Journal of Destination Marketing & Management 12 (2019) 74–83

Contents lists available at ScienceDirect

Journal of Destination Marketing & Management

journal homepage: www.elsevier.com/locate/jdmm

Research Paper

Tourism in protected areas and the impact of servicescape on tourist satisfaction, key in sustainability

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ARTICLE INFO

Keywords:
Protected area
Sustainability
Servicescape
Perceived value
Tourist satisfaction
Dominican Republic

ABSTRACT

Natural areas, when protected, conserve the natural environment and function as social spaces in which tourism brings increased income, employment and financial support for conservation. In this context, the satisfaction of tourists through their experiences in the protected area (PA) is an important objective that not only depends on the PA tourist site, but also on the services that are provided. This paper addresses the impact of the service environment (servicescape) on tourist satisfaction in the context of a PA through the perceived value of a PA tourist site. A questionnaire was administered to a sample of 520 tourists visiting the PA of the Natural Monument Saltos de la Damajagua in Puerto Plata (Dominican Republic). Using variance-based structural equation modelling based on the partial least squares method, facilities were identified as satisfiers, while informational services and food were perceived as dissatisfiers. The dissatisfiers are essential services and their absence/poor performance produce dissatisfaction, while improvements in the satisfiers will increase tourist satisfaction in the PA. These results have implications for the management of the PA, providing tools that can inform PA managers on how to fulfil their goals: the protection of the ecological integrity of the PA and tourist satisfaction.

1. Introduction

Protected areas (PAs), defined as "a clearly defined geographical space, recognize, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystems services and cultural values" (Dudley, 2008, p. 8), accounted for 12.2% of the surface area of the globe in 2012 (Anthamatten & Hazen, 2015). Except when protected areas are strict ecological reserves, the mission of PAs is the protection of natural resources, while at the same time providing a space for environmental education and nature-based tourism activities (Valdivieso, Eagles, & Gil, 2015).

This dual-mandate for PAs implies both resource protection and recreation provision (Marion & Reid, 2007; Pearce & Dowling, 2018), which is undoubtedly an important challenge for PA management. These valuable natural resources present PAs with a two-edged sword: firstly because visitor numbers determine the PA's long/term sustainability (Whitelaw, King, & Tolckach, 2014); and secondly because tourism can help to finance the conservation work, which is a critical factor when public funding is in short supply for conservation worldwide (Valdivieso et al., 2015) and scarce (McCarthy, Donald, Scharlemann et al., 2012). Tourism activity in PAs benefits local destinations through increased income from the financial contributions of visitors, employment and direct conservation support (Ardoin, Wheaton, Bowers, Hunt, & Durham, 2015). In developing countries, tourism can foster rural economies (Valdivieso et al., 2015) and contribute to poverty reduction (Snyman, 2016). Moreover, the idea of strict PAs will most likely not provide for the long-term protection of biodiversity (Wilshusen, Brechin, Fortwangler, & West, 2002).

PA managers therefore face the crucial challenge of simultaneously: (a) favoring the conservation of local biodiversity, landscape, processes, and so on; and, (b) offering educational and leisure services to the visitors, staying aware of the positive and negative impacts of tourism in PAs. These natural spaces certainly appear to have a future, but only

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https://doi.org/10.1016/j.jdmm.2019.02.005
Received 5 March 2018; Received in revised form 5 February 2019; Accepted 16 February 2019

if they contribute to sustainable development (Romagosa, Eagles, & Duitschaever, 2012).

The principles of sustainable tourism are focused on four points: (a) optimal use of environmental resources that protect ecological processes, natural heritage and biodiversity; (b) respect for the socio-cultural authenticity of host communities; (c) providing socio-economic benefits to all stakeholders involved; and, (d) providing meaningful experiences to tourists to assure high levels of visitor satisfaction (World Tourism Organization, 2004).

PAs therefore become, simultaneously, nature conservation areas and social spaces that offer public services (Rodger, Taplin, & Moore, 2015) to tourists, for whom park management is expected to provide satisfying experiences (Taplin, Rodger, & Moore, 2016) and, consequently, visitors are seen as clients (Rodger et al., 2015).

Valdivieso et al. (2015) encouraged the search for indicators from which a PA manager might understand the extent to which the activities "would fulfil the touristic goals" (p.1546), such as tourist satisfaction, which is so important in terms of PA sustainability. Any evaluation of the tourist experience will depend not only on the PA site but also on the services provided there (Chiu, Lee, & Chen, 2014). Servicescape is a concept that originally referred to the physical environment that forms the particular setting and atmosphere where the service experience is produced and consumed (Bitner, 1992). Tourism activities in natural environments imply differing consumption patterns of nature-based products and services, in terms of services and facilities as well as human-nature interactions (Fredman, Wall-Reinius, & Grundén, 2012).

Empirical research on the impact of servicescapes on client satisfaction is scarce (Brunner-Sperdin, Peters, & Strobl, 2012), although it is known that client satisfaction arises from an emotional reaction to a service context. Additionally, despite the importance of tourist satisfaction in the tourism literature centered on heritage tourism (Chen & Chen, 2010), the consideration of tourist satisfaction at PA sites remains largely neglected.

In view of these two gaps, the present research aims to analyze the influence of servicescape as an antecedent of tourist satisfaction in the particular context of tourism in a PA. In doing so, the results will be helpful for PA managers to determine how to provide appropriate levels of human recreational use of the area, as recommended by Valdivieso et al. (2015). This is relevant because is a deeper understanding is required of the links between services, satisfaction and loyalty, both by researchers and PA managers (Rodger et al., 2015). Additionally, this research sheds light on the impact of servicescape on tourist satisfaction, an area that has been neglected in the literature.

