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How do monetary and time spend explain cultural tourist satisfaction?

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ABSTRACT

Tourist expenditure is studied from many perspectives, including that of the two primary types of budget—monetary and temporal—that a tourist must manage in a destination. Yet, despite the scholarly interest in tourist expenditure, no studies to date have sought to quantify how spend type affects tourist satisfaction.

Since money and time are finite, it is important to understand how they contribute to tourist satisfaction. The aim of the present research is therefore to analyze how tourist behavior in a cultural destination, taking into account the real-time spending of both monetary and time budgets, contributes to satisfaction-formation. A sample of 957 touristic activities conducted in the City of Granada (Spain) was analyzed from a multilevel perspective, measuring tourist satisfaction with the activity in real time.

The study identifies several factors of interest for stakeholders of cultural tourism from a new conceptual and methodological approach in tourism satisfaction studies.

1. Introduction

Cultural and heritage tourism has become the fastest-growing segment in the tourism industry. Cultural tourism accounts for 36% of total tourism worldwide and witnessed approximately 4% more growth than global tourism as a whole in 2017 (WTO, 2018). It plays an important role in heritage conservation and the economic development of destinations (Chen, Zhang, & Qiu, 2013). It is important to distinguish it from other tourism typologies, as it differs in terms of travel motivation, tourist interests, and/or geographical location (Brida, Disegna, & Scuderi, 2013Kerstetter, Confer, & Graefe, 2001).

The culturally-motivated tourist is one of the most desirable targets for destinations because of their high spending patterns and their behavioral contribution to destination sustainability (Correia, Kozak, & Ferradeira, 2013). However, such tourists tend to book shorter stays (that is, use a smaller time budget) (De Menezes, Moniz, & Vieira, 2008) and have a higher daily monetary budget to spend at the destination (Vergori & Arima, 2020). These budgets modify the tourist's behavioral patterns. For example, tourists booking shorter stays or presenting high spending patterns tend to visit mainly the primary attractions of the destination (famous landmarks or heritage sites, for instance) (Lau & McKercher, 2006Pulido-Fernández, Cárdenas-García, & Carrillo-Hidalgo, 2017), with such visits typically constituting the most satisfying activities (Botti, Peypoch, & Solonandrasana, 2008).

Meanwhile, the tourist's behavior at the destination, in terms of monetary and time expenditure, will modify their satisfaction. Derived from "customer satisfaction", tourist satisfaction has been of interest to researchers since the 1960s (Chen et al., 2013). Defined as a series of "key judgements that consumers make regarding a tourism service", it is a crucial area of interest among Marketing scholars (Bowen & Clarke, 2002). Satisfaction has been defined from several perspectives, including: "perceived discrepancy between prior expectation and perceived performance after consumption" (Oliver, 1980); "the degree to which one believes that an experience evokes positive feelings" (Rust & Oliver, 1994); or "a function of pre-travel expectations and post-travel experiences" (Turner & Reisinger, 2003). It is usually related to other concepts such as perceived value, service quality, loyalty, or word-of-mouth (WOM) (Chen & Chen, 2010).

The study of tourist satisfaction is important for the insights it provides into such crucial features as WOM recommendation, loyalty within the destination, the avoidance of complaints (and their direct and indirect costs), and destination marketing (Huh, Uysal, & McCleary, 2006Swarbrooke & Horner, 2007), among others. Tourist satisfaction has been previously analyzed in terms of money spent (Castellano et al., 2019Konuk, 2019Vetitnev, Romanova, Matushenko, & Kvetenadze, 2013), stay duration (Neal, 2004Sanz-Blas, Buzova, & Carvajal-Trujillo,

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2019), and monetary budget (Nash, Thyne, & Davies, 2006). However, to the best of our knowledge, no extant studies have analyzed tourist satisfaction in terms of both monetary- and time-budget consumption.

The aim of the present study is therefore to address this lacuna by analyzing how tourist behavior in a cultural destination—taking into account the consumption of both monetary and time budgets—contributes to satisfaction-formation during the stay. The moderating role of tourism activity type (cultural vs. non-cultural) is also examined. Data was collected in the City of Granada (Spain) from a sample of tourists who were asked to record (i) their satisfaction level with each touristic activity they chose to experience, (ii) the amount of money spent on it, and (iii) when the experience took place (as the timing pinpoints whether it took place early in the stay or toward the end). For the purpose of the study, "touristic activity" was given a broad definition, from visiting a famous attraction or landmark to eating out, spending time meandering a historic quarter, or traveling by taxi from one area of the city to another. Not all activities, therefore, required the tourist to use their monetary budget. The data were automatically recorded in real time using the tourist's GPS location. Given the hierarchically-*nested data structure (a sample of activities nested within a sample of tourists), a multilevel regression was used to explain satisfaction.*

