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# Assessing the effects of interaction with attractions and types of visit on day trippers' satisfaction

## Abstract

Day trippers are visitors spending only a few hours at the destination without staying overnight, and they represent a significant number of visitors in many destinations. However, some facets of the behavior of this type of visitors remain under-researched topics. Accordingly, the present study analyzes day trippers' satisfaction by focusing on a novel set of determinants related to their interaction with the tourist attractions visited (intradestination behavior) in the context of cruises. The research was conducted in the city of Valencia (Spain). Through a combination of GPS tracking technologies and traditional surveys, this study considers the spatial patterns, tourist attractions visited, perceived experience, duration of the visit, and expenditures, to find that the effects of these determinants vary according to the type of visit: independent or guided. Moreover, for visit duration and expenditures, the study builds on prospect theory to propose an innovative approach by exploring inverted U-shaped effects which represents a theoretical advance with managerial implications for the destinations.

Keywords: satisfaction; day trippers; spatial patterns; expenditures; prospect theory; Valencia.

## 1. Introduction

In the tourism context, the literature has extensively studied visitor satisfaction with the destination as an influential factor on both destination image and competitiveness and on future visit intention or visitor loyalty (Alrawadieh et al., 2019; Dolnicar et al., 2015; Yoon & Uysal, 2005). Some authors point out that tourist attractions constitute the cornerstone of tourism (Leiper, 1990; Lew, 1987; Tian et al., 2022), being a determining factor in the overall satisfaction of tourists (Kozak & Rimmington, 2000). For the purposes of this paper, tourist attractions are defined as those resources with their own characteristics, whether artificial, natural, or small-scale spatial areas, which have been adapted and managed to attract visitors (Navarro-Ruiz & McKercher, 2020).Visiting such attractions is typically one of the main motivations for the trip (McKercher, 2016) or, as stated by Gunn (1972, p. 24), considering that 'without tourist attractions, there would be no visitors.' However, and despite their key role, studies scarcely focused on satisfaction with the visit from the perspective of tourist attractions and the visitor's interaction with them.

Within this line of research, the present study analyzes satisfaction with the destination visit from an original perspective by focusing on three fundamental elements that have been scarcely analyzed in previous literature and that constitute the main objectives of this research. First, the paper analyzes a novel set of explanatory variables of satisfaction focused on the visitor's interaction with the tourist attractions visited (intradestination behavior). These variables include the spatial patterns followed in the destination, the tourist attractions visited, the perceived experience, the duration of the visit, and the expenditure made. Recent studies have examined the spatial patterns followed by visitors from a destination flow management perspective (Zheng et al., 2019); however, to date, whether such patterns have an effect on overall satisfaction with the visit has not been examined. With respect to visit duration and spending, the paper takes a novel perspective by examining the effects of actual spending and

duration compared with expected spending and duration. Specifically, an inverted U-shaped effect is argued to exist, where greater than expected duration or expenditure will positively affect satisfaction with the visit; however, beyond a certain point, the effect will be negative.

Second, this paper examines the type of visit as a relevant factor in overall satisfaction with the visit, distinguishing between a guided tour or an independent visit. Previous literature has shown the fundamental differences between the two types of visitors in experiencing a destination (Bezova & Azara, 2021; Hyde & Lawson, 2003; Lew & McKercher, 2006). Therefore, the present study proposes that such differences will consequently cause the different explanatory factors examined to have different effects on their satisfaction levels.

Finally, the present study analyzes visitors who have chosen a multidestination trip and who are classified as 'day trippers' as they only spend a few hours at the destination without staying overnight. Although this type of tourism represents a significant percentage of the total number of visitors received in many destinations, scant research examines the behavior and experiences of this type of tourists ultimately due to the difficulties in obtaining information about it (Suriñach et al., 2017). The present work aims to expand our knowledge about this type of visitor, particularly in the urban context (Li et al., 2021).

## 2. Literature review

### *2.1. Spatial patterns*

Tourists' spatial behavior is a key element to improve the planning and management of a destination (Dredge, 1999). This spatial behavior is shown by tourists both between and within 'nodes', that is, those places they can visit and 'service components' to the facilities that support the visitor (Dredge, 1999, p. 782). Therefore, spatial patterns of visitors vary from movements concentrated at one node, considered their tourist 'bubble,' to movements dispersed across multiple nodes within the destination (Jaakson, 2004).

Several studies have analyzed the differences between visitors who concentrate their movements or move widely around the destination, particularly in the case of urban destinations. As highlighted by Deng and Andrada (2020), most of these works have adopted two main approaches: some works have attempted to group or segment visitors according to the patterns followed, while others have adopted a more descriptive, even predictive approach, showing the spatial patterns followed by visitors or trying to predict them. Within the latter line of research, some authors have combined data on spatio-temporal patterns with data about their experience at the destination, such as the feeling of crowdedness or safety during the visit or even physiological responses (Birenboim, 2016; Pettersson & Zillinger, 2011; Shoval et al., 2018). In a recent study, Antón et al. (2018) examined the effect of following a guided, recommended, or logical route versus following a random route on perceived satiety with the visit to a museum. So far, however, no study has analyzed the effect of spatio-temporal patterns on satisfaction with the visit, although it is one of the variables most frequently used to measure visitors' destination experience. Understanding this relationship can help destinations implement measures to improve the overall visitor experience concerning a very sensitive variable, such as the spatial distribution of visitor flows.

