Tourism Management Perspectives 29 (2019) 18–30

Contents lists available at ScienceDirect

Tourism Management Perspectives

journal homepage: www.elsevier.com/locate/tmp

Analysis of domestic cultural tourism spend by segment in the city of Granada: An observational data approach

José-Alberto Castañeda, Julio Vena-Oya*, Miguel-Ángel Rodríguez-Molina, Rocío Martínez-Suárez

Faculty of Economics and Business Administration, University of Granada, Campus Universitario de Cartuja. P.A., 18071 Granada, Spain

ARTICLE INFO

Keywords:
Cultural tourism
Tourist expenditure
Tourist segments
Expenditure distribution

ABSTRACT

This paper provides an analysis of expenditure among domestic tourists visiting a cultural destination, based on the case of the City of Granada, Spain. For that purpose, we constructed a sample of 145 domestic tourists who registered their travel expenditure via a mobile application that provided a basis for identifying tourist segments by different determinants.

Using these data, first the study analyzes the determinants of spend according to tourist segment, using a latent class model. Four segments are identified, presenting significant differences in the determinants of the spend reported by the tourist, and different levels of total actual spend at the destination. Second, within the total spend, a distinction is made between a) the proportion spent on attractions and cultural activities and b) all other expenses. In particular, the study analyzes the differences in the number of purchases, the value of each purchase and the geographical distribution of the purchases across the destination. One of the main findings is that, across the four tourist segments identified in the study, there are differences in total actual spend and non-cultural spend. However, within cultural spend, similar behavior is found throughout the different segments.

1. Introduction

According to the United Nations World Tourism Organization (UNWTO) in 1985, cultural tourism comprises “travel for strictly cultural or educational purposes”. However, the International Council on Monuments and Sites asserts that cultural tourism can mean many different things to different people – a trait that can be considered both a strength and a weakness (McKercher & Du Cros, 2003).

It is important to distinguish cultural tourism from other types of leisure, such as sun-and-sand tourism. More specifically, the literature states that the former differs from other types of tourism in terms of: the motives that lead the tourist to travel (Brida, Disegna, & Scuderi, 2013; Park, Reisinger, & Kang, 2008); the complexity of the market and the opportunities afforded by segmentation (Bowitz & Ibenholt, 2009) the diverse interests of each tourist (Kerstetter, Confer, & Graefe, 2001); the specificity of the geographical location (Stebbins, 1996) and the differences in spending patterns (Pérez & Juaneda, 2000).

As regards the relevance of cultural tourism, we should not forget that, as affirmed by Chen, Lee, Chen, and Chen (2013), it plays a major role in heritage conservation for the destinations and, as such, makes a significant economic impact (Rypkema, Cheong, & Mason, 2011). Beyond its qualitative relevance, this is the tourism sector that has reported the greatest growth over the last decade (Pahos, Stamos, & Kicosev, 2010).

However, cultural tourism destinations also face a series of challenges. For many cultural cities, Granada included, overexploitation is beginning to prove problematic. Granada sees an annual 15-fold increase in its population, in overnight hotel stays alone. This overexploitation among destinations is triggering a range of challenging issues, such as overloaded public services, house price increases and higher cost of living. It is also leading to environmental damage, and puts the historical heritage of destinations at risk. Ultimately, these factors all contribute to diminishing the tourist's experience, reducing their satisfaction (McKinsey & Company and WTTC, 2017).Hence, those bodies responsible for designing a destination's policies and strategies need to must ensure an appropriate balance between the benefits that cultural tourism brings and the costs it generates.

A further issue that tourism managers have to address is how to attract tourism that is of a certain quality. Many micro-destinations attract poor-quality tourism, such as in the case of Salou (known for its

* Corresponding author.
E-mail addresses: jalberto@ugr.es (J.-A. Castañeda), juliovena@correo.ugr.es (J. Vena-Oya), rmolina@ugr.es (M.-Á. Rodríguez-Molina), rmsuarez@ugr.es (R. Martínez-Suárez).

https://doi.org/10.1016/j.tmp.2018.10.001
Received 26 December 2017; Received in revised form 23 August 2018; Accepted 6 October 2018

binge-drinking tourism), Barcelona (with its illegal holiday apartments), Venice (displacement of the local population) or Granada itself (which has become a magnet for stag and hen weekends) (McKinsey & Company and WTTC, 2017). Tourism of this nature generates discontent among residents due to its impact on their day-to-day lives (Liang & Hui, 2016). A solution is therefore needed to deal with the issue of overexploitation of many tourist destinations. One highly effective approach to managing tourist demand is to segment the target public (Dolnicar, 2007; Lee & Sparks, 2007), as it enables destination managers to attract the truly profitably segments and to better understand tourists' needs and interests and, by extension, to successfully design new routes and attractions. Approaching the city tourism market from a segmentation perspective is essential if efficient use is to be made of resources, either by relevant public bodies or by the different firms operating in this sector (travel agencies, hotels, restaurants, heritage agencies and so on). According to Fratu (2011), social, personal and institutional factors all contribute to a given destination being perceived in different ways by tourists. It is therefore essential for both private firms and public institutions to segment tourists so as to understand their needs (Niezgoda & Bartosik, 2010).

In view of the relevance of the sector examined in the present study, the research aim is to understand the determinants of the total actual spend of different segments of cultural tourists, and the distribution of that expenditure in a tourist destination, based on the case of Granada (Spain). Such understanding is fundamental for cultural micro-destination managers, as it equips them to develop strategies that can help reduce the impact of some of the negative externalities that cultural tourism generates.

Compared to previous studies, the present research offers some interesting new contributions on tourism spend, focusing on actual spend (not on estimated expenditure or available budget). Furthermore, the analysis of distribution of spend by type (cultural vs. non-cultural), by segment and by geographical location will contribute to strategic planning related to designing the cultural destination offer.

2. Literature review

In general, the image of Granada among its citizens is positive. However, certain factors make a negative impact on that image, such as environmental contamination, service-overload, petty crime or noise pollution Luque-Martínez, Del Barrio-García, Ibanez-Zapata, & Molina, 2007). Many such problems can be traced back to an excessive flow of tourism in the city, Granada presenting the highest tourist saturation index in Spain, with higher levels of overnight tourist stay (per number of days and per inhabitant) than other cities much better equipped to deal with high volumes, such as Madrid or Barcelona. More specifically, overnight hotel stays accounted for over 3 million visitors in 2017, a figure that, when viewed in comparison with a resident population of 200,000, points to overcrowding at peak times. Second, Granada tends to attract lower-quality tourism, considering factors such as length of stay and average spend per visitor. In both cases, the city's statistics are below the average for Andalusia (IEA, 2018). Third, Granada has to deal with the major problem of seasonal variations: average occupancy stands at 50%, which can lead to issues of tourism overload at peak times, excess capacity at others, and reduced quality of the tourist experience.

One effective strategy for adjusting a destination's tourist load is to employ segmentation – that is, to select the segments of most value to the destination. This approach is a fundamental element of effective tourism management in any city. Segmentation facilitates better distribution of tourism, helping to reduce congestion of the main tourist hotspots by promotion other, less well-known, activities that can be just as appealing to visitors (McKinsey & Company and WTTC, 2017). Among the various criteria that can be applied to select particular segments is that of tourist spend at the destination, hence spend and its determinants require analysis. Given that spend is likely to differ across segments of visitors to a destination, it is important to consider the spending behavior of those sectors and its geographical distribution.

2.1. Tourism spend

Tourism spend refers to the total spent by a tourist on consumable goods and services and on valuable objects (for personal use or for gifts), prior to and during their visit to the destination (United Nations, 2010).

Various studies have analyzed this variable, albeit in different ways. For example, Nicolau and Mas (2005) address total predicted spend; Lew and Ng (2012) study total actual spend; and Zhang, Zhang, and Kuwano (2012) examine expenditure but in the context of stay duration (that is, relative spend). In some studies, the analysis is conducted in more depth by looking at spend distribution across different concepts of expenditure (Lee, Sok Jee, Funk, & Jordan, 2015).

One limitation of these studies is that they analyze aggregate spend, and do not take into account that expenditure can differ between the different segments of tourists at a given destination. Nor do they address the geographical distribution of expenditure, which is a highly relevant factor in designing effective destination marketing strategies and policies. In view of this lacuna, there is a need for scholarly research to establish whether there are distinct segments that differ in expenditure, taking its determinants into account.

2.2. Segmentation of cultural tourism according to determinants of the expenditure

Market segments are the result of splitting individuals according to a pre-defined rule, such that the resulting groups bring subjects together who are similar to one another, and, at the same time, who differ from the individuals belonging to other segments. According to Wedel and Kamakura (2000), market segments can be defined using a range of segmentation bases (geographical, socio-demographic, behavioral and psychographic) (Dolnicar, 2007). Cultural tourism, specifically, presents something of a dilemma regarding whether to segment by tourist type (by age, gender or level of education, for instance) or by tourism type (museums, festivals and so on) (Velasco González, 2009). Richards and van der Ark (2013) found that the majority of studies proposing the segmentation of cultural tourism tend to use the 'tourist type' dimension.