2. Literature review and hypothesis development

Both tourist perceived value and satisfaction are key elements in shaping the tourist experience. Importantly, a highly satisfactory tourist experience reinforced with a high perceived value was identified as a driver of environmentally responsible behavior among Korean and Chinese tourists in a study conducted into nature-based destinations in Jeju Island in Korea (Han, Lee, & Hwang, 2016). Those conclusions echo the ideas of McCool (2006), who suggested that valuable and satisfactory tourist experiences may generate additional support for conservation in PAs.

2.1. Perceived value

Tourism experiences are simultaneously the product and the value, rather than the mere result of the consumption process in a PA, despite the elusiveness and dependency of the PA on the tourists themselves (Vespestad & Lindberg, 2011). The multisensory experiences of tourists in a PA, which cause both cognitive and emotional responses (Bertella, 2016), will determine their satisfaction levels (Kim, 2014). The assessment of the different inputs that combine to shape the tourist experience will therefore explain tourist satisfaction.

A key antecedent of satisfaction is perceived value, which compares the customer's benefits with the monetary and non-monetary sacrifices (Lee, Yoon, & Lee, 2007). This is a complex construct that depends on: (a) price, time, effort and risk; and (b) economic, social and/or emotional benefits when acquiring a product or a service (Xu, Wong, & Tan, 2016).

In the tourism context, the value attached by tourists to their destination experiences is the result of the process by which the tourist receives, selects, organizes, and interprets the information on the various activities in which they engage during their stay at the destination (Prebensen, Woo, Chen, & Uysal, 2013). Perceived value can be enhanced by reducing the costs or sacrifices, in terms of time and effort, through service convenience that facilitates the completion of tasks with minimum consumption of time and energy. Understanding the role of service experience, which depends on many actors, contexts, meanings, and times (Chandler & Lusch, 2015), is particularly important in a context of active client participation – i.e. experiences of an interactive nature (Dong & Siu, 2013) – which is the case of tourism.

The overall service experience depends greatly on the surrounding environment, commonly understood as the physical surroundings. The term servicescape is used to describe those physical elements of the environment in which the service is delivered. The investigation of Bitner (1992), in the field of applied environmental psychology, distinguished between: (a) spatial layout and functionality (furniture and its location); (b) ambient conditions (temperature, lighting and aroma); and (c) signs, symbols and artefacts (signage and decorative style). As a complement to the servicescape concept, the concept of social servicescape has been introduced. Indeed, the human element of the service environment cannot be overlooked, as it stimulates "specific emotional and psychological responses to the consumption experience" (Line, Hanks, & Kim, 2018, p. 5).

Servicescape influences service quality (Nilsson & Ballantyne, 2014) because it is an antecedent of service quality (and not a service quality dimension) (Hooper, Coughlan, & Mullen, 2013). Servicescape goes further than being a simple cue for expected service quality by also influencing 'customers' evaluations of other factors determining perceived service quality' (Reimer & Kuehn, 2005, p. 785).

In the context of tourism services in a PA, the servicescape elements differ from those of an ordinary service encounter (given the absence of furniture, for example), but are in themselves no less important. These factors are new challenging elements to be taken into the equation, so the visitor management literature focuses on both social and ecological resources impact on the visitor experience (Anderson, Manning, Valliere, & Hallo, 2010; Manning, Rovestad, Moore, Hallo, & Smith, 2015; Pilcher, Newman, & Manning, 2009), as well as managerial resources (i.e. services provided).

Since, however, the natural servicescape involves a large amount of non-controllable components (such as temperature, weather, and animal sightings), which necessarily implies less managerial control over the tourist service provided, this study is focused on three crucial controllable elements: (a) information services; (b) food, and (c) facilities, all of which are human-made attributes in the nature-based servicescape. In the case of an experiential service, such as tourism in a PA, further light needs to be shed on how the servicescape can contribute to the development of a better service in order to boost the customer's service experience (Dong & Siu, 2013). Facilities and services were found to be important attributes of the servicescape in the case of nature-based tourism in Sweden (Fredman et al., 2012), as they can "support, enhance or even be a requirement to experience nature" (p.305).

Local cuisine has been related to the concept of authentic tourist experiences (e.g. Hillel, Belhassen, & Shani, 2013; Wang & Mattila, 2015) and perceived service quality (Kim & Moon, 2009). In the case of tourism in PAs, a social-gastronomic motivation has been found to visit Ecuadorean Wetlands (Díaz-Christiansen, López-Guzmán, Pérez Gálvez,

& Muñoz Fernández, 2016) and in an innovative experience of sustainable tourism in Italy, named "pescatourism" (consisting of a day trip on a fishing boat with local fishermen, where tourists participate with them to perform their tasks, eating freshly fish cooked onboard prepared using traditional recipes), the food experience is important in shaping tourist overall satisfaction level (Lai, Cicia, & Del Giudice, 2016). Chen and Huang (2019) found a positive correlation between tourist's food satisfaction and their destination loyalty in Mainland China.

Facilities have been related to perceived value and to revisit intentions (Dong & Siu, 2013). In the case of touristic activities developed in natural settings, recent investigations have shown that the visitor expects facilities and infrastructural services (Fredman et al., 2012), for which reason the evaluation of these services will influence the perceived value of the service that is received. Lawton (2012), in research conducted in Francis Beidler Forest in the USA, recommended measures to reduce latent dissatisfaction generated by facilities before they could become major problems. However, Thapa and Lee (2017), in research conducted in a National Park in Zambia, found that facilities influence neither value nor satisfaction. Given these mixed results, further research on the issue is required.

