Papers

Factors affecting residents' support for tourism development in protected natural areas

Fatores que afetam o apoio dos residentes ao desenvolvimento do turismo em áreas naturais protegidas

Factores que afectan al poyo de los residents al Desarrollo del turismo en áreas naturales protegidas

Carla Stefânia Cabral de Medeiros Santana[1]; Marcos Antônio Leite do Nascimento[1]; Sérgio Marques Junior[1]

[1]Federal University of Rio Grande do Norte (UFRN), Natal, Rio Grande do Norte, Brazil.

Keywords:

Resident Support;
Tourism;
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Abstract

The objective of this article is to analyze the factors influencing residents' support for tourism development in protected areas. To this end, a hypothetical-deductive, descriptive study was developed, using a quantitative analytical survey. The sample consisted of 180 respondents living in Natal, RN who were visiting the state unit Parque das Dunas. A non-probability sampling technique was used to select respondents. The data collected were analyzed using structural equation modeling (SEM) to verify the relationships between constructs, based on the model of verification of behavioral intentions proposed by Chen and Tsai (2007). The results suggest that the quality of the site is the attribute that has the greatest impact in explaining support for the development of tourism in protected areas. It was also observed that the construct Value significantly interacts with the other study constructs, directly influencing residents' support. Thus, as a contribution, this study strengthens the understanding of how resident support for tourism development is more likely to happen when socio-environmental value is perceived.

Palavras-chave:

Apoio dos residentes.
Turismo.
Unidade de Conservação da Natureza.

Resumo

O objetivo deste artigo é analisar os fatores capazes de influenciar o apoio dos residentes ao desenvolvimento do turismo em Unidade de Conservação (UC) da Natureza. Para tanto, foi desenvolvido um estudo hipotético-dedutivo, de natureza descritiva, com abordagem analítica quantitativa do tipo Survey. A amostra utilizada foi composta de 180 respondentes residentes na localidade de Natal/RN que se encontravam em visita a unidade estadual Parque das Dunas. Esta amostra foi coletada de maneira não probabilística por conveniência e utilizando-se a sistematização como critério de seleção dos respondentes. Os dados coletados foram analisados por meio da técnica de Modelagem de Equações Estruturais (MEE) para a verificação dos inter-relacionamentos entre constructos, baseando-se no modelo de verificação das intenções comportamentais proposto por Chen e Tsai (2007). Os resultados encontrados sugerem que a qualidade do local é o atributo que possui o maior impacto na explicação do apoio ao desenvolvimento do turismo em UC da natureza e observou-se também que o constructo Valor apresenta interações significativas com os demais

constructos analisados, influenciando de maneira direta o apoio. Desta forma, como contribuição, esta pesquisa, possibilitou reforçar a compreensão de que quando há percepção do valor socioambiental os indivíduos estão mais propensos ao apoio ao desenvolvimento do turismo.

Resumen

El propósito de este artículo es analizar los factores que pueden influir en el apoyo de los residentes para el desarrollo del turismo en una área protegida. Para este fin, se desarrolló un estudio descriptivo hipotético-deductivo con un enfoque de encuesta analítica cuantitativa. La muestra consistió en 180 encuestados que vivían en Natal/ RN y estaban visitando la unidad estatal Parque das Dunas. Esta muestra se resolectó de forma no probabilística por conveniencia y utilizando la sistematización como criterio de selección de los encuestados. Los datos recopilados se analizaron mediante la técnica del Modelo de Ecuación Estructural (SEM) para verificar las interrelaciones entre constructos, según el modelo de verificación de la intención de comportamiento propuesto por Chen y Tsai (2007). Los resultados sugieren que la calidad del sitio es el atributo que tiene el mayor impacto en la explicación del apoyo para el desarrollo del turismo en la conservación de la naturaleza. También se observó que el constructo de valor presenta interacciones significativas con los otros constructos analizados, lo que influye apoyo directo. Así, como aporte, esta investigación permitió reforzar el entendimiento de que cuando hay una percepción del valor socioambiental, es más probable que las personas apoyen el desarrollo del turismo.

1 INTRODUCTION

Protected area is an expression that emerged in the late nineteenth century with the increasing destruction of nature and risk of species extinction. The creation of such areas gradually become common practice worldwide and they can be defined as "bounded units of territory, demarcated for limited human use in the name of protecting wildlife and ecological processes" (Zinda, 2017, p. 142). In addition to environmental conservation, protected areas are social spaces in which tourism generates income, employment, and financial support for conservation (Oviedo-García, Vega-Vázquez, Castellanos-Verdugo & Orgaz-Aguera, 2019).

Regarding the public use of protected areas, especially the park category, increasing attention has been paid to the relationship between tourism and environmental conservation (Bushell, Staiff & Eagles, 2007; Blanco-Cerradelo, Gueimonde-Canto, Fraiz-Brea & Dieguez-Castrillon, 2018; Rodrigues & Abrucio, 2019; Canto-Silva & Silva, 2017), being the latter a strong pull factor.

According to the World Economic Forum (2017), Brazil ranks first in the world in terms of natural resources, while Embratur considers the national parks a way of strengthening Brazil's global potential as a tourist destination (Brasil, 2018). In the period 2016-2017, the country received a total of 6,588,770 international visitors, 16.3% of whom were motivated by nature, adventure, and ecotourism (Brasil, 2018); a motivation that falls within the scope of natural parks. In terms of domestic arrivals and departures, in 2017, a total of 92,149,646 (Brasil, 2018) visitors indicated as main motivations leisure and nature.