Focusing on tourist type, there appears to be a consensus among authors regarding the most suitable variables for segmenting the market in terms of behavior and, therefore, spend. Niezgoda and Bartosik (2010) find that tourist type can be established on the basis of economic, geographical, demographic, psychological and socio-cultural criteria. Dolnicar (2007) reaffirms this view, noting that the variables of psychographic or sociodemographic behavior can be used to segment cultural tourism. Dolnicar also proposes that the segmentation criteria based on tourist characteristics can be separated into four groups: sociodemographic; geographical; behavioral; and psychographic.

Among the different sociodemographic variables, the literature establishes that age (Oh, Cheng, Lehto, & O'Leary, 2004), gender (Roy-Dholakia, 1999), occupation (Pérez & Juaneda, 2000), income (Fleischer & Seiler, 2002) and educational level (Hung, Shang, & Wang, 2012) will all influence tourist spend. However, despite the great many studies using sociodemographic variables as the principal criterion for explaining spend, numerous authors have questioned its usefulness in predicting behaviors (Tkaczynski, Rundle-Thiele, & Beaumont, 2009). Other determinants with the potential to influence expenditure therefore need to be considered.

To design and effectively adapt the offer to particular tourist segments, understanding individuals' motivations, linked to psychographic segmentation, is a prerequisite (Park et al., 2008).Zhu (2002) affirm that patterns of expenditure are related to the motive for the visit. More recent studies, such as those of Wanga and Davidson (2010) and Brida,

Pereyra, Pulina, and Devesa (2013), also find that the 'motive for the visit to the destination' variable affects decisions on how much to spend. Also important to acknowledge in tourists' choice of destination is the relationship between, on the one hand, their key motives for the visit to a cultural destination and, on the other, the secondary elements of the destination itself (Istoc, 2012; Richards & van der Ark, 2013).

As regards behavior, authors such as Zhang et al. (2012) hold that, the longer a tourist stays in a destination, the more likely it is that their expenditure will increase. This notion finds support from other authors, who affirm that, indeed, time and tourist spend are interrelated (Marrocu, Paci, & Zara, 2015).

Another significant variable contributing to explaining spend and differentiating tourist segments is the composition (size and membership) of the group with which the tourist is travelling. That is, the group with which the tourist is travelling affects the individual's spending patterns (Long-Yi & Chen, 2009), the activities they choose to undertake and how they organize them (Goulias & Kim, 2005). The number of people in the group has also been found to exert an effect on overall tourist spend (Marrocu et al., 2015; Nicolau & Más, 2005).

Finally, the number of previous visits to a destination that a tourist has made also has an influence. The literature finds there are differences between the motivations of repeat visitors compared to those of first-timers (Um, Chon, & Ro, 2006). This phenomenon is due to the search for different experiences, such that repeating the stay in a cultural destination can alter spending patterns (Lee et al., 2015). In other words, repeat tourists will be drawn to some of the same attractions as in their previous visits to the destination, while they will choose not to repeat some activities. However, there is no clear consensus in the literature regarding whether the number of previous visits to a destination increases or decreases tourist spend. Some authors claim that it increases spend (Lew & Ng, 2012), and others that it decreases spend – that is, that tourists on repeat visits spend less, and spend less time there, than first-time visitors (Oppermann, 1997).

The literature demonstrates, then, that the main motivation of the tourist, the length of their stay, the number of members in the group they accompany and the number of previous visits they have made to the destination are all major determinants to be taken into account when explaining tourist spend in that destination. In view of these premises, the following research questions are posed, in the context of the destination under analysis:

RQ1: Do the tourists who visit Granada constitute a homogeneous group, or can they be categorized into distinct segments? In the case of the latter scenario, how many segments exist, if the segmentation is based on tourist spend?

RQ2: What are the variables that determine spend in each of the segments identified?

RQ3: Which segments are of most value to the destination under analysis?

2.3. Distribution of expenditure in the cultural destination

Two levels of study can be identified in the analysis of distribution of expenditure in cultural tourism. On the one hand, we find research on the distribution of overall spend among the various tourism services on offer at the destination. In this approach, an informative and readily applicable classification system is required to analyze these services. Gnoth and Zins (2013) and Richards and van der Ark (2013), for instance, base their categorization on those activities or attractions that can be considered cultural (cinema, theatre, heritage, art galleries and monuments, among others). This perspective has the advantage of offering a significant level of detail on the distribution of expenditure, but it also has two major drawbacks. First, it leaves out other tourism activities that are not directly related to culture but that nevertheless account for an important proportion of the overall spend. Second, it can be complicated to apply to a sample of tourists, as it requires a high number of observations to offer extensive enough information on each category of activity. The approach developed by Istoc (2012) is more efficient. This differentiates between primary, secondary and additional elements. Primary elements include attractions, facilities and cultural activities offered by the destination; secondary elements relate to aspects such as accommodation, eating out and shopping; and additional elements cover public transport, ease of access to and from the destination and tourist information. It is this classification of elements for a cultural destination that the present study will use to analyze spend by tourism service type. The study differentiates between cultural spend (primary elements, in Istoc's framework) and non-cultural spend (secondary and additional elements). On this basis, the following research questions are posed:

RQ4: Are there differences between the segments in terms of average tourism expenditure?

RQ5: If such differences are found to exist, are they due to cultural or non-cultural spend?

On the other hand, linked to the distribution of expenditure by activity type is the geographical distribution of expenditure, given that, in the case of the tourism sector, it is important to understand not only what the tourist spends their money on, but also where they undertake the spend – location of the tourism offer being a key factor in tourist destination management (Bertazzon, 1998). It has been found that correct positioning of the different attractions at a destination helps to increase tourist spend, just as in the case of shops (Gee, 1987; Yüksel, 2007), shopping centers (Josiam, Kinley, & Kim, 2005) and accommodation (Shoval, McKercher, Ng, & Birenboim, 2011). In terms of the location of points of interest to tourists, the literature has demonstrated that this affects spending patterns, such that easier access (convenient transport links and opening times, for instance) will help to raise the level of expenditure (Lee et al., 2015). According to Imler (2011), a tourist will endeavor to maximize their satisfaction during the trip; at the destination, they will therefore undertake those activities for which they have mainly made the trip and for which they are thus more prepared to pay. Consequently, in the case of cultural tourism, a destination's cultural attractions will also affect tourist price sensitivity, as visitors' interest in discovering certain specific places will moderate the effect of the price of those places on their decision-making (Nicolau and Mas, 2005).In sum, the location where the expenditure takes place is also an important factor in arriving at an adequate explanation of the pattern of spending in the cultural tourism context. The following research questions are therefore posed:

RQ6: Does the total spend differ, depending on the segment?

RQ7: Does the geographical spread of cultural and non-cultural spend differ between segments?

In summary, Fig. 1 shows the aims of the present research: to explain spend among cultural tourists, on the basis of determinants identified in the literature review for different tourist segments; and to analyze the distribution of this spend according to a) type of expenditure, differentiating between primary (cultural) elements and secondary or additional (non-cultural) elements and b) the geographical distribution of the expenditure at the destination.

3. Methodology

The present study focuses on an eminently cultural destination: the City of Granada in Southern Spain. Granada is the most popular inland tourist destination in the province of Andalusia (Andalusian Institute of Statistics and Cartography, 2016), while Andalusia itself is among the Top 10 most-visited regions in Europe (Eurostat, 2014).

3.1. Sample and data-collection

The target public for the study comprised domestic tourists, who account for two-thirds of cultural tourism in Andalusia (Andalusian Ministry for Tourism and Sport, 2015), of legal age, who were undertaking cultural tourism in the city of Granada. The sample comprised

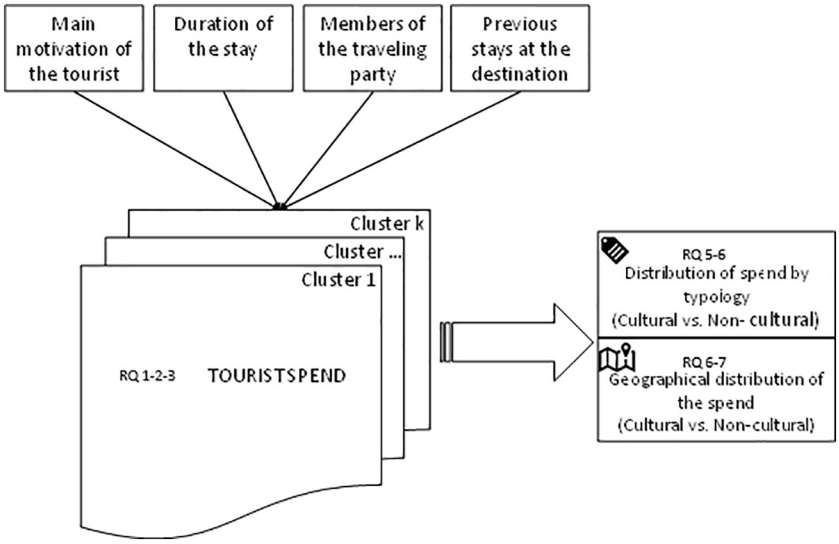

Fig. 1. Research aims.

