional opportunities about virtual collaborative learning experiences while touring a destination via gamified app (Lee and Jin, 2019).

Nicholson (2012) promoted the idea of meaningful gamification which enables participants to find meaning in a real-world activity. gamified application can be applied in all tourism sectors like airlines, hotels, travel agents, car rental, and destination marketing organizations, through three phases of traveling; Pre, during, and post-trip (Xu et al., 2017).

Many examples of gamified experiences in the tourism industry were found, and it seems that the numbers will grow up with the help of digital technology developments (Xu et al., 2013). According to Hamed, 2017 Most of the gamification applications in tourism 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 (Corrêa and Kitano, 2015; Xu et al., 2014; Linaza et al., 2014). Next table 1showed some examples of mobile applications to be labeled as gamification applications.

Table 1: Examples of Gamified Mobile Application In Tourism Around The World.

Application name	Types &Description	Location	Reference
Trip venture	Augmented reality mobile application enhancing destination experience. Providing the opportunity to play in specific theme.	Berlin, Hamburg, Cologne, Munich, Paris, London, Stockholm, Rome, and Barcelona	https://tripventure.in/
Drallo	website include quizzes, treasure hunts to play. Designed for new locations and landscapes.	Switzerland	http://www.drallo.ch
Travel Plot Porto	Location-based game designed to create fun and engaging way to visit Porto's history, monuments, events and sights.	Portugal	http://www.appstore.com.pt/
Disney Memories	platform to refresh memories by designing photos with famous Disney characters and share them on social media.	Disney park	https://disney-memories-hd.soft112.com/
WishTrip Enterprise	Game-based location with GPS-navigable maps. It helps at transform the content of the trip into geo-tagged trail map and allow to chat with others nearby.	Around the world	WishTrip Enterprise
Ahlan Teeko	Kids educational game, based on the Egyptian dialect and aiming to explore simple aspects of Egyptian heritage through digital adventure.	Egypt	http://rainbowappsandsolutions.com/app/
Nexto	Smartphone application depend on augmented reality using challenges, which motivate the user to look for new monuments to collect badges, climb the ranking list and unlock new, entertaining levels	Berlin	https://techcrunch.com/nexto/?guccounter=1

Source: developed by author based on (Yılmaz and Coskun,2016).

To achieve the research goals, it is considered the three phases of the trip: before traveling, during traveling, and after travelling. Some tourists start planning their vacation before traveling and others plan less and are more inclined to decide on-site (Prebensen et al., 2012). The next three phases describe gamification techniques suitable for the respective phases of the visiting process through the 6D principle of gamification based on Werbach and Hunter (2012)

1. Techniques Applicable Before a Trip through 6 D framework.

The first step of 6D was to define business objectives enhancing visiting through increasing customer loyalty at the first phase is all about giving those who want to play deeper and more interactive experience before visiting the destination. In this way, the proposed application (Sighter game: The program can start at any pre-determined location see figure 1) which allows the tourist to feel a powerful and emotional connection to Siwa differently, by posing a challenge and promising a reward. After the business goal has been settled, the second step is that designers should delineate their target behaviors which should be simple and clear, such as create an account, vote for someone else, or increase the number of likes and shares per Facebook message

through game-design. To decide how to design the gamified system it's necessary to describe the players.in this paper, we focus on teenagers' segment and the target here is to keep them in the engagement loops and encourages them to keep updating their profile through motivation and fun which leads to create an atmosphere that matches the real environment and persuades them to take the trip decision. (Moreta et al., 2016; Mora et al., 2017; Swacha and Ittermann, 2017; Zhuowei ,2019; Elrouby and El Kasrawy, 2019).

2- Techniques Applicable on site through 6 D framework design:
In the second phase of the destination visiting process (Stray Boots was the proposed application for this phase, see figure 2), the core visitor experience is formed. gamification can raise the level of visitor satisfaction by instilling visitors. The business objectives here are to make visitors aware of the main idea, and let them inundate in the main destination by posing a challenge through the feeling of surprise mingled with admiration which could be caused by something beautiful, unexpected unfamiliar, and solving a puzzle promising a reward ,which lead to high levels of satisfaction and increase brand awareness (Moreta et al., 2016; Mora et al., 2017; Swacha and Ittermann ,2017; Zhuowei , 2019; Elrouby and El Kasrawy, 2019).

