

Could gamification improve visitors' engagement?

Miguel Trigo-De la Cuadra, Natalia Vila-Lopez and Asunción Hernandez-Fernández

Abstract

Purpose – *The experiences are the basis of the tourist sector and the creation of unique and unforgettable ones allows the differentiation from the competition. The purpose of this paper is to analyze the effects of the experience when visiting a zoo on our emotions and how they influence our (positive and/or negative) behaviors and to investigate whether an innovation (gamification programs) could be used to intensify the relations proposed.*

Design/methodology/approach – *The authors collected the experiences lived by 242 visitors in BIOPARC Valencia (a zoological park). Two subsamples were identified: 166 insatiable tourists who expressed that the gamification would complete their experience, and 76 conventional tourists who indicated that the current experience did not need any kind of improvement.*

Findings – *The results show that some of the proposed relationships are more tenuous among the insatiable visitors, defenders of gamification, which allows the authors to verify the possibilities offered by gamification.*

Originality/value – *First, although the impact of experiential modules on emotions and behaviors has already been investigated, as far as behavioral effects are concerned, the difference between positive behaviors (loyalty) and negative behaviors (complaints and claims) has not been addressed. Second, the relationship between both types of behaviors (positive and negative) in this sector has not been studied to date. Finally, although the literature recognizes the impact of technology and its importance as an instrument of experiential marketing, its empirical exploration remains uninvestigated. Indeed, to date, the willingness of consumers to adopt gamified strategies to improve their tourism experiences has not been investigated.*

Keywords *Experiential marketing, Gamification, Marketing, Emotions*

Paper type *Research paper*

Miguel Trigo-De la Cuadra and Natalia Vila-Lopez are both based at the Department of Commercialization and Market Research, Faculty of Economics, University of Valencia, Valencia, Spain. Asunción Hernandez-Fernández is Assistant Professor at the University of Valencia, Valencia, Spain.

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

Introduction

Tourism is surely one of the pioneering examples of the economy of experience (Quan, & Wang, 2004). Most of the economy values offered by tourism are essentially experiences (Tsaur, Chiu, & Wang, 2007) that tourists consume or experience at all times during a trip (Quan, & Wang, 2004). Hence, it becomes a priority to create pleasurable and memorable experiences to generate higher levels of satisfaction and positively influence intentions of behavior (Chang, & Lin, 2015). That's because a pleasurable experience will remain longer in the mind of a client and will affect his future behaviors. As a result, the management of the experiential environment is a crucial issue for tourism companies for their survival and the creation of tourism engagement (Tsaur, Chiu & Wang, 2007).

Gamification can be understood as an innovative tool that contributes to living memorable experiences in which consumers participate in an active way and that has positive effects (Hamari, Koivisto, & Sarsa, 2014). However, we must consider that the adoption of this type of gamified strategies, which usually incorporate technology, will depend on the perceived advantage over previous forms of performing the same task (Agarwal & Prasad, 1998). In fact, in the tourist sector there are different types of tourists that will show different technology adoption profiles. Based on Frochot and Batat (2018) they can be simplified in:

- (a) People who travel alone (or not) and prefer to integrate into the destiny 's new culture. They are innovative tourists who are prone to live new experiences. They are the defenders of gamification and from this moment on we will call them **insatiable (gamification supporters)**.
- (b) And on the opposite side, we can identify another type of consumers who prefer that everything is planned for them in advance, so they don't have to make any decisions during their stay. They are conventional tourists for whom the

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

memorable service is one that is provided as expected, without games. We will call them **conventional (gamification detractors)**.

In this scenario, this research pursues two main objectives. First, to get to know the effects that experiences generate on emotions and, consequently, on tourists' engagement, specifically those who visit an animal park. To classify experiences, we have followed Tsaur's (2007) proposal, using the so-called strategic experiential modules (SEM). Secondly, to measure whether the stated relations differ between the insatiable tourists (gamification supporters), and the conventional tourists (gamification detractors). To that end, we had the collaboration of an animal park located in Spain: BIOPARC Valencia. This park allowed us to conduct 242 surveys to randomly selected visitors during a 4 day period, which included weekdays and weekends, after completing their visit to the park.

The added value compared to previous studies could be specified in three major points. First, although the impact of experiential modules on emotions and behaviors has been investigated (Musa, et al., 2015; Schmitt, 2010; Tsaur, Chiu, & Wang, 2007), the difference between positive behaviors (loyalty) and negative behaviors (complaints and claims) had not been addressed previously. Secondly, the relationship between the two types of behaviors (positive and negative) had also not been studied in this sector until this date. The present work aims to advance in identifying the extent to which loyal customers transmit their complaints directly to the company, without engaging in negative word of mouth comments in response to a service failure (Ashley, & Varki, 2009). Finally, although the literature recognizes the impact of technology as an instrument of experiential marketing (Rialti, et al., 2016), its empirical exploration remains uninvestigated (Neuhofer, Buhalis, & Ladkin, 2014).

Literature Review

Experiential Marketing in leisure tourism services

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

In the field of tourism, the marketing of experiences has raised great academic interest leading to a growing number of conferences and articles considering this concept. In fact, experiences constitute the essence of the tourism industry (Neuhofer, Buhalis, & Ladkin, 2014).

If we focus more specifically on the application of our study, the world of zoos has been linked to the study of tourism in several papers. Alexander (1979) affirm that zoos are like museums: they have an educational character, are maintained by groups of experts specialized in their care and conservation, and their collections are exhibited to the public. But unlike other museums, in the zoos living animals are shown, cataloged and studied (Turley, 1999). Jamieson (1985) suggests that the main objectives of a zoo are: entertainment, education, scientific research and the preservation of species. But in order to attract visitors, modern zoo exhibits should be entertaining and educational (Fernandez, et al., 2009).

The difficult balance of reconciling the demands of its visitors with the credibility in its educational, scientific and preservation of species aims (Turley, 1999) is solved by zoos through the creation of interventions that carefully attend to the characteristics of the species and the education of the visitors (Fernandez, et al. 2009), allowing them to observe the animals up close, while providing an empathetic experience (Clayton, Fraser, & Saunders, 2009). The combination of these aspects encourages initial visits and subsequent returns, facilitating compliance with the multiple objectives of modern zoos (Fernandez et al., 2009).

Experiential marketing impact on emotions

Experiential marketing derives from the concept of the Economy of Experience proposed by Pine and Gilmore (1998), who study the experiences of consumers. It differs from traditional marketing whose focus was on the functionalities and benefits of the

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

products (Nigam, 2012). On the contrary, the goal of experiential marketing is to create holistic experiences that integrate individual experiences into a holistic Gestalt (Schmitt, 2000). The shift towards experiential marketing occurs as a result of three simultaneous developments in the business environment: the omnipresence of information technologies, the supremacy of the brand and the ubiquity of communications and entertainment (Schmitt, 2000).

In this work, we study experiences from the Theory of Experiential Marketing introduced by Schmitt (1999) and developed in several studies (Brun, et al., 2017; Musa, et al., 2015; Schmitt, 2011; Tsaur, Chiu, & Wang, 2007). From this approach, it is suggested that experiential marketing should provide emotional and functional value and positive customer satisfaction. The so-called Strategic Experiential Modules (SEM), that companies can create for their clients, encompass five large blocks of experiences: sensory experiences (SENSATIONS), affective experiences (FEELINGS), cognitive creative experiences (THOUGHTS), physical experiences related to behaviors and lifestyles (ACTIONS) and social experiences, which emerge from the relationship with a reference group or culture (RELATIONSHIPS). In the following lines, we describe each of these experiential modules to illustrate their impact on visitors' emotions (Nigam, 2012):

Sense Marketing: represent features such as the quality of the facilities and the welfare of the animals, in the case of zoos, that play a very important role in the sensitive experience of the visitor (Turley, 2001).