In the same vein, the Ministry of Environment (MMA) (Brasil, 2016) reported that there was a 238% increase in visits to national parks, from 2.9 million in 2007 to 7.1 million in 2015. Globally, Ballantyne, Packer and Hughes (2008) estimate over 250 million visitors a year in protected natural areas.

The tourism potential of parks is linked to abiotic and biotic factors, cultural and/or historical features; the enhancement of local cultures; personal interest in protected areas; the existence of unique values; environmental valuation; and/or the emergence of a new tourist profile.

As far as tourism and recreation in conservation units (UCs as they are known in Portuguese) are concerned, Bushell et al. (2007, p. 6) argue that "tourism and recreation industry provides considerable benefits to protected areas and the communities adjacent to or within them", whether economic or social, as well as a greater appreciation of cultural, natural, and historical heritage (Moghavvemi, Woosnam, Paramanathan, Musa & Hamzah, 2017; Canto-Silva & Silva, 2017; Bushell et al., 2007).

However, when poorly managed, tourism contributes to the degradation of biodiversity, cultural elements, and ecosystem resources (Moghavvemi et al., 2017; Bowers, 2016) and thus negatively affects the local community (Bushell et al., 2007). Also, tourism can lead to social conflicts caused by the exclusion of the community and increased episodes of violence in the surroundings (Moghavvemi et al., 2017; Andereck, Valentine, Knopf & Vogt, 2005), overcrowding (Garcia, Vázquez & Macías, 2015), price increase (Moghavvemi et al., 2017; Lee & Back, 2006; Bestard & Nadal, 2007), and unequal income distribution (Alam & Paramati, 2016).

Thus, recognizing the role of tourism in UCs and surrounding communities, being aware of its positive and negative effects and understanding that UCs are areas that need integrated and participatory planning (Eagles & McCool, 2002), we consider that understanding the factors that influence residents' support for tourism development in UCs is relevant, since for tourism to thrive in an area it needs support from residents (Gursoy, Bogan, Dedeoglu & Çaliskan, 2019; Ap & Crompton, 1998).

In addition, Murphy points out (1981, p. 189), that "it is necessary to consider local residents' attitudes toward tourism development and to integrate the public into development decisions", as adjacent communities are one of the main components of protected area tourism (Strickland-Munro, Alisson & Moore, 2010) and those that "will experience the greatest impacts arising from that area" (Strickland-Munro et al., 2010, p. 501).

Therefore, this study investigates—through quantitative methods—the factors that can influence residents' support for tourism development. To that end, residents visiting a Brazilian natural park in the city of Natal, RN were surveyed to deepen the understanding of the residents' perception of those factors and its relationship with the support for the development of tourism in this environmental protection area.

2 CONSERVATION UNITS: BRIEF HISTORICAL-CONCEPTUAL PRESENTATION

The concept of protected areas was first created "to protect flora, fauna and areas of exceptional natural interest" (McCormick, 1992, p. 25) of a given territory. Currently, other elements have been added to this definition and the number of areas for protection purposes, with responsibility for environmental preservation and conservation is growing worldwide.

There are historical accounts of protected areas in the Middle Ages, in the West, with areas intended for the exclusive use of feudal society and haven for some species by royal order (Rocha, 2002). Over time, new social configurations appeared, new paradigmatic ruptures took place, and new paradigms emerged. Thus, with the Industrial Revolution and the emergence of preservationist movements, a composition arises in the form of factory works yearning for public recreational areas for leisure time.

From this, the idea of protecting natural areas—mainly in the form of parks, aimed at environmental conservation and promotion of the well-being of the population in contact with nature—gained traction. The creation of Yellowstone National Park, in the United States (USA), in 1872, was a landmark of protected areas. Yellowstone was guided by the idea of wilderness for the recreation of city dwellers (Diegues, 1998).

In Brazil, the process of establishment and creation of protected environmental areas began in 1937, and like other countries, the Yellowstone Park, in the USA, served as model. This was a period of rapid urban growth and widespread industrialization in Brazil, which led to greater interest in demarcating areas for environmental conservation and scenic protection.

3 SUPPORT FOR TOURISM DEVELOPMENT AND ITS BACKGROUND

Support for tourism development has been the object of study of many researchers (Ap, 1992; Lindberg & Johnson, 1997; Gursoy, Jurowski & Uysal, 2002; Gursoy & Rutherford, 2004; Haley, Snaith & Miller, 2005; Nunkoo & Ramkissoon, 2011; Nunkoo & Gursoy, 2012; Lee, 2013; Stylidis, Biran, Sit & Szivas, 2014; Garcia, Vázquez & Macías, 2015; Moghavvemi et al., 2017; among others). Most of these studies have investigated residents' attitudes regarding perceived positive and negative economic, socio-cultural, and environmental impacts of tourism.

In this regard, the social exchange theory (SET) within the scope of tourism, deals with the verification of costs and benefits, as well as the search for mutual benefit between actors (community and tourists) (Ap, 1992; Haley, Snaith & Miller, 2005; Moghavvemi et al., 2017). The basic assumption is that "those who benefit from tourism perceive less social and environmental impacts of tourism and have more favorable attitudes toward tourism development" (Perdue, Long & Allen, 1987, p. 422) unlike those who have no link at all with the activity. On the other hand, Lindberg and Johnson (1997)—when dealing with attitudes in support of tourism development—state that this support depends on the importance each value, i.e., the formation or change of attitude stems from the conception of value.

