



The impact of gamification adoption intention on brand awareness and loyalty in tourism: The mediating effect of customer engagement

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ABSTRACT

Gamification has been used by tourism organisations for marketing purposes to reinforce customer engagement and to achieve brand awareness and loyalty. The current study, using the Unified Theory of Acceptance and Use of Technology, aims to investigate the antecedents and consequences of gamification's adoption intention by tourist organisations, and to examine the mediation effect of customer engagement. A quantitative method was employed using a survey to collect data from a random sample of relevant managers in travel agencies. Using structural equation modelling for data analysis, the findings revealed that tourism organisations have positive intentions to adopt gamification to increase customer engagement and to achieve tourist destinations' brand awareness and loyalty. Implications, limitations, and future research are also addressed.

1. Introduction

Gamification entails using games with specific aim in mind, typically engaging users and influencing their behaviour (Deterding, Dixon, Khaled, & Nacke, 2011; Xi & Hamari, 2019). It is identified as a promising tool for tourism marketing through which customers are engaged to promote tourism destinations. While enjoyed, tourists use serious games to find out information about the places of visit and to achieve memorable experience (Buhalis et al., 2019; Bartoli, Elmi, Bartoli, & Smorti, 2018; Bulencer & Egger, 2015; Xu, Buhalis, & Weber, 2017). Furthermore, gamification has crucial potential benefits for destinations' brand awareness and loyalty (Xu et al., 2017). Liu, Wang, Huang, and Tang (2019) and Buhalis et al. (2019) stated that gamification is a useful technology for tourism sector to reinforce tourist relationships' development, human resources management, and sustainable community support for tourism. Buhalis (2019) has attributed gamification as one of the technologies that will help increase customer satisfaction and engagement in the future.

Rodrigues, Oliveira, and Rodrigues (2019) pointed out that gamified websites attract young generations' attention and raise their aspiration. Additionally, with the spread of mobile technology, businesses are encouraged to embrace gamification to engage customers and increase sales (Eisingerich, Marchand, Fritze, & Dong, 2019). Hence, Zhang,

Phang, Wu, and Luo (2017) indicated that global companies incorporate gamification in their marketing activities (i.e. Expedia). Eisingerich et al. (2019) and Buhalis and Sinarta (2019) mentioned that customer's data collected from gamification apps and social media help companies understand their customers' needs, preferences and support building customer value co-creation.

Gamification has been used by destination marketing organisations (DMOs) for marketing purposes. According to Xu et al. (2017), some DMOs in Thailand and Germany use gamification to market their tourist attractions. Some airlines use it to increase passenger's loyalty and some hotels use it to improve customer engagement or to recruit employees. Some museums use it to maximize visitors' experience (Kasurinen & Knutas, 2018).

Although the previous research has studied the motivations of customer engagement in online communities (i.e. Islam & Rahman, 2017; Rather, Hollebeek, & Islam, 2019) and has also reached a conclusion that customer engagement has a strong effect on brand loyalty, Xu et al. (2017) stated that gamification is still in its infancy stages in tourism industry and the empirical research on the influence of gamification on tourism sales and marketing are called for. In addition, Rodrigues et al. (2019) concluded that measuring attitudes and intentions towards gamification's adoption is a recommended direction for future research to help provide research models contributing to

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gamification domain understanding.

To address the mentioned gaps, the current study contributes to literature of tourism marketing where there is a call for empirical research on the impact of innovative technologies (i.e. gamification) on tourism marketing activities efficiency. Therefore, the present study aims at predicting the antecedents and consequences of gamification’s adoption intention by travel agencies. In the current infancy stage of gamification’s adoption in tourism, the present study explores the traditional factors affecting new technology adoption intention (i.e. gamification) and its effect on customer engagement and brand awareness and loyalty.

Travel agencies are a significant component of travel and tourism industry and most package tours are sold and executed by them particularly with the significant role of online travel agencies (OTAs) in marketing holiday packages (Abou-Shouk, 2018; Abou-Shouk, Lim, & Megicks, 2016). Thus, the current study provides significant insights to travel marketers and trip planners in travel agencies to understand the factors predicting customer engagement, raising brand awareness and loyalty and progressing marketing efforts.

2. Literature review and hypotheses development

2.1. Gamification and tourism

Xu, Weber, and Buhalis (2014) have introduced some examples of gamification in the tourism industry. Location-based games could enable tourist interactions via augmented reality, storytelling technique used by DMOs to motivate tourists visit destinations, restaurants use games to motivate customers to win rewards of gained food, and airlines use gamification for improving passenger’s loyalty programs. Furthermore, Buhalis et al. (2019) highlighted the potential usefulness of gamification in tourism in terms of the ability of exploring historical sites and sustainability concerns. Generally, the main aim of these games is to engage customers, maximize their co-creation value, and to change their purchasing behaviour and loyalty concerns (Xu et al., 2017).

2.2. Conceptualizing gamification

Researchers examining technology actual or intended adoption in tourism usually employ the Technology Acceptance Model (TAM), the Theory of Reasoned Action (TRA), the Theory of Planned Behaviour (TPB), the Unified Theory of Acceptance and Use of Technology (UTAUT) or the extended versions of these models to predict adoption behaviour. The UTAUT in an integrated model that is subsuming the significant common variables revealed from earlier theories to predict technology adoption intention, in addition to its wide use in tourism context to predict innovation’s adoption intention (Abou-Shouk, Zoair, & Abdelhakim, 2019). The UTAUT has four dimensions that predict

technology adoption intention: performance expectancy, effort expectancy, social influence and facilitating factors (Venkatesh, Morris, Davis, & Davis, 2003).