3- Techniques Applicable after a trip through 6 D framework:
The third and last stage of the destination visiting process shows how tourists would remember their visits and whether or how often they would make another visit, which the 6 D framework design showed. That gamification can be used both to reinforce memories of previous visits and to provide reasons for next visits through providing a story-based on quest game design. Provide visitors with information on where they have been to, what level they are on, how many points have, or what badges have collected so far? Users where can try multiple times to get higher points. The last principle is deploying the appropriate tools. Choose appropriate game components and game mechanics, and then coded them into the gamification system where players can earn achievements through completing games, winning trivia challenges, riding rides, and even simply walking through various places within the park, and it is encouraged to share them via social media.

It is accepted that such involvement can be improved by innovation, which allows visitors to feel more proprietorship, stream, and purpose when engaging with the play tasks. Well-designed gamification applications have a positive effect on communication and interaction between visitors and the neighborhood community, improving overall visitor involvement, create maintainable visitor behavior (Negruşa, 2015; Goldsmith, 2017; Spanellis, 2019).

Research Method

This study aimed to use the gamification Impact on Enhancing Visiting Entertainment Destination throughout game design, brand app experience, and consumer–brand satisfaction, to measure purchase intention of using app marketing as a moderating variable measuring the impacts of gamification. gamification involves the use of games or elements of a game structure to attract people to Siwa destination.

The study selected participants as college and graduate students who were very familiar with the Smartphone and digital environment, including mobile applications. Such a sample which is reasonable for dealing with sample bias.

Respondents were male and female aged in their 20s and 30s with an interest in using gamification brand apps were distinguished from existing brand apps.

The research was conducted using 250 college and business administration Graduate students who were Smartphone users were surveyed about their brand apps, of which 234 returned the

questionnaire; these were used for the statistical empirical analysis. To enhance the credibility of the results, actual data were collected from each respondent via Emails to identify those who had been using an app for at least 3 months.

Questionnaire Development

This study was conducted by using a self-administered questionnaire adapted from (Schmitt, 2003 and Kim, 2010). The questionnaire consisted of 3 independent variables related to gamification marketing tool and one independent variable related to purchase intention; responses were based on a five-point Likert scale (from 1—strongly agree to 5—strongly disagree)

The gamification marketing tool section contained 30 items based on three job facets: gamification factors, brand app experience, and consumer–brand satisfaction. The purchase intention contained 10 items about the factor influenced consumer intention to purchase.

Statistical Analyses

Pearson correlations were computed for the measured variables using SPSS version 24. Regression analyses were conducted to examine the extent to which elements of gamification marketing tool are influenced purchase intention and how gamification impact can enhance visiting entertainment destination.

Research Questions

1. Is there a correlation between the previously mentioned dimensions and gender?
2. Are Elements of gamification marketing tool positively influenced purchase intention?

Internal consistency

To test the measurement consistency of the constraint dimensions, table 1 show the reliability analyses were conducted. The Cronbach's alpha coefficient scores indicated that the items used to measure these constructs were marginally reliable, as alpha scores were 0.755

Table 2: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.755	.734	40

Results

Table 3 shows the results of the correlation coefficient using Pearson correlations and indicates the presence of a moderately significant correlation between game design, brand app experience (P=.512), and purchase intention (P=.705) which had the highest level of intention ,as the significance level was less than (0.01). While there was a moderately significant correlation between brand app experience and purchase intention (P=.530). The results indicated that there was not a correlation between the mentioned dimensions and Gender. This result indicates that entertainment destination which decide to apply a gamification strategy can promote it to all customers without focusing on a certain segment based on gender, as it has not been clear who would be more interested in using gamified app and who would engage with the destination through this new marketing trend.