Feel Marketing: it includes affective experiences able to improve the mood and the positive emotions (joy and pride) linked to a brand. This dimension constitutes an important point in the process of facilitating emotional tourism experiences (Agapito, Valle, & Mendes, 2014).

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

Thoughts (Think Marketing): it appeals to the intellect with the aim of creating cognitive experiences; this dimension helps to solve problems that involve the clients in a creative way. In the case of zoos this is very evident. For example, Clayton (2009) verifies that animals stimulate curiosity and cognitive commitment.

Act Marketing: it is related to physical/operational experiences that enrich the lives of clients, showing them alternative ways of doing things, alternative lifestyles and interactions. This type of experience abounds especially in a zoo, linked to entertaining and also to conservation efforts, research, care and general welfare of animals (Fernandez, et al. 2009; Turley, 1999).

Relationship marketing: this module includes experiences that involve the previous four. However, they appeal to the desire to overcome the individual (for example, a future "ideal self" with which he or she wants to relate). For example, visitors to the zoos claim that their experience is something social, fun and entertaining (Chang, and Lin 2015), since it is usually accompanied, mainly in family (Turley, 2001), seeking to generate collective emotions. In short, it is a shared experience, intensified by the existence of mobile phones that can be used during the visit (O'Hara, et al., 2007).

As we have already pointed out, customers want products, communications and marketing campaigns that dazzle their senses, touch their hearts and stimulate their minds (Tsaur, Chiu, & Wang, 2007), that is, experiences that thrill them. That's what, in terms of Maitland (2010), enables a city to become 'iconic'.

Impact of emotions in future behaviours (engagement)

Emotions occur in response to changes in specific plans or events relevant to the objective (Bagozzi, Gopinath & Nyer, 1999). Consumer situations can be emotionally influenced (Watson, & Spence, 2007); in other words, emotions will affect the behavior of

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

consumers. In fact, the consumer's emotional state (pleasure and excitement) will positively influence the client's, since the decision-making process will tend to reduce the complexity of the decision and will result in shorter decision times when the people are in more positive emotional states (Sherman, Mathur, & Smith, 1997).

Several studies have addressed the influence of emotions on behavioral intentions of tourists, such as loyalty (Goossens, 2000; Hosany, et al. 2015; Prayag, et al, 2017; Rahmani, Gnoth, & Mather, 2018; Zhang, et al., 2014). Research has shown that positive emotions can be designed to create pleasant and memorable experiences, since emotions can influence tourism engagement (Bigné, & Andreu, 2004).

Despite the great efforts of companies to provide high quality services, it is impossible to provide a service without errors (Lu, et al. 2018; Urueña, & Hidalgo, 2014). Often, errors can cause customer dissatisfaction, which in turn can generate complaints (Urueña, & Hidalgo, 2014). That is, service failures and negative attitudes can damage tourism services (Laros, & Steenkamp, 2005). It seems that that the most excited customers complain less than those who have not experienced such enthusiastic emotions (Lu, et al. 2018).

Behavioral dimensions: loyalty and claims & complaints

The two dimensions of engagement (positive and negative) previously mentioned are intimately related. Indeed, when experiencing some type of dissatisfaction, customers respond in various ways (Cai & Chi, 2018), which can affect the profitability of companies (Zeelenberg'' & Pieters, 2004). Service failures, expressed in complaint behaviors, tend to be significantly higher among customers who do not know the company (not loyal). However, they can be transformed into opportunities to create and maintain customer satisfaction and loyalty in the future (Lu et al., 2018).

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

There are not many studies that address the issue in the opposite direction. That is, how can customer loyalty influence a decrease in customer claims? Since dissatisfied customers are likely to change providers, complain and/or disseminate negative word of mouth information (Sánchez-García'' & Currás-Pérez, 2011), it is important to investigate how these adverse effects can be reduced.

The tourism sector is particularly susceptible to negative e-WOM, because of the intangible nature of most of its services that are difficult to evaluate without real experience (Lu et al., 2018). Ashley and Varki (2009) note that customers who complain may be among the most loyal customers of a brand because they are more likely to transmit their complaint directly to the company, which allows the company to manage it more effectively and control its effect. In this way we can state the positive engagement (loyalty) and negative engagement (claims and complaints) will be strongly related.

The moderating role of the will to gamify

Rialti (2016) highlights the importance of digital technologies as experiential marketing tools to improve the experience of visitors. With the development of new technologies conventional experiences can be transformed and lead to the emergence of new types of tourist experiences (Neuhofer, Buhalis & Ladkin, 2014). As highlighted by Sevilha Gosling, Silva and de Freitas Coelho (2016), in the tourism industry the centers for the provision of leisure and entertainment tourism services (museums, leisure parks etc.) must face the increase in competition, needing to attract visitors and generate a good impression among them in an innovative way. One way could be the use of gamification tools; gamification can be understood as a mechanism capable of building a memorable experience, thanks to the active participation of the consumers (Hamari, Koivisto'' & Sarsa, 2014). In the same vein, Maitland (2010) has explained that, nowadays, visitors do not seek recognised

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

tourist attractions or tourist precincts, they are not passive visitors that consume carefully-designed tourism experiences. Tourism and touristic practices are changing and evolving and gamification offers a great chance to improve the tourist experience. So, “the changing tourist experience of cities needs to be considered carefully, and change should not be exaggerated” (p. 6).

Deterding et al. (2011) establish the first consensus definition of gamification and conceptualize it as the integration of game dynamics in non-ludic environments in order to improve the experience and the commitment (engagement) of consumers. Or, in other words, the guiding idea of gamification is the use of game design elements in contexts that are not games to motivate desired behaviors (Deterding, 2012).

In the tourism industry, gamification may result in an increase of the interest of certain visitors in the destination since they provide experiences and knowledge that otherwise would not exist (Xu, et al., 2015). For example, designing a treasure hunt in a tourism destination will help visitors to explore various areas and to collect points, photos, memories and experiences but may not have winners or losers (Xu, Buhalis and Weber, 2017, p. 245).

The acceptance of gamification is expected to be greater among insatiable and innovative visitors who like to be surprised. Consequently, the adoption of gamified strategies can have positive impacts on the experience of visiting a zoo, its educational outreach and the future behavior of visitors, especially if tourists are supporters of innovation and lovers of surprises. That is to say, a good part of the visitors of a zoo could be receptive to new technological learning opportunities offered by the zoo, but only to the extent that it fits their objectives of enjoyment in a social environment (Clayton, Fraser, & Saunders, 2009). In this context, there is a focus on the co-creation of the experience in which the

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

consumer is an active participant rather than a passive observer and interaction between staff and customers becomes of great importance (Scott, Laws, & Boksberger, 2009).

On the contrary, sometimes the recipient of the leisure service might see that the experience has been complete, needing nothing more from the service provider. In this scene, the impact of the lived experiences on emotions will reach its maximum without technologies.

In sum, in the case of insatiable tourists with partial experiences, there is still something that can be done to improve experiences (for example, to gamify the visits). In terms of Lavarini and Scramaglia (2017), it would be possible to differentiate between creative tourists who want games (insatiable ones) and the other ones, who could be defined as "slow" tourists (conventional ones). The study by Sevilha Gosling, Silva and Freitas Coelho (2016) shows that, in the case of museums, the main product of a museum is the visitor's experience, which is qualitative in nature. If the visitor receives everything they expected, the impact of the experience will be greater than if their visit has been partial, seeking for peripheral services (Lee, Weaver & Prebensen, 2017).