145 individuals, recruited and interviewed on an ongoing basis throughout the period June 2014–June 2016, to ensure there was no bias arising from seasonal variations in tourism at the destination. The sample was selected via convenience sampling among Spanish domestic tourists who were visiting Granada and who were located at the primary cultural attractions in the city at the time of the survey. As the average length of stay for tourists in Granada is approximately 36 h (INE, 2014), a prerequisite of participation was that sample members should have spent no > 12 h in Granada before starting the survey, to enable at least 24 h'-worth of data to be gathered on their actual spend. As regards the sociodemographic characteristics of the sample, 52.4% were female, and the average age of participants was 30. This sample profile is similar to that obtained in other studies (OTG, 2016).

Once selected to participate, the tourist was asked to fill in a questionnaire about the stay they were commencing (duration, group with which they were travelling and so on), any previous visits to the destination, main motivation for the trip and, finally, sociodemographic details. They were also asked to install an Android-compatible application (app) on their phones. The app would operate in the background and register the location of the individual using GPS technology. Furthermore, whenever they spent 30 min or more in a given area of the city, the app would identify that area, using a clustering algorithm (Medina, Ruiz, Castañeda, Rodríguez, & Frías, 2017). As soon as the tourist moved away from that area, the app would display a notification and ask them a series of questions regarding their recent activity, including the level of satisfaction with the service they had received, if applicable, the people who were accompanying them at the time and the amount they spent on the activity (if anything). In addition, even when the tourist spent < 30 min spending money in an establishment, they would be able to input this spend to the app (that is, with no need to wait for the automatic notification), so long as they indicated the name of the establishment they were purchasing from. By identifying the coordinates of the location, the researchers were able to specify the exact position of the tourist when they made their purchase. The output from this exercise was a profile of their actual expenditure (linked to the coordinates and typology of the establishment), which provided a graphic representation of the distribution of expenditure across a map of the city.

Participation in the survey was incentivized by entry into a prize draw: the winner would have the cost of all the expenses they chose to register via the app reimbursed, on demonstrating proof of purchase. This approach encouraged the sample to send information via the app, and was also a means of checking the veracity of the information submitted. The app used in the study (Granada App) is a bespoke experimental version designed specifically for the present research, which required a database of establishments and locations in each destination under analysis. An outline of the data-collection methodology based on this app is provided in Fig. 2.

One important issue to bear in mind when conducting data analysis is whether the sample size is sufficient to ensure the power of a test (Cohen, 1988). When aiming to explain a dependent variable by means of four predictors, and assuming a medium effect size (0.15), a significance level of 5% and an ideal test power of 0.80, the sample should comprise no fewer than 80 subjects. It can therefore be affirmed that the sample size of the present study is sufficient for the purpose of ensuring that the tests undertaken present adequate statistical power.

3.2. Data analysis methodology

The present study undertook an analysis of tourist spend, using tourist segments, based on variables that explained their total spend: duration of stay, number of times the individual had visited Granada before, number of people travelling with the respondent, and motivation for the trip. Further, the research investigated the explanation of tourist spend according to spend type – primary (cultural) or secondary/additional (non-cultural) – and segment.

To this end, latent class regression and analysis of variance (ANOVA) were used. Latent class regression provided the segments into

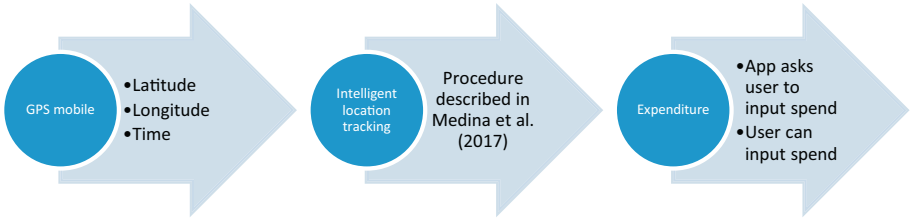

Fig. 2. Procedure followed by the experimental app.

Table 1
Estimated models for latent class regression: indicators.

Model (N° classes)	LL	BIC(LL)	AIC3(LL)	Param. N°	Classification error	R^2	Entropy
A (1)	−1001.02	2031.91	2020.05	6	0	0.14	1
B (2)	−983.4	2031.51	2005.81	13	0.11	0.79	0.58
C (3)	−965.72	2030.99	1991.45	20	0.15	0.86	0.68
D (4)	−947.35	2029.08	1975.71	27	0.21	0.96	0.68
E (5)	−939.51	2048.23	1981.02	34	0.25	0.97	0.67

which the target public would be divided, addressing the relationship between the different predictors and the actual spend registered by the participants. In this type of regression analysis, there is a dependent variable that requires explaining, by means of one or more independent variables. The segments are not known a priori, hence latent class regression is considered an a posteriori segmentation technique. Once the segments in the present study had been identified, a post-hoc analysis was conducted to establish the distinctive characteristics of each. For this purpose, the structure of the spend by activity (cultural vs. non-cultural), was examined, along with the geographical distribution of spend by segment.

3.3. Measurement of the variables

Turning now to the determinants of the tourist's spend, this section explains how these were put into operation. Duration of stay was measured on the basis of the number of days the tourist spent in the City of Granada; 'previous visit' referred to the number of times the individual had visited Granada before; and the number of people indicated the total number of people travelling with the respondent who shared expenditure within a household unit. Finally, the 'motivation for the trip' alluded to the relevance to the individual of the elements they were visiting, based on the framework developed by Istoc (2012).This framework divides the attractions of a cultural destination into primary and secondary/additional elements.

To measure the relative importance of the primary and secondary/additional elements of the destination in the tourist's choice of destination, participants were asked to allocate ten points to the different elements, according to their level of relative personal importance. This variable was covered by a range of −10 to 10, the result being calculated by taking the sum of the scores for the primary/cultural elements (monuments, historic heritage and non-monumental cultural offer) and deducting the scores for the secondary/non-cultural elements (hotel offer, eating out and transport/accessibility). Hence, a final score of 10, for example, indicated that the tourist considered the primary elements to be the only ones of importance, while a score of −10 showed that matters relating to accommodation, eating out or accessibility weighed more heavily on their decision-making. A final score of 0 reflected the fact that the tourist gave the same degree of importance to both the primary and secondary elements of the destination. The use of a constant sum scale, while not without its drawbacks, helps ensure that the respondent does not allocate the maximum importance to all of the elements in their scoring.

The dependent variable in the present study was 'registered actual spend', with the app keeping a tally of all the expenditure declared by each tourist. As the initial questionnaire captured each individual's predicted end-date for their stay, the period for which the expenditure submitted by the tourist needed to be totaled could be identified.

As mentioned earlier, the predictors were: the duration of their stay in Granada; the number of previous visits they had made to the city; the number of members in the party with which they were travelling; and the relative importance of the primary elements related to heritage and cultural activities (motivation) in their decision to select Granada as their destination.

4. Results

Analysis of the sample characteristics showed that the average length of stay for tourists in Granada is approximately 1.5 days (INE, 2014), and that participants could be recruited only during the first 12 h of their stay, the average number of purchases registered by the participants was 10.39; the average spend was €477.72 and standard deviation was €261.74.

The absence of multicollinearity among predictors was checked-for prior to conducting the estimation of latent class regression. The inflation factor of the variance, in all cases, was below 5, indicating that the model presented no issues with regard to multicollinearity.

For the estimation itself, models ranging from 1 to 5 classes were specified. Analysis of the results for the different estimated models showed that the model with four segments presented the best balance between fit and parsimony, vis-à-vis the information criteria BIC(LL) and AIC3(LL) (RQ1) (Table 1). In a complementary analysis, the models were compared by means of the difference between deviances, which showed that the four-class model fitted significantly better than the three-class ($p < .00$), while there were no differences in fit between the four- and five-class models ($p = .25$). Therefore, the four-class model was selected for the study, on the basis of its superior fit (vs. the three-class model) and its greater parsimony (vs. the five-class model) (RQ1). The chosen model explained 96% of the variability of spend, presented a good level of distinction between segments (entropy = 0.68) and offered a reasonably low classification error (0.21) for individuals.