By correlating this information with resident behavior in tourist destinations, it is assumed that perceived values affect attitudes and, thus, the support for tourism development. As Ajzen and Fishbein (1977, p. 888) put it, "people's actions are found to be systematically related to their attitudes when the nature of attitudinal predictors and behavioral criteria are taken into consideration".

When considering the issue of tourism development support in a particular locality, it is common to refer only to the economic benefits of it (Gursoy, Jurowski & Uysal, 2002). Stylidis et al. (2014) and Garcia et al. (2015) understand that if positive impacts are perceived to outweigh negative ones, residents will likely support tourism, just as the success of tourism depends on the active support of the local population (Gursoy & Rutherford, 2004).

However, to assess support, Nunkoo and Gursoy (2012) propose a model that combines social exchange theory and identity theory. According to the authors, support for tourism development (behavior) should not only focus on assessing the impacts, but also on determining the link of individuals to the social structure, i.e., "an individual's identity influences behavior" (Nunkoo & Gursoy, 2012, p. 247). In the same vein, other studies suggest the presence of equally important factors that may also affect support, such as environmental protection (Liu & Var, 1986; Liu, Sheldon & Var, 1987) and community development (Lepp, 2007).

The literature dealing with the antecedents of tourism development support highlights some relevant dimensions for explaining this fact, such as Value (Lindberg & Johnson, 1997; Gursoy, Jurowski & Uysal, 2002; Lee, 2013; Chen & Chen, 2010; Nunkoo & Ramkissoon, 2011; Nunkoo & Ramkissoon, 2012; Nunkoo & Gursoy, 2012; Gursoy & Rutherford, 2004), Image (Stylidis et al., 2014; Stylidis, Shani & Belhassen, 2017; Chen & Tsai, 2007; Ramkissoon & Nunkoo, 2011; Schroeder, 1996), Satisfaction (Chen & Chen, 2010; Chen & Tsai, 2007; Vargas-Sánchez, Porras-Bueno & Plaza-Mejía, 2011; Jo, Lee & Reisinger, 2014), and Quality (Chen & Chen, 2010; Chen & Tsai, 2007; Jo, Lee & Reisinger, 2014).

Value has caught the attention of tourism researchers (Lindberg & Johnson, 1997; Chen & Tsai, 2007; Kashyap & Bojanic, 2000; Wang, Zhang, Gu & Zhen, 2009; Murphy, Pritchard & Smith, 2000; Oh, 1999, Oh, 2000; Petrick, 2004) and, together with satisfaction and quality, they are good antecedents of future behavioral intentions, especially for assessing the intention to return to the tourist destination (Chen & Tsai, 2007) and support.

According to Zeithaml (1988), Value is difficult to conceptualize —measured individually—because of its various meanings. For the author, Value can be associated with price, benefits, quality and, finally, 'a what you get for what you give' evaluation. That is, "perceived value is the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given" (Zeithaml, 1988, p. 14). Despite the various concepts, Woodruff (1997) argues that there is a consensus that value is inherent in utility and consumer perception, as put by Zeithaml (1988).

Thus, perceived benefits influence support (Lee, 2013; Nunkoo & Ramkisson, 2011)—in this case, support for tourism development. On this matter, Garcia et al. (2015) argue that—drawing on most studies already carried out—tourism development support occurs if people perceive positive attitudes. Therefore, in this study the Value-Support relationship is associated with perceived benefits (prerogative of UCs).

The Image construct, is often treated as the mental representation formed from individual impressions and feelings (Lee, Lee & Lee 2005; Wang et al., 2009). Beerli and Martin (2004) consider that the overall image of an attraction or destination is formed from cognitive and affective perceptions, and thus relevant to a positive or negative evaluation. According to the authors, other important elements for image formation are

the stimuli and personal factors (psychological and social). These are significant for investigating the role of protected areas in the daily lives of residents.

Thus, Image is the construct that intends to measure the concept that may be linked to the attraction. Residents' behavior and assessment of local experience (Lee, Lee & Lee, 2005) can be influenced by their representation, their mental image, as well as the choice of a location as recreation and visitation site.

The Satisfaction construct is considered essential to the success of many organizations, companies, products, and services. Therefore, opinion polls are frequently made by companies to measure customer satisfaction, which is often, but not necessarily, an important attribute for customer loyalty and for reducing customer complaints, as stated by Fornell, Johnson, Anderson, Cha and Bryant (1996). For visitors, the feeling of satisfaction raises the possibility of returning to the destination or attraction and recommendation to friends and family (Chen & Tsai, 2007). In the case of a UC, the likelihood of a satisfied visitor returning to that natural area and recommending it to others is higher than in one in which expectations were not met.

The construct Quality is treated by Zeithaml (1988, p. 3) as "the consumer's judgment about a product's overall excellence or superiority". Because of this global assessment, perceived service quality does not necessarily generate satisfaction. It may be that even if an individual is satisfied with the service, he or she still believes that the company has not provided good quality.

In turn, Chen and Tsai (2007) and Jo, Lee and Reisinger (2014) believe that quality is a predictor of behavioral attitudes and, thus, of support for tourism development. In addition, "high quality experiences for park visitors increase interest in the protection and conservation of protected area values" (Bushell et al., 2007, p. 6).

Measuring perceived social and environmental benefits, as well as use and quality benefits, allows us to investigate the meaning, interpretations, relationships, behaviors, importance of that natural area and its influence on people, thus contributing to management of the conservation unit (Shiraishi, 2011).