In the specific case of day trippers, research has offered contradictory results regarding their spatial patterns. While some authors found that day trippers tend to be more concentrated in space and time than other tourists (Stetic et al., 2011), other authors point to day trippers being more spatially dispersed than other types of visitors who spend more than one day at destination (Jin et al., 2018; Su et al., 2020). Considering that these visitors do not seem to follow a particular spatial pattern, establishing a priori an effect, positive or negative, of such patterns on their overall satisfaction with the visit is not possible. Therefore, the following hypothesis is proposed:

H1a. Spatial patterns of concentration or dispersion affect the overall satisfaction with the visit.

### *2.2. Number of attractions visited*

Lau and McKercher (2006) stated that visitors to a destination fundamentally carry out two types of visit in terms of the number of attractions visited: either they move from tourist attraction to tourist attraction to visit as many attractions as possible, or they visit a few but experience the destination in depth. Thus, some visitors with curiosity for a certain tourist attraction need a long time to visit that spot in depth; whereas other visitors achieve optimal satisfaction in a short period of time and need to move to another attraction to acquire peaks of satisfaction, thus visiting as many attractions as possible (Botti et al., 2008). Therefore, a positive relationship is anticipated to exist between the number of tourist attractions visited and visitor satisfaction, although a priori, establishing which of these two typical behaviors has the greater effect would not be possible. In this sense, the following hypothesis is proposed:

H2a. The number of tourist attractions visited, as many as possible or just a few but intensively, has a positive effect on the overall satisfaction with the visit.

### *2.3. Perceived experience*

Packer and Ballantyne (2016) defined visitor experience as ‘an individual's immediate or ongoing, subjective, and personal response to an activity, setting, or event outside of their usual environment’ (p.133). Many researchers suggest that perceived experience is an antecedent of visit satisfaction (Li et al., 2021). Moreover, given its subjective and personal component, the visitor's perceived experience is anticipated to exhibit varying degrees of intensity. In this regard, McKercher (2002) examined the ability of visitors to engage with the place they visit and concluded that the depth of experience ranges from superficial or shallow

to a much deeper, learning-oriented experience. In addition, Kozak (2001) explained that perceived depth of experience arises through visitors' enjoyment of and contact with destination attributes. In either case, both types of experience, more superficial or deeper, which are the product of the subjective perception of each visitor, could lead to greater satisfaction with the visit. Thus, in line with the work of Li et al. (2021) who showed that the tourist experience is positively related to trip satisfaction, the following hypothesis is proposed:

H3a. Perceived experience with the visited attractions, superficial or in-depth, has a positive effect on the overall satisfaction with the visit.

### *2.4. Actual visit length versus expected visit length*

The length of time spent at a destination or the duration of the visit is one of the most influential criteria in visitor behavior, because it can limit or extend the activities carried out as well as the depth of the experience (Pearce, 1988). Previous work has shown that a longer duration of the visit is related to a greater economic impact on the destination visited (Barros & Machado, 2010) and to a greater intention to visit the destination in the future (Brida et al., 2012). Therefore, destination managers are expected to seek how to increase visit duration as much as possible (Jensen & Hjalager, 2019).

The relationship between visit duration and satisfaction has been previously examined in the literature but obtained contradictory results. Some studies have shown a significant relationship (Brida et al., 2012), whereas others found no effect (Ozdemir et al., 2012). Nonetheless, the present study employs a novel approach by examining actual visit duration versus expected duration. In a similar research context to the present study, Sanz-Blas et al. (2019) examined the effect of visit duration as a moderator of the relationship between destination image and visit satisfaction. The authors separated their sample into two groups according to their visit duration whether below or above average. However, their results show

no differences between the two groups. The present study adopts a different approach, proposing the existence of an inverted U-shaped effect of visit duration on satisfaction. Considering that day trippers spend only a few hours at the destination, a longer than expected duration could be related to a greater enjoyment of the experience, which would increase their level of satisfaction. In fact, Vieira et al. (2021) showed that feelings of happiness during a visit to the city of Porto increase the duration of the visit. However, a level of fatigue or saturation (satiation) could be reached in which the lengthening of the visit carries negative connotations and has a negative impact on satisfaction, an effect that has been found in other contexts such as museum visits (Antón et al., 2018). This effect is similar to that suggested in optimum stimulation level theory (Steenkamp & Baumgartner, 1992), according to which the relationship between stimuli received from the environment or by internal mechanisms and a person's affective reaction to those stimuli follow an inverse U-shaped function, where the intermediate values of the stimulus are perceived as the most satisfying. In this sense, the following hypothesis is proposed:

H4a. A longer than expected visit has a positive effect on satisfaction with a diminishing returns pattern.

### *2.5. Actual versus expected expenses*

The relationship between tourist satisfaction and spending patterns has often been examined in the tourism literature (Bigné et al., 2005; Cárdenas-García et al., 2016; Disegna & Osti, 2016; D'Urso et al., 2020; Perles-Ribes et al., 2021; Smolčić Jurdana & Soldić Frleta, 2017; Vena-Oya et al., 2021). Most of these studies employ satisfaction as a predictor of spending behavior, yielding contradictory results. Some authors point out that satisfaction exerts a positive effect on spending in a destination (Disegna & Osti, 2016), whereas many other studies reveal a weak relationship or even no relationship at all (Cardenas-Garcia et al., 2016; Perles-Ribes et al., 2021; Smolčić Jurdana & Soldić Frleta, 2017).