As regards the significance of the predictors of spend, the Wald statistic indicated that the independent variables used in the present study were jointly significant in helping to explain the participants' spending. Similarly, with regard to the Wald(=) statistic, in every case the estimated coefficients differed between the four segments under analysis, suggesting that they helped differentiate the segments identified (Table 2).

Finally, the characteristics of each segment (relative size and average spend) were defined. The different regression coefficients were then analyzed, enabling each segment to be labeled (RQ2) (Table 3).

The first segment can be classified as having 'low spending orientation per household unit'. It is the segment with the second-lowest predicted spend, an average of €398, and is the largest of the four groups, representing 37.3% of the sample. The tourists in this class raise their level of spending as their interest in the primary (cultural) elements of the destination increases. Specifically, an increase of one point in their level of interest will trigger an increase of €7.63 in their total spend. It can also be observed that, in this group, the number of previous visits to the destination has a negative impact on expenditure; those who had made a previous visit to Granada spent €65.76 less in

Table 2
Significance of the predictors in the four-class model.

Predictors	WALD	*P*-value	WALD (=)	P-value
DURATION_STAY	142.03	< 0.01	53.27	< 0.01
N°_PREV_VISITS	47.35	< 0.01	43.36	< 0.01
N° PEOPLE	68	< 0.01	40.25	< 0.01
MOTIVATION	160.56	< 0.01	138.61	< 0.01

Table 3
Characterization of segments in the four-class model.

	CLASS 1		CLASS 2		CLASS 3		CLASS 4	
SIZE	37%		24%		21%		17%	
AVERAGE SPEND	€398.70		€255.50		€530.93		€894.69	
PREDICTORS	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
DURATION_STAY	**61.89**	**< 0.01**	7.41	0.68	**48.17**	**< 0.01**	**204.43**	**< 0.01**
N°_PREV_VISITS	**−65.76**	**< 0.01**	15.70	0.19	−20.53	0.20	**34.34**	**< 0.01**
N° PEOPLE	−24.48	0.06	**73.57**	**< 0.01**	**82.04**	**< 0.01**	**27.04**	**0.02**
MOTIVATION	**7.63**	**0.01**	−2.32	0.64	**−59.12**	**< 0.01**	**16.82**	**0.04**

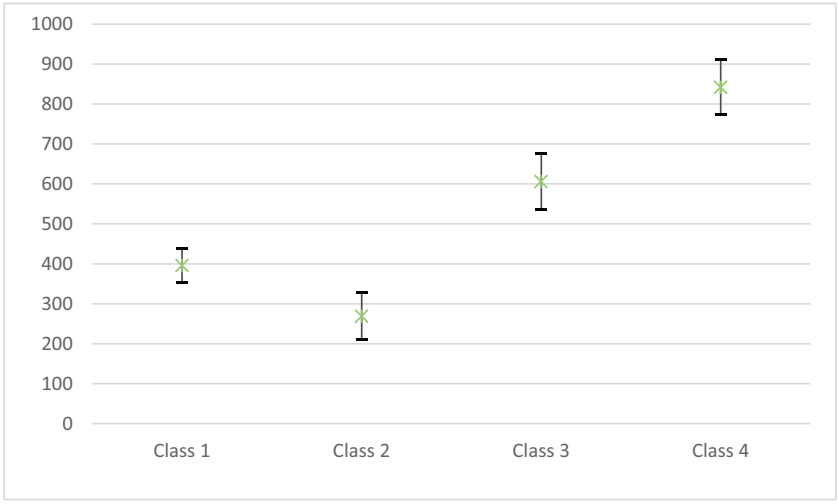

Fig. 3. Estimated marginal averages and bootstrap confidence intervals for total spend, in Euros, by segment.

total during their stay. The final variable affecting this first segment was duration of stay. For each day spent visiting the city, the daily spend increased by €61.89.

In the second segment, 'low spending orientation per person' can be observed. It is the segment that markedly spends the least (€255.50), and it accounts for 24% of the sample. Here, it is only the number of people in the travelling party that affects the actual spend registered; group spend increases by €73.57 for each additional person in the group.

The third segment can be labeled as having a 'high non-cultural spending orientation'. This is the segment with the second-highest predicted spend, at around €530, and represents 21.34% of the sample. This group is particularly interested in the secondary elements of the destination: for each unit increase in this variable, there is a corresponding €60 increase in spend. For each additional person in the group, individual total expenditure increases by €82 during the stay; and for each additional day the individual spends in the city, their spending increases by €48.

The fourth segment is classified as having a 'high cultural spending orientation'. This is the smallest segment in the sample (17.35%), but is the highest spender, at almost €900. Their total spend increases by €204 for each additional day spent at the destination; and participants' previous visits to the city also exert a positive effect on expenditure (approximately €34). Further, expenditure increases by €27 for each additional person in the group. Those in this segment are prepared to spend more when their interest in the destination's primary elements increases (€16.82 for each point-increase).

These results highlight the fact that it is the two latter segments that generate the greatest spend in the destination, albeit the factors that determine this expenditure carry different weights, particularly with regard to interest in primary and secondary elements of the destination. Both of these segments constitute high quality tourism, although they are also the smallest. Segment 2 is larger, but its main drawback is that, once individuals have visited the destination, their spend drops considerably in subsequent visits. And segment 2 is also the least appealing for the destination, as the level of spend is determined by the number of people in the travel party. In sum, the appeal of the segments, from the destination's perspective, is found to be (from most to least attractive): segment 4, segment 3, segment 1 and segment 2 (RQ3).

An ANOVA was conducted for the distribution of total spend, in which the segment to which the individual belonged was introduced as a factor, and total expenditure as a dependent variable. Levene's test indicated significant differences in the error variances for the different segments ($F = 6.732$; $p < .01$), hence the confidence intervals were corrected and the standard error of the coefficients estimated. For this purpose, a non-parametric method – bootstrapping – was applied (Davidson & MacKinnon, 2006). Specifically, the wild bootstrap was used, with 2000 samples (Wu, 1986), as it delivers better results than direct resampling of dependent variables in heteroskedastic data analysis (MacKinnon, 2002). This approach applies to all the analyses outlined below where the variance homogeneity assumption was not fulfilled.

The results of the ANOVA show there were significant differences in average spend by tourist segment ($F = 62.19$; $p < .01$; appendix 1). In analyzing the distribution of total expenditure across the segments, it can be seen that there are significant differences between all of the segments (see the bootstrap confidence intervals in Fig. 3). This indicates that each segment behaves differently in terms of the total spend in the destination (RQ4).

Once the significant differences in total actual spend among the different segments had been established, it was useful to understand whether these differences upheld when differentiating between

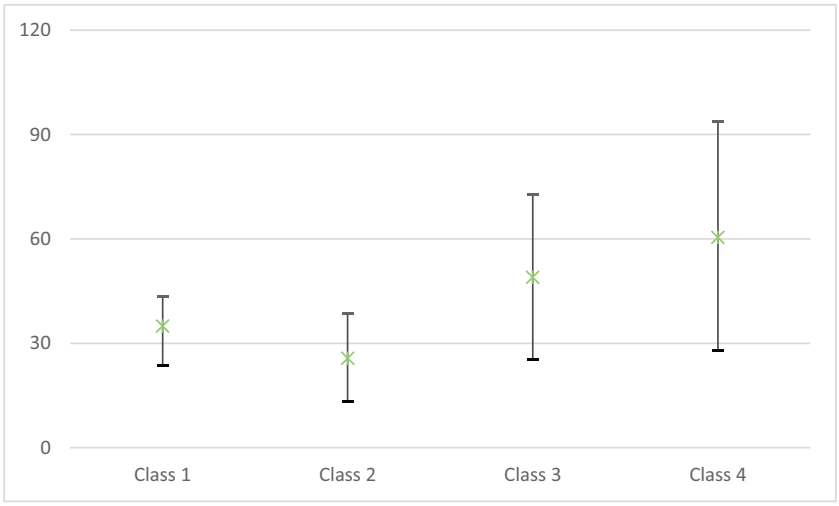

Fig. 4. Estimated marginal averages and bootstrap confidence intervals for cultural spend, by segment.

expenditure on primary elements (cultural attractions and activities) and other expenditure (of the secondary type, such as accommodation, eating out or shopping, or the 'additional' type, such as transport). To this end, an ANOVA was conducted, using spend on primary elements as the dependent variable, and the segments as independent variable. This analysis showed that there were no differences in the level of spend according to segment ($F = 2.17$; $p = .09$; appendix 2). The averages and bootstrap confidence intervals can be seen in Fig. 4, which shows that these intervals overlap. This means that cultural spend is similar across the four segments under analysis (RQ5).