Based on these concepts, we proposed in this study to investigate the relationships between the constructs value, image, satisfaction, and quality as antecedents of the support for tourism development in nature conservation units (UC in the Portuguese acronym). The methods adopted are presented and discussed below.

4 METHOD

We adopted a hypothetical-deductive method, descriptive in nature and quantitative analytical approach. The object of the study was the Parque das Dunas State Conservation Unit, Rio Grande do Norte, Brazil, covering a total of 1,172.80 hectares, located in the urban environment of the state capital, Natal, and close to the city's tourist corridor. The study population is characterized and defined as residents who were visiting the park.

The research instrument was a questionnaire, composed of 32 variables divided into the dimensions Value, Image, Satisfaction, Quality, and Support. The items were measured on an 11-point metric scale, ranging from 0—strongly disagree to 10— strongly agree.

The survey was conducted from November 2 to November 26, 2017 on weekdays and weekends. Respondents were selected by non-probability, convenience sampling, using a systematic collection procedure: in every three persons, one was approached. In total, the collected sample consisted of 180 questionnaires. On this matter, Hair, Anderson, Tatham and Black (2005) recommend that in the case of structural equation modeling, the sample should be at least five times the number of items in the questionnaire. Thus, with 32 items a sample size of 180 respondents meets the recommended criteria. Table 1 presents the study variables and respective description.

**Table 1 -** Summary of study constructs and variables

FACTORS	DESCRIPTION OF THE VARIABLES	AUTHORS
Value (Valor)	VALOR1- I came here because this park is a UC	Moreira (2016)
	VALOR 2- I observe that this park is environmentally well-maintained	Nunkoo & Ramkissoon (2011)
	VALOR 3- I consider this park to have attractive elements	
	VALOR 4- The recreational experience in this park is pleasant	Passold & Kinker (2010)
	VALOR 5- I realize that people contribute to keep this park maintained	
	VALOR 6- This park has tourism potential	Eagles & Mccool (2002)
	VALOR 7- I consider this place as another tourist attraction in the city of Natal	Chen & Tsai (2007); Wang, Zang, Gu & Zhen (2009)
Support (Apoio)	APOIO1- This place is important for tourism development in Natal	Passold & Kinker (2010)
	APOIO2- I believe that people should participate in protection activities in this place	Nunkoo & Ramkissoon (2011)
	APOIO3- I am in favor of tourism development in this park	Nunkoo & Ramkissoon (2012)
	APOIO4- I support a greater incentive to attract visitors to this park	
	APOIO5- To make visitation possible, I am in favor of charging entrance tickets to this park	Lindberg & Johnson (1997)
	APOIO6- The government should create more parks like this one to favor tourism in Natal	Lee (2013)
	APOIO7- I would like tourists in Natal to visit this park	
Image (Imagem)	IMAGEM1- When I think of Natal I remember this park	Lee et. al. (2005)
	IMAGEM2 - This park reminds me of environmental conservation	Wang, Zhang, Gu & Zhen (2009)
	IMAGEM3- This park brings me fond memories	
	IMAGEM4- This park reminds me of pleasant sensations	Beerli & Martin (2004)
	IMAGEM5- I see this park as an educational space	
	IMAGEM6- This park is very exciting	Chen & Tsai (2007)
Satisfaction (Satisfação)	SAT1- The services of this park work as they should	Passold & Kinker (2010)
	SAT2- This park is accessible (well located)	
	SAT3- Visiting this park contributes to a greater interaction with nature	Moreira (2016)
	SAT4- The park has excellent tourism support infrastructure	Chen & Tsai (2007)
	SAT5-The park has all the conditions for recreation	Chen & Chen (2010)
	SAT6- The park has everything I need to have fun	
Quality (Qualidade)	QUALI1- Cleanliness	Moreira (2016)
	QUALI2- Safety	Chen & Tsai (2007)
	QUALI3- Accessibilities	Lee et. al. (2005)
	QUALI4- Facilities	Wang, Zang, Gu & Zhen (2009)
	QUALI5-Recreational activities	
	QUALI6- Overall, how do you evaluate the quality of this park?	Chen & Chen (2010)

Source: The authors (2019)

The analysis model proposed in this study was based on the behavioral intention verification model suggested by Chen and Tsai (2007), in which the authors proposed to build a more comprehensive model that would integrate the Image and Value constructs with the "quality—satisfaction—behavioral intentions" paradigm and, thus, examine how destination image, quality, satisfaction, and perceived value influence people's behavioral intentions.

Behavioral intentions can be understood as the intention to return and willingness to recommend the destination (loyalty).

However, the difference between Chen and Tsai's (2007) model and our model is that the focus are the behavioral intentions, as proposed by them, but rather on how the factors Value, Image, Quality, and Satisfaction behave by being added to the paradigm of tourism development support (Figure 1), since—as already shown in the theoretical discussion—these constructs are recognized as antecedents of support.

