

Visitors' Satisfaction in Natural Areas: The Case of Vinhais Biological Park

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Abstract: Satisfaction is a widely studied issue in tourism as it provides an understanding of the performance of a tourism destination's offer, highlighting the most important features considered by tourists. The growth in tourism demand in natural areas also makes it an important factor in identifying visitor satisfaction, as sustainable planning of these areas may also rely on knowing the opinion of their visitors. In this context, this study aimed to determine the visitors' satisfaction with *Vinhais* Biological Park, located in the northeast of Portugal, during the summer of 2022. A questionnaire consisting of 8 closed-ended questions to identify the socio-demographic profile and overall satisfaction was applied during July and August 2022. Therefore, 251 valid questionnaires were considered for the quantitative data analysis and a final sampling error of 6.13% was assumed. A descriptive statistical analysis was performed to identify the socio-demographic profile and the satisfaction with the resources offered. Four hypotheses were formulated to test the association between socio-demographic profile (age group, gender, nationality, and education level) and overall satisfaction. The χ^2 test was used to test the hypotheses assuming a 5% significance level. The main findings showed that the socio-demographic profile of the sample is predominantly male (54.6%), aged between 11 and 40 years (77.6%), of Portuguese nationality (71.3%) and with higher education level (48.6%). Concerning the visit motivation, 61.4% went to the park after visiting the city of *Vinhais* or the region and nearly half (47%) of the respondents were satisfied. The results of χ^2 test revealed no significant association between the socio-demographic profile and overall satisfaction, meaning that none of the hypotheses was supported. Considering the number of visitors received in the park annually, this study's sample can be regarded as a limitation, making the understanding of satisfaction limited to the period of analysis and at a period when the impact of COVID-19 is noticeable. Finally, for future studies, a comparative analysis with other natural parks, both Portuguese and Spanish, is suggested for better monitoring of visitor satisfaction.

Keywords: Satisfaction, Visitors, Natural parks, Nature tourism

1. Introduction

Tourism can be defined as the relationships and phenomena arising from the interaction of tourists, tourism businesses, governments and receiving communities following the attraction and reception of tourists and other visitors (Goeldner and Ritchie, 2012). Despite the global dimension of Tourism, "this phenomenon also grows on a local scale with direct and indirect consequences on territories and people's lives" (Hall, 2008 p. 33).

Nature-based tourism is a segment for which demand is increasing nationally and internationally. This segment is directly related to the natural heritage, landscapes and cultural aspects of the natural areas (WTO, 2002). The interaction with the environment allows the World Tourism Organization to consider nature-based tourism an important, dynamic, and attractive segment, combined with other tourism segments, such as sports, business, cultural and rural Tourism (WTO, 2002). It is estimated that at least 8 billion people visit protected area destinations every year (Fredman and Margaryan, 2021).

The pandemic context of COVID-19 caused negative impacts on tourism and operators. Institutions and companies needed to readjust their strategic plans. It also forced a new angle on the sustainability triangle to

be erected with the goal of health sustainability. In this scenario, the low-density territories achieved prominence. There has been an increased demand by tourists for these territories, which have searched for a different tourism practice more focused on nature.

With this increased demand, understanding the satisfaction of tourists is important since it indicates the relationship between the expectations of tourists on the destination and their post-travel experience (Oviedo-García, Vega-Vázquez, Castellanos-Verdugo and Orgaz-Agüera, 2019). The purpose of the destinations is that tourists are satisfied, or, in other words, their experiences and perceptions must exceed their expectations (Chen and Chen, 2010). In this respect, many studies relating to tourist satisfaction are undertaken in different nature parks around the world (Agyeman, Aboagye and Ashie, 2019; Karanikola, Panagopoulos, Tampakis and Tampakis, 2020; Geng, Innes, Wu, Wang, and Wang (2021); Seebunruang, Burns and Arnberger, 2022).

Thus, the present study considers the particular case of the *Vinhais* Biological Park inserted in the *Montesinho* Natural Park and aims to determine the visitors' satisfaction of this park. For this purpose, 251 individuals were surveyed during the months of July and August 2022, during which the participants evaluated their satisfaction regarding their experience in the park. The disclosure of the study results reveals an added value since it allowed the identification of the socio-demographic profile of those who visit the park, as well as to verify their overall satisfaction.