Meanwhile, as the tourist's app enabled them to capture the location of each instance of spending, it was possible to analyze whether there was a relationship between the segment to which they were assigned and the distribution of their expenditure at the destination. Spending location was taken from the latitude and longitude, and these were used as dependent variables in a MANOVA, in which the segment pertaining to the tourist in question was used as the factor. Box's test demonstrated that the covariance matrices were homoscedastic ($F = 1.39$; $p = .18$). The results also showed that cultural spend in the territory presented no differences according to segment (Pillai's trace $= 0.01$; $p = .52$; appendix 3). This reinforces the notion that all tourists visit essentially the same cultural attractions at the destination.

The graphic representation of each sample segment can be seen in Figs. 5a, 5b, 5c and 5d. In all of the segments, expenditure is concentrated around the two main areas where the cultural attractions of the destination are located (marked with a star).

Analysis of expenditure on secondary and additional elements (that is, non-cultural spend) (See Fig. 6.) shows significant differences between the four segments ($F = 67.62$; $p = .01$; appendix 4). Logically, the ascending order in expenditure on these elements matches the order of total spend (that is, Class 2 is the lowest-spending segment, followed by Segments 1 and 3, with Segment 4 being the highest-spending). These results demonstrate that it is the non-cultural spend that accounts for the differences in tourist average spend (RQ5).

With regard to segmental differences in non-cultural spend, the question arises as to whether these differences arise due to the greater number of purchases, the greater amount spent at each stopping-point or the different geographical distribution of the spend.

To address the first possible explanation, an ANOVA was carried out, taking the number of non-cultural purchases as the dependent variable, and the segment to which the individual belonged as a factor. The ANOVA results indicated that there were differences in the number of secondary and additional elements purchased at the destination, according to the segment ($F = 5.90$; $p < .01$; appendix 5). It was found that, indeed, those segments that spent the most (Segments 3 and 4) were those that made the greatest number of purchases, compared to Segments 1 and 2 (Fig. 7).

The differences in non-cultural spend among individuals from different segments may also possibly be explained by a higher spend at each stopping-point. To test this scenario, the value of the spend at each stopping-point was taken as the dependent variable, and the segment to which the individual belonged as a factor. Once again, the results showed differences according to segment ($F = 16.94$; $p < .01$; appendix 6). Segment 4 presented the highest non-cultural spend (Fig. 8), while segments 1 and 2 presented the lowest non-cultural spend. No significant differences were found between segments 3 and 1.

Finally, one further possible explanation for the differences in total spend on non-cultural elements at the destination may be the geographical distribution of the expenditure. To test for differences in the geographical distribution of expenditure on non-cultural elements, a MANOVA was conducted, taking the latitude and longitude of the location of each non-cultural purchase as dependent variables, and segment as the independent variable.

Box's test showed that the covariance matrices were heteroskedastic ($F = 250.37$;$p < .01$), hence Pillai's trace was used, due to its robustness when covariance homogeneity assumptions are violated (Johnson & Field, 1993).

It was identified that there were differences in the territorial distribution of non-cultural spend among different tourist segments (Pillai's trace $= 0.02$; $p = .04$; appendix 7).

Fig. 9 shows the graphic representation using heatmaps, highlighting the areas considered the city Centre in each case. From the heatmaps it can be observed that it is Segments 1 and 2 (that is, those with the lowest non-cultural spend) that most extend their expenditure beyond the city Centre area. The other two segments, those presenting the highest non-cultural spend, focus their spending to a greater extent on the city center, where establishments tend to be more expensive. It can therefore be concluded that the geographical spread of expenditure differs between lower-spending and higher-spending segments. This spread is generated by the non-cultural expenditure (that is, "avoidable" expenditure), because the main cultural attractions are visited by all the segments (RQ7).

In short, the study found differences in the level of tourist spend, depending on the segment. These differences derive from expenditure on the destination's secondary and additional elements – the level of spend on primary elements being fairly homogeneous between segments. The research identifies that the segment most inclined to spend is Segment 4, characterized as having a 'high cultural spending orientation'. The differences in non-cultural spend among tourists classified into different segments are attributable to three elements: a greater

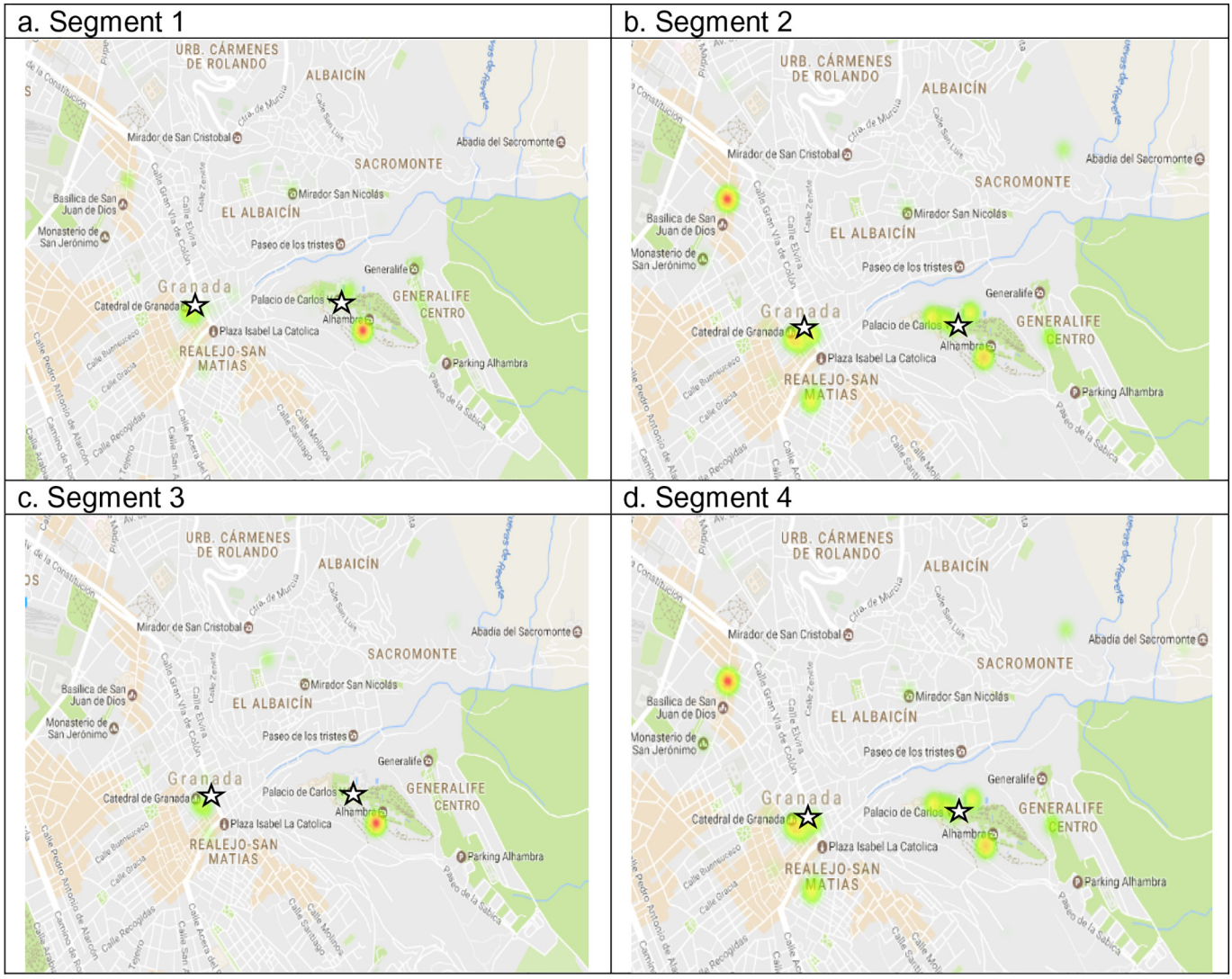

Fig. 5. Heatmaps of the geographical distribution of cultural spend (in color).

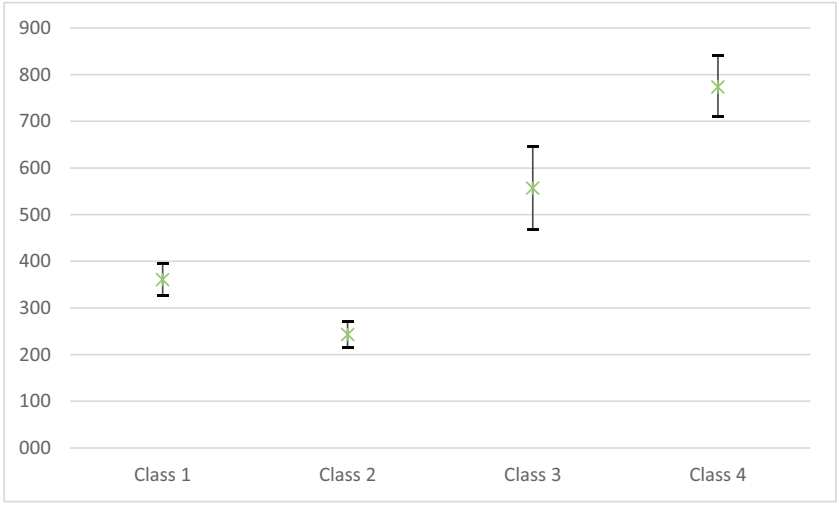

Fig. 6. Estimated marginal averages and bootstrap confidence intervals for spend on secondary and additional elements, by segment.