In the same line, the work of Yeh and Lin (2005) shows how the managers of tourism companies should bet to incorporate interactive activities (for example, through special educators or new technologies) to further engage the tourists in the visit and allow a different learning. Also, Borrero, Sanjuán Muñoz & Ramírez González (2015) insist that, in a modern world like the present one, technological advances favor the development of applications with gamification techniques that could be fundamental for the tourists' experiences to reach their maximum.

In short, the insatiable tourists (those who would like to incorporate gamification to their visit) have not yet had a "memorable experience" in Egger and Bulencea (2015)

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

terminology; so their deception with the company is significantly higher than those tourists who already consider themselves fully served.

Finally, the emotions experienced in a tourist visit will provoke a greater intention to return (positive behavior) and less desire to complain (negative behavior) in tourists who consider their visit complete, rather than in tourists for whom the visit could still be improved. Egger and Bulencea (2015) explain how when the visit is complete (memorable), the willingness to repeat and pay a higher price is greater and the intention to complain and spread negative comments decreases. On the contrary, if the tourist feels incomplete, he admits additional surprises (i.e. gamification options). Sometimes emotions stimulate engagement; other times, emotions inhibit or limit the engagement (Bagozzi, Gopinath, & Nyer, 1999).

Study Purpose and Hypotheses

Based on previous lines, it is expected that visitors' experiences affect their emotions and this will ultimately determine their future behaviours (in terms of loyalty and intention to claim and complain). Even more, behavioural intentions will be related among them. So, we have theoretically reached our first objective: to analyze the effects of visitors' experiences on emotions and how these influence their (positive and/or negative) behaviors. To demonstrate this empirically, the following hypotheses have been stated:

H1a: SENSE's marketing experience has a positive effect on emotion;

H2a: FEEL's marketing experience has a positive effect on emotion;

H3a: THINK's marketing experience has a positive effect on emotion;

H4a: ACT's marketing experience has a positive effect on emotion;

H5a: RELATE's marketing experience has a positive effect on emotion;

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

H6a: Eliciting positive emotions on the tourists will increase their loyalty (positive engagement);

H7a: Eliciting positive emotions on the tourists will decrease their claims & complaints (negative engagement);

H8a: Loyalty (positive engagement) will decrease claims and complaints (negative engagement).

Second, we have also demonstrated theoretically our next objective: to investigate whether the predisposition to improve the experiences (through gamification programs) can intensify the relations proposed. Once again, to demonstrate this empirically, the following hypotheses have been specified:

H1b: SENSE's marketing experience will provoke stronger positive emotions among conventional tourists (gamification detractors) rather than insatiable ones (gamification supporters);

H2b: FEEL's marketing experience will provoke stronger positive emotions among conventional tourists (gamification detractors) rather than insatiable ones (gamification supporters);

H3b: THINK's marketing experience will provoke stronger positive emotions among conventional tourists (gamification detractors) rather than insatiable ones (gamification supporters);

H4b: ACT's marketing experience will provoke stronger positive emotions among conventional tourists (gamification detractors) rather than insatiable ones (gamification supporters);

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

H5b: RELATE's marketing experience will provoke stronger positive emotions among conventional tourists (gamification detractors) rather than insatiable ones (gamification supporters);

H6b: Positive emotions will improve loyalty (positive engagement) more on conventional tourists (gamification detractors) than on insatiable ones (gamification supporters);

H7b: Positive emotions will decrease claims and complaints (negative engagement) more on conventional tourists (gamification detractors) than on insatiable ones (gamification supporters);

H8b: Loyalty will decrease claims and complaints more on conventional tourists (gamification detractors) than on insatiable ones (gamification supporters).

The Figure 1 contains the proposed relationships.

****INSERT Figure 1 ABOUT HERE****

Methodology

Study Setting and Data Collection

To achieve the defined objectives, we proceeded to randomly survey 242 tourists after visiting a leisure resort in which the protagonists are the animals: BIOPARC Valencia.

The interviewer waited for the visitor at the exit door of the park, which granted us the necessary permissions to carry out the investigation. This animal park is one of the largest in Europe. During the year 2017 it was visited by 598,000 people, of whom almost 39% were from the province of Valencia, 44.5% were international visitors, which proves to be a main tourist point of the city of Valencia and approx. 16.5% came from the rest of Spain. Our survey was conducted in September and on days when it was a holiday in one of the Spanish

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

provinces and coincided with the week and weekend prior to the beginning of the school year.

Sampling was carried out with the collaboration of the center, following a random procedure. The surveys were in different languages due to the diversity of visitors. In summary, the profile of the sample is shown in Table 1.

****INSERT Table 1 ABOUT HERE****

Measurement of Constructs

For the measurement of the different concepts included in the hypotheses, scales previously tested in the academic literature were used. Thus, to measure each of the five sensory modules, an adapted scale of Schmitt (1999b), Brakus (2001) and Tsaur (2007) was used, with a total of 14 items measured on a 5-point Likert scale. To measure the emotions felt by tourists, the Likert scale of 5 points that analyzed 12 emotions was also used. This scale has been applied previously in works such as those of Tsaur (2007) that used it to measure emotions in the Taipei Zoo and that was well adapted to the emotions of the BIOPARC in Valencia. The intention to carry out positive behaviors (loyalty, recommendation, repeat and pay more) or negative ones (internal and external complaints and claims) was assessed using questions adapted from the study of Zeithaml et al. (1996) and Tsaur (2007).

Data Analysis

Prior to the structural analysis, the reliability and validity of the used measurement instrument were verified. Next, we analyzed the structural equation model proposed in the hypotheses using the SPSS 19 and EQS 6.2 softwares.

Before verifying the proposed model, the measurement model's psychometric properties were evaluated.

Results

To test the psychometric proprieties of our constructs, the univariate and multivariate normality of the observed variables was tested based on the skewness and kurtosis of the observed variables using the SPSS software ($\tau \sim 0$ and $\kappa \sim 3$). Then, a confirmatory factor analysis was done on the eight measurement scales being studied using the robust maximum likelihood method. Several changes were introduced following various criteria to improve the initial measurement model (Table 2).

The data collected in Table 2 corroborates the *reliability or internal consistency* of the scales. The table shows three indicators used for this purpose: (i) Cronbach's alpha for each scale, with a value greater than 0.8 (critical threshold $\alpha > 0.7$, according to Cronbach (1951) (ii) the composite reliability index (IFC), which exceeds the critical value of 0.7 (Fornell and Larcker, 1981) and (iii) the variance extracted indices (AVE), exceeding the minimum value of 0.5 (Fornell and Larcker, 1981). Additionally, the factor loadings of each item on each factor are significant (values $\simeq 0.7$) (meaning that the variance between the factor and its indicators is greater than the error variance). Therefore, the results allow us to state that the proposed scales have internal consistency.

To ensure *convergent validity*, we followed the three steps proposed by Jöreskog and Sörbom (1993). Firstly, the factorial regression coefficients of the items were analyzed to verify their significance in relation to their corresponding latent variables. The t Student value associated with each of the items was used (weak convergence condition) ($p > 2.58$, 1% significance). In the second stage, we tested that the value of the standardized coefficients was greater than the critical value of 0.5 ($\lambda > 0.5$) (strong convergence condition). Finally, the third step led to the progressive elimination of indicators that did not display a strong linear relationship ($R^2 < 0.5$), although in some cases this criterion has been reduced slightly following several studies that

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

suggest the possibility of lowering this threshold ($R^2 < 0.3$). A high explanatory power of the latent variable will result in higher R^2 , while a small explanatory power will lead to lower R^2 . Thus, although the measurement model satisfied both (strong and weak) convergence criteria from the beginning, we have eliminated 15 items from the model (they are crossed out in Table 2), retaining only indicators with a higher R^2 or very close to 0.5 (and therefore with a high explanatory power for its corresponding factor). The end result of the retained items and their corresponding factor loading are shown in Table 2.