To answer the aims of this study, the paper is structured into four sections. After this introduction, a theoretical background, presenting the literature review, correlates nature tourism with the impacts of the pandemic and consequently with the new consumer behaviour and satisfaction. The next section is the methodology, referring to the methods used to collect and analyse the data. The penultimate section presents and discusses the results obtained from the research. The last point presents the main conclusions reached, the main contributions, the limitations encountered during the course of the research, and the suggestions for future research guidelines. It is hoped that the presentation of these results will highlight the importance and benefits of nature-based tourism, as well as expose the level of satisfaction of those who visit the *Vinhais* Biological Park.

2. Theoretical Background

Nature-based tourism arises from the relationship that man has with nature, through the territory use, and this can be defined as a segment encompassing several subsegments, such as ecotourism, adventure tourism, geotourism, green tourism and others (Martins and Silva, 2019).

Nature-based tourism can take two distinct forms: environmental tourism, which encompasses the various aspects of the sea, the land, the sky, and their state of purity, and ecological tourism or ecotourism, which refers to traveling to natural areas to observe and understand nature and the environment, with the concern of keeping it unchanged (Martins and Silva, 2019). In both cases, this tourism segment lies in the motivation and desire to be close to nature, contemplate the natural environment and escape the urban environment (Sato, Kim, Buning and Harada, 2018). The need for contact and proximity to nature is more keenly felt by the more urban environment people live in daily, so the demand for these destinations is mostly from tourists living in cities (Zhang and Chan, 2016).

Thus, nature-based tourism is associated with the existence of certain general purposes that are part of it, such as contributing to ecological conservation, simplifying the visitation to natural spaces, and providing information on natural values (Martins and Silva, 2019). According to these concepts and mentioning nature-based tourism as a form of sustainable tourism, which is dependent on conserved and aesthetically/scientifically valued nature, it proves that it occurs much closer to the ideals of alternative tourism and sustainability than to mass practices that can harm the nature on which it depends. Thus, this segment of tourism brings together the three basic dimensions of sustainability: it recognizes the need to value the environmental and socio-cultural dimensions; it considers the desire to maximize and distribute economic benefits among the local community, as well as the need for satisfaction of visitors and tourists; it bets on sustainable tourism development that implies the conservation of natural and cultural resources of the destination to minimize possible negative impacts (Burgos and Mertens, 2015).

Regardless of the location, nature-based tourism relies heavily on the natural environment and its resources (Priskin, 2001). This, justifies the appropriate use of environmental resources, respecting the socio-cultural authenticity of communities and ensuring that economic activities are viable in the long term (Spenceley, 2020). It is important to bear in mind that the participation of different stakeholders in the planning process and the constant monitoring of the impacts may maintain a high level of satisfaction among tourists (Tyrväinen, Uusitalo, Silvennoinen and Hasu, 2014).

Thus, in the spheres of business activity, the literature suggests that nature tourism is a special case with particular characteristics that require a peculiar treatment in the analysis of competitiveness, as it involves the provision of a service that is nature-centric but at the same time attractive to the customer (Aşan and Emeksiz, 2018).

It is true that tourism activity implies that there is mobility and interaction between people, which, due to the pandemic crisis of COVID-19, has profoundly impeded this practice. It required to immediately reduce how people live and travel in order to connect more locally (Everingham and Chassagne, 2020; Sigala, 2020).

Due to this reality, an increase in visitors to National Parks was observed, mainly during the summer compared to previous years. As a consequence of the pandemic, tourists' behaviours were motivated by a common factor that was to "escape" the virus transmission (Landry, Bergstrom, Salazar and Turner, 2021). Thus, tourists sought to avoid crowds and polluted cities and go in search of a sense of security, opting for outdoor places and isolated locations, which justifies the increase in this type of tourism (McGinlay et al., 2020).

In a post-pandemic period, tourism demand tends to increase awareness of the value of nature and consequently will foster nature tourism (Galvani, Lew and Perez, 2020). Following on from this, Spalding, Burke and Fyall (2020) add that many travellers will seek out broader, more remote, outdoor locations in both coastal and more rural areas, as well as nature parks and national parks. There will be three new trends in post-pandemic tourism: the digital intellectualization of the tourism industry, the ecological, healthy and environmental protection of tourist consumption demand, and the popularity of new tourism products, such as Rural Ecotourism (Chen, Huang and Li, 2020).