The present research employs the UTAUT to predict the factors influencing adoption intention of gamification (sections 2.3 to 2.6 will refer to the four dimensions of the UTAUT and gamification adoption). One outcome of gamification’s adoption is customer engagement (Buhalis, 2019; Rather & Camilleri, 2019; Xu et al., 2017) (see section 2.7). It is also acting (i.e. customer engagement) as an antecedent of brand awareness (i.e. Buhalis & Sinarta, 2019; Samala, Singh, Nukhu, & Khetarpal, 2019; Xi & Hamari, 2019; Xu et al., 2017) and brand loyalty (i.e. Harwood & Garry, 2015; So, King, Sparks, & Wang, 2016; Vivek, Beatty, & Morgan, 2012) (see sections 2.9 and 2.10). Therefore, the current study integrates the previous research of gamification’s adoption, customer engagement, brand awareness, and brand loyalty (see section 3 and Fig. 1) to predict the antecedents and consequences of gamification’s adoption in tourism sector.

2.3. Performance expectancy and gamification’s adoption intention

Performance expectancy refers to the perceived benefits achieved using innovations to improve job performance (Abou-Shouk, 2012; Abou-Shouk et al., 2019; Venkatesh et al., 2003). The main benefit of gamification is supporting tourism enterprises to increase customer engagement (Alsawaier, 2018) and to build a form of co-ordination with customers that helps achieve the concept of customer co-creation (Abou-Shouk, 2018; Buhalis & Sinarta, 2019). The co-ordination between businesses and their customers is a form of co-operative marketing aiming to market tourism products and services globally, and to increase business competitive positions (Abou-Shouk, Tamam, & Hewedi, 2019). Jang, Kitchen, and Kim (2018) and Buhalis and Foerste (2015) explained that information received by social media and game’s users about tourist attractions is significantly influencing their adoption intention of technologies (i.e. gamification).

Buhalis and Sinarta (2019) and Hsu and Chen (2018) revealed that gamified websites are positively influencing users’ experience and helping market business brands. It also has a significant effect on the customers’ brand trust and loyalty. Jang et al. (2018) found that the gamified customer’s benefits include achieving the target marketing outcomes through engaging customers and influencing their purchasing behaviour. Therefore, tourism businesses incorporate gamification in their marketing strategies for improving customer participation, changing purchasing behaviours and maintaining loyalty practices (Xu et al., 2014; 2016). To this end, the first proposition of the present research is developed as follows:

H1. Gamification’s performance expectancy is positively affecting tourism organisations’ (i.e. travel agencies) intention to adopt gamification websites/ applications

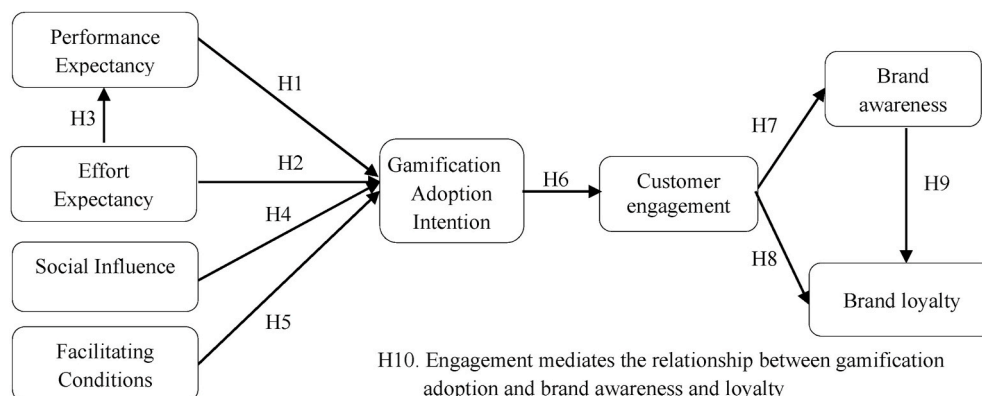


Fig. 1. Research model.

2.4. Effort expectancy and gamification adoption

Effort expectancy refers to the effort required to use new technology (Venkatesh et al., 2003). Previous research has reported significant causal associations between effort expectancy and technology adoption and between effort expectancy and performance expectancy (i.e. Abou-Shouk et al., 2019; Abou-Shouk, 2012; Abou-Shouk & Hewedi, 2016; Venkatesh, Brown, Maruping, & Bala, 2008; Venkatesh, Thong, & Xu, 2012). According to Sánchez-Mena and Martí-Parreño (2017) one main driver of using gamification is its easiness to use. The design of games in addition to the feelings of enjoyment that players perceive of using serious games generate customer positive attitudes towards learning and thinking creatively to pass games' challenges (Liu et al., 2019). The customer's feelings of challenges' achievement increase player's competences to use gamification (Xi & Hamari, 2019). Customers stated that they will be frustrated whether the game is too hard to use or to be able to upgrade to higher game levels, while it would be boring if it is too easy, and thus a balance should be kept for users' enjoyment and achievement (Eisingerich et al., 2019). Rasool, Shah, and Islam (2020) recommended marketers to revise their games continuously to maintain fun and excitement in order to sustain customers' engagement.

According to Mathew and Soliman (2020), perceived enjoyment and convenience are positive influencers of customers' intention to use digital content marketing. Clear games' design motivates users to engage with the game and gain its benefits (Hassan, Dias, & Hamari, 2019; Marcucci, Gatta, & Le Pira, 2018). Chittaro and Buttussi (2019) pointed out that complex games are rarely used by customers and discourage their engagement. Therefore, Rapp, Hopfgartner, Hamari, Linehan, and Cena (2019) emphasized that simple and clear design of games are significant factors affecting users' inspiration and adoption of such games. Thus, the second hypothesis of the present research is formulated as follows:

H2. Gamification's effort expectancy is positively affecting tourism organisations' (i.e. travel agencies) intention to adopt gamification websites/ applications

2.5. Effort expectancy and performance expectancy

According to the UTAUT relationships, effort expectancy has a direct effect on performance expectancy (Venkatesh et al., 2003). This relationship implies that the easier-to-use the technology is, the more beneficial it is perceived (Abou-Shouk et al., 2019). Shaw and Sergueeva (2019) revealed that the degree of application's easiness-to-use is crucial for customer's decision of adoption. Users usually weight the effort they spend to learn the new technology against the benefits they would gain from adoption, they perceive the technology as highly useful if they would not spend too much effort to learn and use it (Davis, Bagozzi, & Warshaw, 1989). Previous studies examined the relationship between ease-of-use and perceived benefits and revealed that there is a positive influence of easiness to use a technology and the perception of it as useful and beneficial (i.e. Abou-Shouk et al., 2016; Abou-Shouk & Hewedi, 2016; Abou-Shouk, 2012). Therefore, we assume that the easiness of the games used by gamers in tourism marketing, would affect their perceived benefits of gamification, and the third hypothesis is formed as follows:

H3. Gamification's effort expectancy has a positive influence on gamification's performance expectancy.