Since monetary and time budgets are both finite, it is necessary to determine how they contribute to tourist satisfaction. For example, it is important for stakeholders such as destination managers or tourism business owners to know which of the two budget types is the more influential in terms of maximizing satisfaction. The analysis of both budget types contributes to explaining some of the characteristics of cultural tourism, such as high spend and short stay in a single destination. Finally, perhaps due to the difficulty of sample collection, previous studies have collected only *overall* satisfaction data, in airports or hotels, for instance (Chen et al., 2013), whereas the present research offers a new approach by capturing tourist satisfaction in real time and for each activity using a mobile phone app specifically designed for this purpose. This approach provides much more detailed information with which to guide activity/service management as opposed to overall destination management.

2. Literature review

Transaction-specific satisfaction and overall satisfaction are defined as two different constructs (Jones & Suh, 2000). The former is derived from the evaluation of a single experience (Bitner & Hubbert, 1994), while the latter is the cumulative measurement of the tourist's successive experiences during a vacation (Pizam, Neumann, & Reichel, 1978), both being positively correlated (Parasuraman, Zeithaml, & Berry, 1985). However, overall satisfaction is a complex issue to evaluate meaningfully, not only because there are multiple influential factors but also because these are not linked to one single unified service (Truong & Foster, 2006). In the context of tourism, some activities generate lasting satisfaction while others generate only short-term satisfaction, and activities that are highly promising as a source of great satisfaction for the tourist may prove to be disappointing, for example if poor weather hinders their enjoyment (Botti et al., 2008). Furthermore, in the case of cultural travel, where it is usual to visit multiple sites, the factors that contribute to satisfaction-formation also contribute to site-specific variation (Noe & Uysal, 1997). Therefore, in this study, satisfaction with a single activity or tourism service is adopted, based on the concept of transaction-specific satisfaction as "the consumer's [tourist's] dis/satisfaction with a discrete service encounter" (Jones & Suh, 2000, p. 148).

Swarbrooke and Horner (2007) frame tourist satisfaction-formation in three phases, which they term: (1) the "tourism product" (including tangible elements and intangible service elements), (2) the "satisfaction factor" (tourist perceptions, attitudes, and expectations, plus uncontrollable factors); and (3) the "outcome" (total or partial satisfaction, or dissatisfaction). More broadly, the literature has endeavored to understand and capture this process, with researchers primarily using four theoretical models for tourist satisfaction evaluation (Kozak, 2001) (Chen et al., 2013).

The four models are: the NORM theory, in which identifying the tourist's reference points is crucial, as these determine the norms for judging service quality (LaTour & Peat, 1979); the importance–performance model, based on the actual experience at the destination (Churchill Jr & Surprenant, 1982); the expectation–performance model, in which tourists' expectations are measured first, followed by their perception of the service delivered, referring to the gap between the two (Parasuraman et al., 1985); and the outcome–input model, in which tourist satisfaction is determined by the comparison between what the tourist has received (outcome) and the money and time spent on the experience (input) (Oliver & Swan, 1989).

The present research follows the outcome–input model, as it assumes that tourists must manage two budgets during any visit: monetary budget and time budget. These authors found that tourist spend relating to these budgets modified tourist satisfaction. The present research is premised on this theory, which remains valid in explaining tourist satisfaction (e.g. Martin, Saayman, & du Plessis, 2019Meng & Han, 2018).

2.1. The effect of tourist consumption of monetary and time budgets on transaction-specific satisfaction

While a tourist's monetary budget is concerned with the amount of money they plan to spend during a trip, there is often a gap between what they anticipated spending and what they really spend (March & Woodside, 2005). Both must be taken into account in seeking to understand tourist satisfaction.

Prior to making a purchase, consumers hold attribute norms or form attribute performance expectations. As the product is used or the service delivered, the consumer then compares performance perceptions to these prior comparison standards. If the performance is higher than these standards, a positive disconfirmation arises, this being a direct function of the degree of incremental satisfaction (Oliver & Swan, 1989). There is also a considerable degree of scholarly support for the expectation-performance model (Parasuraman et al., 1985) and it is well-established that price is one way for customers to determine product quality and perceived service quality (Konuk, 2019). According to Grewal (1995), there is a positive relationship between product price and consumer expectations of product quality. Expectations have a direct and positive effect on satisfaction because "without observing the performance, expectations may have already predisposed the consumer to respond to the product in a certain way (the higher the expectations, the higher the satisfaction or vice versa)" (Oliver, 1997, p. 89). Similarly, the confirmation of high expectations leads to greater satisfaction than the confirmation of low expectations (Swan & Trawick, 1980). In sum, tourist satisfaction with a tourism activity derives from the confirmation of their expectations, and it is higher when they consider the price paid for the activity to be fair (Hutchinson, Lai, & Wang, 2009Konuk, 2019). On this basis, the following hypothesis is proposed:

