The relationship between the impact of archaeological tourists and sparsely populated rural areas

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Abstract

Archaeological sites open to visitors, located in rural areas, receive tourists and visitors in a regulated manner, thereby establishing a socio-economic impact relationship between the tourist resource they visit and its sparsely populated rural surroundings. Using a semi-structured survey with random sampling, data were collected from 564 visitors at four heritage sites in the province of Cuenca (Spain): Segóbriga, Valeria, Noheda, and Ercávica. These sites, of significant archaeological and touristic value, are situated in low-density population areas, where cultural tourism can become a driver of development and a deterrent to depopulation. The aim is to show how visitor decisions directly impact not only the archaeological site but also the surrounding rural environment through the use of hospitality services (such as restaurants and accommodations). The research reveals a direct relationship between tourists' decisions (overnight stays, dining, type of visit) and a positive impact on the local economy. Moreover, it is a replicable methodological reference for other regions with similar characteristics in Spain and internationally. This study differs from previous research through its focus on rural destinations, its analysis of real visitor behaviour, and the use of a flexible methodology adapted to the specific context. The investigation contributes to the body

of knowledge in archaeotourism, heritage management, and sustainable rural development, opening new lines for future research.

Keywords: Tourist profile, archaeological tourism, rural development, socio-economic impact, depopulation.

1. Introduction

This study aims to analyze the impact that the cultural tourist profile has on the environment when visiting tourist resources, such as archaeological sites located in rural areas with low population density. To address this issue, the study includes an extensive segmentation of visitor types, assessing their sociodemographic and economic characteristics, as well as specific factors that influence their decision-making processes.

The goal is to understand the profile of tourists, specifically cultural tourists, who visit archaeological sites and impact the surrounding rural and sparsely populated areas. This will enable managing organizations to design more efficient promotional and dissemination campaigns, thereby achieving greater socioeconomic impact in these regions. To this end, a semi-structured survey with random sampling was employed, proving to be an effective methodological tool for distinguishing the decisions made by cultural tourists compared to other types of visitors.

The semi-structured survey with random sampling is particularly effective for analyzing tourist behaviour, especially in rural environments where dynamics are complex and heterogeneous. This technique allows for the structured yet flexible collection of both quantitative and qualitative information, facilitating adaptation to the characteristics of the environment and visitor profiles. As noted by Hernández Sampieri, Fernández-Collado, and Baptista [9], semi-structured surveys allow for deeper exploration of the subjective aspects of the tourist experience while providing systematized data for comparative analysis.

In this study, the application of this methodological approach has enabled the integration of multiple variables—sociodemographic

characteristics (gender, age, origin), tourism preferences, and economic factors (type of accommodation, use of hospitality services)—into a coherent analytical framework. Through a clear segmentation of categories and a representative random sample, the technique has helped clarify how these dimensions influence the choice of archaeological destination and the activities carried out during the visit.

Moreover, this methodology enables a detailed observation of cultural tourists' decision-making in key aspects such as length of stay, personal motivations, perception of site management, and willingness to explore nearby attractions. In this regard, authors like Veal [25] emphasize the suitability of structured and semi-structured surveys in tourism contexts to generate empirical evidence useful for strategic planning and decision-making in heritage destinations.

Therefore, this technique not only provides methodological rigour to the analysis of visitor profiles but also proves to be a versatile and easily replicable tool for related research. It is especially useful in contexts where cultural tourism can serve as a driver of rural development, as it allows for a comprehensive quantification of its socioeconomic impact by linking the behaviour patterns of each visitor type to their environment. Additionally, it facilitates the identification of management opportunities that enhance synergies between cultural tourism and complementary services available in rural areas with low population density.

2. Theoretical Framework

Cultural and Heritage Tourists have been categorized in various ways [23]. In this regard, identifying and understanding the typologies of heritage tourists—their motivations, behaviours, perceptions, and experiences—is crucial for effectively addressing visitor management plans and marketing strategies [18]. McKercher's [16] classification of cultural tourists was the first to employ both stages of travel: before and during the visit.

Analyzing the tourist experience and the critical factors that influence tourist satisfaction is imperative [15]. More specifically, motivations

stimulate tourists' choice when deciding to visit a particular cultural destination or a specific archaeological site [8]. Thus, the relationship between motivations, expected and perceived value of the destination, and the monument itself is interconnected [10].

The ability to determine tourists' intentions to visit or revisit archaeological sites at different times has been explained by some authors through their religious, social, and historical connection to the site [4]. However, others suggest that cultural openness, understanding, awareness, and participation are identified as elements of tourists' cultural competence, which can facilitate positive cultural behaviour [14].