2.6. Social influence and gamification's adoption

Social influence is the third UTAUT's predictor of technology adoption (Venkatesh et al., 2003). It refers to the impact of relevant others on individual's perception to use a particular technology (Venkatesh et al., 2012). Eisingerich et al. (2019) emphasized the significant

effect of social influence on users' technology adoption. They found that social interaction is a significant driver to adopt gamification particularly when the majority of friends or work colleagues use the same game. Likewise, Abou-Shouk et al. (2019) revealed that social influence is a significant enabler of mobile applications' usage by tourist organisations as a result of customers' and competitors' pressures. Furthermore, Aebli (2019) depicted that one rationale motive behind adopting gamification by gamers is individuals' connectedness to others. Shen, Choi, Joppe, and Yi (2020) added that socializing with friends and interacting with local people at destinations are further significant motives to use game applications and taking gamified trips in tourism destinations. Build upon the importance of social influence in adopting gamification, the fourth hypothesis is stated as follows:

H4. Social influence is significantly influencing tourism organisations' (i.e. travel agencies) intention to adopt gamification websites/ applications

2.7. Facilitating conditions and gamification's adoption

Facilitating conditions of gamification adoption are among the dimensions called for in future research (Rasool et al., 2020). It refers to available resources and support to perform behaviour (Abou-Shouk et al., 2019; Venkatesh et al., 2003). Sánchez-Mena and Martí-Parreño (2017) found that limited financial resources, limited time for preparation, lack of preparation materials, and lack of training are significant barriers to adopt gamification. As for Jang et al. (2018) users with limited experience in using serious games will depend on the facilitating support provided by organisations to encourage their adoption and engagement with the game. Similarly, Abou-Shouk et al. (2019) pointed out that the facilitating conditions available in travel agencies, hotels, and archaeological sites have positively influenced their adoption intention of mobile applications. Tourism organisations need stimulated reality materials to build serious games in addition to financial and human resources to adopt gamification effectively. Building upon the significance of facilitating conditions for businesses to adopt gamification, the fifth hypothesis of the present study is initiated as follows:

H4. Facilitating conditions are significantly influencing tourism organisations' (i.e. travel agencies) intention to adopt gamification websites/ applications

2.8. Gamification's adoption and customer engagement

Moving from antecedents of gamification's adoption intention to the consequences of adoption, scholars agree that the main outcome of gamification's adoption is to effectively encouraging customer participation (i.e. Buhalis, 2019; Alsawaier, 2018; Harwood & Garry, 2015; Hassan et al., 2019; Rather & Camilleri, 2019; Xu et al., 2017; Yang, Asaad, & Dwivedi, 2017). Rodrigues et al. (2019) concluded that one significant outcome of gamification's adoption is customer engagement. Yang et al. (2017) referred to gamification as a system that applies game design in order to achieve customer engagement and retention. Similarly, Hwang and Choi (2020) stated that the primary aim of firms' use of gamification is to motivate and engage customers.

Eisingerich et al. (2019) explored that gamification is a significant medium facilitating customer engagement. They claimed that gamification's adoption helps companies achieve customer engagement through the social interaction, rewards' gaining, and behaviour change. Hsu and Chen (2018) emphasized that the use of gamification in marketing activities strengths customer engagement. Marcucci et al. (2018) added that gamification's adoption enhances stakeholder's engagement and Jang et al. (2018) mentioned that gamification is the main driver of engaging customers.

In tourism sector, Liu et al. (2019) claimed that gamification's adoption increases internal motivations of tourists to engage in festival activities. Aebli (2019) confirmed that gamification is a promising tool

to engage tourists and to create meaningful experience. Recently, [Coghlan and Carter \(2020\)](#) affirmed that visual reality games help interpret and protect heritage sites via representing threatened areas by engaging tourists to learn these sites. [Shen et al. \(2020\)](#) indicated that destinations use gamified trips to engage tourists via various features including interactive maps, challenges, rewards' gain, storyline and other features. They classified the adopter tourists of gamified trips into six categories with the majority categorized as knowledge collectors, reward seekers, and explorers. To this end, the sixth hypothesis of the present research is formulated as follows:

H6. Gamification's adoption intention by tourism organisations (i.e. travel agencies) has a significant positive impact on customer engagement with destinations.

2.9. Customer engagement and brand awareness

Generally, businesses consider customer engagement as the basis of customer awareness ([Rather & Camilleri, 2019](#)). Marketing practitioners believe that customer engagement is a crucial strategy to build strong customer relationships ([Vivek et al., 2012](#)). Therefore, businesses invest in using innovative tools (i.e. gamification platforms) in order to foster customer engagement and increase brand awareness ([Harwood & Garry, 2015](#); [Leclercq, Hammedi, & Poncin, 2018](#); [Liu et al., 2019](#)). [Dessart and Pitardi \(2019\)](#) highlighted the role of storytelling content of digital videos to engage customers with brands.