To demonstrate discriminant validity, we analyzed the variance-covariance matrix between pairs of factors (matrix Φ) and their corresponding confidence intervals (Φ value + two standard errors) (Table 3). It is noted that squared covariance's between factors are significantly lower than unity. Additionally, the AVE (main diagonal) for the six factors exceeds the square of the covariance (top half of the matrix shown in Table 3). In cases where this does not happen, the AVE obtains slightly lower values to the square of the correlation, which suggests discriminant validity as the confidence intervals do not include the value 1.

****INSERT Table 2 and 3 ABOUT HERE****

Once the psychometric characteristics of the first-order model were verified, a model of structural equations was completed with the ultimate purpose of contrasting the 8 hypotheses that finally formed the model.

As reflected in Table 4, of the five experiential modules, two of them are highly significant to get excited during the visit. In fact, **sensory experiences** contribute significantly to improve emotions ($\beta = 0.36$; $P < 0.5$), since this is an animal park that offers the visitors the possibility of entering into wild habitats where animals live in the social

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

groups of their species and in coexistence with other compatible species, as occurs in Nature. Therefore, **H1a** would be accepted.

Additionally, **feeling experiences** contribute also significantly to improve emotions, being the intensity of the relationship even higher ($\beta = 0.57$; $P < 0.5$). That is, **H2a** would be accepted, since the feelings during the visit have allowed to reinforce the emotions of the visitors (entertainment, mood, etc.). On the contrary, three experiential modules do not seem to contribute to making the tourist experience more emotional: the **cognitive experiences** (the curiosity of the visitor has not been significantly awakened), the **operational experiences** (since everyone could take pictures, no operational advantages have been perceived) and the **relational experiences** (a significant interest in buying souvenirs, or interacting with others has not been demonstrated). Therefore, **H3a**, **H4a** and **H5a** should be rejected.

In relation to the effects of emotions, a positive and significant relationship with **loyalty** is observed (**positive behaviors**) ($\beta = 0.88$; $P < 0.5$). **H6a** would be accepted because the more excited tourists will be more positively engaged to the park than the less excited tourists. On the contrary, emotions do not significantly affect the **negative behaviors of claims and complaints** (negative engagement). Both excited and non-excited tourists would express their non-conformities and complains without deferring to each other, so **H7a** should be rejected. This may be due to the fact that tourists tend to propagate negative aspects with greater propensity than positive ones. This result contravenes that obtained by Alegre and Garau (2010), who argue that the impact of satisfaction is lower than the impact of dissatisfaction. On the contrary, our results lead us to conclude that more and less excited tourists can complain equally. Finally, it has not been possible to demonstrate that the loyalty and the claims and complaints are inversely related in a significant way. That is, tourists with greater positive engagement (recommendation, intention to return, speak well of the animal

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

park) do not complain and criticize significantly less (negative engagement). Both loyal and non-loyal tourists exhibit complaints and claims without deferring to each other, so **H8a** would be rejected. This could be, as Bagozzi, Gopinath, & Nyer (1999) support, because memory-based evaluations, as in our case, do not lead to connections between favorable behaviors and reduction of unfavorable ones.

****INSERT Table 4 ABOUT HERE****

To analyze the moderating role of the intention to adopt gamification tools to improve the visit, 2 independent estimations were carried out: one for the 76 assessments given by conventional tourists (gamification detractors) and another one for the 166 valuations poured by the insatiable tourists (gamification supporters).

For this, a multisampling analysis was applied with the EQS 6.1 software. According to Jaccard and Wan (1996), 2 steps are necessary.

The first does not involve any formal analysis of the moderating effect, as the parameters and significance of the proposed causal relationships are re-estimated for the two groups considered (conventional and insatiable tourists). This multisample analysis indicates that the causal relationships between both groups are manifested with slight differences (Table 4). In both subsamples the same hypotheses are verified as in the general case, plus two more hypotheses. Specifically, it verifies the significant importance of two experiential modules that were not significant in the general model: cognitive experiences and relational experiences. Therefore, when both subsamples are analyzed separately, four of the five experiential modules of Schmitt (1999) are significant to improve the emotions felt during the visit. In addition, as in the general model, the improvement of emotions leads to positive behavior, loyalty. These relationships are given, in most cases, more intense for the group of conventional tourists, whose experience is complete.

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

However, it is found that only in three of the cases the differences between both groups are significant. Specifically, **H1b**, **H3b** and **H6b** would be accepted since it is appreciated that the relations are more intense for conventional tourists than for insatiable ones. That is:

- The impact of SENSE marketing experiences on emotions ($0.63 > 0.51$) is greater in the case of conventional tourists (full experience) as hypothesized;
- The impact of cognitive (THINK) experiences on emotions ($0.29 > 0.23$) is greater in the case of conventional tourists as hypothesized;
- The impact of emotions on loyalty is greater in the case of conventional tourists as hypothesized ($0.96 > 0.83$).

On the contrary, the impact of the FEEL and RELATIONAL experiences on emotions does not differ between the two groups, so **H2b** and **H5b** would be rejected respectively. In the same way, OPERATIONAL experiences would not be measurable in either case, and **H4b** should also be rejected. Likewise, neither emotions nor loyalty seem to diminish complaints and claims in any of the 2 groups of tourists, so **H7b** and **H8b** should be rejected as well.

****INSERT Table 5 ABOUT HERE****

Discussion

The proposed model allows us to verify the results of the intention to implement gamified models on the consumer's experience. The relationship of the motivational factors with the experiential marketing modules has not yet been studied. For this reason, verifying how these factors affect each of the modules is a study that can help define future projects to stimulate urban tourism.

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

Additionally, the urban destinations, and in particular the zoological parks that they can offer, must encourage a mixture of emotions to enrich the experience of the tourists and achieve their true satisfaction and loyalty (Rodríguez del Bosque & Martín, 2008). Moreover, as our results have demonstrated, the offer of an entertaining experience encourages initial visits and subsequent returns to the zoo, which translate into higher revenues for conservation, research and care efforts and general welfare of the animals (Fernández et al., 2009). The final conclusion is that a well-designed park that provokes memorable experiences serves as a tractor to stimulate urban tourism.

Our main theoretical contribution is that the Theory of Experiential Marketing can benefit a lot from the new technologies in as much as Gamification Theory offers a novel approach to stimulate new experiences, and, therefore, to encourage tourists and visitors' emotions. As Kim, Ritchie and McCormick (2012, p. 12) concluded, "in a highly competitive market situation, being able to provide memorable experiences is significant as it increases positive behavioral intentions". In this vein, the present study advances the theoretic development in the stream of Smart Tourism Technologies (Huang, Goo, Nam, and Yo (2017), because as our results have demonstrated, information technologies can change consumers' feelings and behaviours.

In the managerial field, some recommendations could be provided to promote urban tourism.