H1. : There is a positive relationship between the money spent on a touristic activity and the tourist's satisfaction with that activity

The second budget type managed by tourists is that relating to time. The time budget can be understood as "the length of stay [the tourist] can afford, given their budget and time constraints" (Matias, Nijkamp, & Neto, 2007, p183), separating the travel time to/from the destination from the length of the stay there (Hanemann, 1984).

Mazursky (1989) proposes that satisfaction with an experience is not only shaped by expectations but also by similarities between present and past experiences. That is, prior experiences (especially from the recent past) may stimulate affective responses that influence the consumer's satisfaction with a future event (Han, Guan, & Duan, 2014Shankar, Smith, & Rangaswamy, 2003), meaning that these experiences influence

the tourist's personal assessment standard for present activities (Warshaw, 1980Westbrook & Oliver, 1991). Hence, this standard—when applied to the current stay—will be mainly based on the tourist's cumulative experience during that stay. Therefore, as the tourist progressively acquires experience of the different activities on offer at a given destination, the assessment standard they apply is likely to become increasingly realistic (Homberg, Koschate, & Hoyer, 2005Mainolfi & Marino, 2020).

As satisfaction increases as a consequence of past positive experiences, the probability that the consumer will make a further (different) purchase also increases (Hill & Gardner, 1987), as does the probability that such further purchases will also be satisfying to the tourist (Chen & Chen, 2010). This phenomenon is largely due to the association with feelings of excitement derived from previous satisfaction and the predisposition to seek out further pleasurable activities in a positive frame of mind that this generates (Kim & Mattila, 2010). It follows, then, that length of stay is also positively associated with tourist satisfaction (Sanz-Blas et al., 2019), because—on the premise that the experiences the tourist accumulates over time are incrementally satisfying—those activities enjoyed toward the end of the stay will generate more satisfaction than those experienced at the beginning. The following hypothesis is therefore proposed:

H2. : There is a positive relationship between the timing of the touristic activity (early in the stay vs. toward the end) and the tourist's satisfaction with that activity.

The standard normative comparison that the tourist makes in their assessment of satisfaction (Leiper, 1990) differs between first-time and repeat-visitors (Albaity & Melhem, 2017Toyama & Yamada, 2012). First-timers are more motivated and more open to being excited than repeat-visitors vis-à-vis the destination's primary elements (Yuan, Deng, Pierskalla, & King, 2018). For this reason, the question of whether the tourist was new to the destination was included as a control variable in the present study.

2.2. Tourism activity as a moderator in the relationship between budget and satisfaction

Regarding the different experiences in a destination, drawing on the distinction developed by Botti et al. (2008), we classified these into two types, "*Escape*" activities (*E-Activities*) and "*Discovery*" activities (*D-Activities*). The former are generally related to the primary elements of the destination, which, according to Istoc (2012), are linked to cultural activities in an urban cultural destination. They constitute the main incentives for tourists to visit as they are unique to the destination in question (and, in almost all cases, unique in the world—such as Spain's Alhambra, Egypt's Giza, Peru's Machu Picchu, or intangible heritage, such as flamenco performances in the case of Spain). This uniqueness renders it difficult for visitors to generate a comparative assessment standard (Peypoch & Solonandrasana, 2007). Furthermore, tourists usually plan their visit to those activities in advance of their stay (Imler, 2011). In terms of satisfaction, *E-Activities* are satisfying in their own right—that is, they do not need to be accumulated over time in order to satisfy the tourist. On this basis, it is expected that the timing of these activities (early in the stay or toward the end) will not affect tourist satisfaction. On this premise, the following hypothesis is proposed:

H3. : Satisfaction with *E-Activities* is not dependent on the timing of the experience relative to stay duration.

Meanwhile, *D-Activities* are associated with secondary elements (such as hotels, restaurants, shops, transport services, and so on). These generate short-term satisfaction, and the tourist can often find multiple comparable alternatives at the destination (Istoc, 2012Versichele et al., 2014). Again, in light of Caccomo and Solonandrasana (2002), a destination can offer a wide range of *D-Activities*. This is what Botti et al. (2008) term "Clustered *D-Activities*", which act together to prolong tourist satisfaction. It is expected that this accumulation of *D-Activities* successively improves the tourist's assessment of satisfaction with such activities as their stay progresses. It is therefore hypothesized that:

H4. : Tourist satisfaction with *D-Activities* increases, the later in the stay they are experienced.