[Samala et al. \(2019\)](#) revealed that customer engagement leads to achieve better customer attention to brands (i.e. brand awareness). [Abbasi et al. \(2020\)](#) found that customer engagement increases brand awareness by sharing information about brands through word-of-mouth. Similarly, [Xi and Hamari \(2019\)](#) concluded that DMOs mostly use gamification to raise brand awareness. [Shen et al. \(2020\)](#) described the first category of gamification adopters as knowledge collectors to build their awareness about destinations via gamified trips and exploring tourist destinations' attractions. [Xu, Tian, Buhalis, Weber, and Zhang \(2016\)](#) and [Buhalis \(2019\)](#) found that exploring destinations is one of gamification usage motives in tourism marketing. Therefore, the seventh hypothesis is developed as follows:

H7. Customer engagement has a significant positive influence on tourist destination's brand awareness.

2.10. Customer engagement and brand loyalty

Although brand loyalty is a concept achieved beyond purchasing, customer engagement was found strongly affecting customer loyalty of specific brands ([Islam & Rahman, 2017](#); [Islam, Rahman, & Hollebeek, 2018](#); [Kaur, Paruthi, Islam, & Hollebeek, 2020](#); [Khan, Hollebeek, Fatma, Islam, & Rahman, 2019](#); [Rather et al., 2019](#); [Vivek et al., 2012](#)). [Thakur \(2019\)](#) found that customer engagement moderates the role between customer satisfaction and customer loyalty. Investigating the effect of customer engagement in tourism, [So et al. \(2016\)](#) revealed that it improves hotel and airline customers' brand evaluation, trust and loyalty. Likewise, [Samala et al. \(2019\)](#) empirically confirmed that customer engagement enhances tourist satisfaction, trust, and loyalty of certain tourism brands. Similarly, [Xi and Hamari \(2019\)](#) concluded that DMOs adopt gamification to increase brand loyalty.

[Hassan et al. \(2019\)](#) and [Jang et al. \(2018\)](#) pointed out that customer's social interaction with a service is significantly increasing their loyalty concerns with this service. [Hsu and Chen \(2018\)](#) finished to the result that the user's experience created through gamification is significantly affecting user's brand trust and loyalty. Recently, [Coghlan and Carter \(2020\)](#) found that tourism games improve tourist's post-experience engagement (i.e. brand loyalty). Likewise, [Hwang and Choi \(2020\)](#) confirmed that using gamification increases customer loyalty. Thus, the eighth hypothesis is formulated:

H8. Customer engagement has a significant positive impact on tourism destination's brand loyalty.

2.11. Brand awareness and brand loyalty

Tourism scholars and practitioners have realised the significance of tourist brand awareness and brand loyalty, which are interrelated sub-notions of brand equity ([Huerta-Alvarez, Cambra-Fierro, & Fuentes-Blasco, 2020](#)). According to [Kim, Choe, and Petrick \(2018\)](#), brand awareness and brand loyalty are basic components of a common structured framework used to conceptualize customer-based destination brand equity. The connection between brand awareness and brand loyalty has been investigated in prior studies within the tourism and hospitality context. For instance, [Hsu and Chen \(2018\)](#) demonstrated that brand awareness is an essential source of brand knowledge and a primary phase of visitors' commitment towards a specific brand and it is consistently linked to brand loyalty. [Xu et al. \(2016\)](#) have evaluated the link between brand awareness and brand loyalty of hotel chains and found that brand loyalty was significantly and positively influenced by brand awareness. Furthermore, [Kim et al. \(2018\)](#) illustrated that brand awareness of a festival was found to be a key predictor of festival brand loyalty. They also depicted that higher levels of festival brand awareness could lead to greater visitors' emotions associated with the festival destination. Thus, the following hypothesis is formulated:

H9. Tourist brand awareness is significantly affecting tourist destination's brand loyalty.

2.12. The mediating role of customer engagement

[Vivek et al. \(2012\)](#) found that customer engagement acts as a mediator between customer's participation and involvement and brand loyalty. In their conceptual model, [Wirtz et al. \(2013\)](#) conceptualized online brand engagement as a mediator between drivers to engage with a brand and increasing brand satisfaction and commitment. [Hollebeek, Glynn, and Brodie \(2014\)](#) examined the mediating role of customer engagement. They revealed that customer engagement mediates the relationship between brand involvement and self-brand connection and brand usage intent in social media settings. Similarly, [Hollebeek and Macky \(2019\)](#) found that engagement mediates the relationships between digital content marketing activities and brand loyalty. [Fernandes and Esteves \(2016\)](#) revealed that customer engagement mediates the relationship between the service context and loyalty behaviours. Recently, [Xi and Hamari \(2020\)](#) found that customer engagement mediates the relationship between features of gamification and brand equity (i.e. brand awareness and loyalty). Thus, the tenth hypothesis is developed.

H10. Customer engagement mediates the relationship between gamification's adoption intention and tourist brand's awareness and loyalty.

3. Research framework

The research model (see [Fig. 1](#)) integrates two models. The first looks at the predictors of gamification's adoption intention by travel agencies using the UTAUT developed and validated by [Venkatesh et al. \(2003\)](#), [Venkatesh et al. \(2008\)](#), [Venkatesh et al. \(2012\)](#) and the widely used amongst models measuring technology adoption in tourism sector ([Abou-Shouk et al., 2019](#)). The second model investigates the consequences (i.e. outcomes) of gamification's adoption (i.e. customer engagement, tourist destination brand awareness and loyalty). It is developed based on literature empirical studies (i.e. [Samala et al., 2019](#); [Xi & Hamari, 2019, 2020](#); [Xu et al., 2014, 2016](#)). The developed research model also investigates the mediating effect of customer engagement revealed by gamification's adoption and reinforcing the target outcome of tourist brand's awareness and loyalty ([Fig. 1](#)).