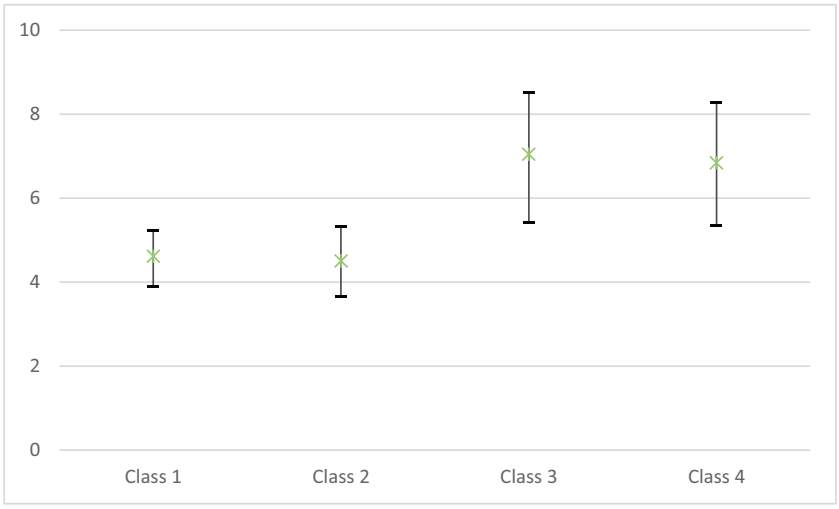

Fig. 7. Estimated marginal averages and bootstrap confidence intervals for number of purchases of secondary and additional elements, by segment.

number of purchases per tourist; a higher value of such purchases; and a concentration of these purchases in the areas of the city where the most expensive establishments are located.

5. Discussion of results

Given the growing issue of overcrowding in certain tourist destinations and the resulting need to identify those tourist segments able to provide the greatest value, destination managers need to respond with appropriate strategies.

The first part of the present study identified – by segmenting tourists visiting a micro-destination and analyzing their actual spend – the most profitable tourist segments, from an expenditure perspective. According to Park et al. (2008), this segmentation stage is fundamental in ensuring that the offer is well-matched with the relevant segments and their motivations, to generate tourism that is both profitable and sustainable. While expenditure analysis has been addressed in previous studies (Lew & Ng, 2012; Marrocu et al., 2015), the present research demonstrates that determinants such as visit motive Baidal, Antoni, Rodríguez Sánchez, & Vera-Rebollo, 2013), length of stay (Zhang et al., 2012), number of previous visits (Um et al., 2006) or number of people in the travel party (Moscardo, 2004) differ in relative importance, depending on the segment. This study therefore contributes to the literature by showing how heterogeneity analysis provides an understanding of the factors that explain level of spend.

Four segments of the cultural tourist sample were identified:

1. Segment 1 (‘low spending orientation per household unit’) presents a low level of total expenditure, which increases, the longer the stay, and slightly increases, the more the tourist is interested in the primary elements of the destination. However, this expenditure declines over successive visits to the same destination – a finding similar to that of Oppermann (1997). This segment shows no differences in its cultural spend relative to the other three segments, but does so in its non-cultural spend, which is lower than that of tourists in Segments 3 and 4. The tourists classified in this segment present a lower level of expenditure on secondary and additional elements at the destination, mainly because they make fewer purchases, and they undertake a significant proportion of their spending outside the most expensive areas of the destination.
2. In Segment 2 (‘low spending orientation per person’), the tourist's total spend is explained exclusively by the number of people in the party with which they are travelling. This spend increases, the greater the size of the group, as previously found by Mok and Iverson (2000) or, more recently, Marrocu et al. (2015). The ‘group’, in the context of this study, refers to those individuals with whom

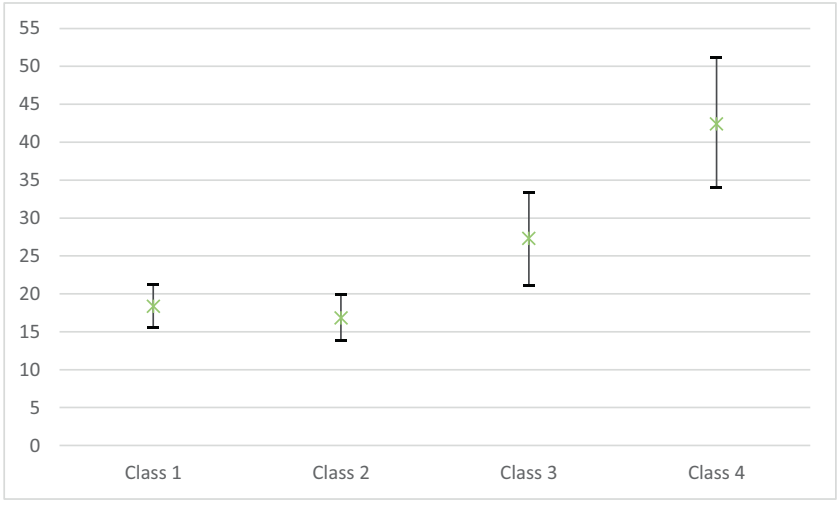

Fig. 8. Estimated marginal averages and bootstrap confidence intervals for the value of the spend on secondary and additional elements per stopping point, by segment.

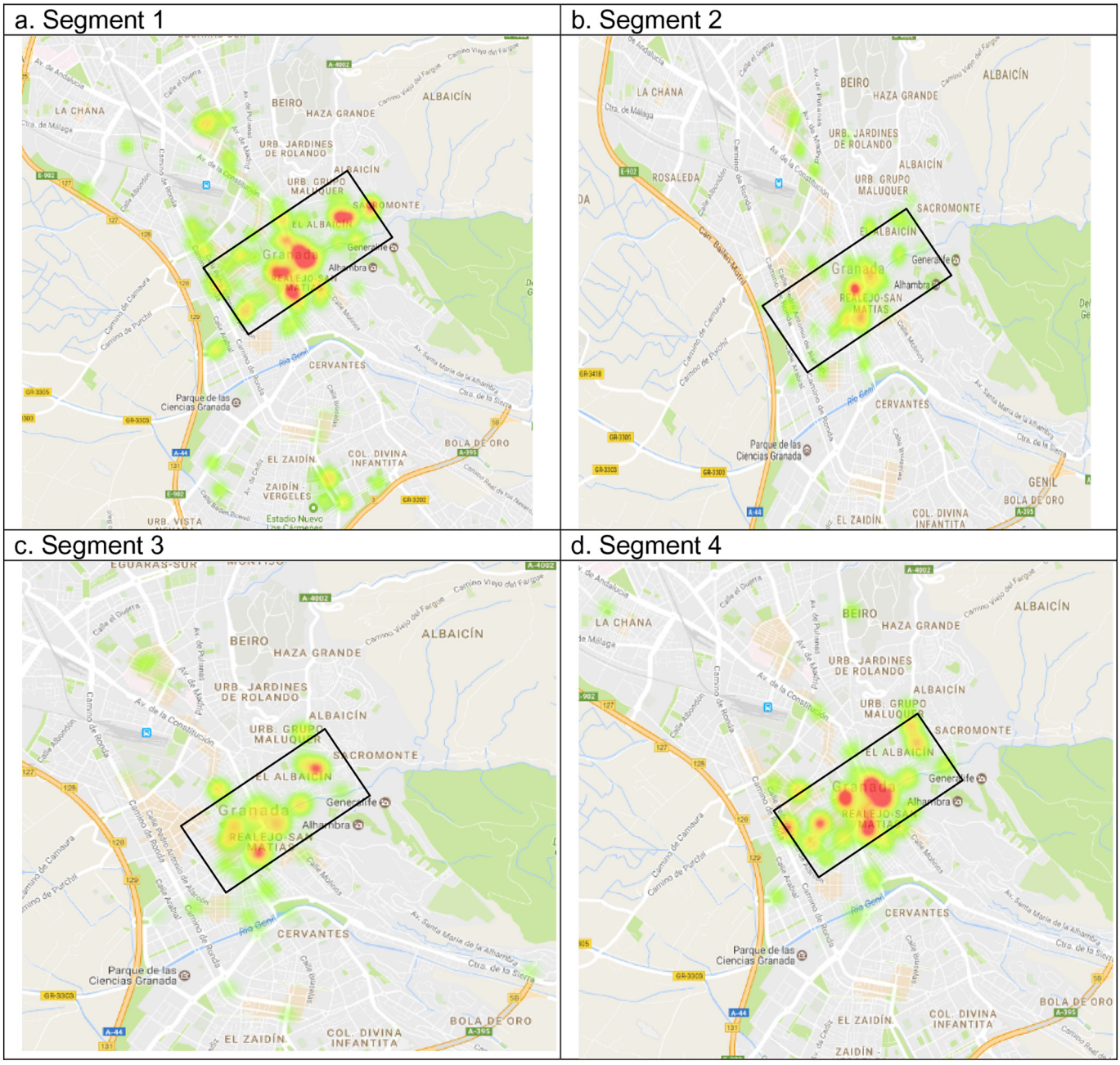

Fig. 9. Heatmaps of the geographical distribution of expenditure on secondary and additional elements, by segment (in color).

the respondent is travelling and who form part of the same household group. This segment resembles Segment 1 in its distribution of non-cultural spend.