For individuals, communities and society in general, nature tourism provides unique experiences valued as a direct or indirect benefit of visiting, for example, Nature Parks or other protected areas (Torland, Weiler, Moyle and Wolf, 2015). As a result, numerous multidisciplinary factors may affect the success of this more sustainable nature-based tourism (Burgos and Mertens, 2015). An important part of these indicators refer to subjective aspects of visitor satisfaction and their perception of resources and the environment (Tyrväinen et al., 2014).

The tourists' satisfaction with natural environments has been highlighted in the literature. Agyeman, Aboagye, and Ashie, (2019) identified the satisfaction in National Park in Ghana and evidenced the tourists' satisfaction with the natural and cultural resources, but in contrast, the management concerned them. In Attica Zoological Park, in Greece a high satisfaction with the experience was identified (Karanikola, Panagopoulos, Tampakis and Tampakis, 2020). In Banff National Park a positive correlation between satisfaction and the season was determined. In the high season, satisfaction tends to be negative (Geng et al., 2021). Finally, in Thai Forest National Park reality tourists showed less satisfaction with tourism facilities and services (Seebunruang, Burns and Arnberger, 2022). These studies highlight that different aspects contribute to tourist satisfaction in natural areas.

3. Methodology and Methods

3.1 Geographic Location

Vinhais Biological Park is a public park, with about 5 hectares, located in the forest of *Prada (Vinhais)*, in the northeast of Portugal, and in the Natural Park of *Montesinho* (Figure 1), which has 12 wild species and 12 domestic species native of the region (PBV, 2022). The oak woods dominate the vegetation found over much of the park's territory. Other flora species are also characteristic of the region, such as *cravina (Dianthus loricifolius subsp. marizii)*, *arméria (Arenaria quercoides subsp. fontiqueri)* and *Festuca brigantina e Avenula pratensis subsp lusitânica*.

The parks goals consist of the interpretation of the region's landscape, in its natural (flora, fauna and geography), cultural (history, archaeology and ethnography) and environmental education components, nature conservation and promotion of biodiversity and development of tourism, especially ecotourism, recreation and leisure for the population.



Source: PVB (2022)

Figure 1: Vinhais Biological Park Location

3.2 Data Collection and Analysis

Based on the purpose of this paper, in the first step, a questionnaire consisting of 8 closed-ended questions, allowing to identify the socio-demographic profile and overall satisfaction (5-point Likert Scale, 1=very unsatisfied to 5=very satisfied), was applied to the park visitors during July and August 2022, a period considered high season. The instrument employed had been validated previously in the study by Costa (2019) who applied a similar research study in the reality of *Vila Nova da Barquinha*. Google Forms was used to collect the data, and a total of 251 valid questionnaires were considered for the quantitative data analysis. A final sampling error of 6.13% was assumed.

A descriptive statistical analysis was performed to identify the socio-demographic profile and the satisfaction with the resources offered. Once, the investigation aim was to determine the differences between the socio-demographic profile and the overall satisfaction, four hypotheses were formulated to test the associations:

H₁: There is an association between the age group and the overall satisfaction of the park visitors.

H₂: There is an association between gender and the overall satisfaction of the park visitors.

H₃: There is an association between nationality and the overall satisfaction of the park visitors.

H₄: There is an association between educational level and the overall satisfaction of the park visitors.

The χ^2 test were used to test the hypotheses assuming a 5% significance level, as indicated by Hair, Risher, Sarstedt and Ringle (2019), for making decisions on the confirmation or not of the research hypotheses.

4. Results and Discussions

4.1 Sample Profile

The main findings showed that the socio-demographic profile of the sample is predominantly male (54.6%), aged between 11 and 40 years (77.6%), of Portuguese nationality (71.3%), with higher education level (34.6%) and students (47.8%). Concerning the visit motivation, 61.4% went to the park after visiting the city of *Vinhais* or the region and nearly half (47.4%) of the respondents were satisfied (Figure 2).