4. Research methods

4.1. Measures

The current paper comprises eight reflective latent variables (Fig. 1) adapted from previous research. Performance expectancy was measured using three indicators adapted from extant studies (i.e. Abou-Shouk et al., 2019; Xu et al., 2017). Effort expectancy was assessed through three items (Sánchez-Mena & Martí-Parreño, 2017; Venkatesh et al., 2003; Yang et al., 2017). Three indicators were adopted from prior studies (Venkatesh et al., 2003; Yang et al., 2017) to measure social influence. Facilitating conditions (5 items) and behavioural intention (3 items) were measured depending on the research of Abou-Shouk et al. (2019). Customer engagement was measured using four indicators adapted from past studies (Samala et al., 2019; Xi and Hamari, 2019, 2020). Five indicators of brand awareness were modified from literature research (i.e. Samala et al., 2019; Sánchez-Mena & Martí-Parreño, 2017). Lastly, brand loyalty is measured by four indicators adapted from literature studies (i.e. Harwood & Garry, 2015; Hsu & Chen, 2018; Hwang & Choi, 2020; Samala et al., 2019; Xi & Hamari, 2020).

4.2. Sampling design and data collection

The study employed the quantitative method using online questionnaire to gather primary data from the target participants. Firstly, in the cover page of the survey, a short brief on the importance of gamification’s applications for marketing purposes in tourism organisations is provided. The confidentiality issue of collected data is assured. Next, the survey was divided into two parts. The first encompasses a filter

question about the respondents’ knowledge of gamification, the demographic characteristics of participants including gender, age and qualification. It also involves some questions related to agents’ website and types of served markets. The second part consisted of 30 scale indicators associated with the researched constructs (Table 1). A five-point Likert scale was utilized, with anchors ranging from strongly disagree (1) to strongly agree (5), to measure the research model indicators.

The population of the present study contains category ‘A’ travel agencies in Egypt that are licenced to organize and sell tour packages for both inbound and outbound tourism (Abou-Shouk, 2018; Soliman & Wahba, 2019). According to the Egyptian Travel Agents Association (ETAA)(2020), there are 2198 travel agents, category A, operating in Egypt. This study focused on category A, as they are large agencies with various departments including marketing department, along with sufficient human and financial resources to invest in technology. This study targeted the concerned managers of agencies (e.g. general managers, marketing managers, sales’ managers or customer services’ managers) to better understand and assess their intention towards adopting gamification’s applications for marketing purposes. According to Saunders, Lewis, and Thornhill (2016), the representative sample size of 2198 travel agencies is 327 agencies (one relevant manager from each agency). The simple random sample was employed to select travel agencies from the ETAA’s, 2020 directory. Research assistants and friends were helped circulating the survey link to the 327 randomly selected travel agencies. Between December 2019 and February 2020, valid 312 responses were obtained and used in data analysis. G*Power following the guidelines of Kock (2020) is employed to calculate the minimum sample size needed for this empirical research and identified a sample size of 160 to achieve a power level of 0.80. As a result, 312

Table 1
Measurement model.

Constructs	Indicators	Loading	α	CR	AVE	\sqrt{AVE}
Performance expectancy	Using game application could enable my company to easily market products/service	0.850	0.774	0.869	0.689	0.830
	Use of game application could significantly increase the efficiency of my company’s marketing activities	0.817				
Effort Expectancy	Using game application could increase the competitiveness of my company	0.823	0.849	0.908	0.768	0.876
	I believe that it is easy to use the game application to market my company effectively	0.875				
	I think that customer interaction with the game application would be clear and understandable	0.885				
Social influence	Customers will find the application easy to use	0.870	0.809	0.887	0.724	0.851
	My company could use game application if an increased proportion of competitors use it	0.864				
Facilitating conditions	My company could use the game application because a significant proportion of customers will engage with it	0.848	0.860	0.899	0.651	0.807
	The management encourage using new innovative technologies for marketing purposes	0.840				
	My company has available resources to develop and use the game application	0.773				
	Using the game application would fit well with the way my company markets their services	0.829				
	My company has the skilled human resources to use the application and encourage customer engagement	0.784				
Behavioural intention/ expectation	It is expected that customers will enjoy the application	0.819	0.839	0.903	0.756	0.870
	It is believed that customers will find the application useful	0.799				
	I expect my company to use the game application in the near future	0.874				
	My company will use the application in the near future	0.890				
Customer engagement	My company is likely planning to use the application in the near future	0.844	0.847	0.897	0.731	0.855
	Using game application will increase customers’ interactivity/engagement with brand	0.823				
	Customers will like to actively participating in brand community discussion/activities	0.845				
	Customers will thoroughly enjoy exchanging ideas with other people in the brand community.	0.844				
Brand attention/awareness	Customers will be passionate about our brand	0.801	0.843	0.889	0.741	0.861
	Customers would like to learn more about our brand	0.766				
	Customers will pay a lot of attention to anything about our brand	0.764				
	Anything related to our brand will grab the attention of customers	0.761				
	I concentrate a lot on this brand	0.825				
Brand loyalty	Customer Sharing of their experience and recalling memories will help increase brand awareness	0.804	0.873	0.913	0.724	0.851
	Using game application will increase customer commitment to our brand	0.856				
	Customers would intend to keep using our brand	0.843				
	Customers will speak positively about our brand	0.879				
	Customers will recommend our brand to others	0.826				

Note: α : Cronbach’s alpha, CR: Composite Reliability, AVE: Average Variance Extracted.

Model fit indices: average path coefficient = 0.495, $P < 0.001$, average R-squared = 0.719, $P < 0.001$, average adjusted R-squared = 0.717, $P < 0.001$, average block VIF = 3.882 (< 5), average full collinearity VIF = 4.584 (< 5), Tenenhaus GoF = 0.710 (large), Sympton’s paradox ratio = 1 (ideal), R-squared contribution ratio = 1, (ideal), statistical suppression ratio = 1 (ideal), and nonlinear bivariate causality direction ratio = 1 (ideal).

responses collected for this study are adequately enough to conduct rigorous statistical analysis.