However, the present study raises a new perspective on the relationship between visit satisfaction and spending. According to the satisfaction literature, prior to making a purchase, consumers form expectations about attribute standards in relation to the amount of money they are likely to spend (Oliver & Swan, 1989). Similarly, visitors' satisfaction with an activity undertaken during their visit is derived from the confirmation of their expectations and may be higher when visitors consider the activity's expenditures to have been fair (Hutchinson et al., 2009). Moreover, as stated by D'Urso et al. (2020), satisfaction is subjectively formed after the experience/use of a product and depends on prior expectations. This finding is in line with the expectation-disconfirmation paradigm proposed by Oliver (1980). Thus, starting from that disconfirmation paradigm and considering the potential effect of expenditures, visitors would form their satisfaction levels by comparing the actual level of expenditure (performance) with the expected one (expectations). In this sense, Vena-Oya et al. (2021) proposed that both the tourists' budget (the amount of money visitors plan to spend) and the amount they actually spend during their visit are factors affecting their satisfaction. By contrast, considering that consumers generally decide to spend their money trying to obtain the highest possible satisfaction (Yeung et al., 2013), an inverted U-shaped relationship between spending and satisfaction would also be expected. This relationship would be similar to that found for the price-satisfaction relationship (Chen et al., 2020) and implies that the more tourists spend, the more satisfied they are, until they reach a point at which satisfaction decreases as spending increases. Therefore, the following hypothesis is proposed:

H5a. Higher than expected expenditure has a positive effect on satisfaction with a diminishing returns pattern.

### *2.6. Effect of the type of visit: independent or guided*

This study proposes that the relationships between the different variables examined and satisfaction with the visit will vary according to the type of visit defined as the way in which

visitors prefer to discover a destination. Moreover, it is categorized as a guided and an independent visit. The justification for this proposal is based on two factors. First, the spatio-temporal behavior of visitors differs according to the type of visit undertaken whether independent or guided. Hyde and Lawson (2003) proposed that independent visitors have control over their itinerary and temporal consumption within the destination, presenting greater flexibility in their movements and in the tourist attractions they visit. Conversely, guided visitors follow a fixed itinerary, in which visits to tourist attractions and the distribution of time in each of them are pre-established and controlled by the guides who lead the group and who act as channels of the perceived experience in the destination (Bezova & Azara, 2021; Weng et al., 2020). Second, interaction with tourist attractions and perceived experience also differs according to the type of visit made. Independent visitors are more likely to be in contact with local people and discover the variety of the destination's offerings by visiting both iconic and secondary or tertiary attractions and extracting as much as possible from each place (Hyde & Lawson, 2003). As for guided visitors, while Weng et al. (2020) highlighted the fact that their perception of effective heritage interpretation is higher than that of independent visitors, authors such as Crespi-Vallbona (2021) posited that the contemplative visits experienced by guided visitors can be extremely boring.

The present study proposes that differences in how independent and guided visitors experience the destination will affect how the various determinants examined affect their satisfaction levels. To our knowledge, this study is the first to investigate the differential effect on satisfaction of the type of visit undertaken (independent or guided). In addition, most of the studies examining the determinants of tourist satisfaction with the visit are notably focused on independent tourists, with few studies focusing on guided tourists. Virtually no studies examine both types of tourists and/or their differences in behavior. Among the few papers that analyzed the effect of guided tours as a determinant of tourist satisfaction, Kuo et

al. (2016) found that guide interpretations impact the satisfaction of tourists visiting the Kinmen Battlefields (Taiwan), while Sanz-Blas and Buzova (2016) showed that guided tours increase cruise tourist satisfaction. Based on the above, we hypothesize that:

H1b-H5b: The effect of variables related to intradestination behavior on overall satisfaction with the visit differs according to the type of visit (independent or guided).

Finally, the paper examines a set of control variables related to the pre-visit stage that previous studies have shown to affect visitor satisfaction with the destination, including prior experience at the destination (McKercher & Wong, 2004; Shahrivar, 2012), prior information about tourist attractions (Hyde & Lawson, 2003), planned time (Chavas et al., 1989), and prior interest in particular tourist attractions (Kozak & Rimmington, 2000). Figure 1 summarizes the main variables analyzed in this study.

Insert Figure 1 around here

## 3. Methods

### *3.1. Study setting*

The present study focuses on a particular type of multi-destination visitor, namely, the cruise tourists, who for each port of call visited adopted a day-tripper behavior. This characterization of cruise tourists as leisure day-trippers should be made with caution, as the two types of visitors are certainly not considered to be identical. Rather, it is assumed that in terms of their visit to the several ports of call, cruise visitors share the most distinctive feature with day-trippers, namely that they spend a few hours in the destination without staying overnight. Thus, cruise visitors have to choose how they will spend their time, either discovering the destination on a guided tour or visiting it on their own.

The target population of the present study consisted of cruise passengers who visited the city of Valencia (excluding crew members). Valencia has a population of approximately

800,000 inhabitants and is the third largest city in Spain (INE, n.d.). The city is also an important emerging cruise destination comparable to other West Mediterranean cruise destinations, such as Naples or Palermo (Italy) in terms of passengers per call received (between 2,000 and 2,600 in 2018), or such as Lisbon (Portugal), Palermo (Italy) and Málaga (Spain) in terms of the total number of passengers (between 400,000 and 600,000 in 2018) (MedCruise, 2018).

### *3.2. Data collection*

This study employs different data sources on the bases of GPS tracking technologies and structured questionnaires (e.g., De Cantis et al. 2016; Ferrante et al., 2018). This approach allows generating a dataset that more accurately reflects the complex behavior of visitors within the destination (Li et al., 2019). Following a pilot study to test the questionnaires and logistical aspects of the study, we proceeded with data collection that took place during the peak season of cruise arrivals (April to June 2018). When independent passengers disembarked, they were asked to participate in in the study. Those who agreed to collaborate answered an initial questionnaire and were given a GPS device to carry with them throughout their visit. Once they returned to the terminal, they returned the device and answered a second questionnaire. In the case of guided visitors, they were surveyed only once after their visit to the city and in their case, the GPS was carried by the guide. The GPS device used recorded the participant's position every 15 sec with a 20-h battery that ensured its operation throughout the visit.