Firstly, we recommend urban managers to promote the development of tourist attractions in a city (i.e. tourist parks) by investing in communication (to increase awareness) and in new technologies (to improve service delivery). The final purpose is to create unique experiences, able to influence people sensations and feelings. This will provide a favorable mood, positive emotions, which, as we have seen, influence positive engagement. That is, tourists will be more loyal to a tourist attraction (and consequently to the city in which it is

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

located) if they feel unique experiences. An excited tourist is a loyal tourist who recommends the experience. Therefore, we must get the tourist excited, and a good way to do it is through experiential marketing.

Secondly, in a scenario of scarcity of resources, betting on improving the experience in the park should focus more on the improvement of sensations and feelings, and less on other experiential modules that have been less significant (knowledge, action and relationship). Therefore, the co-creation of the experience in which the consumer becomes an active participant instead of a passive observer should be encouraged, appealing to the senses (aroma, hearing, etc.) and to their feelings (joy, pleasure etc.). Even more, urban managers could also help to develop co-creation strategies by offering unique experiences since the beginning, when the tourists begin to prepare the trip (interactive maps, virtual avatars to personalized de visit etc.). In terms of Frantzeskaki and Kabisch (2016) these means that public managers should have the capacity for adaptation to context dynamics and opportunities, because each tourist is different.

Third, as our results demonstrate, positive emotions during the visit result in more positive engagement. Therefore, it is recommended to strengthen the development of loyalty programs that encourage repeated returns to the zoo (i.e. loyalty card). This measure also translates into higher revenues. In this vein Xu, Buhalis and Weber (2017) recommend the successful implication of useful gaming elements in different sectors in tourism, which means that different agents should work side by side to get loyal tourists: park manager, city managers, tour-operators etc.

Finally, from the beginning we saw a predisposition of the visitors to the adoption of new gamified technologies that enrich the experience. Of the random sample, 69% expressed their desire to gamify the visit. In addition, the study proved that certain relationships are weaker in the group of tourists who have not experienced a full service, that is, who would

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

like to support the visit in a gamified experience. Therefore, and given that what we have named “insatiable tourists” are the majority, it is recommended to bet on the execution of a strategy of gamification of the visit to enhance the motivations and the engagement of visitors. In fact, the use of gamification is especially recommended in the case of zoos, where Clayton (2009) already verified that fun was not incompatible with learning, being that visitors to a zoo are especially receptive to the opportunities of learning that is offered to them during the visit, but only to the extent that they fit their goals of enjoyment in a social environment. All this is possible through the implementation of gamified programs that offer this type of learning and social interaction in a fun and entertaining way.

Limitations and future lines

This study has some limitations that could inspire further research. First, the size of the sample is small as only 242 tourists took part in the survey. Second, we have obtained our information during the weekend. Also, while subjective data is easier to analyse, it is not as detailed, and will not provide the exact numerical values that objective data can.

In terms of future lines, the main one would be to implement a gamified program in a zoo to be able to perform a new measurement in which to really contrast if our expectations of results based on the intentions demonstrated are verified once the gamified strategy is implemented. Additionally, we could carry out a demographic study following Tsaur's (2006) proposal to better understand the behaviors and motivations of the different types of public. For example, a comparison among visitors from different countries (continents) could enrich our results. Even more, other participants could be interviewed outside the holiday period (weekend) to take into consideration the potential influence of seasonality. To conclude, other scales could be added in future studies to enrich our study, for example the

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

rigorous and novel scale developed by Kim, Ritchie and Cormick (2012) to approximate visitors' memorable experiences.

Bibliography

Agapito, D., Valle, P., & Mendes, J. (2014). The Sensory Dimension of Tourist experiences:

Capturing Meaningful Sensory-informed themes in Southwest Portugal. *Tourism Management*, 42 (June), 224-37.

<https://doi.org/10.1016/j.tourman.2013.11.011>.

Agarwal, S., & Prasad, J. (1998). The background and consequents of user perceptions in

Information technology adoption. *Decision Support Systems* 22 (1), 15-29.

[https://doi.org/10.1016/S0167-9236\(97\)00006-7](https://doi.org/10.1016/S0167-9236(97)00006-7).

Alegre, J., & Garau, J. (2010). TOURIST Satisfaction and dissatisfaction. *Annals of Tourism*

Research, 37 (1), 52-73.

<https://doi.org/10.1016/j.annals.2009.07.001>.

Anderson, J.C., & Gerbing, D.W. (1988). Structural equation Modeling in practice: A

Review and recommended two-step approach. *Psychological Bulletin*, 103 (3), 411.

Ashley, C., and Varki, S.. (2009). Loyalty and its influence on complaining behavior and

service recovery Satisfaction. *Journal of Consumer Satisfaction, Dissatisfaction and Complaint Behavior*, 22, 14-22.

Bagozzi, R. P., M. Gopinath, & Nyer, P. U. (1999). The Role of Emotions in Marketing.

Journal of the Academy of Marketing Science, 27 (2), 184-206.

<https://doi.org/10.1177/0092070399272005>.

Bigné, J. E., & Andreu, L (2004). Emotions in segmentation. *Annals of Tourism Research*, 31

(3), 682-96.

<https://doi.org/10.1016/j.annals.2003.12.018>.

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

Borrero, F., Sanjuán, P.C. & Ramírez, G. (2015). Techniques of gamification in tourism, proof of application, House Museum Mosquera. *Systems and Telematics*, 13 (33), 63-76.

<https://doi.org/10.18046/syt.v13i33.2081>.

Brun, I., Rajaobelina, L., Ricard, L. and Berthiaume, B. (2017). Impact of Customer Experience on Loyalty: A multichannel examination. *The Service Industries Journal*, 37 (5-6), 317-40.

<https://doi.org/10.1080/02642069.2017.1322959>.

Cai, R., & Geng-Qing Chi, C. (2018). The impacts of complaint efforts on customer satisfaction and Loyalty. *The Service Industries Journal*, January, 1-21.

<https://doi.org/10.1080/02642069.2018.1429415>.

Chang, S.H., and Lin, R. (2015). Building a Total Customer experience Model: Applications for the Travel experiences in Taiwan's Creative Life Industry. *Journal of Travel and Tourism Marketing*, 32 (4), 438-53.

<https://doi.org/10.1080/10548408.2014.908158>.

Clayton, S., Fraser, J. & Saunders, C.D. (2009). Zoo experiences: Conversations, connections, and concern for animals. *Zoo Biology*, 28 (5), 377-97.

<https://doi.org/10.1002/zoo.20186>.

Deterding, S. (2012). Gamification: Designing for Motivation. *Interactions*, 19 (4), 14 – 17.

Deterding, S., Sicart, M., Nacke, L., O'Hara, K. & Dixon, D..(2011). Gamification. Using game-design elements in non-gaming context. In *CHI ' 11 Extended Abstracts on Human factors in computing systems*, 2425 – 2428.

Egger, R., and Bulencea, P. (2015). *Gamification in Tourism: Designing Memorable Experiences*. BoD-Books on Demand, 1-188.

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

Fernandez, E. J., Tamborski, M.A., Pickens, S.R., & Timberlake, W. (2009). Animal –

Visitor interactions in the Modern Zoo: Conflicts and Interventions. *Applied Animal Behaviour Science*, 120 (1-2), 1-8.

<https://doi.org/10.1016/j.applanim.2009.06.002>.

Fornell, Claes, & David F. Larcker (1981). Evaluating Structural Equation models with

unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18 (1), 39-50.

<https://doi.org/10.2307/3151312>.

Frantzeskaki, N., & Kabisch, N. (2016). Designing a knowledge co-production operating space for urban environmental governance—Lessons from Rotterdam, Netherlands and Berlin,

Germany. *Environmental Science & Policy*, 62, 90-98.

Frochot, Isabelle, & Wider Batat (2018). Towards an experiential approach in tourism studies. Goodfellow Publishers, 1-22.