4.3. Analysis method

To perform data analysis, the PLS-SEM using WarpPLS software version 7.0 is used. The application of PLS-SEM requires a two-phase process (Manley, Hair, Williams, & McDowell, 2020). The first is assessing the measurement reliability and validity and the second is evaluating the inner model (Hair, Howard, & Nitzl, 2020). PLS-SEM is a promising analytical technique, especially for information systems and new technology research (Henseler, Hubona, & Ray, 2016) and is widely-used in social science studies including marketing (Davvetasa, Diamantopoulos, Zaefariana, & Sichtmann, 2020) and tourism (i.e. Abou-Shouk, 2018; Abou-Shouk & Hewedi, 2016; Abou-Shouk et al., 2019; Soliman & Abou-Shouk, 2016). Furthermore, PLS-SEM is a suitable technique used in some cases of research including complex models involving causal direct and indirect relationships and assessing multi-item constructs (Manley et al., 2020).

5. Research findings

5.1. Respondents' profile

Findings show that 36.2% of involved travel agencies work in international market scope, followed by 34.9% working in both national and international markets while 28.8% serves the national market only. 83.3% out of 84.6% of surveyed agencies owing websites have expressed their intention to adopt gamification for marketing purposes in the near future. The mean values of research model's constructs range from 3.74 for brand loyalty to 3.62 for performance expectancy meaning that respondents have positive opinions on the predictors and consequences of gamification's adoption intention. The majority of agencies' managers surveyed has a university qualification (88.8%) versus a minority (11.2%) has a postgraduate qualification. Most respondents are males (58.7%) and are aged between 25 and 45 years old (70.8%).

5.2. Measurement model

The measurement model aims to ensure the validity and reliability of the measures employed. Table 1 depicts that the indicators' loadings exceed 0.7, showing good correlations with their constructs. Cronbach's alpha (CA) and composite reliability (CR) values exceeding the threshold of 0.7 assuring reliability concerns (Manley et al., 2020). Furthermore, the values of average variance extracted (AVEs) are greater than the threshold of 0.5 implying that convergent validity exists (Hair et al., 2020). The square roots of AVEs were found greater than the

correlations among constructs confirming the existence of discriminant validity (Table 1). Furthermore, the HTMT ratio, as a more conservative method, revealed ratios less than the acceptable cut-off score of 0.90 (Henseler, Ringle, & Sarstedt, 2015) and therefore the discriminant validity exists. In addition, the VIFs values for the research model constructs were found less than 5 indicating that multicollinearity is not a problem (Hair et al., 2020).

5.3. Structural model

The structural model tests the causal relationships in the research model (i.e. hypotheses). Fig. 2 displays that there is a positive relationship between behavioural intention of gamification's adoption and performance expectancy (H1) ($\beta = 0.28$, and $P < 0.01$); effort expectancy (H2) ($\beta = 0.11$, and $P < 0.05$); social influence (H4) ($\beta = 0.24$, and $P < 0.01$); and facilitating conditions (H5) ($\beta = 0.31$, and $P < 0.01$). These four constructs explain 76% of variance in adoption's intention and have a large effect-size on the intention behaviour. This means that the benefits of using gamification by businesses, its easiness of use, the social influence of customers, businesses and relevant others in addition to facilitating conditions (available resources and support) are significantly influencing the gamification's adoption intention by travel agencies for marketing purposes. What is more, effort expectancy has a positive effect on performance expectancy (H3) ($\beta = 0.83$, and $P < 0.01$) and explains 69% of its variance. Behavioural intention of gamification's adoption by travel agencies is found positively and largely affecting customer engagement (H6) ($\beta = 0.83$, and $P < 0.01$) and explains 68% of variance in customer engagement ($R^2 = 0.68$). This leads to accept that gamification is a significant used technology to engage customers with tourist destinations. Additionally, customer engagement is positively influencing both brand awareness (H7) ($\beta = 0.83$, and $P < 0.01$, and $R^2 = 0.69$, large effect size), and brand loyalty (H8) ($\beta = 0.60$, and $P < 0.01$ and $R^2 = 0.51$, large effect size). Brand awareness has a positive impact on brand loyalty (H9) ($\beta = 0.29$, and $P < 0.01$ and $R^2 = 0.24$, medium effect size). Both customer engagement and brand awareness explain 75% of variance in brand loyalty while customer engagement explains 69% of variance in brand awareness. These findings imply that engaging customers achieves both the tourist awareness and loyalty of destination brands. Customer engagement was found partially and largely mediating the relationship between gamification's adoption intention and brand awareness ($\beta = 0.69$, and $P < 0.01$) and brand loyalty ($\beta = 0.50$, and $P < 0.01$, with a large effect size and H10 is supported). This means that engagement of tourists has a large effect on brand awareness and loyalty.

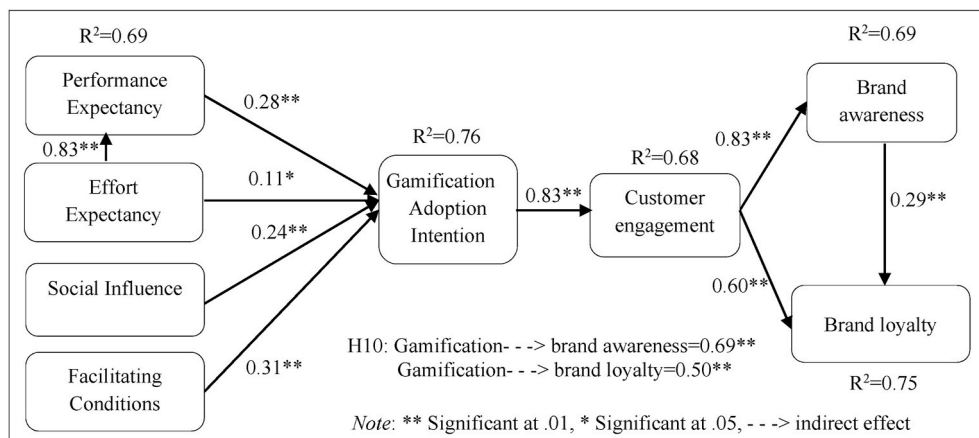


Fig. 2. Structural model of gamification adoption intention and its consequences.