Table3: Correlations between mentioned dimension and gender

		game design	brand app experience	consumer–brand satisfaction	purchase intention	Gender
game design	Pearson Correlation	1				
	Sig. (2-tailed)					
brand app	Pearson	.512**	1			

		game design	brand app experience	consumer–brand satisfaction	purchase intention	Gender
experience	Correlation					
	Sig. (2-tailed)	.000				
consumer–brand satisfaction	Pearson Correlation	.176**	.139*	1		
	Sig. (2-tailed)	.009	.040			
purchase intention	Pearson Correlation	.705**	.530**	.125	1	
	Sig. (2-tailed)	.000	.000	.065		
Gender	Pearson Correlation	.007	-.059	.026	-.079	1
	Sig. (2-tailed)	.920	.387	.700	.228	
	N	234	234	234	234	234

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

The results in table 4 reveal that the R-squared value of the model that tested the impact of Elements of gamification marketing tool on purchase intention was .536, indicating that the explanatory power of the regression model was 53.6%. This result means that 46.4% of the variation was unexplained; thus, adding other independent variables could support and improve the fit of the model. The F-statistic value, a measure for testing the statistical significance of a regression equation, was 82.405, showing that the model was significant at the 0.001 level. The regression coefficient (β) of the subordinate factor game design elements was 589 (p< 0.02) .230 (p< 0.05) for brand app experience.

Table 4: Elements of gamification as marketing tool are positively influenced purchase intention.

Dependent Variable	Independent Variable	Unstandardized B	Std. Error	Standardized Beta	t-value	p-value
purchase intention	(Constant)	5.133	2.730		1.880	.061
	game design	.650	.060	.589	10.784	.000
	Brand-app experience	.244	.058	.230	4.240	.000
	Consumer-brand satisfaction	-.013	.057	-.011	-.225	.822

F-value=82.405, P-value=.000, R-square=.536
Notes. *p< .05, **p< .01, ***p< .001.

Two subordinate factors of impact of Elements of gamification marketing tool had a significant effect on purchase intention, indicating that game design, and brand app experience were definitely critical factors for influencing the purchase intention of clients. The other dimension consumer–brand satisfaction did not meet the requirement (*p*> .05).

Game design, had the highest beta value (.589), followed by brand app experience (.230). This result indicates that Game design and brand app experience made the strongest contribution to purchase intention.

These β values provide a sense of the influence that each predictor had on the outcome when the effects of the other variables were held constant. Thus, if Game design and brand app experience

increased by one unit, purchase intention will be increased by 0.650 units, and 0.240 units respectively. Based on the previous results, the final predictive model was:

Purchase intention =5.133+ (0.650* game design)+(0.240* brand app experience)

Discussion

Gamification has been widely used in tourism sector, as an innovation strategy of digital transformation. It has a great influence to engage and motivate users as well as to spark further behaviour.so as well has marketing domain adopted gamification as a new way to increase the engagement with further strengthen brand app experience, and consumer–brand satisfaction. However, many are still confusing gamification in tourism with the creation of loyalty programs or developing full games applications. The study found that the use and spread of gamified applications in Egyptian destination were not much applied as it can and should be the great challenge was that gamified applications may require huge budget, time and mastery of many technical protocols and experience to operate.

In this study we investigated the relationship between the consumer intention to purchase (N=234) influenced by gamification elements (30 elements divided to across three dimensions: game design, brand app experience, and consumer–brand satisfaction). It also measures the relationship between the mentioned dimensions and gender. As well as this to determine the influence of gamification elements to attract people to Siwa destination.

The study proposed two questions to measure the impact of gamification at enhancing visiting destination Siwa. The first question aimed to measure the gender impact on purchase intention and using gamified app on destination. The result showed that there is no correlation between male or female at using gamified app to enhance visit to Siwa and there's also no correlation between gender and purchase intention. This result was in line with Hamed (2017). It revealed that there was not any relationship between gender and using Gamification applications in tourism websites. What is worth to mention that Koivisto and Hamari (2014) disagreed with this result, they reported that women have greater social benefits from the use of Gamification app. Therefore, the designing of gamification applications and the target audience should be segmented depending on homogenous market segments instead of gender factor.

The second question aimed to evaluate the influenced of the elements of gamification (the three dimensions: game design elements, brand app experience and consumer–brand satisfaction) as a marketing tool at purchase intention. The highest beta value was for game design elements and brand app experience, however the lowest beta value was for consumer–brand satisfaction.