3. Segment 3 ('high non-cultural spending orientation') is of great interest to cultural destinations. Tourists in this segment present high total expenditure, and this increases, the longer their stay and the greater the size of the group they are travelling with. The total expenditure increases along with the tourist's interest in the secondary and additional elements. As previously asserted by Zhu (2002) and Wanga and Davidson (2010), the motive for the visit influences spending patterns. Segment 3 accounts for 21% of tourists. As regards its cultural spend, it presents no differences compared to the other segments, but it does register a higher non-cultural spend than Segments 1 and 2, as it makes more non-cultural purchases, these being of higher value and more concentrated in the most expensive areas of the destination.
4. Segment 4 ('high cultural spending orientation') holds the most attraction for cultural destinations in terms of total spend, but is the least significant by volume of tourists (accounting for just 17% of cultural tourists). Visitors in this segment will spend more, the longer their stay lasts (Alegre and Juaneda, 2006; Zhang et al., 2012), the greater the number of people in the group, the more times they have visited the same destination (Lew & Ng, 2012) and the more interested they are in the primary elements there. While their cultural spend is similar to that of the remaining segments, their spend on secondary and additional elements at the destination is higher. In terms of distribution of spend, this presents very similar behavior to that of Segment 3.

Analysis of each segment showed two distinct profiles. The first two segments represent mass tourism – that is, high volumes but low expenditure. By contrast, segments 3 and 4 are smaller, but their

expenditure level is much higher. It can be derived from this that, to address one of the main problems faced by micro-destinations – namely, overexploitation of tourism-related resources – the ideal response is to attract tourists from these latter two segments, to foster high-quality tourism, rather than aiming for a low-cost strategy based on economies of scale.

One noteworthy difference between segments 3 and 4 that is worthy of note relates to visit motivation. In segment 3, tourists focus more closely on the secondary elements of the destination (restaurants, hotels, transport and so on), whereas tourists in segment 4 place more importance on cultural elements, and it is these that explain their level of expenditure. It can be concluded from this that the attractions of a given destination must be suitably well communicated and managed, and that this communication should emphasize different aspects, depending on the segment to which it is targeted. If the aim is to attract these two segments in particular, communication that focuses exclusively on cultural attractions alone will not be sufficient, especially for segment 3.

6. Conclusions

The present study undertook an analysis of tourist spend, using tourist segments, based on variables that explained their total spend. Further, it investigated the explanation of tourist spend according to spend type – primary or secondary/additional – and segment.

Four segments of the cultural tourist sample were identified. In each segment, total spend was explained by different predictive variables, with differences in the estimated coefficients for these. Each segment also presented differences in the averages for total spend and non-cultural spend, with average cultural spend proving markedly homogeneous across the different segments. This suggests that all the tourists in the sample had organized their stay so as to be able to visit the main cultural attractions of the destination. Therefore, the fact that there are different levels of interest in the destination's cultural elements does not reduce the latter's capacity to generate income from the different tourist segments. However, differences between segments are observed in terms of expenditure on secondary elements at the destination. Specifically, spend differs between, on the one hand, segments 1 and 2 (which present the lowest spend on secondary elements) and, on the other hand, segments 3 and 4 (which present the highest spend relating to secondary elements).

In view of these results, those responsible for the management of tourist destinations can adopt one of two strategies. The first is geared toward achieving better-quality tourism and higher spend per tourist, as quality exerts a positive effect on behavioral intention (Zeithaml, Berry, & Parasuraman, 1996) and on the individual's predisposition to pay more (Baker & Crompton, 2000). It is recommended that, under this strategy, cultural tourism destination managers should make efforts to lengthen the average stay and facilitate large group sizes (trips including children or with older family members, for instance). A further important recommendation as part of this strategy relates to how investments in cultural destinations are channeled. Given the finding that the differences between segments in total spend are largely due to expenditure of a non-cultural nature, destination managers are advised to carry out improvements to the primary elements and, just as important, to further develop the secondary and additional elements (Wanga & Davidson, 2010; Zhu, 2002). The former improvements will help attract tourists to the destination, while the latter will foster higher spend in these segments relating to high-quality cultural tourism. One difficulty of this strategy is that tourists from these segments tend to concentrate their expenditure on the most touristic areas, which does little to foster a redistribution of wealth – or indeed tourists – throughout the destination. For this reason, if a destination opts for targeting the segments offering the greatest value, this strategy should be complemented with the creation and promotion of attractions and tourism services distributed widely across the territory.

An alternative strategy would be to seek increased income by means of rotation – not only because of the higher income per se that it generates (Hernández & Casimiro, 2012), but also as it affords the opportunity to take advantage of economies of scale (Brida, Pereyra, Pulina and Devesa, 2013). Furthermore, mass tourism exerts a positive effect on the construction of infrastructures, which improves the destination (Akis, 2011; Baidal, Antoni, Rodríguez and Vera, 2013). Under this strategy, it is Segments 1 and 2 that provide the most tourists (37% and 24%, respectively). These tourists present a low total spend, but this can be increased by lengthening the duration of their stay or the number of people in their travelling party. While this approach may, in principle, seem less appropriate, it offers a major advantage: the greater geographical distribution of spend across the destination. The main drawback of this strategy is that it also generates a series of externalities that must be addressed by the destination's managers in order to avoid damaging its image.

In short, while there is no single strategy that will resolve all of the challenges associated with cultural tourism in micro-destinations, some strategies, such as that of selecting the segments with the greatest level of spend, constitute an appealing option that helps avoid some of the social problems and issues of over-occupation that some destinations are currently facing.

6.1. Limitations of the present research

The principal limitation of the present study is due to the challenge presented by the data-gathering, given that participants needed to install a mobile app and remain permanently connected to the GPS device. Both of these factors make it difficult to achieve a large tourist sample.

Secondly, the fact that the app was only available to download from Google Play meant that those tourists using iOS or Windows Phone operating system were unable to be part of the sample. Furthermore, given that participants needed to use a data package for the app to work, the sample had to be restricted to domestic tourists, as many international tourists either do not have a data tariff suitable for using abroad or prefer not to use this tariff, for fear of excessive charges. That said, as mentioned in the section on methodology, most cultural tourism is domestic in nature.

Lastly, the research was based on a *sample* of actual tourist spend, rather than on the *total* actual spend during their entire stay – the sample being derived exclusively from the expenditure they chose to register via the experimental app. However, given that the average length of stay at the destination among the sample subjects was 1.5 days, and that the average number of purchases registered by the tourist was 10.39, the tourist spend can be said to be adequately represented.

Acknowledgement

This research was undertaken within the framework of Research Projects ECO2015-65306-R and 2013_P_18_CEIUGR.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.tmp.2018.10.001.

References

Akis, A. (2011). The effects of mass tourism: A case study from Manavgat (Antalya–Turkey). Procedia. *Social and Behavioral Sciences, 2011*(19), 289–296.

Alegre, J., & Juaneda, C. (2006). Destination loyalty: Consumers' economic behavior. *Annals of Tourism Research, 33*(3), 684–706.