6. Discussion of findings

Employing the UTAUT, this study tested the antecedents and outcomes of gamification's adoption intention in category 'A' travel agencies in Egypt. Overall, according to the findings, all hypotheses were confirmed. The empirical findings indicated that performance expectancy has a positive influence on behavioural intention to adopt gamification's applications in the Egyptian travel agencies. Using gamification apps has substantial effects on firm's performance in terms of improving marketing activities and competitiveness. These benefits could then improve the intention to use gamification apps for effective tourism marketing in these enterprises. This result is in line with Hsu and Chen (2018) who reported that there is a positive link between a gamified website and users' experience, which in turn has a positive influence on customer's trust of business brands. It also supported the results of Xu et al. (2014), Xu et al. (2016) and Jang et al. (2018) who depicted that adopting gamification apps substantially affecting customers' participation, loyalty and changing their purchasing behaviour.

It is also revealed that behavioural intention to adopt gamification's applications in travel agents was significantly impacted by effort expectancy, which in turn is positively affecting performance expectancy. These results support prior studies (i.e. Abou-Shouk et al., 2019; Venkatesh et al., 2008; Venkatesh et al., 2012) that confirmed the significant association between effort expectancy and both technology adoption and performance expectancy. These findings are consistent with the work of Xi and Hamari (2019) who reported that there is a significant link between players' achievement and competence when using gamification apps. This agreement supports the argument that the level of individuals' enjoyment depends on the difficulty of using a game application (Eisingerich et al., 2019). Additionally, these results concur with Mathew and Soliman (2020) who found that tourism consumers' attitude and behavioural intention to use online-based digital content marketing are positively influenced by perceived enjoyment and convenience. Moreover, these results agreed with previous studies (i.e. Chittaro & Buttussi, 2019; Hassan et al., 2019; Marcucci et al., 2018; Rapp et al., 2019) indicating that users' behaviour and engagement are significantly impacted by games' design clarity and easiness.

In addition, the results illustrated that there is a significant and positive link between social influence and gamification's adoption intention within travel agencies in Egypt. This finding is compatible with prior studies illustrating the relationship between social influence and adoption of mobile apps (Abou-Shouk et al., 2019) and certain gamification apps (Eisingerich et al., 2019). It also supported the work of Aebli (2019) and Shen et al. (2020) who indicated that socializing-related issues motivate individuals to use gamification apps in tourism destinations.

Moreover, the study findings indicated that there is a positive connection between facilitating conditions and behavioural intention to use gamification apps and gamified websites. To adopt gamification for tourism marketing purposes, tourism enterprises (i.e. travel agencies) in Egypt are required to pay closer attention to provide all requirements of financial and qualified human resources, and substantial support that helps in creating gamification platforms and applications to be efficiently used for marketing activities. This finding is in line with prior studies revealing that facilitating conditions provided by organisations determined the intention of mobile applications used for online reservation (Abou-Shouk et al., 2019) in addition to games' adoption and customer engagement with these games (Jang et al., 2018).

Regarding the outcomes of gamification's adoption, the empirical findings explicated that intention to adopt gamification apps by travel agencies significantly and positively influenced tourism customers' engagement with their destination. This leads to the agreement that gamification's applications play a crucial role in engaging travellers with their tourist destinations. According to the current research findings, utilizing gamification's applications could reinforce individuals' interactivity, passion and engagement with a specific brand and could

encourage them to effectively participate and to exchange ideas with others in brand community discussion and activities. This agreement is in line with prior studies (i.e. Hwang & Choi, 2020; Rodrigues et al., 2019; Yang et al., 2017) depicting that there is a significant relationship between gamification's usage and customer engagement. This result also supports the findings of Eisingerich et al. (2019), Hsu and Chen (2018) and Jang et al. (2018) who demonstrated that gamification apps positively affected customers' engagement in addition to stakeholder's engagement (Marcucci et al., 2018) in the tourism context (e.g. Aebli, 2019) including festival activities (Liu et al., 2019) and heritages sites (Coghlan & Carter, 2020).

Furthermore, the results revealed that brand awareness and brand loyalty were significantly and positively influenced by travellers' engagement. This means that the higher customer engagement with gamification's applications, the higher the tourist awareness and loyalty of destinations brand increase. This result is agreed with prior research (Xi & Hamari, 2019; Yang et al., 2017) pointing out that individuals' engagement through gamification could improve their loyalty towards a service. Furthermore, this result is in line with previous tourism research proved that customer engagement has a positive impact on their evaluation, trust and loyalty towards brands relate to airlines and hotels (So et al., 2016), specific tourism service (Samala et al., 2019) and tourist destinations and DMOs (Xi & Hamari, 2019). Moreover, according to the results, it is indicated that brand awareness has a positive effect on brand loyalty. This finding is in agreement with the work of Hassan et al. (2019) and Jang et al. (2018) who revealed that customers' loyalty towards specific service could be enhanced by their social interaction with and attention to this service.

Lastly, the empirical findings pointed out that customer engagement partially mediates the association between gamification's adoption intention and both brand awareness and brand loyalty. This result reassured the crucial role of customers' engagement in boosting the level of awareness and loyalty of tourists towards tourism destination brands. This finding is in agreement with Xi and Hamari (2020) who confirmed the mediation impact of customer engagement between gamification's features and brand equity and Hwang and Choi (2020) who revealed that gamification's adoption for loyalty programs is positively influencing customer's loyalty towards these programs. Overall, gamification's adoption is empirically proven to be a foster of customer engagement, which in turn, helps raising their awareness about tourist brands and increase their loyalty to such brands.