Depending on the design of game elements; The regression coefficient (β) of the subordinate factor was 589 (p< 0.02) the gamified system with used MAD framework creates fun, engaging, rewarding tourist experiences, contributes to a deeper engagement, understanding and learning, higher satisfaction with the entertainment destination, establishes a fun and personal experience, which contributes to increase brand awareness, built up customer loyalty.

The game design elements were critical factors to motivate consumers for using gamified applications on tourism destination in the three stages of trip through 6D gamification Design Framework as follow:

Before the trip rewarding consumers by game design mechanics like badges or points were Attract tourists through increasing customer loyalty, encourage them to create an account on the app, vote for someone else through the app, or motivate them to rate reviews.

On the trip: raise the level of visitors satisfaction through Making visitors feel surprise mingled with admiration. It will occur by something unexpected unfamiliar, or inexplicable through using Geocaching, that is called game dynamics.

After the trip: used the MAD framework for game design to reinforce memories of previous visits and to provide reasons for next visits, provide a story-based on quest design, reward completing a quest with points, badges and give discounts or souvenirs for the leaders which support them to revisit the destination (siwa) again. These results were not in line with the study of Zichermann (2011) And Hamari (2013), they reported that extrinsic motivation like rewards, discounts or offering money has no effect on increasing playing activity.

The researcher had the same view with Sigala (2015b) and Xu et al. (2014) about the importance of including both intrinsic and extrinsic incentives in the gamification strategy, however, the current study stressed on MAD components need to be considered to create a meaningful gamification experience to enhance visit to Siwa.

On the other hand, there was a strong relation between brand- app experience and consumer purchase intension. The regression coefficient (β) of the subordinate factor was 230 (p< 0.05) for brand app experience which means many consumers are downloading and using brand apps. Positive brand app experiences lead consumers to use the app regularly, sign up for loyalty programs, make more purchases, and become more loyal to the destination.

The last thing worth mentioned was that even though the regression coefficient (β) of the subordinate factor consumer–brand satisfaction did not meet the requirement ($p> .05$) towards consumer purchase intension. The impact of gamification on consumer brand satisfaction cannot be neglected. One possible explanation for this is that most of gamification marketing techniques of online communities may be able to increase using apps and attract new members, but do not intrinsically motivate customers to engage with the specific brand (Xi and Hamari, 2019).

In view of all mentioned points, it is believed that the impact of gamification on entertainment destination Siwa could be enhanced by gamified apps. Therefore, people will feel more ownership, flow and purpose when engaging with the play tasks. Well-designed gamification applications have positive impact on communication and interaction between tourists and destination, enhancing overall tourist experience, develop sustainable tourist behavior, and increase the brand awareness.

In line with modern trends, this paper highlights the impact, of developing gamification applications in Siwa in arrange to enable not only a better tourist experience during they travel and stay in the destination, but also a feedback to the destination management, which can be used for further development of destination product.

References:

Adrián D., Joseba Saenz N., Luis M., Fernández C., Sanz C., Pagés J., Herráiz J.,(2013). Gamifying learning experiences: Practical implications and outcomes. Elsevier Ltd.

Bellman, S., Potter, R. F., Treleaven- Hassard, S., Robinson, J. A., and Varan, D (2011). The effectiveness of branded mobile phone apps. *Journal of Interactive Marketing, 25(4)*., 191-200.

Byeong Cheol Lee, (2019). The Effect of Gamification on Psychological and Behavioral Outcomes: Implications for Cruise Tourism Destinations. *Sustainability 11(11)*, 3002.

Chang J.-W. (2014). Gamification Design for Increasing Customer Purchase Intention in Mobile Marketing Campaign App. Conference Paper: HCI International.

Cruz-Cunha, M-M., (2013). Serious Games as Educational, Business and Research Tools. Publisher: IGI Reference.

Deterding, S., Dixon, D., Rilla, K., and Lennart, N. (2011). From Game Design Elements to Gamefulness: Defining Gamification. Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environment.

Deterding, S., Khaled, R., Nackle, L. E., and Dixon, D. (2011). Gamification: Toward a definition. ACM, New York.