Goossens, Cees (2000). Tourism Information and Pleasure motivation. *Annals of Tourism Research*, 27 (2), 301-21.

[https://doi.org/10.1016/S0160-7383\(99\)00067-5](https://doi.org/10.1016/S0160-7383(99)00067-5).

Hamari, Juho, Jonna Koivisto, & Harri Sarsa (2014). Does Gamification Work? --A

Literature Review of Empirical Studies on Gamification. En, Ieee., 3025-34.

<https://doi.org/10.1109/HICSS.2014.377>.

Holbrook, Morris B, and Elizabeth C Hirschman (1982). The Experiential aspects of

consumption: Consumer fantasies, feelings, and Fun. *Journal of Consumer Research*, 9 (2), 132-40.

Hosany, S., Prayag, G., Deesilatham, S., Caušević, S., & Odeh, K. (2015). Measuring tourists' emotional experiences: Further validation of the Destination Emotion Scale.

Journal of Travel Research, 54 (4), 482-95.

<https://doi.org/10.1177/0047287514522878>.

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

- Hosany, S., & Witham, M. (2010). Dimensions of cruisers ' experiences, satisfaction, and intention to Recommend. *Journal of Travel Research*, 49 (3), 351-64.
<https://doi.org/10.1177/0047287509346859>.
- Huotari, K., and Hamari, J. (2012). Defining gamification: A service marketing Perspective. In *Proceeding of the 16th International Academic MindTrek Conference*, 17 – 22.
- Huotari, K., and Hamari, J. (2017). A Definition for Gamification: Anchoring Gamification in the Service Marketing Literature. *Electronic Markets*, 27 (1), 21-31.
<https://doi.org/10.1007/s12525-015-0212-z>.
- Laros, F., & Steenkamp, J.B. (2005). Emotions in Consumer Behavior: A Hierarchical approach. *Journal of Business Research*, 58 (10), 1437-45.
<https://doi.org/10.1016/j.jbusres.2003.09.013>.
- Lavarini, R., & Scramaglia, r. (2017). Creative Tourism. In *Slow Tourism, Food and Cities*, Routledge, 79-94.
- Lee, Y. S., Weaver, D. B., & Prebensen, N. K. (2017). *Arctic Tourism Experiences: Production, consumption and Sustainability*. Cabi. Edited by Young-Sook Lee, David Weaver, Nina K Prebensen: UK., 191-192.
- Lu, L., Gursay, D., Chi, C. G. Q., & Xiao, G. (2018). Developing a Consumer complaint and Recovery Effort Scale. *Journal of Hospitality & Tourism Research*, 42 (5), 686-715.
<https://doi.org/10.1177/1096348015597033>.
- Musa, G., Mohammad, I., Thirumoorthi, T., Moghavvemi, S., & Kasim, A. (2015). Exploring Visitors ' Experience Using Strategic Experiential modules (SEMs): The Case of Zoo Negara, Kuala Lumpur. *International Journal of Tourism Cities*, 1 (3), 234-53.
<https://doi.org/10.1108/IJTC-08-2014-0012>.

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

- Neuhofer, B., Buhalis, D., and Ladkin, A. (2014). A Typology of technology-enhanced tourism experiences: technology-enhanced tourism experiences. *International Journal of Tourism Research*, 16 (4), 340-50.
<https://doi.org/10.1002/jtr.1958>.
- Nigam, A. (2012). Modeling relationship between experiential marketing, experiential value and purchase intentions in organized quick service chain restaurants shoppers using structural equation modeling approach. *Paradigm*, 16 (1), 70 – 79.
- O'Hara, K., Kindberg, T., Glancy, M., Baptista, L., Kumar, B. & Gil Kahana, & Rowbotham, J. (2007). Collecting and Sharing Location-Based Content on Mobile phones in a Zoo Visitor Experience. *Computer Supported Cooperative Work (CSCW)* 16 (1-2),
<https://doi.org/10.1007/s10606-007-9039-2>.
- Pine, B.J., & Gilmore, J.H. (1998). Welcome to the Experience Economy. *Harvard Business Review*, 76, 97-105.
- Prayag, G., Hosany, S., Muskat, B., & Del Chiappa, G. (2017). Understanding the relationships between tourists' emotional experiences, Perceived Overall Image, satisfaction, and intention to Recommend. *Journal of Travel Research*, 56 (1), 41-54.
<https://doi.org/10.1177/0047287515620567>.
- Quan, S., and Wang, N. (2004). Towards a Structural Model of the Tourist experience: An Illustration from Food experiences in Tourism. *Tourism Management*, 25 (3), 297-305.
[https://doi.org/10.1016/S0261-5177\(03\)00130-4](https://doi.org/10.1016/S0261-5177(03)00130-4).
- Rahmani, K., Gnoth, J. and Mather, d. (2018). A psycholinguistic study view of tourists' emotional experiences. *Journal of Travel Research*, January, 57(8), 1108-1120
<https://doi.org/10.1177/0047287517753072>.

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

Rialti, R., Zollo, L., Ciappei, C., & Laudano, Q. (2016). Digital Cultural Heritage. *AMA Summer Academic Conference*, 1062-63.

<https://doi.org/10.15444/GMC2016.07.09.01>.

Rodriguez del Bosque, I.R., & Héctor San Martín (2008). Tourist Satisfaction a Cognitive-Affective Model. *Annals of Tourism Research*, 35 (2), 551-73.

<https://doi.org/10.1016/j.annals.2008.02.006>.

Sánchez-García, I., and Currás-Pérez, R. (2011). Effects of dissatisfaction in Tourist Services: The Role of Anger and Regret. *Tourism Management*. 32 (6), 1397-1406.

<https://doi.org/10.1016/j.tourman.2011.01.016>.

Schmitt, B. H. (1999). Experiential Marketing. *Journal of Marketing Management*, 15, 53-67.

<https://doi.org/10.1362/026725799784870496>.

Schmitt, B. H. (2010). «Experience Marketing: Concepts, Frameworks and Consumer insights». *Foundations and Trends in Marketing*, 5 (2), 55-112.

<https://doi.org/10.1561/17000000027>.

Schmitt, B. H. (2000). *Experiential Marketing: How to get customers to sense, feel, think, act, relate*. The Free Press: New York, USA

Scott, N, Laws, E. & Boksberger, P. (2009). The Marketing of Hospitality and Leisure experiences. *Journal of Hospitality Marketing & Management*, 18 (2-3), 99-110.

<https://doi.org/10.1080/19368620802590126>.

Sevilha Gosling, M. de, J. A. Silva, & de Freitas Coelho, M. (2016). The model of experiences applied to a MUSEO. *Studies and Perspectives in Tourism*, 25, 460 – 482.

Sherman, E., Mathur, A. & Belk, R. (1997). Store Environment and Consumer Purchase Behavior: mediating Role of consumer emotions. *Psychology & Marketing*, 14 (4), 361-78.

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

[https://doi.org/10.1002/\(SICI\) 1520-6793 \(199707\) 14:4 < 361:: AID-MAR4 > 3.0.](https://doi.org/10.1002/(SICI) 1520-6793 (199707) 14:4 < 361:: AID-MAR4 > 3.0.CO; 2-)

CO; 2-

Tsaur, S., Chiu, Y.T. , & Wang, C.H., (2007). The Visitors Behavioral Consequences of Experiential Marketing: An Empirical Study on Taipei Zoo. *Journal of Travel and Tourism Marketing*, 21 (1), 47-64.

https://doi.org/10.1300/J073v21n01_04.