7. Research implications

7.1. Theoretical implications

With regard to theoretical contributions, the present study contributes to the extant knowledge in tourism studies by examining the determinants and outcomes of gamification's adoption intention within the travel and tourism fields. Gamification has been widely examined in different disciplines and contexts; however, little attention has been paid to the factors influencing the adoption's intention of gamification apps and its associated outcomes, particularly in developing nations, involving Egypt, where limited studies have empirically explored the predictors and significance of gamification, as an untraditional distinct tool that could be used in marketing and promoting tourism businesses' activities. More specifically, as far as the authors know, this work is the first attempt to investigate the issues related to gamification's adoption intention from travel agents' perspective, especially in Egypt. In addition, it is evident that most of the previous studies have focused on the customers' perspective concerning using gamification's applications. Therefore, this study contributes to the current literature in tourism by investigating the intention to use these applications from the perspective of travel agents' managers. Moreover, this research adds to the theory and contributes to the existing literature on UTAUT (Venkatesh et al., 2003) within the travel and tourism settings by incorporating three

crucial constructs regarding travel and tourism marketing and behaviour (i.e. customer engagement, brand awareness, and brand loyalty). To the best of the authors' knowledge, there is no past research examining the current research's model including its relevant variables within the travel and tourism domain in the Middle East region. Consequently, this research presents a further and in-depth understanding of the direct and indirect paths between the studied constructs, and their associated indicators, regarding the determinants and consequences of managers' intention to use gamification platforms in travel agencies in Egypt. Additionally, this study adds to the few studies investigating the influence of online and digital technologies and platforms on customer engagement, brand attention and brand loyalty of tourism destinations in the Middle East nations, including Egypt. Lastly, this study contributes to knowledge by indicating the substantial significance of customer engagement in increasing brand awareness and loyalty towards tourism destinations within an extended UTAUT model.

7.2. Practical implications

The current study provides various managerial implications regarding the benefits, enablers and consequences of gamification's adoption for effective marketing activities in tourism organisations (e.g. travel agents). Based on the aforementioned discussion associated with the empirical results, it is evident that behavioural intention to adopt gamification applications for marketing purposes by travel agencies is substantially influenced by four main antecedents, which are the benefits raised from gamification's adoption, its ease of use, social influence, and facilitating conditions. More interestingly, facilitating conditions have the highest influence on the behavioural intention towards gamification's adoption. This means that tourism organisations have to support the efforts seeking to use and adopt new and innovative e-marketing tools and applications (e.g. gamification) and to provide adequate financial and human resources to adopt suitable gamification applications and platforms for their marketing strategies and activities. In addition, tourism organisations in Egypt are required to provide training courses for the concerned staff on how to effectively use gamification platforms for tourism marketing purposes. These enterprises would be first requested to select proper applications and platforms and provide suitable systems for adopting gamification applications in an efficient manner. Second, experts and professionals in gamification apps have to be invited to conduct training programs for concerned employees in these organisations. Such training programs can provide clear guidelines and outlines on the practical aspects regarding the use of gamification's applications and platforms in governmental organisations (e.g. Egyptian Tourism Authority and Egyptian Tourism Federation) and non-governmental tourism organisations in Egypt (e.g. travel agencies, tour operators, etc). Additionally, using gamification platforms by small and medium-sized enterprises (SMEs), such as travel agencies, is an opportunity that could help in achieving their marketing goals and objectives. These platforms can be considered as an effective communication tool for such agencies lacking direct connection with their target markets and customers, especially in times of crises such as the outbreak of COVID-19 pandemic. Moreover, adopting gamification apps for marketing purposes is a proper technique for tourism enterprises, particularly these enterprises that find difficulties to provide sufficient human and financial resources to effectively promote their services and products globally. Moreover, the present study presents empirical evidence of the contribution of gamification's applications in raising brand awareness and building brand loyalty through engaging tourists in co-created valuable experiences. In this vein, gamification's applications could be a helpful source of information as well as a convenient window through which tourists can search for the required details about the destination (e.g. attractions, facilities, services, prices, etc). That is, tourism organisations are recommended to use effective gamification applications and platforms as well as to provide adequate and accurate information for users regarding the destination through

these apps, which in turn improves users' engagement and helps accomplish the long-run outcomes of tourism destinations' brand awareness and brand loyalty. Furthermore, the findings provide substantial evidence for tourism marketers and practitioners related to the significance of customer engagement in establishing effective connections and communication channels with target consumers by adopting suitable gamification's applications and platforms.

8. Limitations and future research directions

The present research has some limitations to be addressed by scholars in future research. First, the target sample of this paper included category 'A' travel agents in Egypt. Therefore, future studies could examine the adoption intention of gamification's applications in other Egyptian tourism organisations (e.g. tourist villages; tourist resorts; hotels; and/or another category of travel agents) to better understand the factors related to gamification's adoption within these enterprises. Additionally, this study investigated gamification's adoption intention from the perspective of concerned managers in travels agencies category A (i.e. supply side). Thus, further research can examine the gamification's adoption from tourists' perspective both quantitatively and qualitatively. This can help in providing clear outlines regarding the relationship between gamification's adoption and tourists' engagement and loyalty. Next, the current research used an online survey to collect data from target respondents in Egypt. Hence, it is recommended to conduct this research in another developing country and/or employ a comparative study between two countries with different cultures. A multi-group analysis, depending on a socio-demographic feature (e.g. gender, education level, type of firm, region, etc) is also recommended for further research. Moreover, this article assessed the mediation impact of customer engagement between gamification's adoption intention and brand loyalty and awareness. Future studies are, therefore, recommended to evaluate the moderation impact of some constructs associated with customers' attitudes, intention, and behaviour, along with new technology usage (e.g. privacy concerns, perceived security; perceived risks, eWOM, etc). Additionally, corporate image and/or corporate reputation could be examined, as mediators within the study framework in further research.

Author statement

Mohamed Abou-Shouk: Conceptualization, Methodology, Formal analysis, Investigation, Writing - Review & Editing Writing - Original Draft, Project administration. Mohammad Soliman: Conceptualization, Methodology, Investigation, Writing - Review & Editing original Draft.

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