Undoubtedly, heritage tourism has played a fundamental role in the revival of cultural and historical values, the dissemination of archaeological knowledge, environmental improvement, and the progress of local communities [5]. Archaeological and cultural resources have significantly contributed to tourists' experiences. Moreover, more versatile methods and creative approaches are now being integrated to develop interpretative and effective methods for both educational and entertainment purposes [1]. However, greater attention should be paid to how to integrate various local community resources into heritage tourism [13].

Li and Qian [13] studied tourists' perceptions at Daming Palace in China, using structured questionnaires to assess the visitor experience in an archaeological setting. This methodology has been adopted in the present study, although the most notable difference lies in the territorial context in which it is applied. While their research focuses on a large city with high tourist flows, the current study analyzes rural Spanish sites facing depopulation issues.

The idea of developing a successful and innovative strategy for the sustainable growth of cultural tourism—one that involves the municipality and its surroundings—is based on analyzing visitors' motivations and activities related to archaeological tourism. The aim is to revalue local cultural and natural resources by creating innovative tourist experiences [19]. These authors examined the creation of innovative tourist experiences through the valorisation of archaeological sites in Southeast Europe, emphasizing the importance of linking heritage with tourism sustainability, much like the present study. However, a key difference is that their approach focuses more on

value-enhancement proposals from the supply side, whereas this work focuses on analyzing the tourist profile and their actual behaviour through a semi-structured survey with random sampling.

Nevertheless, the specific situation of a cultural tourist visiting an archaeological site opens the door to new questions related to their behaviour. This becomes particularly relevant at historical sites where overtourism not only disrupts the environment but also causes damage, despite the economic benefits it brings. Issues such as litter accumulation, wear and tear of structures, and disorganized visitor movement affect both site management and the visitor's perception of the experience [17].

In the specific field of archaeotourism, when archaeological sites are managed as tourist attractions, it is important to analyze how visitors use them [3]. It is particularly interesting that, to achieve sustainability in heritage tourism, it is argued that tourists must be placed at the centre of management and planning processes, as their levels of acceptance drop significantly with an unbalanced and excessive influx of tourists [2].

Cultural visitors tend to be more preservation- and conservation-oriented and support and reward effective management actions when achieved. Nevertheless, most tourists have been overlooked in the management of heritage attractions [2].

The impact of cultural heritage management on the tourism development of an area [7] speaks to the quality of performance, which is under the control of management [6]. This fact shows that archaeology has not been the central axis of tourism strategies in government agendas.

3. Materials and Methods

3.1. Data Collection Through the Sample

To define the profile of the tourist that influences the environment, a structured questionnaire was designed, and a representative sample was calculated based on the total number of annual visitors recorded

in 2022 at the four selected archaeological sites. In total, the sites of Segóbriga, Valeria, Noheda, and Ercávica received 77,677 visitors.

To determine the minimum number of surveys needed to obtain a representative sample of the visitor population at the archaeological sites in 2022, a 95% confidence level and a 5% margin of error were applied. With these parameters, it was calculated that at least 383 people needed to be surveyed. Ultimately, the survey reached a total of 564 respondents, exceeding the established minimum of 383. To carry out the data collection, the questionnaire was made visibly available via a QR code format at the four tourist sites. The study is based on the premise of identifying the cultural tourist profile through spontaneous participation in the survey. This premise is important to avoid indirectly influencing the responses.

3.2. Description of the Sample Data

The questionnaire aims to evaluate the impact of cultural and archaeological tourism on the surrounding environment. For this purpose, distinct categories were taken into account and organized in a flowchart format in Table 1, including: socio-demographic aspects (age, gender, and origin); economic aspects (type of accommodation chosen, overnight stays, food services, type of visit, and trip duration); and characteristics specific to the visitor profile, which encompass travel behavior (motivations such as types of tourism, interest, prior knowledge and experience; frequency; perception; and satisfaction). These elements are part of tourism studies on the cultural tourist profile [11, 20-22, 24]. These studies show that different audience segments exhibit different behaviours at a destination, even if their demographic patterns and travel profiles are similar.

3.3. Variables in the Statistical Model

To develop the study, both direct and indirect influencing variables were considered within the statistical model. For this, a quantitative analysis was conducted through a semi-structured survey using random sampling. First, the different variables were coded for subsequent analysis. The dependent variable of the study is the "environment,"

which is the core of the research. The coding is defined as 1 = "has an impact on the environment" and 0 = "does not have an impact on the environment." This variable includes the decisions made by cultural tourists who choose to stay overnight at the archaeological sites and/or eat at nearby restaurants or bars during their visit to the tourist resource, whether as a round trip or as part of a longer journey.

In this sense, the dependent variable implies a primary value in which the socioeconomic impact is key. The independent variables should determine the extent to which visitors' decisions influence this impact [12]. Thanks to their interconnection within decision trees, specific profiles can be formulated to define the type of visitor engaging in archaeological tourism. For this reason, the independent variable most directly linked to the dependent variable is archaeological tourism. From there, each variable was first analyzed within its context, and once this analysis was completed, connections to the statistical model were established.