Dicheva, D., Dichev, C., Agre, G. and Angelova, G, (2015). Gamification in Education: A Systematic Mapping Study. *Journal of Educational Technology & Society, 18(3)*, 77-85.

Elrouby I. and El Kasrawy I., (2019). Applying Gamification to Raise Awareness of Cultural Heritage in Egyptian Museums (Case Study: Alexandria National Museum). *JFTH, 16(1)*, 1-16.

Francisco J. G., Carlos J., Villagrá A., Rosana C., Patricia R., Molina C., and Faraón, L.-L. (2019). Cátedra Santander-UA de Transformación Digital, Universidad de Alicante, 03690 San Vicente del Raspeig, Spain. Available online: https://doi.org/10.3390/informatics6040049.

Gerald C. (2018). The Origins and Future of Gamification University of South Carolina Scholar Commons.

Goldman S. (2016). Virtual & Augmented Reality: The Next Big Computing Platform? Innovation series. Research report.

Goldsmith , S. (2017). Boosting Engagement by Gamifying Government, government technology. Available online: https://www.govtech.com/authors/Stephen-Goldsmith-GT.html.

Hall, S., and Takahashi, R. (2017). Augmented and virtual reality: The promise and peril of immersive technologies. available online: https://www.weforum.org/

Hamari, N. Xi, J. (2019). Does Gamification satisfy needs? A study on the relationship between Gamification features and intrinsic need satisfaction. *International Journal of Information Management*, 46, 210-221.

Hamari, J. (2013). Transforming homo economicus into homo ludens: A field experiment on Gamification in a utilitarian peer-to-peer trading service. *Electric Commerse Research and Applications*. Available online: http://dx.doi.org/10.1016/

Hamari, J. (2019). Gamification. In G. Ritzer and C. Rojek (Eds.), *The Blackwell Encyclopedia of Sociology*. New York John Wiley & Sons.

Högberg J., Ramberg M., Gustafsson A., and Wästlund E., (2019). Creating brand engagement through in-store gamified customer experiences. *Journal of Retailing and Consumer Services, 50,* 122-130.

Huang, H. and Gao, S., (2018). Location-Based Services. The Geographic Information Science & Technology Body of Knowledge. (1st Quarter Edition).

Hunicke, R., Leblanc, M., & Zubek, R. (2004). MDA: A formal approach to game design and game research. Paper presented at the in Proceedings of the challenges in games AI workshop. 19th national conference of artificial intelligence.

Koivisto J. and Hamari J. (2014). Demographic differences in perceived benefits from Gamification. *Computers in Human Behavior, 35,* 179-188.

Lee, J.-Y. and Jin, C.-H. (2019). The role of Gamification in brand app experience: The moderating effects of the 4Rs of app marketing. Cogent Psychology. Available online: https://doi.org/10.1080/23311908.2019.1576388.

Werbach, K., and Hunter, D. (2012). For the Win: How Game Thinking Can Revolutionize Your Busines.

Duggan K., Shoup K. (2013). Business Gamification for Dummies. E- book.

Kumar J., Herger M., and Dam, R. F. (2020). Bartle's Player Types for Gamification. Available at https://www.interaction-design.org/literature/article/bartle-s-player-types-for-Gamification.

Kuo, M. and Chuang, T., (2016). How Gamification motivates visits and engagement for online academic dissemination– An empirical study. *Computers in Human Behavior, 55*,16-27.

Sigala, M. (2015). The application and impact of Gamification funware on trip planning and experiences: the case of TripAdvisor's funware. *Electronic markets: the international Journal on Networked Business, 25(3)*, 189-209.

Huber M. Z. and Lorenz M. (2015). Gamification and Sustainable Consumption: Overcoming the Limitations of Persuasive Technologies. Springer international Publishing.

Mora, A. (2018). A framework for agile design of personalized Gamification services. thesis, Department of Computer Science, Multimedia and Telecommunications Universitat Oberta de Catalunya.