According to Botti et al. (2008), tourist satisfaction with E-Activities and D-Activities depends on tourist motivation regarding destination choice. In the case of a cultural destination, several tourist motivations can be distinguished, from an explicitly culturally-driven motivation to a passing interest in certain cultural attractions (Barac, 2012). Many studies have hypothesized a direct and positive relationship between motivation and satisfaction (Mainolfi & Marino, 2020). As tourists who are primarily motivated by culture have a greater appreciation of cultural activities (Devesa, Laguna, & Palacios, 2010;Prayag, Suntikul, & Agyeiwaah, 2018), cultural motivation was included as a control variable in the present study.

Finally, the literature has identified no differences in price as a performance indicator of satisfaction among *E-Activities* vs. *D-Activities* (Kim, Kim, & Goh, 2011Lu, Chi, & Liu, 2015), noting that a high perceived value (as a consequence of high prices) in both cases has a direct and positive effect on tourist satisfaction (Cronin Jr, Brady, & Hult, 2000). Thus, activity type is not expected to exert a moderating effect on the relationship between spending and satisfaction.

3. Methodology

This research was conducted in Granada, a city located in Andalusia (southern Spain). Granada attracted more than 3 million tourists in 2018[1] and it is known as an eminently cultural destination. The Alhambra—the only UNESCO World Heritage site in the city—is its main attraction, which receives 2.6 million visitors per year.[2] These figures are broadly comparable to those of other popular European destinations, as shown in Table 1. Tourist behavior is also fairly similar across the destinations analyzed in the table—a daily spend of €63–€100, depending on the country, and an average stay duration of 1.2–3 nights. Granada presents a daily tourist spend of €70.40 and tourists spend 2 nights, on average, at the destination.

3.1. Sample and data-collection

Potential respondents were stopped by the researchers at the main

Table 1
Comparison of tourism data for popular European destinations.

City	Inhabitants	Total tourists per year (inbound + domestic)	Average daily tourist spend	Average overnight stays
Granada (Spain)	240,000	3 million	€70.40	2.1
Venice (Italy)	260,000	4.77 million	€100€	2.2
Bruges (Belgium)	120,000	2 million	€63	1.8
Brighton (UK)	230,000	1.5 million	€82	3
Bordeaux (France)	250,000	5.8 million	€100	1.2

Source: The authors.

[1] www.juntadeandalucia.es/turismoydeporte/publicaciones/estadisticas/perfil_prof_granada_mar19.pdf.

[2] https://www.alhambra-patronato.es/patronato/portal-de-transparencia/estudios-visitantes.

cultural attractions of the city (Alhambra and cathedral) and invited to take part in the study (see Appendix A). The fieldwork was conducted over the course of one year. Those who accepted the invitation were asked to download an app onto their mobile phones and answer a survey concerning their sociodemographic attributes, any previous visits to the destination, main motivation for the trip, planned duration of the stay, and planned spend.

The app operated continually in the background and registered the location of the individual using GPS technology until the end of their stay. Whenever the tourist spent more than 30 min at a particular location, the app identified the precise area, using a clustering algorithm (Medina Quero, Ruiz Lozano, Castaneda Garcia, Rodriguez Molina, & Frías Jamilena, 2017). At that point, the app displayed a real-time notification and asked the participant about their satisfaction with their experience. For experiences lasting less than 30 min, tourists could voluntarily input the satisfaction rating themselves. The data-collection procedure is summarized in Fig. 1.

For each activity reported, the participant was asked to rank their satisfaction level on a 6-star scale (with 5 representing maximum satisfaction and 0 the minimum) and input the amount of money spent on it. The time of the activity was recorded automatically by the app using the aforementioned clustering algorithm. The participant had to select the activity type (restaurants, shopping, traditional-craft shopping, or cultural activities) and the amount of money spent on the activity, among other variables. If the tourist opted to report their level of satisfaction with an activity of their own accord (that is, not as a result of the automatic notification), the app was programed to link the time at which these activities were carried out with the location, based on the GPS location database.

Over the course of the year, the sample recorded a total of 957 activities, 24.69% of which were deemed *E-Activities* and 75.31% *D-Activities*, with a mean satisfaction rating of 3.95 (SD = 1.05). Table 2 shows, for both activity types, the mean for satisfaction, monetary budget, and anticipated length of stay (time budget).