Research into the role of information services in tourist satisfaction with PAs has produced mixed results. Pinkus, Moore, Taplin, and Perace (2016) found that service quality (which included services, facilities, and information offered at Purnululu National Park in Australia) positively influenced satisfaction, in line with the results of Lee, Graefe, and Burns (2004) in the case of forest visitors and the research of Tian-Cole, Crompton, and Wilson (2002) into visitor satisfaction at a wildlife refuge. Similarly, in a study conducted in the Galapagos Islands, Zander et al. (2016) found that the previous knowledge of the PA among visitors increased their satisfaction levels. Additionally, Thapa and Lee (2017) found that information (as a part of staff and information construct) directly and positively influenced value in a study conducted in Kafue National Park in Zambia. Conversely, Rodger et al. (2015), who experimentally manipulated the provision of information in Australia (by means of a color information sheet located at two park entrances) found that the provision of information had no significant effect on visitor satisfaction. He and Chen (2012), meanwhile, found that satisfaction was higher when people paid a visit to visitor education centers in just two out of the five botanical gardens analyzed in China. It is therefore necessary to shed light on the specific relationship between informational services and satisfaction of tourists in a natural park.

In view of the above, in the context of a PA, the following hypotheses are proposed:

H1. Information services positively influence the perceived value of a PA tourist site.

H2. Food positively influences the perceived value of a PA tourist site.

H3. Facilities positively influence the perceived value of a PA tourist site.

2.2. Tourist satisfaction and behavioral intentions

Both tourist satisfaction and behavioral intentions are crucial for the success of a tourism destination and the planning of its marketing strategies (Eusébio & Vieira, 2013). Within the tourism industry, satisfaction drives recommendations of the destination and increases the probability of repeat visits (Castellanos-Verdugo, Vega-Vázquez, Oviedo-García, & Orgaz-Agüera, 2016). Additionally, focusing on post-visit behavioral intentions is important because, according to the theory of reasoned behavior (Ajzen, 1991; Armitage & Conner, 2001; Miller, 2017), it is a predictor of actual behavior.

The satisfaction construct can be approached from a cognitive point of view, conceptualizing consumer satisfaction as a post-consumption assessment that either meets or falls short of previous expectations. Dissatisfaction therefore results when there is no confirmation of such expectations. Conversely, satisfaction can be considered as the emotional reaction generated by consumption, that is the tourist's psychological outcome after the destination experience (Lee, Lee, & Park, 2014; Žabkar, Brenčič, & Dmitrović, 2010). The purely cognitive perspective is rejected in an increasing number of investigations, adding weight to the idea that the customer's emotional state explains client satisfaction (Brunner-Sperdin et al., 2012).

Recently, in the context of nature-based literature, Moore, Rodger, and Taplin (2015) explained the lack of consensus over satisfaction as a consequence of its shared origin with service quality in the expectancy disconfirmation paradigm, blurring the boundaries between the two terms. The interchangeable use of these two concepts in the tourism literature (Pinkus et al., 2016) has increased confusion over these closely related but different concepts.

Service quality is the perception of the quality of the performance, while satisfaction is a more general and subjective evaluation. Both concepts can be easily distinguished from a practical point of view, as managers of PAs can control service-quality attributes, while control over overall visitor satisfaction is quite another matter (Rodger et al., 2015).

Post-visit behavioral intentions refer to the individuals' stated intention to behave in a certain way after visiting a destination. It is commonly measured using intention to revisit and intention to recommend the destination to others (Moore et al., 2015). Intention to revisit and intention to recommend are widely used in the literature on tourism to measure loyalty (e.g. Lee, Jeon, & Kim, 2011; Žabkar et al., 2010).

In the particular context of tourism activities in PAs, both the intention to revisit and to recommend can potentially generate future income, helping to make the area economically sustainable, which may explain the growing interest in the analysis of behavioral intentions in the nature-based tourism literature (Moore et al., 2015; Pinkus et al., 2016). Even so, as a hitherto neglected area of research, very little is known so far about post-visit behavioral intentions in PAs. In the case of ecotourism destinations, it should be remembered that revisiting may be an inappropriate way to analyze loyalty and that it may be contrasted with recommendation (Pinkus et al., 2016; Rivera & Croes, 2010).

The tourism literature has established perceived value as a key antecedent of tourist satisfaction and future behavioral intentions (Bajs, 2015; Castellanos-Verdugo et al., 2016; Yoon, Lee, & Lee, 2010). Much remains to be done, however, in the area of nature-based tourism, particularly in Pas. The literature that identifies links between perceived value-satisfaction-behavioral intentions is mainly limited to the USA, thereby neglecting nature-based activities in other geographical areas. Investigations in the Galapagos Islands (Rivera & Croes, 2010) and in Kakadu National Park, Australia (Crilley, Weber, & Taplin, 2012) are, to the best of the authors' knowledge, the only two exceptions. As Ha, Akamavi, Kitchen, and Janda (2014) have affirmed, further research within different contexts is therefore necessary, to examine the relationship between satisfaction and behavioral intention in greater depth.

In accordance with previous investigations, perceived value is believed to have a significant effect on satisfaction, which, in turn, influences behavioral intentions (recommendations and revisit intentions) word-of-mouth and the intention to repeat the visit. The following hypotheses are therefore proposed in the context of tourism in a PA:

H4. The perceived value of a PA tourist site positively influences the satisfaction of PA tourists.