Although the study had 627 participants, the final valid sample consisted of 487 visitors (355 independent and 132 guided). This difference was due to the data cleaning process. Individuals who responded to both the initial and final questionnaire and whose GPS tracks showed no temporal jumps in their position because of the so-called ‘urban canyon effect’ were considered valid, in line with Ferrante et al. (2018).

### *3.3. Measures*

The variables related to spatial patterns were built from the spatiotemporal data collected with the GPS devices. Specifically, a variable with three categories was defined: SINGLE_NODE, which included visitors who had visited a single node or whose excursion in the city of Valencia was limited to a single node; MULTIPLE_NODE, which included visitors who had visited multiple nodes or whose excursion in the city of Valencia included multiple nodes; and OUT_NODE, which included guided visitors who had made an excursion outside the city of Valencia or who had visited a node outside the city of Valencia. Regarding the number of tourist attractions visited and the perceived experience, visitors were asked to indicate, among the options given, what they had mostly done during their visit to the city. Specifically, the number of tourist attractions visited included the following response options: 'visit as many attractions as possible,' 'intermediate behavior,' and 'visit a few attractions intensely.' On the other hand, the perceived experience included the following response options: 'superficial experience,' 'intermediate experience,' and 'deep experience.' The variable duration of the visit was measured from the initial and final questionnaires in the case of independent visitors, because we noted the time of completion of both types. For guided visitors, the start and end time of the visits was known. In the case of spending behavior, the passengers provided information on several items such as transportation, entrance fees, souvenirs, shopping, food and beverages, and trip cost. Finally, satisfaction with the visit was measured with a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree). Control variables were measured with dichotomous scales (yes/no). Table 1 shows the descriptive statistics for the variables examined.

Insert Table 1 around here

### *3.4. Model*

To analyze the determinants of perceived satisfaction, we used a regression model. The dependent variable was perceived satisfaction ($PS_i$) for individual i; the control variables were visitor characteristics ($VC_i$), such as previous experience, previous information, previous interest in tourist attractions, and time available; and the independent variables were intradestination behavioral traits ($IDB_i$), i.e., spatial patterns, number of attractions visited, perceived experience and duration of visit, as well as spending behavior ($EB_i$).

The formula is as follows:

$$PS_i = \alpha + \sum_{j=1}^{J} \gamma_j \cdot VC_{ij} + \sum_{h=1}^{I} \delta_h \cdot IDB_{hj} + \theta \cdot EB_i + \varepsilon_i, \quad (1)$$

where $\alpha$, $\gamma_j$, $\delta_h$, and $\theta$ are the parameters to be estimated, and $\varepsilon_i$ is the error term.

To identify nonlinearities in the effect of expenditures, we decompose the overall effect into different effects similar to the process involved in prospect theory (Kahneman & Tversky, 1979). Specifically, we create two new variables from expenditures: positive differences in expenditure behavior ($PDEB_i$) defined as (Actual expenditure$_i$ – Expected expenditure)·D1, where D1 = 1 if (Actual expenditure$_i$ – Expected expenditure) > 0; otherwise, D1 = 0; and the negative differences in expenditure behavior ($NDEB_i$) defined as (Actual expenditure$_i$ – Expected expenditure)·D2, where D2 = 1 if (Actual expenditure$_i$ – Expected expenditure) < 0; otherwise, D2 = 0. The variable 'expected expenditure' is obtained by calculating the average value of this variable for each type of visitor.

Adding the quadratic terms, we obtain the following expression:

$$\pi \cdot PDEB_i + \rho \cdot NDEB_i + \tau \cdot PDEB_i^2 + \varphi \cdot NDEB_i^2, \quad (2)$$

where the parameters $\pi$ and $\rho$ that capture potential asymmetries in satisfaction effects arising from positive versus negative deviations between actual and expected expenditures and $\tau$ and $\varphi$ reflect the potential decreasing sensitivities. Replacing Equation 2 in Equation 1, we obtain:

$$PS_i = \alpha + \sum_{j=1}^{J} \gamma_j \cdot VC_{ij} + \sum_{h=1}^{I} \delta_h \cdot IDB_{hj} + \pi \cdot PDEB_i + \rho \cdot NDEB_i + \tau \cdot PDEB_i^2 + \varphi \cdot NDEB_i^2 + \varepsilon_i. \quad (3)$$

Similarly, we can estimate the non-linear effect of visit duration using this procedure.

Finally, to determine the spatio-temporal patterns of each group, the data from the GPS devices were examined via cartographic methods applying QGIS 3.4.5 Madeira (see Appendix).

## 4. Results

We first present the general model of day trippers to go on to show the results of the differential effects of the type of visit. The F-statistics are highly significant (p-value < 0.001) in both models suggesting that the factors analyzed effectively explain the tourist's satisfaction with the visit; in fact, three out of the five indicators examined show significant effects on satisfaction with the visit. Admittedly, although low goodness-of-fit metrics are not out of the ordinary in satisfaction studies (Gerdt et al., 2019; Kung, 2018), the modest R2 measures suggest that the search for additional variables that could provide greater explanatory power would open up opportunities for new lines. Specifically, and as stated later, while our determinant factors revolve around the characteristics of the visit, further avenues of research should explore the inclusion of attributes of the ship as well as the destination.