The data analysis was carried out independently by classifying the variables into distinct categories: socio-demographic, economic, and characteristics specific to the visitor profile.

4. Results

4.1. Results from the questionnaire

By listing each of the responses obtained in the questionnaire and analyzing them, it is evident that the data itself provides clear and conclusive information (see Table 1). The study's dependent variable, which seeks to determine whether archaeological tourism can have a socioeconomic impact, shows that 84.9% spend the night and/or eat in the surrounding area, while 15.1% do not.

Table 1: Percentages of the variables in the sample.

CHARACTERISTICS	VARIABLE	CONCEPT	%
Impact	Environment	Impact on the environment	84.9
		No impact on the environment	15.1
Sociodemographic	Gender	Female	55.3
		Male	44.7
	Age ranges	Up to 31 years old	20.2
		From 32 to 44 years old	20.6
		From 45 to 54 years old	19.2
		From 55 to 62 years old	20.2
		Over 62 years old	19.7
	Place of origin	Local area (Cuenca/Guadalajara)	27.3
		Castilla-La Mancha	5.5
		Rest of Spain	66.3
		Abroad	0.9

Economic	Type of accommodation	Tourist apartment	5.0
		Campsite	0.9
		Rural house	5.9
		Hostel	2.1
		Hotel	17.2
		Other	1.8
		Guesthouse	0.4
		Relative's/friend's home	13.1
		Usual residence	45.4
		Second residence	8.3
	Overnight stays	Overnight stay in tourist accommodation	33.2
		No overnight stay	66.8
	Within overnight stays	Overnight stays in the area	75.3
		No overnight stay in the area	24.7
	Food services	Stay to eat in the area	76.8
		Do not stay to eat in the area	23.2
	Type of visit	Friends	32.3
		Family	31.6
		Organized group	5.7
		Couple	27.8
		Alone	2.7
	Trip duration	Excursion without route through the area	18.9
		Excursion with route through the area	55.7
		Trip without route through the area	3.2
		Trip with route through the area	22.2
Tourist Profile: Motivations			

Tourist Profile: Motivations	Archaeological tourism	Preference for archaeological tourism	62.6
		No preference for archaeological tourism	37.4
	Cultural tourism	Preference for cultural tourism	62.8
		No preference for cultural tourism	37.2
	Nature tourism	Preference for nature tourism	60.8
		No preference for nature tourism	39.2
	Rural tourism	Preference for rural tourism	33.9
		No preference for rural tourism	66.1
	Active/Adventure tourism	Preference for active/adventure tourism	20.6
		No preference for active/adventure tourism	79.4
	Interest	Personal interest	88.3
		Companion	11.7
	Prior knowledge of the site	Friends/acquaintances	45.4
		Internet	23.8
		Tourist Information Office	3.7
		Other reasons	14.9
		Printed press	11.7
		Accommodation recommendation	0.5
	Previous experience in other archaeological sites in the local area (Cuenca/Guadalajara)	Previous experience exists	38.7
		No previous experience	61.3
	Previous experience in other archaeological sites in Castilla-La Mancha	Once a year	6.9
		Two to three times a year	93.1
	Previous experience in other archaeological sites in Spain	More than three times a year	33.9
		Accessibility	66.1
	Previous experience in archaeological sites abroad	Toilets	6.4
		Vending machine (drinks/food)	93.6
	No previous experience in other archaeological sites	Maintenance	23.0
		Nothing to comment	77.0

Tourist Profile: Frequency	Frequency	Parking	45.9
		Entry price	29.8
		Signage inside the site	24.3
Tourist Profile: Perceptions	Perception – Positive	Signage to reach the site	19.3
		Guided tour	10.5
		Self-guided tour	1.4
		Add extra service	15.8
		Insufficient (0–4)	0.7
		Sufficient (5)	22.9
		Good (6)	25.0
		Very good (7)	9.2
		Very good (8)	7.6
		Excellent (9)	91.5
		Excellent (10)	12.1
	Perception – Negative	Impact on the environment	4.4
		No impact on the environment	16.0
		Female	12.2
		Male	4.1
		Up to 31 years old	27.1
		From 32 to 44 years old	4.1
		From 45 to 54 years old	2.5
		From 55 to 62 years old	10.1
		Over 62 years old	27.8
		Local area (Cuenca/Guadalajara)	2.7
		Castilla-La Mancha	2.0
	Suggestions	Rest of Spain	51.1
Tourist Profile: Satisfaction after the experience	Overall evaluation	Abroad	0.7
		Tourist apartment	0.7
		Campsite	1.2
		Rural house	5.1
		Hostel	17.0
		Hotel	30.7
		Other	44.5

Source: Own elaboration.