H5. The perceived value of a PA tourist site positively influences the behavioral intentions of PA tourists.

H6. PA tourists' satisfaction positively influences the behavioral intentions of PA tourists.

3. Methods

The methodology used in this research is detailed and explained in the following three subsections: the first is devoted to the measures designed to test the constructs of the model and how common method bias has been addressed; the second provides background information on the PA in Dominican Republic where the data were gathered; while the third centers on the sample features, the data-gathering process and a detailed explanation of the methodology chosen for testing the proposed hypotheses.

3.1. Measures

The theoretical constructs of this research were assessed using multi-items on a five-point Likert-type scale (1 = completely disagree, 5 = completely agree), adapting appropriate scales from a review of the relevant literature. In the case of the tourist satisfaction construct in PAs, a multiple-item scale was preferred (Moore et al., 2015) instead of the more commonly used single-item scale, so as to establish a more valid form of measurement.

The standard, systematic, five-step procedure of the translation-back-translation method was used to adapt the original scales to Spanish (McGorry, 2000; Su & Parham, 2002). The procedure was performed as follows: (a) direct translation from English into Spanish by two independent native Spanish translators; (b) comparison and discussion of both translations to produce a synthesis; (c) back-translation of the synthesis into English by two native English translators; (d) consolidation of the translations by refining the wording and removing discrepancies between the four translators to produce a final draft of the Spanish version; (e) pre-test with 35 individuals in the PA to check understanding of the questionnaire and the appropriateness of its structure. No problems were detected in the pre-test.

A crucial issue in a research design is the validity of its methodological, which can be at risk due to positive self-reporting bias and social desirability bias when a questionnaire is used to gather the research data. However, common method bias can be mitigated using procedural remedies (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; 2012). In this study, where the predictor and the criterion variable cannot be measured in different contexts (regardless of whether or not the source of common method bias can be established), procedural remedies are the 'most effective way to control common measurement biases' (Podsakoff et al., 2003, p. 900). Specifically, the procedural remedies involved the use of clear and well-known concepts, employing plain and concise language and avoiding complex syntax and double-barreled items. With respect to social desirability bias, the anonymity of respondents was guaranteed, and it was explained that there were no right or wrong answers. Finally, the use of synonyms was avoided, making sure that the wording of items was varied while keeping the questionnaire as short as possible. The investigation design was carefully performed to minimize common method bias (Gorrell, Ford, Madden, Holdridge, & Eaglestone, 2011), to maximize respondent motivation and ability, and to minimize task difficulty, thereby encouraging accurate responses (Podsakoff, McKenzie, & Podsakoff, 2012). Altogether, the procedural remedies and the questionnaire pre-test are effective ways of controlling the aforementioned biases (Podsakoff et al., 2003).

3.2. Saltos de la Damajagua (Dominican Republic)

At present, the Dominican Republic has 23% of its land mass and 9% of its marine area protected, according to World Database on Protected Areas. The Saltos de la Damajagua, the PA with the highest growth rate in terms of tourists visiting in the Dominican Republic, is a Natural Monument located in Puerto Plata (in the north of the Dominican Republic) and is 5.74 km^2 in area (World Database on Protected Areas, 2016). A National Monument in the Dominican Republic is a PA set aside to protect a specific natural monument, which can be a landform, sea mount, submarine cavern or even a living feature such as an ancient grove (International Union for Conservation of Nature, 2016).

Traditionally, tourist development in the Dominican Republic was based on sun-sand all-inclusive tourism promoted by international hotel chains and cruises. These sorts of activities inevitably overlook local livelihoods and damage the environment, hardly fostering local socio-economic development, particularly if leakages are considered. The Republic has initiated a new policy in tourism seeking its sustainability on the basis of the Dominican Sustainable Tourism Development Project.

As mentioned above, in general, an important characteristic of tourism in PAs is that it should be a sustainable activity. To do so, tourism has to be organized with the participation of four actors: (a) the authorities; (b) the local population; (c) the companies involved in tourism; and (d) the tourists themselves (Björk, 2000) in a multi-level governance process called co-management (Sessin-Dilascio, Prager, Irvine, & Sinisgalli, 2015). It is certainly a difficult task but it may produce positive outcomes: a meta-analysis of 165 PAs reported that co-management is more likely to achieve ostensibly opposing aims, i.e. biological conservation and socio-economic outcomes (Oldekop, Holmes, Harris, & Evans, 2016). The Saltos de la Damajagua is a successful example of co-management in the Dominican Republic, involving the Ministry of Environment, the Provincial Government, the Playa Dorada Association of Hotels, the Ministry of Tourism, the Association of River Damajagua Guides, representatives of local landlords, the municipality of Imbert, and the Damajagua Local Administration.

3.3. Data collection, sample profile and methodology

Data collection was done using a self-administered structured questionnaire in two languages (Spanish and English), which was distributed to tourists visiting the Natural Monument of Saltos de la Damajagua (Puerto Plata, Dominican Republic). Over a three-week period, trained interviewers distributed and, where necessary, assisted respondents to complete a final sample of 520 valid questionnaires, surpassing the required minimum sample size of 471 valid questionnaires for a simple random design with a finite population (final sampling error 4.28%).

The sample was comprised of non-Dominicans (65.4%), of whom 34.2% came from the USA and 61.7% were single. The most numerous age group was between 18 and 34 years of age (67.5%) and 61.6% of the sample practiced nature-based tourism at least twice a year. The distribution by gender was well balanced (50% men).