Figure 1 - Structural model based on Chen and Tsai (2007)
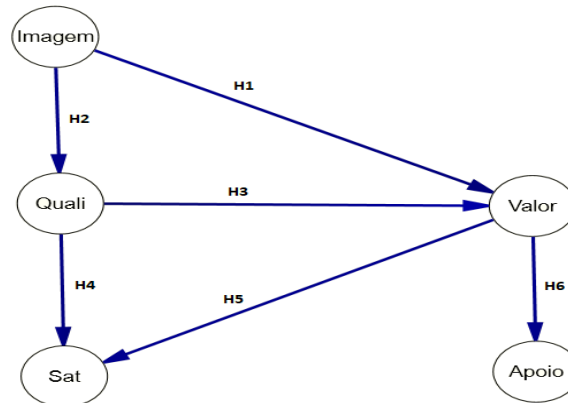
Source: Research data (2019)

The model predicts that there is a direct link between Image and Value. This intention assumes that the more favorable the perceived image, the higher the value attributed (Chen & Tsai, 2007). The relationship is consistent with other studies, such as those by Wang et al. (2009) and Sheth, Newman and Gross (1991).

In this context, attraction or destination image is also a construct that can influence perceived quality both in terms of prior intentions to visit and return to the attraction, because there is the understanding that the more favorable the attraction/ destination image the higher the perceived quality. This relationship was also identified by Wang et al. (2009); considering this, the following hypotheses are proposed:

H1: The image perceived by residents visiting Parque das Dunas has a significantly positive influence on perceived value.

H2: The image perceived by residents visiting Parque das Dunas has a significant positive influence on perceived quality of the attraction.

Drawing on the study by Chen and Tsai (2007)—and based on other authors such as Cronin Jr., Brady and Hult (2000), Chen and Chen (2010), Fornell et al.(1996), Wang et al. (2009), Oh (1999) and Petrick (2004)— we find that the higher the perceived quality, the higher the perceived value of the attraction, i.e., the positive relationship of these two constructs leads directly to favorable results as found by Cronin Jr., Brady and Hult (2000).

Regarding the relationship between Quality and Satisfaction, numerous studies have been conducted on this correlation, such as those by Chen and Tsai (2007), Cronin and Taylor (1992), Lee, Lee and Lee. (2005), Chagas and Marques Jr. (2010), Chen and Chen (2010), Hutchinson, Lai and Wang (2009), Fornel et al. (1996), Wang et al. (2009), Oh (1999) and Cronin Jr., Brady and Hult (2000), which suggests the importance of this issue.

Finally, as far as protected natural areas are concerned, although their main objective is nature conservation, they are also social spaces whose public services are expected to offer satisfactory experiences (Oviedo-García et. al., 2019).

Therefore, the following hypotheses are proposed:

H3: Quality perceived by residents visiting Parque das Dunas has a significant positive influence on perceived Value.

H4: Perceived quality by residents visiting Parque das Dunas has a significant positive influence on Satisfaction.

Value in the context of attractions and visitor experience has a substantial influence on Satisfaction as found by Oriade and Schofield (2019) and other authors such as Chen e Tsai (2007), Woodruff (1997), Hutchinson, Lai and Wang (2009), Oh (1999), Chen and Chen (2010), Wang et al. (2009), Fornell et al. (1996) and Cronin Jr, Brady and Hult (2000), therefore, the higher the attraction's value the higher the satisfaction. That is, the findings suggest that there is a positive and direct relationship between Value and Satisfaction.

Regarding the relationship between Value and Support for tourism development, according to the studies by Lindberg and Johnson (1997), Gursoy et al. (2002), Lee (2013), Nunkoo and Ramkissoon (2011), Nunkoo and Ramkissoon (2012), Nunkoo and Gursoy (2012) and Gursoy and Rutherford (2004) they are closely related. This is because the higher the perceived value (perceived benefits) the higher the support.

Thus, the proposed hypotheses are:

H5: *Value perceived by residents visiting Parque das Dunas has a significantly positive influence on Satisfaction.*

H6: *Value perceived by residents visiting Parque das Dunas has a significantly positive influence on Support for tourism development.*

The data obtained were examined using structural equation modeling (SEM) with Analysis of Moment Structures (AMOS, v. 18.0), which according to Hair et al. (2005, pp. 468-469) is a "technique combining aspects of multiple regression (examining dependence relationships) and factor analysis [...] to estimate a series of interrelated dependence relationships simultaneously". This technique was also used in other studies, such as those by Lubeck, Santini, Camargo and Wanin (2016), Silva and Marques Jr. (2016), Buosi, Lima and Leocárdio (2014), and Ladeira, Costa, Santini and Araujo (2013).

The results obtained are presented in the following section.

5 RESULTS AND DISCUSSION

5.1 Structural model analysis

Structural equation modeling includes both measurement and structural models. In the structural model, interrelated dependence relationships between constructs are estimated (Hair et al., 2005, p. 469) and the most representative relationships in the model are presented. For the analysis of the structural model, the quality of the model must be assessed, i.e., to examine if the proposed model has acceptable estimates. In this study, absolute, incremental and parsimony goodness-of-fit indices are analyzed, according to criteria defined by Mâroco (2010) and Hair et al. (2005).

Measures of absolute fit assess, in the words of Hair et al. (2005, p. 489), "only overall model fit". In this study CMIN/DF, GFI, RMSEA were calculated. The tests that make up the incremental indices are CFI, TLI, NFI that compare "incremental fit with a null model" (Hair et al., 2005, p. 496). Finally, the parsimonious fit measure verifies the proportion of the number of constructs added in the model plus the number of respondents, a very complex model may fail to meet the parsimony criterion. The most representative indexes are PGFI, PCFI and PNFI.