### *4.1. General model of day trippers' satisfaction*

First, the global model is analyzed for the whole sample (n = 487) as shown in Table 2. The results show a significant and positive relationship between visiting the maximum number of tourist attractions possible and overall satisfaction with the visit (H2a). As indicated by Botti et al. (2008), visitors seem to show different visitation patterns in terms of the number of

attractions visited which have an impact on higher satisfaction when the number of attractions visited is high in the present study. Second, the results indicate a significant and positive effect of perceived in-depth experience on satisfaction (H3a). These results are in line with those found by Li et al. (2021), reflecting that deeply felt tourism experience is positively related to trip satisfaction. Finally, the data show the existence of an inverted U-shaped effect of expenditure, i.e., higher than expected expenditures increase visitor satisfaction up to a level; beyond it, increases in the amount spent reduce satisfaction (H5a). This result is similar to that found for the price-satisfaction relationship (Chen et al., 2020) and is in line with the results of Vena-Oya et al. (2021) for the case of cultural visitors. Regarding the spatial patterns followed (H1a) and the effect of the actual duration of the visit versus the expected duration (H4a), their impact on satisfaction is not recognized.

Regarding the control variables, only the variable measuring prior interest in specific tourist attractions shows a significant, positive effect on the overall satisfaction with the visit. This finding is in line with the results of Chi and Qu (2009) and Kozak and Rimmington (2000).

Insert Table 2 around here

### *4.2. Differential effects of the type of visit*

The results indicate the differences in the level of satisfaction with the visit between independent and guided visitors for the variables analyzed (see Table 3). All the significant results found in the general model are fulfilled in the case of independent visitors. That is, a positive and significant effect exists on the satisfaction of independent visitors according to the number of tourist attractions visited (the maximum possible) (H2b) and the perceived experience (in depth) (H3b). The existence of an inverted U-shaped effect of spending is also confirmed (H5b).

Additionally, the results show that independent visitors are less satisfied than guided visitors (H1b), regardless of the spatial pattern of the visit (single or multiple nodes). These results are very interesting as they show that the independent visitor, who a priori manifests a preference for greater flexibility and control over his/her itinerary during the visit (Hyde & Lawson, 2003), does not seem to obtain the expected reward in terms of a satisfactory experience.

Regarding the control variables, the results show a positive and significant effect of prior interest in specific tourist attractions on satisfaction for independent visitors. They also indicate that first-time guided visitors are less satisfied than repeat guided visitors.

Insert Table 3 around here

## 5. Conclusions

This study has examined the impact of day trippers' behavior on satisfaction with the visit in a cruise context. The set of determinants analyzed are related to the tourist attractions visited (intradestination behavior) and the type of visit (independent or guided). Tourist attractions have been long recognized as a key component of tourism demand, having a direct influence on visit satisfaction. Few studies, however, have focused on the relationship between satisfaction with the visit and the visitor's interaction with tourist attractions. The variables examined include the spatial patterns followed in the destination, the number of tourist attractions visited, the perceived experience, the duration of the visit, and the expenditure made. Building on prospect theory, the study takes an innovative approach by exploring inverted U-shaped effects for visit duration and expenditures. This study also addresses the differential effects of the examined determinants on satisfaction with the visit by the type of visit, guided or independent. The results show a significant and positive effect on satisfaction with the visit for the number of tourist attractions visited, the perceived experience and the expenditure made. No significant effects are found for the spatial patterns followed and the

duration of the visit. The results show that the effects of these determinants on satisfaction vary according to the type of visit.

### *5.1. Theoretical implications*

Theoretically, the results of this study contribute to the understanding of multidestination visitor behavior in their role as day-trippers or day visitors. Specifically, a type of multidestination visitor is examined, namely, the cruise tourists, who tend to visit multiple destinations throughout their trip and stay in these destinations for only a few hours. Deepening the knowledge of the determinants of satisfaction of this type of visitor is vital because their satisfaction constitutes a precedent for returning to the destination in the future, staying longer, with all the positive impacts that this would create (Petrick, 2004). These positive impacts have been found in previous research, for the case study of Valencia (Sanz-Blas & Carvajal-Trujillo, 2014) and for other destinations (Pranić et al., 2013).

To further advance in this line of knowledge, a series of variables related to the visitors' interaction with tourist attractions are examined. The results of the study indicate that the overall experience of the day-tripper visitors will largely depend on the way in which they interact with the destination's tourist attractions, particularly on the previous interest in certain tourist attractions, the number of attractions visited and the in-depth experience, as well as the expenditure made at the destination. Regarding this last variable, the results point to the existence of an inverse U-shaped relationship: the more tourists spend, the higher their levels of satisfaction are; however, after a certain level of spending, satisfaction begins to decrease. Likewise, the results obtained indicate that the visitor experience will be particularly affected by the type of visit made (on their own or as part of a guided group). This finding is in line with Sorrentino et al. (2019) who found that independent and guided visitors have different motivations, perceptions, and spending patterns.

### *5.2. Practical implications*

The present study offers valuable information to tourism marketing and managers to help them take specific measures in the particular context of day trips, with the aim of improving satisfaction with the visit. For example, prior interest in specific tourist attractions could be increased by improving attraction-specific information and increasing the number of communication channels available to obtain such information. For the sample analyzed, most of the visitors indicated that they obtained information about the attractions to be visited at the different ports of call on board the cruise ship. Therefore, reinforcing the availability of information about the destinations in those cruises and also upon arrival at the terminal would be important to facilitate access to all the tourist attractions and increase the likelihood of attaining a highly satisfactory experience. Such information should reinforce aspects related to the depth of the experience to increase its effectiveness. In addition, information could be provided about different itineraries to be followed to visit the greatest number of tourist attractions, which would not only increase satisfaction levels but also allow for better management of visitor flows.