Mora, A., Riera, D., González, C. et al. (2017). Gamification: a systematic review of design frameworks. *J Comput High Educ29*, 516–548 https://doi.org/10.1007/s12528-017-9150-4

Negruşa L.A., Toader V., Sofică A., Tutunea M.F., and Rus R.V., (2015). Exploring Gamification Techniques and Applications for Sustainable Tourism. Department of Hospitality Services, Faculty of Business, Babeş-Bolyai University.

Nicholson, S. (2012). Theoretical Framework for Meaningful Gamification. School of Information Studies, Syracuse University.

Odincova, A. (2017). Using Gamification to Motivate Self-Regulated Learning in Adults, Research through Design: Developing a Quiz-Based Learning Tool. Master thesis, University of Oslo.

Robsona K., Planggerb K., Kietzmanna J., McCarthya I., and Pitt L., (2015). Is it all a game? Understanding the principlesof gamification. *Business Horizons, 58*, 411-420.

Sailer, M., (2016). The impact of Gamification of motivation and performance: Empirical studies in the context on manual working processes. Springer publisher.

Souza V.S., Varum C.M.D.A. & and Eusébio C. (2017). The Potential of Gamification to Increase the Competitiveness of Tourist Destinations: literature review based on Scopus. *Turismo em Análise, 28(1)*, 91-111.

Spanellis, A., (2019). The role of Gamification in workplace creativity. insight publisher. Available online: https://workplaceinsight.net/the-role-of-Gamification-in-workplace-creativity.

Suh, A. and Wagner, C. (2017), "How Gamification of an enterprise collaboration system increases knowledge contribution: an affordance approach" Journal of Knowledge Management, Vol.21, (No.2).

Swacha, J., et Ittermann R., (2017). Enhancing the tourist attraction visiting process with Gamification: key concepts. *Engineering Management in Production and Services Journal, Vol. 9(No,4)*. 59-66.

Terrill, B. (2008). My coverage of lobby of the social gaming summit. http://www.bretterrill.com/2008/06/my-coverage-of-lobby-of-social-gaming.html.

UNWTO Guidelines for Institutional Strengthening of Destination Management Organizations (2020). Preparing DMOs for new challenges.

Yoo, C., Kwon, S., Na, H.; Chang, B., (2017). Factors Affecting the Adoption of Gamified Smart Tourism Applications: An Integrative Approach. *Sustainability* 9(12), 2162.

Wafa Hammedi, Leclercq Thomasand and Ingrid Poncin, (2019). Customer Engagement: The Role Of Gamification. In: Linda D. Hollebeek, David E. Sprott, Handbook of Research on Customer Engagement, Edward Elgar Publishing.

Weber, J., (2016). Gaming and Gamification in Tourism". available online: https://thinkdigital.travel/wp-content/

Werbach, K., & Hunter, D. (2012). For the Win: How game thinking can revolutionize your business. Philadelphia, PA: Wharton Digital Press.

Yılmaz H., and Coskun I. (2016). New Toy of Marketing Communication in Tourism: Gamification, A Guide for Game-Design-Based Gamification. E-BOOK, e-Consumers in the Era of New Tourism.

Xu, F., Buhalis, D. and Weber, J. (2017). Serious games and the Gamification of tourism. *Tourism Management, 60*, 244-256.

Xu, F.; Weber, J.; Buhalis, D., (2014). Gamification in Tourism. In Information and Communication Technologies in Tourism. Springer International Publishing.

Zichermann, G. (2011). Gamification Co. Intrinsic and Extrinsic Motivation in Gamification. Available online: http://www.Gamification.co/2011/10/27/intrinsic-and-extrinsic-motivation-in-Gamification/.

Zichermann, G. and Cunningham, C., (2011). Gamification by Design: Implementing Game Mechanics in Web and Mobile Apps. 1st ed. O'Reilly Media, Inc.

Zimmerling, E., Höflinger, P., Sandner, P. and Welpe, I., (2016). A system framework for gamified Cost Engineering. *Information Systems Frontiers, vol.18(No.6)*. 1063-1084. DOI 10.1007/s10796-016-9624-3.

http://sightergame.com/

https://www.strayboots.com/

Figure 1 sighter game example for pre-trip gamified app

Figure 2 stray boots game example for on- trip gamified app

Source : http://sightergame.com/

Source : https://www.strayboots.com/