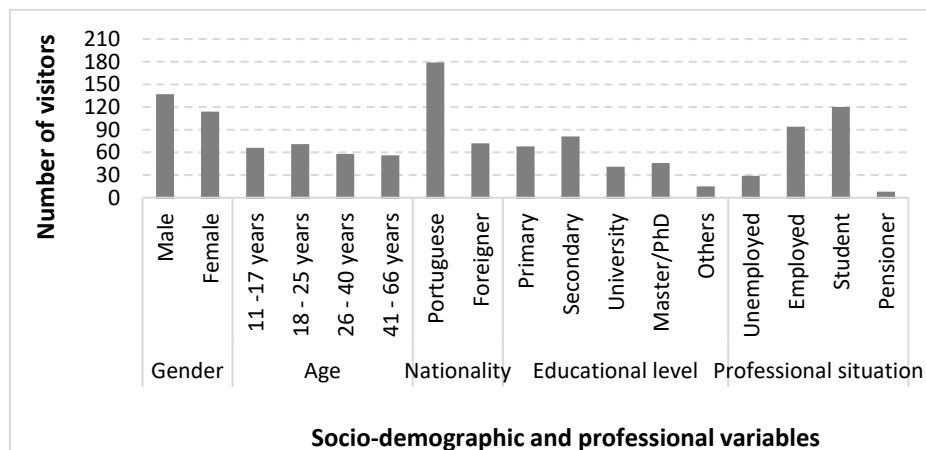


Figure 2: Socio-Demographic and Professional Sample Profile

4.2 Overall Satisfaction by Socio-Demographic Profile

To identify the satisfaction regarding the experience of the *Vinhais* Biological Park among the different socio-demographic profiles, the variables age group, gender, nationality, and educational level were crossed with overall satisfaction (Table 2). Regarding age, the group presenting the higher percentage of unsatisfied (25.8%) is the youngest (11-17 years), while the group with the highest percentage of very satisfied answers is in the 18-25 age group (32.4%). Similarly to the reality of *Vinhais* Biological Park, the study on satisfaction with cultural tourism in Cordoba, Spain, also identified greater satisfaction among younger visitors (González Santa-Cruz and López-Guzmán, 2017).

With regard to gender, both male and female participants were satisfied with their experience in the park (46.7% and 48%, respectively). Regarding the nationality of the visitors, both the Portuguese (45.8%) and the foreign (51.4%) were satisfied or very satisfied.

With reference to the level of education, the highest percentage of satisfied people is those with primary education (29.4%). Respondents with secondary and university education demonstrated very satisfied (30.9% and 29.3%, respectively). It is noteworthy that the highest number of individuals with master or PhD had a neutral opinion (37%). In summary, the visitors to the park demonstrated satisfaction with their experience during their visit.

Table 2: Overall Satisfaction by Socio-Demographic Profile

Variable	Category	Satisfaction level					Total n (%)
		Very unsatisfied n (%)	Unsatisfied n (%)	Neither unsatisfied/ Neither satisfied n (%)	Satisfied n (%)	Very Satisfied n (%)	
Gender (n=251)	Male	18 (13.2%)	25 (18.2%)	30 (21.9%)	29 (21.1%)	35 (25.6%)	137 (100%)
	Female	14 (12.3%)	22 (19.3%)	23 (20.1%)	29 (25.4%)	26 (22.9%)	114 (100%)
	Total	32 (12.7%)	47 (18.7%)	53 (21.1%)	58 (23.1%)	61 (24.3%)	251 (100%)
Age (n=251)	11-17 years	9 (13.6%)	17 (25.8%)	10 (15.2%)	17 (25.8%)	13 (19.7%)	66 (100%)
	18-25 years	6 (8.5%)	11 (15.5%)	16 (22.5%)	15 (21.1%)	23 (32.4%)	71 (100%)
	26-40 years	11 (19.0%)	8 (13.8%)	16 (27.6%)	13 (22.4%)	10 (17.2%)	58 (100%)
	41-66 years	6 (10.7%)	11 (19.6%)	11 (19.6%)	13 (23.2%)	15 (26.8%)	56 (100%)
	Total	32 (12.7%)	47 (18.7%)	53 (21.1%)	58 (23.1%)	61 (24.3%)	251 (100%)

Table 2: Overall satisfaction By Socio-Demographic Profile (Cont.)