Turley, S. K. (1999). Exploring the future of the traditional UK Zoo. *Journal of Vacation Marketing*, 5 (4), 340 – 355.

Turley, S. K. (2001). Children and the Demand for recreational experiences: the Case of Zoos. *Leisure Studies*, 20 (1), 1-18.

<https://doi.org/10.1080/02614360122877>.

Urueña, A., and Hidalgo, A. (2014). Justice, emotions and satisfaction in complaint Behavior in Services. In, 17. Washington, D.C. (USA).

Watson, L., & Spence, M.T. (2007). Causes and consequences of emotions on Consumer Behaviour: A review and Integrative Cognitive Appraisal Theory. *European Journal of Marketing*, 41 (5/6), 487-511.

<https://doi.org/10.1108/03090560710737570>.

Xu, F., Tian, F., Buhalis, D., Weber, J., & Zhang, H. (2016). Tourists as Mobile gamers: Gamification for Tourism Marketing. *Journal of Travel and Tourism Marketing*, 33 (8), 1124-42.

<https://doi.org/10.1080/10548408.2015.1093999>.

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

Yeh, J., & Lin, C. (2005). Museum Marketing and Strategy: Directors ' perception and belief. *Journal of the American Academy of Business*, 6 (2), 279 – 284.

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

Zeelenberg, M., & Pieters, R. (2004). Beyond Valence in Customer dissatisfaction. *Journal of Business Research*, 57 (4), 445-55.

[https://doi.org/10.1016/S0148-2963\(02\)00278-3](https://doi.org/10.1016/S0148-2963(02)00278-3).

Zeithaml, V. A., Berry, L., and Parasuraman, A. (1996). The Behavioral Consequences of Service Quality. *Journal of Marketing*, 60 (2), 31-46

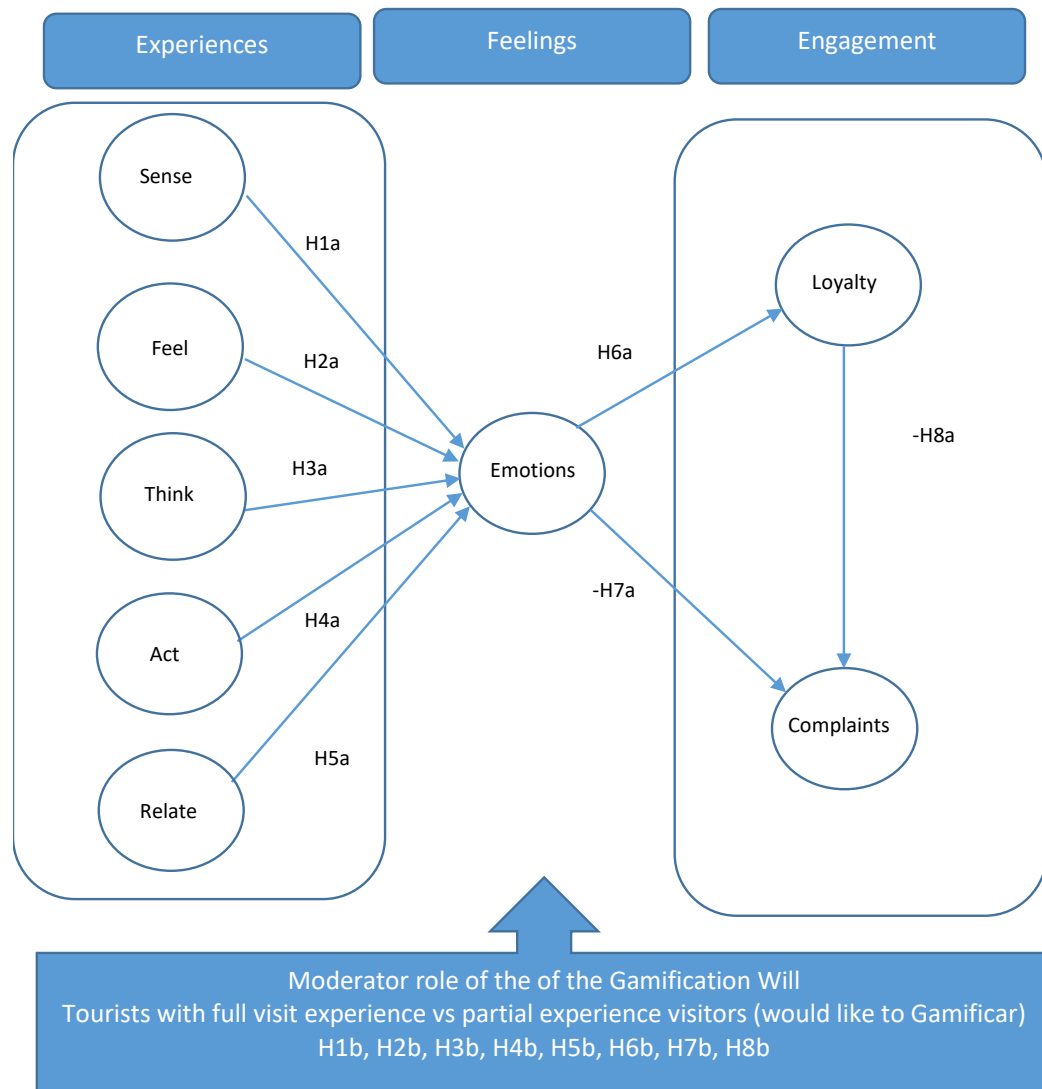
<https://doi.org/10.2307/1251929>.

Zhang, H., Fu, X., Cai, L. A., & Lu, L. (2014). Destination Image and Tourist Loyalty: A Meta-Analysis. *Tourism Management*, 40 (February), 213-23.

<https://doi.org/10.1016/j.tourman.2013.06.006>.

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

Figure 1. Model proposal.



COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

Table 1. Sample profile of the visitors interviewed

		Total	% Total	Gamif Yes	Gamif No	% Yes	% Donot
Sex	Female	157	65%	105	52	67%	33%
	Male	85	35%	61	24	72%	28
	Valencia	89	37%	63	26	71%	29
Locality	Province of Valencia	38	16	29	9	76%	24
	Other province Spain	80	33%	55	25	69%	31
	Other country	35	14	19	16	54%	46%
Age	> 65	8	3	5	3	63%	38%
	51-65	20	8	7	13	35%	65%
	36-50	115	48%	73	42	63%	37%
	26-35	52	21	41	11	79%	21
	19-25	40	17	35	5	88%	13
	13-18	7	3	5	2	71%	29
Reason to visit	Promotion/Discount	7	3	5	2	71%	29
	It is an attraction of the city	19	8	11	8	58%	42%
	I like animals	171	71%	119	52	70%	30
	Bring/entertain child/s	29	12	19	10	66%	34%
	Other	16	7	12	4	75%	25
Company in the Visit	Friends	29	12	21	8	72%	28
	Family	155	64%	100	55	65%	35%
	Couple	54	22	43	11	80%	20
	Only	4	2	2	2	50%	50%
Loyalty	You have the B pass!	29	12	22	7	76%	24
Total Interviewed		242		166	76	69%	31