The evaluation of the hypotheses through a linear structural equations model meant that relationships could be established between the constructs, so as to determine the predictive power of the model. There are two basic approaches to estimate structural equation models: (a) "composite-based approach to structural equation modelling (SEM) that linearly combines indicators to form composite variables, which serve as proxies for the concepts under investigation" and (b) "common-factor based SEM (i.e. covariance-based SEM, CB-SEM) which considers the constructs as common factors that explain the covariation between their associated indicators" (p.399) (Sarstedt, Hair, Ringle, Thiele, & Gudergan, 2016).

PLS-SEM is a composite-based approach: a method focusing on the prediction of the hypothesized relationships maximizing the explained variance in the dependent variables (Hair, Hult, Ringle, & Sarstedt, 2017). PLS-SEM is particularly appropriate when research focuses on prediction and explanation of the variance of key constructs and the variables in the model are both composite and common factor ones for,

in comparison with covariance-based structural equation modelling (CBSEM), PLS-SEM shows almost no bias and CBSEM show severe biases (Rigdon, Sarstedt, & Ringle, 2017; Sarstedt et al., 2016). Additionally, Sarstedt et al. (2016) have demonstrated through simulation that above all in the case of uncertainty over the nature of the data, PLS-SEM is the preferred methodology, which means it is the best option in most situations. Therefore, as Henseler (2018, p.4) states, "PLS is a suitable technique for explanatory purposes if a structural equation model contains one or more constructs operationalized as a composite. The analyst's focus will predominantly lie on the endogenous variables' R-squared, the statistical inference of path coefficients, and effect sizes".

Unlike covariance-based SEM, PLS does not seek to optimize a unique global scalar function (Henseler & Sarstedt, 2013) and, therefore, the term goodness of fit has a different meaning than it would in the context of covariance-based SEM. In the latter case, fit statistics "are derived from the discrepancy between the empirical and the model-implied (theoretical) covariance matrix, whereas PLS-SEM focuses on the discrepancy between the observed (in the case of manifest variables) or approximated (in the case of latent variables) values of the dependent variables and the values predicted by the model in question" (Hair et al., 2017, p. 78). Therefore, the measures indicating the model's predictive capability are the key to judging the quality of the model (Hair et al., 2017).

4. Results

IBM SPSS 22 and Smart-PLS, version SmartPLS 3.2.7, were used to test both the reliability and the validity of the measurement instrument as well as the structural models.

4.1. Reliability and validity of the measurement model

Individual item reliability was assessed by means of the factorial load. Values over 0.707 (Ali, Rasoolimanesh, Sarstedt, Ringle, & Ryu, 2018; Barroso, Cepeda Carrion, & Roldán, 2010) imply that the shared variance between the construct and its indicators is greater than the variance of the error.

Construct reliability was checked using the composite reliability measurement, a better choice than Cronbach's alpha (Chin, Marcolin, & Newsted, 2003), firstly because it does not assume that all the population have equal indicators loadings, secondly because it is not sensitive to the number of items in the scale (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014) and thirdly because it is less frequently affected by common method bias (Gorrell et al., 2011). Composite reliability accepts values ranging from 0.6 (Diamantopoulos & Siguaw, 2000) to 0.8 (Koufteros, 1999). Despite choosing the most restrictive criteria for the evaluation of composite reliability, all the constructs had values close to or above 0.9 (see Table 1). Moreover, since "Cronbach's alpha typically

Table 1
Items of the refined measurement scales and measures of reliability.

Construct/indicator	Loading	Composite reliability	Rho_A	AVE
Informational service - Adapted from Yoon et al. (2010)		**0.90**	**0.871**	**0.76**
I consulted prior information that allowed me to have a good understanding of the program and schedules	0.78			
The information signals increased my understanding of information and guidance	0.92			
The brochures were well prepared	0.90			
Food Adapted from Yoon et al. (2010)		**0.95**	**0.998**	**0.81**
The food is varied	0.90			
The food is quality	0.94			
The price of food is good	0.92			
The offer of local cuisine is abundant	0.84			
Facilities - Adapted from Yoon et al. (2010)		**0.89**	**0.859**	**0.58**
The protected area is easily accessible	0.70			
The general cleanliness of the protected area is good	0.78			
The protected area provides opportunities for rest	0.75			
I felt safe in the protected area	0.80			
The seating area is well equipped	0.74			
Perceived value of PA tourist site - Adapted from Yoon et al. (2010) and Chiu et al. (2014)		**0.87**	**0.785**	**0.68**
The visit was great (money, time, effort)	0.84			
The visit offers more value than expected	0.87			
Visiting this protected area offers more value than other protected areas	0.77			
PA tourist satisfaction - Adapted from Yoon et al. (2010) and Žabkar et al. (2010)		**0.94**	**0.926**	**0.69**
Overall, I am satisfied with this visit	0.87			
Overall I am happy with this visit	0.84			
I think I did the right thing in choosing to visit this protected area	0.79			
I am glad I decided to visit this protected area	0.82			
I am delighted to have visited this area protected	0.82			
I feel happy having visited this protected area	0.85			
Behavioral intentions - Adapted from Martin-Ruiz, Castellanos-Verdugo, and Oviedo-Garcia (2010); Žabkar et al. (2010) and Williams and Soutar (2009)		**0.92**	**0.890**	**0.69**
If I had to choose again, I would choose again this protected area	0.83			
I will recommend the practice of ecotourism to family and friends	0.85			
I will speak highly of this protected area to family and friends	0.84			
I will probably recommend this protected area to family and friends	0.83			
I would repeat the visit to this protected area on another occasion	0.80			

Table 2
Discriminant validity.