Goodness-of-fit indices of the structural model obtained are reported in Table 2:

Table 2 - Goodness-of-fit indices of the structural model

Goodness-of-fit indices		Model values	Reference values, Mâroco (2010)	Index classification in the model
Absolut indices	CMIN/DF	1.549	]1;2[- good fit	Good fit
	GFI	0.919	< 0.8 – bad fit [0.8; 0.9[- acceptable fit [0.9; 0.95[- good fit ≥ 0.95 – very good fit	Good fit
	RMSEA	0.055	> 0.10 - acceptable fit]0.05;0.10]- good fit ≤ 0.05 - very good fit	Good fit
Incremental indices	CFI	0.952	>0.80 - good fit	Good fit
	TLI	0.940	>0.80 - good fit	
	NFI	0.879	>0.80 - good fit	
Parsimonious indices	PGFI	0.635	< 0.6 – bad fit	Good fit
	PCFI	0.753	[0.6;0.8]- good fit	
	PNFI	0.695	≥ 0.8 – very good fit	

Source: Research data (2019)

According to the data presented in Table 2, reference indices, and the values found in the analysis, the good fit obtained in all relationships is confirmed. It is now up to the verification of the theoretical model, as well as the hypothesized relationships. At this point, we examined the path coefficients, explanatory power, and regression coefficients of the relationships. Figure 2 shows the model in its standardized form. Of the 32 initial observable variables, only 15 variables were used to compose the structural model—i.e., those that met communality and factor loading criteria for the composition of the structural model.

Figure 2 - Standard Structural Model
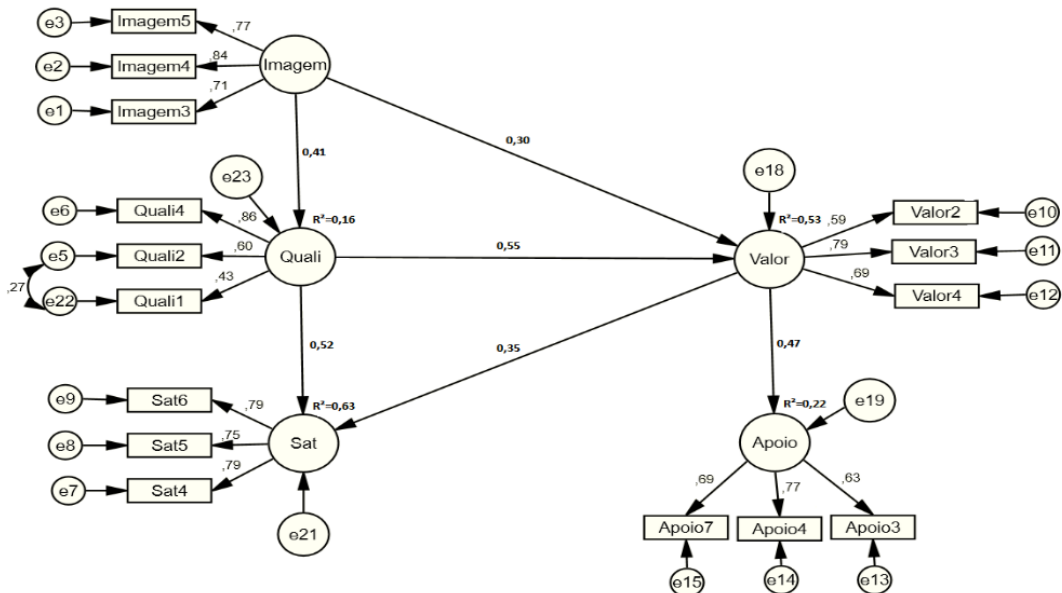
Source: Research data (2019)

Path coefficients of all relationships are statistically significant, with a moderate relationship found between Image and Value (0.30), Image and Quality (0.41), Quality and Value (0.55), Quality and Satisfaction (0.52), Value and Satisfaction (0.35), and Value and Support (0.47).

The explanation of dependent variables through R^2 can be considered as adequate with the proposed structure. The R^2 is the coefficient of determination or the explanatory power of the variation of the independent variable over the dependent one (Hair et al., 2005). As a dependent variable, Quality presented a R^2 of 0.16, the lowest value found in the proposed structural model, probably because Image is the only independent construct used to explain Quality. In other words, there are other non-model constructs that explain Quality variance.

On the other hand, the R^2 value obtained in the dependence relationships for Satisfaction (0.63) and Value (0.53) explain more than 50% of the variance of these two constructs in the proposed structural model, these are considered significant values in applied social sciences studies (Chagas, 2015). Finally, Support obtained a moderate R^2 (0.22), a case that can be explained by having only Value as the independent value.

According to the hypothesized theoretical relationships, the evaluation of the regression coefficients between relationships are used to test the statistical significance ($p < 0.05$) of the hypotheses formulated (Table 3).

It can be observed that, according to the criterion used ($p < 0.05$) all hypotheses are supported. Hypothesis 1 (H1) that points to a positive and significant relationship between Image and Value was confirmed, as in the studies by Wang et al. (2009) and Sheth, Newman and Gross (1991). However, this effect is not consistent with the results of the study by Chen and Tsai (2007), because although these authors initially dealt with the existence of a direct effect of Image on Value, after the analysis they found that there was no such feature but the indirect effect of this. Thus, their hypothesis was not supported.

Table 3 - Hypotheses testing

Dependence relationship	Standard estimation	S.E	C.R	p	Hypotheses verification
Value ←Image (H1)	0.304	0.64	3.096	0.002	Not rejected (supported)
Quality ←Image (H2)	0.406	0.59	3.422	***	Not rejected (supported)
Value ←Quality (H3)	0.551	0.187	3.806	***	Not rejected (supported)
Satisfaction ←Quality (H4)	0.518	0.364	3.389	***	Not rejected (supported)
Satisfaction ←Value (H5)	0.345	0.241	2.641	0.008	Not rejected (supported)
Support ←Value (H6)	0.470	0.121	4.100	***	Not rejected (supported)

***Highly significant

Source: Research data (2019)

Hypothesis 2 (H2) relates Image as an antecedent of Quality—as was found by Chen and Tsai (2007), Wang et al. (2009) —was supported.