On the other hand, managers should implement specific measures adapted to different types of visitors, either independent or guided. Our results indicate that the satisfaction of independent visitors is lower than that of other visitors in terms of spatial patterns followed. Traditionally, independent visitors have been assumed to prefer visiting the destination on their own because they value the freedom of discovering the different tourist attractions on their own; this freedom, which implies the choice of different itineraries and spatio-temporal patterns, results in a better experience or greater satisfaction (Hyde & Lawson, 2003). Nonetheless, the results obtained in this study suggest a new perspective, according to which actions aimed at modifying these spatial patterns could contribute to improving the perceived experience. This result is particularly relevant in that examining the relationship between

spatial patterns and satisfaction has been conducted for the first time. Moreover, independent visitors report high levels of satisfaction both when they visit as many tourist attractions as possible and when they visit a smaller number of attractions but experience the latter in greater depth. They also report higher satisfaction when the experience is more in-depth. In view of these results, an interesting alternative to increase the satisfaction of independent visitors would be the use of technologies based on geo-positioning to allow for real-time recommendation of itineraries as response to all their visit preferences (e.g., App with active GPS). This type of tool would allow the independent visitor to enjoy the advantages of guided tours in terms of the information received and the security of not 'forgetting' any relevant tourist attraction without the perceived disadvantages, such as the lack of control over the itinerary or the time spent at the various attractions. In addition, with this type of technology, destination managers would have real-time information on the number of tourists per tourist attraction, so that the recommended itineraries could be adapted to avoid saturation of these areas. A proposal in this direction has been implemented in the city of Venice, where CCTV cameras, optical sensors, and a cell phone tracking system managed by the police can identify the flow of people walking through the city, even distinguishing residents from visitors (Bubola, 2021).

The results are also of interest to the cruise industry. After all, the intention to cruise again will depend on the overall satisfaction with the experience. This satisfaction is built, in part, through the accumulation of satisfactory experiences in each of the ports of call visited. A better understanding of the effect that the different variables examined have on satisfaction with the visit would allow cruise lines to improve the offer related to the different visits in the ports of call. For example, they could work with local operators to design visits that allow for different degrees of visitors' experiences with the tourist attractions (e.g., more or less intense and immersive visits, more or less attractions visited).

## 6. Limitations and future research

Finally, the present study is not free of limitations and thus offers suggestions for future lines of research. First, data were collected before the outbreak of the COVID-19 pandemic. Therefore, the results obtained may not be entirely applicable in the new post-COVID context. Future work should examine the variables analyzed to determine whether behavioral changes derived from the coronavirus pandemic exist that could influence them. For example, analyzing whether the interest in visiting a few tourist attractions in depth has decreased due to the fear of prolonged contact with other tourists in enclosed spaces would be interesting. It would also be interesting to determine whether the preference for one type of visit, independent (less close contact with other visitors) or guided (more contact), has been altered. Similarly, expenditure patterns could vary from expected expenditure if consumption preferences vary due to fear of visiting enclosed and crowded spaces (e.g., museums, restaurants).

Second, this study only considers the perspective of visitors and their satisfaction levels in relation to the tourist attractions visited in the destination. Future work should incorporate aspects such as the interaction with tourist services (e.g., restaurants, transportation) and the interaction with residents, analyzing the dynamics established between all the actors involved. Regarding the residents' perspective, it would be interesting to compare the effect that the attitude and perception of residents (latent or explicitly manifested), has on the experience of visitors, particularly in shared spaces (tourist attractions visited). Additionally, a promising avenue for future research is to examine the potential impact of the different motivations for visiting the destination as well as attributes of the ship and the destination. Segmentation techniques could be applied to group visitors and examine their differences in satisfaction with the visit and the relationships proposed in the present study. A similar approach could be adopted regarding the sources of information used, as

previous research in a similar context has demonstrated that they significantly moderate the relationship between satisfaction with the visit and behavioral intentions (Sanz-Blas et al., 2017). Furthermore, this paper differentiates between guided and independent tourists but does not examine specific elements of the quality of the guided tour, which could moderate interactions between perceived experience and satisfaction with the visit.

Third, this study has considered cruise visitors as leisure day-trippers given the time spent at the destination and the fact that they do not stay overnight. Future studies should use other samples of excursionists or day-trippers to contrast the results found (e.g., package day-long tours).

Finally, the present study has focused on a single case study, the city of Valencia (Spain). Further studies are necessary to ensure the generalizability of the proposed model, that could include destination-specific characteristics (e.g., spatial configuration, type of attractions) and examine different regions (e.g., Caribbean, Asia) or more mature and overcrowded destinations (e.g., Barcelona, Venice).

**Disclosure statement**

No potential competing interest was reported by the authors.