	(1)	(2)	(3)	(4)	(5)	(6)
(1) Food	**0.90**					
(2) Informational service	0.50	**0.87**				
(3) Behavioral intentions	0.24	0.30	**0.83**			
(4) Perceived value of PA tourist site	0.36	0.33	0.61	**0.83**		
(5) PA tourist satisfaction	0.27	0.29	0.76	0.69	**0.83**	
(6) Facilities	0.41	0.36	0.59	0.70	0.67	**0.76**

Diagonal elements (bold) are the square root of variance shared between the constructs and their measures (AVE). Off-diagonal elements are the correlations among constructs. For discriminant validity, the diagonal elements should be larger than the off-diagonal elements.

understimates the true reliability and should therefore only be regarded as a lower boundary to the reliability" (Henseler, Hubona, & Ray, 2016, p. 10), construct reliability was also checked by means of rho_A (Dijkstra & Henseler, 2015). This is a consistent reliability measure for PLS construct scores, which were all above of the required threshold of 0.7 (Henseler, 2017).

Both the convergent and the discriminant validity were evaluated in order to check the overall validity of the constructs. Convergent validity, which implies that a set of indicators represents a single underlying construct, was evaluated through the average variance extracted (AVE), seeking values above 0.5 (Fornell & Larcker, 1981), a requirement with which all the constructs of this investigation complied. Discriminant validity was established by confirming that the AVE had a higher value than the shared variance between the main construct and the other constructs that are represented (Hair et al., 2014) (see Table 2).

4.2. Structural model

The structural model was evaluated by examining the explained variance in the dependent constructs and the coefficients of the dependency of the model, which highlights the relative strength of the relations between the constructs.

Table 3 illustrates the quantity of explained variance, i.e. what each antecedent variable explains over its endogenous construct. As can be seen, information services explain 1.98% of the explained variance of the construct perceived value. Cuisine explains 2.52% and facilities explain 45.5%. Perceived value exercises a positive influence over tourist satisfaction, explaining 47.61% of the explained variance. Finally, satisfaction and perceived value explain 49.4% and 9.15% respectively of the variance in behavioral intentions.

Bootstrapping (5000 resamples) was used, in order to obtain the confidence intervals of the standardized regression coefficients. The statistical significance of the path coefficients was therefore assessed by means of standard error and the t-statistic provided by bootstrapping (Henseler, Ringle, & Sinkovics, 2009), as shown in Table 4.

It may be concluded from these results that four of the six hypotheses proposed had a significant path coefficient. The results confirm a positive relationship between facilities and perceived value ($\beta = 0.65$, $\rho = 0.001$). They also supported the hypothesis that tourist satisfaction is influenced by perceived value ($\beta = 0.69$, $\rho = 0.001$). The results showed that behavioral intentions were explained by both perceived value ($\beta = 0.15$, $\rho = 0.001$) and tourist satisfaction ($\beta = 0.65$, $\rho = 0.001$). However, they supported neither H1 nor H2, as no statistically significant relation was found between information services and food in relation to the perceived value of PA tourist site (H1: $\beta = 0.06$; H2: $\beta = 0.07$).

To estimate the model, fit both the SRMR (Standardized Root Mean Square Residual) and NFI (Normed Fit Index) were calculated (SRMR = 0.066; NFI = 0.930). SRMR values above 0.08 indicate that the degree of misfit is considerable (Henseler, 2017) and, in case of NFI values, although the threshold are still to be determined for composite models, for factor models it is 0.90 (Henseler et al., 2016).

The Q^2 index is widely used to measure the predictive relevance or the predictability of the endogenous constructs in a model. There are two types of Q^2, according to the form of prediction: cross-validated communality and cross-validated redundancy (Fornell & Cha, 1994). Chin (1998) suggested the use of the latter to examine the appropriateness of the prediction of the theoretical/structural model. This indicator offers a measure of goodness so that the observed values are reconstructed by the model and its parameters (Chin, 1998). If Q^2 is

Table 3
Effect on endogenous variables.

	R^2	Q^2	Direct effect	Correlation	Explained Variance
Perceived value of PA tourist site	0.49	0.03			
H1: Information services			0.06	0.33	1.98%
H2: Food			0.07	0.36	2.52%
H3: Facilities			0.65	0.70	45.5%
PA tourist satisfaction	0.48	0.33			
H4: Perceived value of ecotourist site			0.69	0.69	47.61%
Behavioral intentions	0.59	0.11			
H5: Perceived value of PA tourist site			0.15	0.61	9.15%
H6: PA tourist satisfaction			0.65	0.76	49.4%

Table 4
Hypotheses statistics.

Hypotheses	Suggestedeffect	Path Coefficient (β)	T value (bootstrap)	Upheld/Not upheld
H1: Information services - > Perceived value of PA tourist site	(+)	0.06	1.37	Not Upheld
H2: Food - > Perceived value of PA tourist site	(+)	0.07	1.40	Not Upheld
H3: Facilities - > Perceived value of PA tourist site	(+)	0.65[a]	13.93	Upheld
H4: Perceived value of PA tourist site - > PA tourist satisfaction	(+)	0.69[a]	13.87	Upheld
H5: Perceived value of PA tourist site - > Behavioral intentions	(+)	0.15[a]	3.60	Upheld
H6: PA tourist satisfaction - > Behavioral intentions	(+)	0.65[a]	12.47	Upheld

Note.
[a] $p < 0.001$ (based on a student t (4999) distribution with one tail); t (0.001, 4999) = 3.09.