The particular structure of the data, whereby experiences are nested with tourists, involves at least two hierarchical levels: tourist and satisfaction. A Multilevel Modeling (MLM) approach was selected for the analysis of this nested structure (Hox, Moerbeek, & Van de Schoot, 2010) because single-level analysis does not distinguish between shared variance within a participant and the variance between observations. In these cases, the classical regression approach can be misleading when dealing with hierarchically-structured data (Julian, 2001). To confirm whether there was a significant participant influence on observations (and hence multilevel analysis was needed), Intra-class Correlation Coefficients (ICC) were analyzed. A value of ICC > 0.1 is required to justify the need for multilevel regression versus classical regression (Hox et al., 2010). The ICC in the present study was 0.12, indicating that 12% of the satisfaction's variance is explained by the participant characteristics and 88% by the activity's characteristics.

According to Maas and Hox (2005), in MLM, the appropriate sample size depends on the number of observations per participant. In our study, the lowest number of reported activities per participant was 5, and the mean was 9.48 (SD = 2.67); hence, according to the recommendation of these authors, at least 100 participants should take part, and this criterion was fulfilled.

Table 2
Descriptive statistics.

	Mean	SD
Satisfaction [0–5]	3.95	1.05
Monetary budget	€212.37	107.9
Time budget (days)	2.69	1.03
Activity type	24.69% *E-Activities*	–
	75.31% *D-Activities*	

3.2. Measurement scales

Turning to the measurement of the variables, the dependent variable was satisfaction with an activity. It was measured on a star-rating scale ranging from 0 stars (complete dissatisfaction) to 5 stars (complete satisfaction), similar to other studies such as that of Bigné, Andreu, and Gnoth (2005). This is a common ranking format that tourists find in many ranking apps. The suitability of a single-item measure has been supported by the literature (Selnes, 1998Shankar et al., 2003Van Riel, Liljander, & Jurriens, 2001Yoon, 2002). The online star rating and smiley-face scale were based on the work of Westbrook and Oliver (1991), who developed and tested different single-item satisfaction measures.

Monetary-budget consumption was expressed as the ratio between real spend on a given activity and total monetary budget for the stay declared by the tourist (Brida & Tokarchuk, 2017March & Woodside, 2005). Time-budget consumption was measured based on the time differential between the point at which the tourist carried out a given activity and the first activity they recorded during their stay (Vassiliadis, Priporas, & Andronikidis, 2013) divided by their total time budget (number of days they expected to stay). This was then expressed as a ratio (for example, an activity experienced on day 3 of a 5-day stay would be shown as 3/5).

Regarding control variables, trip motivation was measured using a constant sum scale. The use of this scale avoids the risk of all types of attractions and services being rated important by tourists. The participants were asked to distribute 10 points between *E-Activities* (that is, interest in heritage and cultural attractions or activities) and *D-Activities* (that is, restaurants, shopping, or facilities such as transportation or hotels). The final score was obtained from the importance of *E-Activities* minus the importance of *D-Activities* (Botti et al., 2008). The final score ranged from +10 (exclusively motivated by *E-Activities*) to −10 (exclusively motivated by *D-Activities*). Finally, "previous visits to the destination" was a dummy variable (first-timers = 0, repeat-visitors = 1) (Albaity & Melhem, 2017Yuan et al., 2018).

4. Results

To test the role of both monetary- and time-budget spend in tourist satisfaction, first, the overall model was tested; then, it was tested with *E-Activities* only as a moderator; and, finally, with *D-Activities* only. Using the MLM method, models with random intercepts (different start-point of satisfaction for each tourist) can be estimated, as can models that also include random slopes (different elasticity of the satisfaction–budget relationship) (Hox et al., 2010). Including the control variables in both models, the specific models tested for explaining

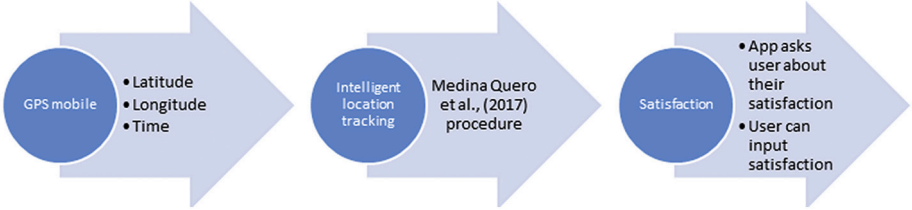

Fig. 1. Data-collection procedure.