# APPENDIX SPATIO-TEMPORAL BEHAVIORS

**Figure 2 Spatio-temporal behavior of guided visitors**

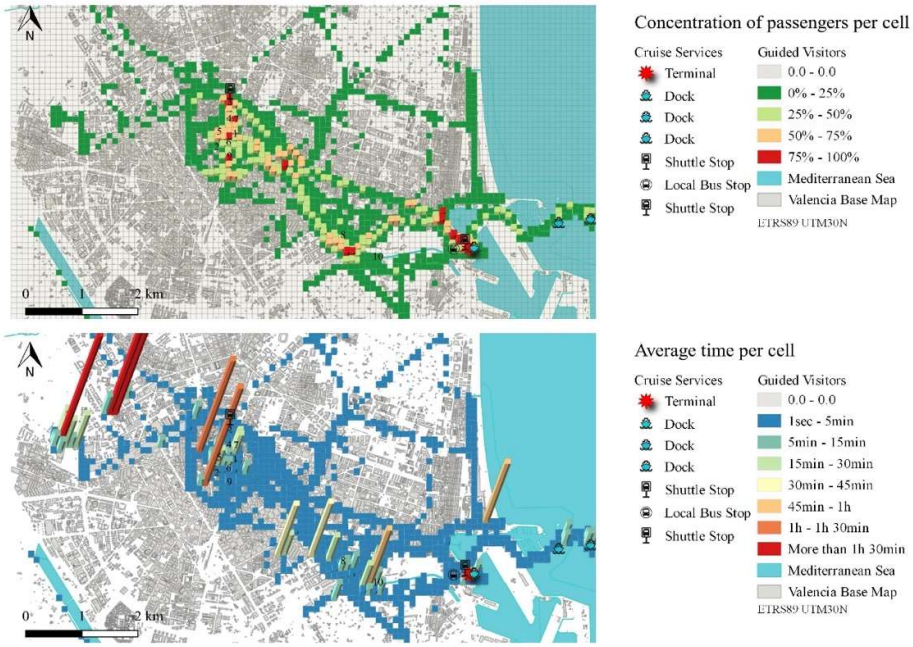


**Figure 3 Spatio-temporal behavior of independent visitors**

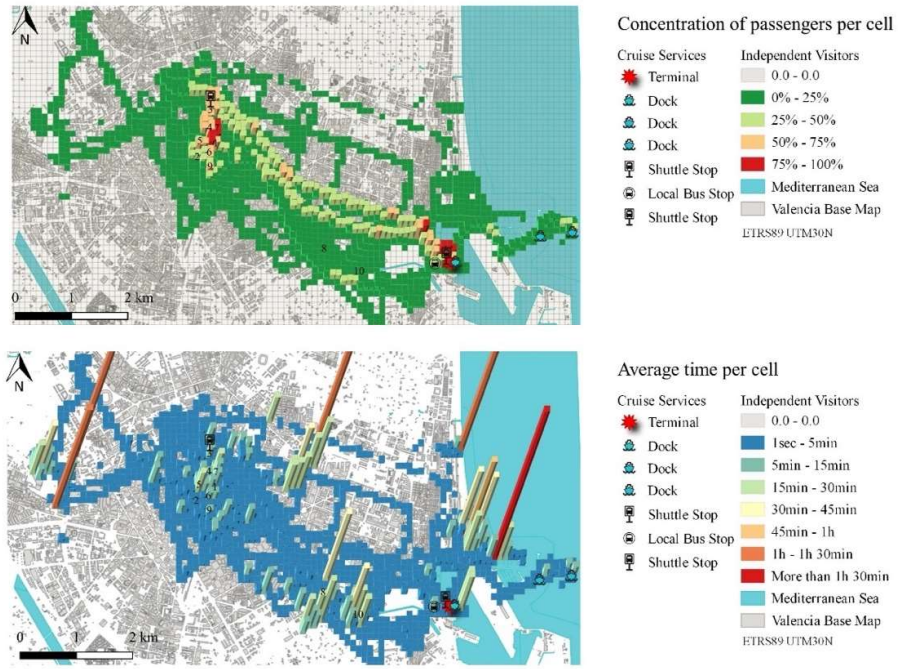

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**Table 1 Descriptive statistics**

| | General | | Independent | | Guided | |
|---|---|---|---|---|---|---|
| | Mean/Percentage | SD | Mean/Percentage | SD | Mean/Percentage | SD |
| FIRSTVISIT | 76.00% | 43.0 | 75.00% | 43.0 | 76.00% | 43.0 |
| PREVINFO | 79.00% | 41.0 | 79.00% | 40.0 | 78.00% | 41.0 |
| TIMEPLAN | 61.00% | 49.0 | 47.00% | 50.0 | 98.00% | 15.0 |
| INTEREST | 54.00% | 50.0 | 58.00% | 49.0 | 44.00% | 50.0 |
| SINGLE_NODE | 47.00% | 50.0 | 54.00% | 50.0 | 20.00% | 46.0 |
| MULTIPLE_NODE | 47.00% | 50.0 | 46.00% | 50.0 | 51.00% | 50.0 |
| OUT_NODE | 5.00% | 22.0 | 0.00% | 0.0 | 19.00% | 40.0 |
| ASMANY | 45.00% | 50.0 | 44.00% | 50.0 | 48.00% | 50.0 |
| FEWDEPTH | 41.00% | 49.0 | 41.00% | 49.0 | 43.00% | 50.0 |
| SHALLOW | 42.00% | 49.0 | 46.00% | 50.0 | 32.00% | 47.0 |
| DEEP | 30.00% | 46.0 | 24.00% | 43.0 | 45.00% | 50.0 |
| PDVISITDUR | €29.26 | 47.7 | €33.54 | 50.3 | €17.74 | 37.7 |
| NDVISITDUR | €-44.40 | 72.0 | €-54.32 | 80.8 | €-17.75 | 25.1 |
| PDEB | €11.92 | 33.2 | €11.81 | 34.2 | €12.33 | 29.2 |
| NDEB | €-11.92 | 11.1 | €-11.82 | 11.6 | €-12.33 | 9.3 |
| SAT | 6.46 | 0.86 | 6.43 | 0.85 | 6.58 | 0.88 |