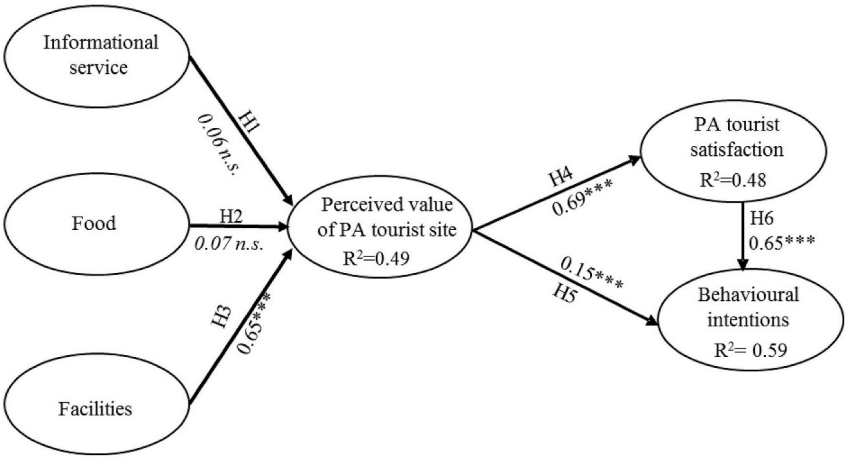

Fig. 1. Proposed model. Please change information service to information services and behavioral intentions to behavioral intentions.

greater than zero the model has predictive relevance. In the present case, the results confirm that the structural model presents predictive relevance (Fig. 1).

5. Discussion and conclusion

In order to assess service quality – services, infrastructure and facilities – the parks and tourism literature has often adopted the SERVQUAL (Parasuraman, Zeithaml, & Berry, 1985) (e.g. Moore et al., 2015; Taplin et al., 2016; Thapa & Lee, 2017; Tian-Cole et al., 2002) and, to a less extent, SERPERF scales (Cronin & Taylor, 1992) (e.g. Ban & Ramsaran, 2017; Rathnayake, 2016). However, in this investigation, the focus is on the analysis of the role of servicescape (as human made environment, i.e. service setting) in the context of touristic service in a natural PA, connecting it with perceived value, PA tourist satisfaction and behavioral intentions. As Margaryan (2018, p.1896) states, “in the context where tourism businesses are not aiming at delivering products and services anymore but rather at creating a favourable environment for tourists to co-create their own experiences, the operational setting in nature based tourism is of particular importance”.

The relevance of this research is linked to the impact that PA tourist satisfaction has on relevant indicators for the sustainable management of PA tourist sites. As the provision of satisfactory experiences is integral to park management (Taplin et al., 2016) and as satisfaction scores are in fact rarely used to assess the success/failure of a PA (Coghlan, 2012), this investigation is important because it contributes to the still quite scarce body of research in PAs focusing on servicescape, satisfaction and behavioral intentions.

5.1. Theoretical implications

For the acceptable management of PAs, a more in-depth examination of the relationship between service quality and satisfaction (Rodger et al., 2015) is needed, moving a step further in understanding the relationship between satisfaction and behavioral intentions (Ha et al., 2014), particularly in the context of tourism in PAs. With that end in sight, the structural model presented here reflects the relationships between three aspects of servicescape (facilities, food and information services) and perceived value, as well as between this construct and tourist satisfaction and behavioral intentions. Likewise, the model establishes a direct relation between satisfaction and behavioral intentions.

As with previous studies in marketing and tourism (Dong & Siu, 2013; Lee et al., 2007, 2011), this study has shown the positive effect of facilities on the perceived value of a PA tourist site. Consequently, the results indicate that tourists visiting PAs will evaluate their tourism experience as disagreeable when the installations are not acceptable, which is in accordance with the nature-based tourist supply perspective where facilities and naturalness are both considered important attributes (Fredman et al., 2012).

However, contrary to what was hypothesized, neither cuisine nor information services were found to be related with perceived value in this study, despite previous studies in the context of tourism having shown a connection between local cuisine and authentic tourist experiences. Nonetheless, the results with regard to information services are in line with Rodger et al. (2015), who found that printed information on an A4 color leaflet distributed at the park entrance had no influence on visitor satisfaction.

Both the study context and the way information sources is operationalized can explain these results. The particular features of the Natural Monument Saltos de la Damajagua clearly differs from previous studies on servicescape's influence on satisfaction, generally performed in the field of customer satisfaction (see, for example, Brunner-Sperdin et al., 2012).

Additionally, the duality satisfier/dissatisfier (Crompton, 2003) is useful to explain these results. Satisfiers are attributes that excite or motivate visitors and that are able to enhance their satisfaction. Dissatisfiers, on the contrary, if not adequately maintained, can provoke significant dissatisfaction, as they are taken for granted, but, even if improved, cause no satisfaction in themselves. Therefore, information services and food could be considered dissatisfiers (the tourists consider them part of the basic set of elemental tourist experiences in the PA) and, even so, when working well or above a certain standard, they will not generate satisfaction (Alegre & Garau, 2010). On the contrary, tourists to the Natural Monument Saltos de la Damajagua consider facilities as satisfiers, which they may even have expected lower levels or even none at all. These results are relevant when designing the tourism service that is provided in the PA of Damajagua.