Variable	Category	Satisfaction level					Total n (%)
		Very unsatisfied n (%)	Unsatisfied n (%)	Neither unsatisfied/ Neither satisfied n (%)	Satisfied n (%)	Very Satisfied n (%)	
Nationality (n=251)	Portuguese	22 (12.3%)	35 (19.6%)	40 (22.2%)	40 (22.3%)	42 (23.5%)	179 (100%)
	Foreigner	10 (13.9%)	12 (16.7%)	13 (18.1%)	18 (25.0%)	19 (26.4%)	72 (100%)
	Total	32 (12.7%)	47 (18.7%)	53 (21.1%)	58 (23.1%)	61 (24.3%)	251 (100%)

Educational level (n=251)	Primary	8 (11.8%)	18 (26.5%)	12 (17.6%)	20 (29.4%)	10 (14.7%)	68 (100%)
	Secondary	11 (13.6%)	14 (17.3%)	15 (18.5%)	16 (19.8%)	25 (30.9%)	81 (100%)
	University	6 (14.6%)	8 (19.5%)	5 (12.2%)	10 (24.4%)	12 (29.3%)	41 (100%)
	Master/PhD	5 (10.9%)	7 (15.2%)	17 (37%)	8 (17.4%)	9 (19.6%)	46 (100%)
	Others	2 (13.3%)	0 (0)	4 (26.7%)	4 (26.7%)	5 (33.3%)	15 (100%)
	Total	32 (12.7%)	47 (18.7%)	53 (21.1%)	58 (23.1%)	61 (24.3%)	251 (100%)

4.3 Hypothesis Validation

Considering that the data attended all the assumptions, χ^2 test was applied, and the results revealed no significant association between the socio-demographic profile and overall satisfaction, meaning that none of the hypotheses was supported. Table 3 summarises the results of the previously outlined research hypotheses.

Related to gender, this study is contrary of the Huete-Alcocer, López-Ruiz and Grigorescu (2019) that identified the gender influences the satisfaction in a cultural heritage in Spain. Conversely, the Spanish study indicated that the age does not affect the satisfaction (Huete-Alcocer, et al., 2019), corroborating the Portuguese reality. Related to the nationality of the visitors, the results cannot be compared with other studies, once this socio-demographic characteristic was not focused on previous research. Finally, in the Spanish reality, the educational level (Huete-Alcocer, et al., 2019) did not present relevance in the satisfaction, proving the reality of *Vinhais* Biological Park.

Table 3: Hypotheses Validation

Research Hypotheses	Test	p-value	Supported
H1: There is an association between the age group and the overall satisfaction of the park visitors	Independence χ^2	0.409	No
H2: There is an association between gender and the overall satisfaction of the park visitors	Independence χ^2	0.933	No
H3: There is an association between nationality and the overall satisfaction of the park visitors	Independence χ^2	0.892	No
H4: There is an association between educational level and the overall satisfaction of the park visitors	Independence χ^2	0.168	No

5. Conclusion

Tourism is a relevant sector in Portugal. However, precautions must be taken so that this activity is not massified and its development is carried out to ensure sustainability. Although it has affected the tourism business, the pandemic period arising from COVID-19 demonstrated a greater demand for natural environments and parks in Portugal.

Thus, in this context, this study aimed to identify the satisfaction of visitors to *Vinhais* Biological Park through the application of a survey with 251 respondents. It also sought to identify significant differences between the respondents' socio-demographic profiles and overall satisfaction. To this purpose, four hypotheses were defined, but none of them was supported. That is, although there are differences in the satisfaction of the different profiles, the statistical tests did not prove these differences to be significant. It is worth noting that visitors generally are satisfied with their experience. To understand the visitors' socio-demographic profile and their level of satisfaction contribute to the planning of the park, taking into consideration the opinion and the level of satisfaction of its visitors.

Considering the number of visitors received in the park annually, this study's sample can be regarded as a limitation, making the understanding of satisfaction limited to the period of analysis and at a period when the impact of COVID-19 is noticeable. Finally, for future studies, a comparative analysis with other natural parks, both Portuguese and Spanish, is suggested for better monitoring of visitor satisfaction and propose strategies to better support the visitors and contribute to regional development.

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