satisfaction with each cultural tourism activity were as follows (Eq. (1) and Eq. (2)):

$$sat_{ij} = \gamma_{00} + u_{0j} + \gamma_{10} spend_{ij} + \gamma_{20} time_{ij} + \gamma_{01} mot_j + \gamma_{02} novel_j + \varepsilon_{ij} sat_{ij}$$
$$= \gamma_{00} + u_{0j} + \gamma_{10} spend_{ij} + \gamma_{20} time_{ij} + \gamma_{01} mot_j + \gamma_{02} novel_j + \varepsilon_{ij} \quad (1)$$

where *i* is the activity, *j* the tourist, γ_{00} the fixed part of tγhe intercept, u_{0j} the random intercept between tourists, *spend* the monetary-budget consumption, *time* the time-budget consumption, *mot* the trip motivation, and *novel* first-time vs. repeat visitor to the destination.

$$sat_{ij} = \gamma_{00} + u_{0j} + \gamma_{10} spend_{ij} + u_{1j} spending + \gamma_{20} time_{ij} + u_{2j} time + \gamma_{01} mot_j + \gamma_{02} novel_j + \varepsilon_{ij} \quad (2)$$

where γ_{10} is the fixed part of the slope and u_{1j} the random variation between tourists.

4.1. Overall model

The models were estimated using Restricted Maximum Likelihood. This was the preferred method as it enables non-biased parameters to be attained, even with small samples (Kenward & Roger, 1997). Prior to estimating the overall model, the absence of heteroscedasticity and multicollinearity was verified using the Breusch-Pagan test (*p*-value = 0.18) and the Variance Inflation Factors (VIF) (< 5).

Thus, Eq. 1 was estimated on the basis of the total sample of activities to test the effect of the consumption of monetary and time budgets on tourist satisfaction-formation, including trip motivations and previous visits to the destination. According to the results (see Table 3), there is a significant and positive relationship between the amount of money spent on an activity and the tourist's level of satisfaction with that activity (p-value = 0.01). This result supports H1. As discussed in the literature review, the confirmation of high expectations leads to high satisfaction. A significant and positive coefficient was also estimated for time-budget consumption (p-value = 0.03), confirming H2. Higher satisfaction is expected from activities undertaken toward the end of the stay, because the previous activities enjoyed during the stay enable the tourist to set their expectations of forthcoming ones. Hence, it is more likely that these expectations will be met and the tourist will be satisfied with them.

With regard to the control variables, only the motivation coefficient was found to be significant. Previous visits were included in the analysis to discount the possibility that this experience might be key in setting the tourist's assessment standard for attractions and activities at the destination (Warshaw, 1980Westbrook & Oliver, 1991). This result may reflect the fact that tourists tend not to repeat a visit to a cultural destination in a short timeframe, unlike in the case of other types of tourism (such as sun-and-sand). This renders their past experience less valuable as a comparison standard, due to the effect of memory and evolution of the destination.

Next, random slopes for the consumption of monetary and time budgets were included. The inclusion of a random slope for time budget did not improve the overall fit of the model (deviance difference = 1.574; p-value = 0.21). The more parsimonious model was therefore retained. When a random slope was formulated for time-budget, the Hessian matrix did not converge, so it was advisable to stop and finish the estimation process (Hox et al., 2010), thereby retaining the overall model shown in Table 3.

Table 3
Overall model.

Variable	Estimation (Standard deviation)	t-value (*p*-value)
Intercept	3.62 (0.11)	31.81 (0.00)
Monetary-budget consumption	0.79 (0.33)	2.37 (0.01)
Time-budget consumption	0.28 (0.13)	2.17 (0.03)
Trip motivation	0.03 (0.01)	2.41 (0.01)
First time (0 = Yes)	0.09 (0.11)	0.85 (0.39)

Note: -2LL = 2770.47; AIC = 2774.47; BIC = 2784.19.

4.2. The E-Activities model

Regarding the *E-Activities* model, similar results to those of the overall model were obtained in the case of monetary-budget consumption, with a positive and significant effect on satisfaction with the activity. Given that *E-Activities* are cultural attractions and cultural events in a cultural destination (Istoc, 2012), the greater the price paid for those activities, the greater the tourist satisfaction with them.

The coefficient for time-budget consumption was found not to be significant. With regard to time, the non-significance could be associated with the planning of these activities prior to the visit (Imler, 2011). That is, satisfaction may be generated by the visit itself, not by *when* the activity was carried out (that is, closer to the beginning or the end of the stay). Specifically, in the case of *E-Activities*, Granada has just one monumental complex that is a UNESCO World Heritage site (Alhambra-Generalife-Albaicín). With the inclusion of a binary variable (visit made to this complex or not), a significant and positive coefficient was observed (coefficient = 0.36; *p*-value = 0.02), confirming that the mere fact of having visited increases tourist satisfaction, regardless of when it occurs. This result confirms the independence of satisfaction with *E-Activities* from the timing of the visit to them (relative to the stay duration), as proposed in H3.