The results have also pointed out that perceived value is an antecedent of both satisfaction and behavioral intentions, in line with earlier investigations in other tourism research settings (Chen & Chen, 2010; Petrick, 2004). Further, PA tourist satisfaction is related in a positive way with behavioral intentions, in line with Pinkus et al. (2016), who found a satisfaction effect on positive word of mouth in a nature-based tourism destination. The current study contributes to the very limited analysis undertaken in the previous literature on nature-based tourist satisfaction and behavioral intentions (Pinkus et al., 2016).

5.2. Management implications

The tourism experience constitutes a crucial element for acceptable management of the natural space in which PA tourism activities are developed, so that the search for PA tourist satisfaction has to be a priority if it is taken into account that it determines future behavioral intentions. It is therefore key in the management of the natural space to have accessible information that may be consulted on the satisfaction levels of the visitor (Tonge, Moore, & Taplin, 2011).

It is necessary to advance from a commonly recommended management perspective focused on limiting the number of visitors (e.g. Beale & Monaghan, 2005; Collins-Kreiner, Malkinson, Lavinger, & Shtainvarz, 2013; Reed & Merenlender, 2008; SæÞ; órsdóttir, 2013; Strier, 2010; Velando & Munilla, 2011), in order to increase the likelihood of natural-area conservation, to a new perspective where natural-area managers treat visitor satisfaction as an essential element with the help of a management-by-objectives framework to "help decision makers develop purposes and objectives, guide the process of acquiring the necessary information to make decisions, and help reach desired objectives" (Miller, Fefer, Kraja, Lash, & Freimund, 2017, p. 39). The profitability of nature-based tourism depends on giving customers a consistently high-quality experience (Coghlan, 2012), due to its impact on income that will be allocated both to conservation and to the enhancement of the services provided to visitors (Rodger et al., 2015). As other research has shown, the perceived value and the satisfaction of tourists positively influence environmentally responsible behavioral intention, which indicates that, beyond environmentally-related motives in the environmentally responsible behavior of nature-based tourism, tourist satisfaction is another key influential factor (Han et al., 2016).

Accessibility to the PA, its cleanliness, rest areas, and so on, should be carefully designed and managed, as these aspects are all satisfiers, while cuisine and informational services have to be guaranteed, because their absence will reduce visitor satisfaction, according to our results. This aspect is particularly relevant in a natural area, unlike other types of tourism (e.g. theme parks), because nature cannot be controlled in a PA and, therefore, the services are only one element of the experience that is provided to the visitor (Coghlan, 2012). Indeed, as Eagles (2002) pointed out, tourism in PAs relies on (a) environmental quality levels and, no less importantly, (b) suitable levels of consumer service.

These proposals in no way contradict ecological integrity because tourism activity may be configured in the paradigm of "process-based conservation by linking facilities and visitors to key ecosystem attributes" (Shultis & Way, 2006, p. 232) seeking the best form of compliance with park regulations and visitor satisfaction. Additionally, tourism in PAs unites conservation performance and socio-economic development, particularly when co-management regimes are adopted (Oldekop et al., 2016). To do so, more investigation is necessary from the area of social sciences to identify, shape and measure satisfiers and dissatisfiers within the servicescape context, bearing in mind there is no unique solution for all PAs and the needs of all stakeholders have to shape the chosen approach (Snyman, 2016).

5.3. Limitations and future lines of research

The convenience sample used in this research, due to a shortage of resources, is the first limitation that need to be acknowledged. The results may have been different if the data had been collected in a different way.

Experimental randomized research design is necessary to advance down this line of research, by manipulating one or more service items, to assess their impact on satisfaction and/or behavioral intentions (Taplin et al., 2016). For example, information sources impact on perceived value of PA may depend on the way it is operationalized and, therefore, experimental research design could be very useful to test its impact and, in particular, under what circumstances information services increases visitor satisfaction. Experimental randomized research is, indeed, very scarce within tourism contexts, probably due to the great difficulties associated with it, but further results would be likely to provide a direct assessment of causality (Rodger et al., 2015). The research presented in this paper was never intended to demonstrate causality and limits itself to the predictability concept (Roldán & Sánchez-Franco, 2012). Causality is almost a utopia in social and behavioral sciences, where distributions are very often unknown and hardly normal, in a discipline with nascent theories and scarce little knowledge.

Studies of this sort in the framework of other natural resources would be interesting to be able to generalize the results, given that the proposed hypotheses have been tested in the environment of a unique PA. With a view to producing a more robust and stable model, future investigations should broaden the indicators in use, as the construct of the perceived value of a PA tourist site only contemplated three indicators; likewise, the different dimensions of perceived value could be evaluated, as suggested in some other works (Lee et al., 2011).

Other studies could focus on the search for variables that moderate or mediate the relations in the proposed model, such as the foreign or local origin of visitors to the natural area, since our investigation relies on the analysis of direct relations between constructs, because PLS methodology is based on a recursive inner model that is subject to predictor specification (Barroso et al., 2010; Henseler et al., 2009). Additionally, differences between non-Dominican and Dominican regarding their servicescape-perceived value-satisfaction-behavioral intentions may exist. So, future research may look at them.

Other independent variables, in addition to perceived value and satisfaction, could predict behavioral intention and past behavior or attributional importance (Petrick, 2004), which would have to be determined in future investigations. Additionally, authors acknowledge both (a) the weakness of satisfaction measure (Manning, 2011) and (b) the existence of other elements that may impact on satisfaction such as sounds or wildlife and, therefore, it remains unknown so far how this research results would change if those other elements would be included in the proposed model.

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