Hypothesis 3 (H3) is consistent with the studies by Cronin Jr., Brady and Hult (2000), Chen and Chen (2010), Fornell et al. (1996), Wang et al. (2009), Oh (1999), when they treat Quality as antecedent of perceived Value.

Hypothesis 4 (H4) states that the Quality construct is predictive of Satisfaction. And according to empirical data this hypothesis is supported, in line with the studies of Cronin and Taylor (1992), Lee, Lee and Lee. (2005), Chagas and Marques Jr. (2010), Chen and Chen (2010); Hutchinson, Lai and Wang (2009), Fornell et al. (1996), Wang et al. (2009), Oh (1999), Cronin Jr., Brady and Hult (2000). However, it again contradicts the model of Chen and Tsai (2006), because this direct relationship when tested empirically by the authors was not supported.

Hypothesis 5 (H5) considers perceived Value as antecedent of Satisfaction, and also Woodruff (1997), Hutchinson, Lai and Wang (2009), Oh (1999), Chen and Chen (2010), Wang et al. (2009), Fornell et al. (1996), Cronin Jr., Brady and Hult (2000), Chen and Tsai (2006) confirm such an effect.

Finally, hypothesis 6 (H6), which proposes a significant and positive relationship between Value and Support, is also confirmed, as in the studies by Lindberg and Johnson (1997), Gursoy, Jurowski and Uysal (2002), Lee (2013), Nunkoo and Ramkissoon (2011), Nunkoo and Ramkissoon (2012), Nunkoo and Gursoy (2012), Gursoy and Rutherford (2004).

5.2 Model validation

Construct validity was assessed by examining factor loadings in the bivariate analysis, composite reliability, and average variance extracted (AVE). According to Hair et al. (2005, p. 489) "validity is the extent to which a scale or set of measures accurately represents the concept of interest".

Bivariate analysis, besides presenting factor loadings, shows the interaction of the correlations between constructs. Factor loadings indicate the "correlation between the original variables and the factors, and the key to understanding the nature of a particular factor" (Hair et al., 2005, p. 90). Values greater than 0.5 are considered acceptable (Mâroco, 2010). As shown in Figure 3, the variable "Quali1" presented a factor loading of 0.43, slightly below the recommended (0.5) threshold, however, since all the others factors presented higher values it was not necessary to make significant changes.

Figure 3 - Bivariate Correlation Analysis
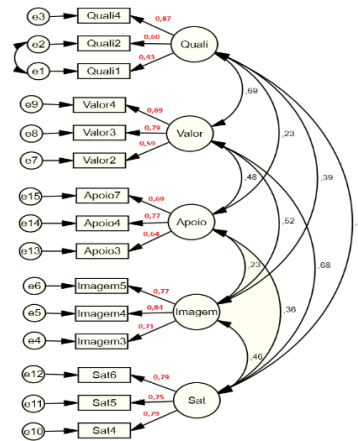
Source: Research data (2019)

Thus, this technique confirms factor analysis validity. In addition, considering the correlations between constructs, the results shown in Figure 3 do not have multicollinearity, since the values were less than 0.85, an assumption that must be observed in structural equation analysis (Kline, 2011).

Composite reliability is used to assess internal consistency of the variables that form the construct, while average variance extracted (AVE) is another complementary measure of reliability, and "reflects the overall amount of variance in the indicators accounted for by the latent construct" (Hair et al., 2005, p. 490). Such measures are calculated as follows:

$$\text{Construct reliability} = \frac{(\sum \text{standardized loadings})^2}{(\sum \text{standardized loadings})^2 + \sum \text{error variance}}$$

$$\text{Extracted variance} = \frac{\sum \text{standardized loadings}^2}{\sum \text{standardized loadings}^2 + \sum \text{error variance}}$$

Error variance of indicators has the following formula:

$$\text{Error} = 1 - (\text{standardized loading})^2$$

According to Hair et al. (2005), the commonly accepted threshold for construct reliability is 0.70. However, in applied social sciences, values below 0.70 are acceptable. These same authors suggest that the extracted variance should exceed 0.50 to meet what is proposed. Table 4 shows the results of these two measures.

Table 4 - Estimation of composite reliability and variance extracted

Variables and construct (regression coefficients)	Standardized loading	Error	p	Composite reliability and extracted variance (AVE)
Value2↔Value	0.595	-	***	Reliability: 0.735 AVE: 0.484
Value3↔Value	0.787	0.207	***	
Value4↔Value	0.692	0.146	***	
Support3↔Support	0.638	-	***	Reliability: 0.741 AVE: 0.489
Support4↔ Support	0.770	0.215	***	
Support 7↔ Support	0.685	0.191	***	
Image3↔Image	0.711	-	***	Reliability: 0.818 AVE: 0.601
Image4↔Image	0.840	0.112	***	
Image5↔Image	0.771	0.096	***	
Sat4↔Satisfaction	0.789	-	***	Reliability: 0.817 AVE: 0.599
Sat5↔ Satisfaction	0.747	0.086	***	
Sat6↔ Satisfaction	0.786	0.104	***	
Quali1↔Quality	0.425	-	***	Reliability: 0.676 AVE: 0.430
Quali2↔ Quality	0.599	0.254	***	
Quali4↔ Quality	0.867	0.422	***	

*** Highly significant relationship
Source: Research data, 2019

Regarding reliability, only Quality deviates slightly from the recommended value (0.676), but considering that the study is social science research, this value is accepted. In terms of variance extracted, Value (0.484) and Support (0.489) are within the limit of the suggested criterion, with Quality with a slightly lower value (0.430). Despite these values slightly below the recommended thresholds, the indicators can still be considered acceptable in the specification of the proposed structural model, as they do not seriously infringe the authors' suggestion.