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

Table 2. Convergent validity and reliability results

	Item (Indicator)	Lij Stand. Charge	T Robust*	R ²	Cronbach's a lpha	RC	AVE
F1: Senses							
1	All my senses have been involved (seen, heard, taste, touch, smell)	.64	10.16 *	.41	.75	.63	.4
2	has been interesting	.76	8.54	.58			
3	I have perceived a high sensory appeal (attractive to the senses)	.68	8.20	.46			
F2: Feelings							
1	has improved my mood	.51	6.14	.26	.76	.82	.6
2	I have been awakened by different emotions	.57	7.07	.32			
3	I experienced positive feelings	.79	6.84	.63			
4	I have fun/entertaining	.75	5.99	.56			
F3: Thoughts							
1	I have felt intrigue (there are things that intrigued me)	.67	6.87	.43	0.70	.61	.5
2	I've been curious	.68	7.46	.46			
3	I've felt creative	...	...	...			
F4: Performances							
4	I would like to do (I have done) photographs in Bioparc To save them as a souvenir	---	---	---	Na	Na	Na
F5: Relations							
1	I would like to buy some souvenirs related to Bioparc	.54	.00	.29	Na	Na	Na
2	It has motivated Me to preserve the environment	...	...	...			
F6: Emotions							
1	Joy	.75	6.41	.56	.87	.87	.5
2	Fun	.79	8.03	.62			
3	Relax	...	...	...			
4	Surprise	.45	6.00	.20			
5	Excitation	...	...	...			
6	Want to act (do things)	...	...	...			
7	Astonishment	.42	7.95	.18			
8	Euphoria	...	...	...			
9	Attraction by site/place	.66	8.68	.44			
10	Feeling of warmth	.66	6.70	.43			
11	Satisfaction	.89	6.82	.74			
12	Feeling of being enjoying/enjoyment	.77	6.10	.59			
F7: Loyalty (positive engagement)							
1	I'll say positive things (recommend) from Bioparc to other people	.77	6.10	.59	.73	.79	.5
2	I will recommend it to anyone who asks me	.80	5.70	.64			
3	I will repeat the visit in the coming years	.75	5.93	.23			
4	This is my first choice as "leisure alternative" (In	...	...	...			

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

	Comparison with Oceanográfica or similar)			
5	I will visit more often to this place	.43	5.55	.18
6	I do not contemplate visiting competitors (other parks, Oceanográfica...) For the fact that they offer me better prices	...	...	...
7	I will continue to visit Bioparc Even if the prices increase slightly	...	...	...
8	I'm willing to pay an even higher price than the competitors offer for the same experience I've had	...	...	...

F8: Complaints and claims (negative engagement)

1	Would show my dissatisfaction to employees who had given me an unsatisfactory treatment	.99	6.99	1.00	.83	.66	.5
2	I would complain to the employees/managers of the center if I had had a problem with some service	.71	6.67	.51			
3	Ask for a Compensation Economic if I had experienced a problem with the service	...	...	...			
4	Inform the media (press, Radio, etc.)	...	...	...			
5	I would complain to outside agencies (such as consumer associations and users)	...	...	...			
6	I would complain to family and friends	...	...	...			

Global Fit: $\chi^2 = 2840.21$ ($P = 0.00$); S-B $\chi^2 = 679.84$ (231 degrees of freedom) ($P = 0.00$);

Gfi= 0.81; RMSEA = 0.082 < 0.097; SRMR= 0.065 < 0.1.

Incremental Fit: AGFI= 0.76; Nfi = 0.76; NNFI = 0.79; CFI = 0.83; CFI Robust = 0.71.

Parsimonious Fit Non normed $\chi^2 = 2.94$ (between 1-5)

Na (not Applies) * $p < 0.05$ items that have not been included in the scale for failing to meet the recommended validity criteria have been crossed out.

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

Table 3: Discriminatory validity results

	F1	F2	F3	F5	F6	F8	F9
F1	1	.36	.13	.19	.49	.53	.00
F2	.56; .78	1	.01	.25	.77	.58	.01
F3	.18; .54	.36; .68	1	.07	.27	.14	.02
F5	.44; .44	.50; .50	.27; .27	1	.38	.27	.05
F6	.68; .86	.82; .94	.38; .66	.62; .62	1	.64	.00
F8	.62; .84	.67; .85	.20; .54	.52; .52	.77; .91	1	.01
F9	-.11; .19	-.14; .14	-.32; .02	.22; .22	-.11; .17	-.06; .24	1

*Above The diagonal: Estimated interactor correlation. Under The diagonal: confidence interval for Interfactor Correlation * * $p < 0.01$; * $p < 0.05$; Ns*

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

Table 4: Structural Equation Model Results

		Standardize Charge (β)	T*	Hypothesis
Effects of experiences				
H1a	SENSE's marketing experience has a positive effect on emotion	.36	3.45 *	✓
H2a	FEEL's marketing experience has a positive effect on emotion	.57	4.34 *	✓
H3a	THINK's marketing experience has a positive effect on emotion	.07	.84	No
H4a	ACT's marketing experience has a positive effect on emotion	Na	Na	Na
H5a	RELATE's marketing experience has a positive effect on emotion	.08	1.88	No
Effects of emotions				
H6a	Positive emotions will increase loyalty (+ engagement)	.88	6.04 *	✓
H7a	Positive emotions will decrease claims & complaints (- engagement)	.17	1.05	No
Relationship Between behavioral intentions: positive and negative				
H8a	Loyalty will decrease claims and complaints	-.16	-.92	No
Global Fit: $\chi^2 = 2840.21$ ($p = .00$); S-B $\chi^2 = 690.80$ (236 degrees of Freedom) ($p = .00$); Gfi = .81; RMSEA = .082 < .097; SRMR = .06 < 0.1 Incremental Fit: AGFI = .76; NFI = .76; NNFI = .79; CFI = .82; CF Robust = .74 Parsimonious Fit: Normed $\chi^2 = 2.98$ (between 1-5)				

* $p < 0.05$ **Nate:** hypothesis 4 does not apply (since it was allowed and encouraged to take photos during the whole visit).

COULD GAMIFICATION IMPROVE VISITORS' ENGAGEMENT?

Table 5: Moderation Variable (Conventional vs Insatiable tourists)

		Insatiable Tourists (Partial experience)		Conventional Tourist (Complete Experience)		Difference
		β	T *	β	T*	
H1b	SENSE's experience will increase positive emotions (Conventional tourist > Insatiable)	.51	4.55 ✓	.63	4.56 ✓	3.28 *
H2b	FEEL's experience will increase positive emotions (Conventional tourist > Insatiable)	.64	4.79 ✓	.001	4.79 ✓	Ns
H3b	THINK's experience will increase positive emotions (Conventional tourist > Insatiable)	.23	2.50 ✓	.29	2.50 ✓	1.32 * *
H4a	ACT's experience will increase positive emotions (Conventional tourist > Insatiable)	Na	Na	Na	Na	Na
H5b	RELATE's experience will increase positive emotions (Conventional tourist > Insatiable)	.36	4.57 ✓	.72	4.58 ✓	Ns
H6b	Positive emotions will increase loyalty (Conventional tourist > Insatiable)	.83	3.96 ✓	.96	3.95 ✓	1.06 * *
H8b	Positive emotions will decrease claims & complaints (Conventional tourist > Insatiable)	-.47	Ns	-.38	Ns	...
H9b	Loyalty will decrease claims & complaints (Conventional tourist > Insatiable)	.60	Ns	.41	Ns	...

Global Fit: $\chi^2 = 3387.74$ ($p = .00$); S-B $\chi^2 = 1349.15$ (497 degrees of Freedom) ($p = .00$); GFI=.71; RMSEA .111 < .127; SRMR=.19 < .1

Incremental Fit: AGFI= .65; NFI = 0.60; NNFI = .66; CFI =0.70; CFI Robust = .40

Parsimonious Fit: Normed $\chi^2 = 2.71$ (between 1-5)

* * $p < .05$; * * $p < .1$. NS (not significant)