Since the estimates of the regression coefficients are unbiased, even if the sample is small, bootstrapping may be useful for assessing the sampling variability (Hox, 2002), provided we are interested only in the regression coefficients (Maas & Hox, 2005). In the present study, bootstrapping was used (1000 samples) to confirm the results of the MLM estimation (see Tables 4 and 5). No differences were found in the significance of the coefficients.

4.3. The D-Activities model

The *D-Activities* model produced a similar pattern to that of the overall model for the two budget types. Thus, monetary consumption increases the tourist's satisfaction with the purchase (as in the case of *E-Activities*), but, in this case, the more time tourists spend at the destination, the more they are predisposed to be satisfied with the next *D-Activity* they experience. H4 therefore cannot be rejected, and satisfaction with these activities will be higher toward the end of the visit. The accumulation of *D-Activities* (Caccomo & Solonandrasana, 2002) can lead the tourist to experience a sense of excitement that positively affects their assessment of forthcoming activities (Botti et al., 2008).

5. Discussion of results

This study aims to analyze how the consumption of the main two budgets that a cultural tourist must manage in a destination (money vs.

Table 4
The *E-Activities* model.

Variable	Estimation (SD)	Bootstrap estimation (SD)	t-value (p-value)	Bootstrap p-value
Intercept	3.84 (0.22)	3.84 (0.18)	17.46 (0.00)	0.00
Monetary-budget consumption	1.76 (0.76)	1.76 (0.88)	2.31 (0.02)	0.03
Time-budget consumption	0.02 (0.22)	0.02 (0.24)	0.10 (0.91)	0.92
Trip motivation	0.06 (0.02)	0.06 (0.02)	2.45 (0.02)	0.00
First time (0 = Yes)	0.12 (0.19)	0.12 (0.31)	0.61 (0.54)	0.31

Table 5
The *D-Activities* model.

Variable	Estimation (Standard deviation)	t-value (p-value)
Time-budget consumption	0.58 (0.17)	3.44 (0.00)
Monetary-budget consumption	1.21 (0.40)	2.96 (0.00)
Trip motivation	0.02 (0.01)	1.44 (0.15)
Previous visits	0.06 (0.65)	0.45 (0.65)

time) affects their satisfaction with each touristic activity they experience. An MLM was conducted for an overall sample of activities and also differentiating between *E*-Activities and D-Activities.

First, the overall model was estimated including the consumption of both budgets, with trip motivation and previous visits to the destination as control variables. Regarding monetary-budget consumption, the more money tourists spend on an activity, the more satisfied with it they tend to be. Tourists regard the price of the activities in the destination as a quality indicator (Grewal, 1995). In other words, a higher price generates higher tourist expectations about product or service performance. In the present case, the price of an entrance ticket to the Alhambra would be an example of a quality indicator for an *E-Activity*, while the price of a set menu in a restaurant would exemplify quality indicators for *D-Activities*. In short, high prices are associated with high consumer expectations (Konuk, 2019), and the confirmation of high-quality expectations exerts a greater influence on satisfaction than the confirmation of low expectations (Swan & Trawick, 1980). Tourists do not mind paying for an activity if it is one of quality (Konuk, 2019), and it will bring them higher levels of satisfaction if it meets their high expectations.

Regarding time-budget spend, the literature suggests that a standard of comparison may arise in the tourist during the course of their stay at a destination (Westbrook & Oliver, 1991). The expectations they have toward the end of the stay will be closer to the true performance they can expect from each activity. Our results suggest that, as time passes, tourists experience a sense of excitement derived from past satisfaction (Kim & Mattila, 2010), which produces higher levels of satisfaction at the end of the stay. To generate this effect, a consistently high-quality supply of services at the destination is required. Significant variability in consistency renders it more difficult for the tourist to set their personal assessment standard. In this sense, tourists have been shown to place greater value on the confirmation of their expectations regarding prices (relating to their monetary-budget consumption) than on the reinforcement of their satisfaction as they spend more time at the destination (their time-budget consumption) (a coefficient of 0.79 versus 0.28).

Concerning *E-Activities*, the present results show that when these activities are consumed during the stay they do not affect tourist satisfaction. On this point, some authors suggest that these activities are mainly planned prior to the stay (Imler, 2011), thus limiting their influence on satisfaction *during* the stay, and they may generate long-term satisfaction (Caccomo & Solonandrasana, 2002). *E-Activities* (such as visiting the Alhambra, the Louvre, or the Statue of Liberty) are also unique, rendering it difficult for tourists to generate a standard of comparison for them (Peypoch & Solonandrasana, 2007). In this sense, it is important to understand that what really matters in tourist satisfaction with *E-Activities* is the experience itself, not the timing of such activities or how many days the tourist spends at a destination (Sanz-Blas et al., 2019).