Having completed all the steps previously described, the structural model is validated for the purposes of this study.

6 FINAL REMARKS

To develop an effective study on tourism in natural parks, it is necessary to know the opinion of those who, according to Nunkoo and Ramkissoon (2012), are the most affected, the residents. Considering that the number of these areas has been growing and attracting tourism, and that they are public places of environmental protection that provide welfare and contact with the natural environment, investigating the factors that affect residents' support for tourism development in these places is essential.

Therefore, in this study, a hypothetical-deductive, descriptive, and quantitative analytical study was carried out, using structural equation modeling for data analysis.

The results suggest that the Quality dimension strongly influences perceived Satisfaction and Value, as found in the study by Cronin Jr., Brady and Hult (2000), and Value plays a moderating role between Quality and Support and between Image and Support. In other words, it is understood that Quality and Image contribute to the perceived Value (of social and environmental benefits of the conservation unit) and, thus, can generate support for tourism development. This type of event was also found by Zouain, Lohman, Cardoso, Virkki and Martelotte (2019), and Silva and Marques Jr. (2016).

It is also concluded that Quality and Value also play a moderating role between Image and Satisfaction. However, Quality has a greater effect than Value when examining the path coefficients. In this sense, Image influences Satisfaction, however, it needs Quality as a moderating element, which is consistent with the conclusions of the study by Chen and Tsai (2007) and confirming once again that Quality is relevant enough for visitors (residents) with managerial implications for the park—cleanliness of the area, the safety, and the quality of the facilities, for example.

As for Image as an antecedent of Quality, this is probably because all respondents already knew the study conservation unit. Thus, they already had a previous image, both cognitive and affective, at the time of the visit, which may have influenced perceived quality.

Thus, the results suggest that residents' supportive behavior for tourism development in the Parque das Dunas Conservation Unit is directly influenced by perceived value (socioenvironmental benefits), as found in the studies by Lindberg and Johnson (1997), Gursoy, Jurowski and Uysal (2002), Lee (2013), Chen and Chen (2010), Nunkoo and Ramkissoon (2011), Nunkoo and Ramkissoon (2012), Nunkoo and Gursoy (2012), and Gursoy and Rutherford (2004).

Finally, Quality offered by the study conservation unit demonstrates a strategic aspect regarding the choice of the resident as a place of visit and the possibility of tourism development on site, consistent with Bushell et al. (2007) when they state that a high quality experience increases interest in the protection and conservation of protected areas.

Nevertheless, it is understood that the Value dimension is the most relevant construct of this study, due to the intrinsic characteristics of a natural park, i.e., the issue of protection and generation of benefits that are perceived by residents in terms of support.

It is concluded that all proposed hypotheses were supported, just as all relationships are statistically significant, with a high relationship between dimensions (path coefficients) and good fit indices.

That said, it is understood that the objective of this study was achieved, as well as it allowed to broaden the understanding about residents' support for tourism development using the theoretical model of Chen and

Tsai (2007) in natural parks. The results also reinforced the conception that when social and environmental value is perceived, individuals are more likely to support tourism development.

As limitations of the research, it is believed that quantitative studies, by their very statistical nature and the use of questionnaires, limits the understanding of complex phenomena. Thus, it is suggested that also qualitative studies are conducted to gain in-depth insights on this topic. Likewise, further research could focus on national parks, and use a larger sample.

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Informations about the authors

Carla Stefânia Cabral de Medeiros Santana
She has a Master's degree in Tourism from the Federal University of Rio Grande do Norte (UFRN), a Specialist degree in Environmental Management at the Federal Institute of Rio Grande do Norte (IFRN) and a Bachelor's degree in Tourism from the Unifacex.
Contributions: research design; literature review; data collection; data analysis; discussion.
Email: carlastefaniasantana@yahoo.com.br
ORCID: https://orcid.org/0000-0002-6887-6610

Marcos Antônio Leite do Nascimento
He has Bachelor's degree in Geology from the Federal University of Rio Grande do Norte (UFRN), Masters' and PhD in Geodynamics and Geophysics from the Federal University of Rio Grande do Norte; He teaches at the Federal University of Rio Grande do Norte/UFRN.
Contributions: literature review; data analysis; discussion.
Email: marcos@geologia.ufrn.br
ORCID: https://orcid.org/0000-0002-8158-7186

Sérgio Marques Junior
He has a Bachelor's degree in Agronomic Engineering from the University of São Paulo (USP), Master's degree in Agronomy from the University of São Paulo and PhD in Agronomy from the São Paulo State University Julio de Mesquita Filho (UNESP); He teaches at the Federal University of Rio Grande do Norte/UFRN.
Contributions: literature review; data analysis; discussion.
Email: sergio@ct.ufrn.br
ORCID: https://orcid.org/0000-0002-6008-8038