5. Conclusions

The profile of tourists who visit archaeological sites located in sparsely populated rural areas presents a range of very heterogeneous

characteristics that explain their impact on the territory and the surrounding environment where the analyzed tourist resources are located. A total of five different age groups were analyzed, each displaying a distinct visitor profile based on age segment.

The age group up to 31 years old consists of a predominantly female young audience. A significant portion comes from the regional area, although origins from the rest of Spain and even international interest are also notable. This group mainly engages in day trips that include routes through the surrounding area. However, when taking trips with routes in the surrounding area, they tend to stay overnight in tourist apartments or campsites. They usually travel with family, but also with friends or partners, and even through organized trips related to academic training.

The 32 to 44 age group mostly comes from the regional and national surroundings and tends to prefer day trips over longer journeys, although they often include routes around the area as a pretext for visiting the site. Thus, this age group is predominantly composed of day-trippers and families who consume locally but have minimal impact in terms of overnight stays, where camper vans or converted vehicles stand out.

The 45 to 54 age group also comes from the surrounding areas and records the highest number of foreign visitors. This group is primarily composed of day-trippers who visit with family, partners, or alone. As such, day trips, often including routes in the surrounding area, are predominant. However, this group is split between those who limit their visit to the archaeological site and those who include broader regional routes. This duality—between day trip or extended travel with routes in both cases—is likely due to this group's life stage: either they have family responsibilities or have already moved past them.

Among the 55 to 62 age group, women are significantly represented, and visitors come not only from the region but also from the rest of Spain. While day trips are still prevalent, this group is the most likely to choose hotels when staying overnight. They often travel with friends or partners. This suggests that age does not necessarily equate to family responsibilities, or if it does, it is to a lesser extent. For this reason, both day trips with surrounding routes and extended trips including such routes are the most commonly chosen types of travel.

Finally, visitors over 62 years old, both men and women, visit out of personal interest. For this reason, their origins are more diverse, and they tend to stay in mainly residential accommodations. At the same time, their purchasing power allows them to choose hotels, and to a lesser extent, tourist apartments or alternatives like camper vans. This segment typically visits archaeological sites with friends, partners, or in organized groups. As a result, they are the largest group choosing either day trips with surrounding routes or longer trips with similar features.

In short, the analysis of the impact of cultural tourists in rural and sparsely populated areas reveals that the decisions made by tourists when visiting archaeological sites significantly affect the surrounding environment. In addition to archaeological tourism, other forms of tourism such as rural or nature tourism—also have an impact. Although they represent 40.1% of respondents, their impact on the environment remains high at 85.3%. This suggests that cultural tourism in general, whether motivated by archaeological interest or not, contributes to the development of local economies. Accommodations and tourist infrastructure, such as campsites and apartments, also play a central role in this dynamic, attracting 87.9% of visitors who generate benefits for the region.

The cultural tourist profile is diverse, highlighting both those with a strong preference for archaeological tourism and those motivated by curiosity or companionship. A significant 88.3% of respondents visit these places out of personal interest, demonstrating that internal motivations are key for tourism in rural areas. Word of mouth and digital media are crucial factors, with 45.4% of respondents discovering the sites through recommendations from friends and family. The internet also plays a significant role in promoting these destinations, being the preferred channel for 23.8% of tourists.

Regarding previous experience, most respondents (77%) had already visited other archaeological sites, reinforcing the idea that cultural tourists show high loyalty to this type of destination. Frequent visits, once or more per year, are common among tourists, contributing to a steady flow of visitors and, therefore, a sustained impact on local economies. This behavioural pattern highlights the importance of offering high-quality experiences that encourage repeat visits.

On the other hand, the evaluation of services offered at archaeological sites is key to understanding tourist satisfaction. Guided tours are the most highly rated, with 91.5% of positive feedback, underscoring the importance of providing enriching and educational experiences. However, other services, such as maintenance or signage within the site, received lower ratings, indicating areas for improvement that could further enhance the visitor experience and increase regional impact.

Despite some negative perceptions, such as inadequate signage for reaching the sites, tourists generally rate their experience as very satisfactory. A total of 75.2% give their visit an outstanding rating, reinforcing the idea that cultural tourism in rural areas is not only viable but also positively valued by visitors. This type of tourism offers development opportunities for local communities while preserving and promoting cultural and archaeological heritage.

Finally, future lines of research should focus on exploring how to optimize the tourist experience and improve the services offered by rural destinations. It would also be useful to delve deeper into the factors that influence the choice of these destinations and how promotional strategies can be improved to attract more international visitors. The synergy between different types of cultural tourism, archaeological, and nature tourism also deserves further study to maximize the positive impact on the rural environment. This study serves as a methodological reference for future research in other regions or countries with similar realities: low population density, high heritage value, and a need for sustainable development strategies.

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