In the case of *D-Activities,* as the stay progresses, tourists are more predisposed to feeling satisfied with the next activity if previous activities met their expectations of high quality and their personal standards of price fairness (Konuk, 2019). The main difference compared to *E-Activities* is that *D-Activities* provide tourists with short-term satisfaction, but the cumulative consumption of these activities generates long-term satisfaction (Botti et al., 2008). Consequently, only satisfaction with *D-Activities* will depend on the timing of these activities relative to the beginning or the end of the stay. This confirms the results obtained by Botti et al. (2008) and reinforces the theory of "Clustered *D-Activities*" and their influence on tourist satisfaction-formation over the long term. With such activities, monetary-budget consumption has a greater influence than time-budget consumption on tourist satisfaction-formation.

No differences were found between *E-Activities* vs. *D-Activities* and monetary-budget consumption, being significant and positive in both cases. This means that tourists value fair prices and they do not mind paying for a tourism attraction or activity if it is one of quality (Kim et al., 2011Lu et al., 2015).

6. Conclusions

The present study undertook an analysis of tourists' transaction-specific satisfaction-formation considering monetary- and time-budget consumption. Several implications and recommendations for destination management organizations and destination marketing companies can be derived from the results.

Cultural tourism is a desirable typology in spending terms for destinations. Cultural tourists regard their expenditure at the destination as an investment linked to the quality of the activities and services they enjoy during their stay, while greater quality leads to improved satisfaction. In view of the findings, this behavior is not only valid for cultural activities (*E-Activities*) but also extends to all the services the tourist enjoys at the destination (including *D-Activities*). Many *E-Activities* may, in the past, have included free entrance, but tourists are still willing to pay for these attractions if they offer added value or if superior services are delivered thanks to the work of destination managers, their satisfaction increasing if their quality expectations are met. In sum, visits to more costly attractions tend to be more satisfactory if tourists perceived the price to be fair.

Another major issue for cultural destinations is the increase in the volume of excursionists (Guedes & Jiménez, 2015) and the global trend toward shorter stays (Jacobsen, Gössling, Dybedal, & Skogheim, 2018). *E-Activities* (those associated with visits to primary cultural attractions) generate tourist satisfaction regardless of when they are carried out (beginning vs. end of the stay) and regardless of any previous standard of comparison. As discussed previously, these activities are usually planned before the trip occurs and have a unique appeal. Bearing in mind that cultural motivation has a significant effect on tourist satisfaction, tourists who are highly motivated by culture would seek to experience the maximum number of *E-Activities* during their stay. Despite the fact that a cultural destination usually offers a range of cultural attractions, the offer of multiple cultural attractions of *exceptional* quality (such as UNESCO World Heritage sites) in one single destination is limited, which is not conducive to increasing overnight stays. For example, in the case of Andalusia, cultural tourists usually visit Seville, Granada, Córdoba, and Malaga in a single trip to the area. Therefore, building up a longer supply of high-quality complementary services and other tourism attractions (*E/D-Activities*) could increase the overnight stays of cultural tourists, as their satisfaction will grow as they accumulate experience with these *D-Activities*. In this sense, it is important to pay attention to a destination's complementary offer if it is to retain tourists—for example, by providing City Cards that offer a wide and carefully-curated selection of complementary services and attractions.

Finally, responding to the recommendations made by Chen et al. (2013), a new approach to sampling was developed in this study. Tourists were recruited at the beginning of their stays, and their satisfaction with an activity was recorded by them in real time. This methodology provides more detailed and unbiased information on each activity, unlike overall satisfaction with the visit or a retrospective evaluation following various days of consumption.

6.1. Limitations of the present research

One limitation of the study is that, even though the app alerted tourists when they had been in one place for about 30 min, many attractions and activities do not take that long to be experienced. In these cases, tourists had to submit the information about their activities by hand, selecting from the app menu accordingly, and it is possible that some instances were not recorded. Therefore, as tourists were given control over the app, for privacy reasons, it is likely that only a certain proportion of the activity data was submitted. However, more than nine instances of satisfaction with an activity were recorded, on average, per tourist. Participants' opinions of whether they considered each price to be fair were not explicitly taken into account in this analysis, but post-consumption satisfaction included this fairness in the construct. Finally, the limited geographical context of the study must be noted as a limitation. However, tourist behavior in terms of daily spend and time-budget is quite similar across other popular European cities, and the present results could be validated by testing this new methodology in other iconic cultural destinations.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.tmp.2021.100788.

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