**Table 2 Determinants of the overall satisfaction with the visit (n = 487)**

| Variable | Coefficient | SD | t-Statistic | Prob. |
|---|---|---|---|---|
| Constant | 6.157674 | 0.264928 | 23.24283 | 0.0000 |
| FIRSTVISIT | -0.09282 | 0.084777 | -1.09493 | 0.2741 |
| PREVINFO | 0.145271 | 0.10898 | 1.333008 | 0.1832 |
| TIMEPLAN | -0.05687 | 0.083928 | -0.67762 | 0.4983 |
| INTEREST | **0.206955** | **0.080146** | **2.582246** | **0.0101** |
| SINGLE_NODE | -0.24687 | 0.161586 | -1.52778 | 0.1272 |
| MULTIPLE_NODE | -0.21002 | 0.149096 | -1.40865 | 0.1596 |
| ASMANY | **0.389551** | **0.177486** | **2.194827** | **0.0287** |
| FEWDEPTH | 0.19052 | 0.17817 | 1.069313 | 0.2855 |
| SHALLOW | -0.09605 | 0.101292 | -0.94822 | 0.3435 |
| DEEP | **0.252655** | **0.089829** | **2.812612** | **0.0051** |
| PDVISITDUR | -0.00137 | 0.002288 | -0.59984 | 0.5489 |
| NDVISITDUR | 0.00049 | 0.002962 | 0.165435 | 0.8687 |
| PDVISITDUR^2 | 8.00E-06 | 1.09E-05 | 0.735239 | 0.4626 |
| NDVISITDUR^2 | 4.16E-06 | 1.48E-05 | 0.281845 | 0.7782 |
| PDEB | **0.006856** | **0.001811** | **3.786527** | **0.0002** |
| NDEB | -0.01924 | 0.014256 | -1.34992 | 0.1777 |
| PDEB^2 | **-2.47E-05** | **6.47E-06** | **-3.81614** | **0.0002** |
| NDEB^2 | -0.00067 | 0.000507 | -1.32807 | 0.1848 |
| | | | | |
| R-squared | 0.097262 | | | |
| F-statistic | 2.801282 | | | |
| Prob (F-statistic) | 0.000119 | | | |

Note: statistically significant results are highlighted in bold.

**Table 3 Determinants of satisfaction according to the type of visit (independent or guided)**

| Variable | Coefficient | SD | t-Statistic | Prob. |
|---|---|---|---|---|
| Constant | 7.3465 | 0.5828 | 12.6065 | 0.0000 |
| FIRSTVISIT_INDEP | -0.0365 | 0.0916 | -0.3992 | 0.6899 |
| FIRSTVISIT_GUID | **-0.4137** | **0.2030** | **-2.0382** | **0.0421** |
| PREVINFO_INDEP | 0.0824 | 0.1154 | 0.7135 | 0.4759 |
| PREVINFO_GUID | 0.3059 | 0.2695 | 1.1351 | 0.2569 |
| TIMEPLAN_INDEP | -0.0954 | 0.0872 | -1.0949 | 0.2741 |
| TIMEPLAN_GUID | 0.0594 | 0.2737 | 0.2171 | 0.8283 |
| INTEREST_INDP | **0.3312** | **0.1001** | **3.3103** | **0.0010** |
| INTEREST_GUID | -0.2424 | 0.1547 | -1.5672 | 0.1178 |
| SINGLE_NODE_INDEP | **-1.6609** | **0.6511** | **-2.5507** | **0.0111** |
| SINGLE_NODE_GUID | -0.3792 | 0.3496 | -1.0845 | 0.2787 |
| MULTIPLE_NODE_INDEP | **-1.7233** | **0.6569** | **-2.6234** | **0.0090** |
| MULTIPLE_NODE_GUID | -0.1171 | 0.2183 | -0.5366 | 0.5918 |
| ASMANY_INDEP | **0.5016** | **0.2052** | **2.4443** | **0.0149** |
| ASMANY_GUID | -0.0723 | 0.3502 | -0.2063 | 0.8366 |
| FEWDEPTH_INDEP | **0.3401** | **0.2069** | **1.6439** | **0.1009** |
| FEWDEPTH_GUID | -0.5135 | 0.3906 | -1.3145 | 0.1893 |
| SHALLOW_INDEP | -0.0742 | 0.1094 | -0.6784 | 0.4979 |
| SHALLOW_GUID | -0.2951 | 0.2791 | -1.0574 | 0.2909 |
| DEEP_INDEP | **0.2153** | **0.1008** | **2.1355** | **0.0333** |
| DEEP_GUID | 0.2203 | 0.2060 | 1.0690 | 0.2856 |
| PDVISITDUR_INDEP | 0.0000 | 0.0028 | -0.0159 | 0.9873 |
| PDVISITDUR_GUID | -0.0008 | 0.0060 | -0.1332 | 0.8941 |
| NDVISITDUR_INDEP | -0.0011 | 0.0032 | -0.3333 | 0.7391 |
| NDVISITDUR_GUID | 0.0110 | 0.0151 | 0.7301 | 0.4657 |
| PDVISITDUR^2_INDEP | 0.0000 | 0.0000 | 0.4437 | 0.6575 |
| PDVISITDUR^2_GUID | 0.0000 | 0.0000 | -0.2384 | 0.8117 |
| NDVISITDUR^2_INDEP | 0.0000 | 0.0000 | -0.1279 | 0.8983 |
| NDVISITDUR^2_GUID | 0.0001 | 0.0001 | 0.6893 | 0.4910 |
| PDEB_INDEP | **0.0071** | **0.0020** | **3.5513** | **0.0004** |
| PDEB_GUID | -0.0032 | 0.0080 | -0.4002 | 0.6892 |
| NDEB_INDEP | -0.0237 | 0.0148 | -1.5985 | 0.1106 |
| NDEB_GUID | 0.0542 | 0.0511 | 1.0622 | 0.2887 |
| PDEB^2_INDEP | **-2E-05** | **-6E-06** | **-3.7986** | **0.0002** |
| PDEB^2_GUID | 0.0000 | 0.0000 | 0.9707 | 0.3322 |
| NDEB^2_INDEP | -0.0008 | 0.0005 | -1.6348 | 0.1028 |
| NDEB^2_GUID | 0.0026 | 0.0020 | 1.2963 | 0.1955 |
| R-squared | 0.1399 | | | |
| F-statistic | 2.0334 | | | |
| Prob (F-statistic) | 0.0005 | | | |

Note: statistically significant results are highlighted in bold.