Andalusian Institute of Statistics and Cartography. Encuesta de Coyuntura Turística de Andalucía, tercer trimestre. (2016). Available at: http://www.juntadeandalucia.es/institutodeestadisticaycartografia/iea/detalleDatosDia.jsp?cod=1791&ram=D

accessed 18/01/2017 .
Andalusian Ministry for Tourism and Sport. Balance del Año Turístico en Andalucía. (2015). Available at http://www.turismoandaluz.com/estadisticas/sites/default/files/bata_2015.pdf (accessed 08/08/2018).
Baidal, I., Antoni, J., Rodríguez Sánchez, I., & Vera-Rebollo, J. F. (2013). The evolution of mass tourism destinations: New approaches beyond deterministic models in Benidorm (Spain). *Tourism Management, 34*, 184–195.
Baker, D. A., & Crompton, J. L. (2000). Quality, satisfaction and behavioral intentions. *Annals of Tourism Research, 27*(3), 785–804.
Bertazzon, S. (1998). Demand-supply dynamics in tourism systems: A spatio-temporal GIS analysis. *The Alberta ski industry case study (pH.D.)* Available from *ABI/INFORM Complete, ProQuest Dissertations & Theses Global.* (304444191).
Bowitz, E., & Ibenholt, K. (2009). Economic impacts of cultural heritage: Research and perspectives. *Journal of Cultural Heritage, 10*(1), 1–8.
Brida, J. G., Disegna, M., & Scuderi, R. (2013). Visitors of two types of museums: A segmentation study. *Expert Systems with Applications, 40*(6), 2224–2232.
Brida, J. G., Pereyra, J. S., Pulina, M., & Devesa, M. J. S. (2013). Causalidad entre turismo y crecimiento económico de largo plazo: una revisión crítica de la literatura econométrica. *Innovar, 23*(47), 53.
Chen, Y., Lee, S., Chen, C., & Chen, Y. (2013). Cultural landscape of tourism perceptions by multidimensional scaling on Wulai aboriginal community, Taiwan. *Journal of Global Business Management, 9*(3), 84–94.
Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
Davidson, R., & MacKinnon, J. G. (2006). The power of bootstrap and asymptotic tests. *Journal of Econometrics, 133*(2), 421–441.
Dolnicar, S. (2007). Management learning exercise and trainer's note for market segmentation in tourism. *International Journal of Culture, Tourism and Hospitality Research, 1*(4), 289–295.
Eurostat. Regional Year Book: Tourism. (2014). Available at http://ec.europa.eu/eurostat/documents/3217494/5786365/KS-HA-14-001-09-EN.PDF/ab13a585-7d5f-403e-9e4a-5ef8131851e0 (18/01/2017).
Fleischer, A., & Seiler, E. (2002). Determinants of vacation travel among Israeli seniors: Theory and evidence. *Applied Economics, 34*(4), 421–430.
Fratu, D. (2011). Factors of influence and changes in the tourism consumer behaviour. *Bulletin of the Transilvania University of Brasov. Economic Sciences. Series V, 4*(1), 119–126.
Gee, C. (1987). Travel related shopping and financial services. *The Travel Industry, 6*, 422–456.
Gnoth, J., & Zins, A. H. (2013). Developing a tourism cultural contact scale. *Journal of Business Research, 66*(6), 738.
Goulias, K. G., & Kim, T. (2005). An analysis of activity type classification and issues related to the with whom and for whom questions of an activity diary. *84th Annual Meeting of the Transportation Research Board*. Washington, D.C.: January.
Hernández, J. M., & Casimiro, L. A. (2012). Simulation model for a joint mass/rural tourism system. *Tourism and Hospitality Research, 12*(1), 5–14.
Hung, W., Shang, J., & Wang, F. (2012). Another look at the determinants of tourism expenditure. *Annals of Tourism Research, 39*(1), 495–498.
Imler, A. N. (2011). *Evaluating nature of expenditures and economic impact of tourism spending on nature-based activities in South Carolina coastal economies (M.S.).* Available from ABI/INFORM Complete, ProQuest Dissertations & Theses Global. (893139148).
Instituto de Estadística de Andalucía (IEA) (2018). Encuesta de Coyuntura Económica. Available at: http://www.juntadeandalucia.es/institutodeestadisticaycartografia/iea/detalleDatosDia.jsp?cod=1791&ram=D.
Instituto Nacional de Estadística (2014). *Movimientos turísticos de los españoles (FAMILITUR).* Informe anual2014.
Istoc, E. (2012). Urban cultural tourism and sustainable development. *International Journal for Responsible Tourism, 1*(1), 38–56.
Johnson, C. R., & Field, C. A. (1993). Using fixed-effects model multivariate analysis of variance in marine biology and ecology. *Oceanography and Marine Biology: An Annual Review, 31*(177), e221.
Josiam, B. M., Kinley, T. R., & Kim, Y. (2005). Involvement and the tourist shopper: Using the involvement construct to segment the American tourist shopper at the mall. *Journal of Vacation Marketing, 11*(2), 135–154.
Kerstetter, D. L., Confer, J. J., & Graefe, A. R. (2001). An exploration of the specialization concept within the context of heritage tourism. *Journal of Travel Research, 39*(3), 267–274.
Lee, S., & Sparks, B. (2007). Cultural influences on travel lifestyle: A comparison of Korean Australians and Koreans in Korea. *Tourism Management, 28*(2), 505–518.
Lee, S. K., Sok Jee, W., Funk, D. C., & Jordan, J. S. (2015). Analysis of attendees' expenditure patterns to recurring annual events: Examining the joint effects of repeat attendance and travel distance. *Tourism Management, 46*, 177–186.
Lew, A. A., & Ng, P. T. (2012). Using quantile regression to understand visitor spending. *Journal of Travel Research, 51*(3), 278.
Liang, Z., & Hui, T. (2016). Residents' quality of life and attitudes toward tourism development in China. *Tourism Management, 57*, 56–67.
Long-Yi, L., & Chen, Y. (2009). A study on the influence of purchase intentions on repurchase decisions: The moderating effects of reference groups and perceived risks. *Tourism Review of AIEST - International Association of Scientific Experts in Tourism, 64*(3), 28–48.
Luque-Martínez, T., Del Barrio-García, S., Ibanez-Zapata, J. A., & Molina, M.Á. R. (2007). Modelling a city's image: The case of Granada. *Cities, 24*(5), 335–352.
MacKinnon, J. G. (2002). Bootstrap inference in econometrics. *Canadian Journal of Economics, 35*(4), 615–645.
Marrocu, E., Paci, R., & Zara, A. (2015). Micro-economic determinants of tourist expenditure: A quantile regression approach. *Tourism Management, 50*(0), 13–30.
McKercher, B., & Du Cros, H. (2003). Testing a cultural tourism typology. *The International Journal of Tourism Research, 5*(1), 45–58.
McKinsey & Company and World Travel and Tourism Council. Coping with success. Managing overcrowding in tourism destinations. (2017). Available at https://www.wttc.org/-/media/files/reports/policy-research/coping-with-success—managing-overcrowding-in-tourism-destinations-2017.pdf Accessed: 18/8/2018.
Medina, J., Ruiz, M. D., Castañeda, J. A., Rodríguez, M. A., & Frías, D. M. (2017). A dynamic fuzzy temporal clustering for imprecise location streams. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems, 25*(03), 409–426.
Mok, C., & Iverson, T. J. (2000). Expenditure-based segmentation: Taiwanese tourists to Guam. *Tourism Management, 21*(3), 299–305.
Moscardo, G. (2004). Shopping as a destination attraction: An empirical examination of the role of shopping in tourists' destination choice and experience. *Journal of Vacation Marketing, 10*(4), 294–307.
Nicolau, J. L., & Más, F. J. (2005). Heckit modelling of tourist expenditure: Evidence from Spain. *International Journal of Service Industry Management, 16*(3/4), 271–293.
Niezgoda, A., & Bartosik, M. (2010). *The effect of culture-related factors on tourist buying decisions: Marketing implications for tourism firms.* 1655–1665,1,13.
Observatorio Turístico de Granada (2016). Available at: http://datosturisticos.com/otgranada/?m=tine&b=0&z=1&*p*=1.
Oh, J. Y. J., Cheng, C. K., Lehto, X. Y., & O'Leary, J. T. (2004). Predictors of tourists' shopping behaviour: Examination of socio-demographic characteristics and trip typologies. *Journal of Vacation Marketing, 10*(4), 308–319.
Oppermann, M. (1997). First-time and repeat visitors to New Zealand. *Tourism Management, 18*(3), 177–181.
Pahos, A., Stamos, A., & Kicosev, S. (2010). Cultural tourism in Europe. *UTMS Journal of Economics, 1*(1), 85–92.
Park, K., Reisinger, Y., & Kang, H. (2008). Visitors' motivation for attending the South Beach Wine and Food Festival, Miami Beach, Florida. *Journal of Travel & Tourism Marketing, 25*(2), 161–181.
Pérez, E. A., & Juaneda, S. C. (2000). Tourist expenditure for mass tourism markets. *Annals of Tourism Research, 27*(3), 624–637.
Richards, G., & van der Ark, L. A. (2013). Dimensions of cultural consumption among tourists: Multiple correspondence analysis. *Tourism Management, 37*(0), 71–76.
Roy-Dholakia, R. (1999). Going shopping: Key determinants of shopping behaviors and motivations. *International Journal of Retail & Distribution Management, 27*(4), 154–165.
Rypkema, D., Cheong, C., & Mason, R. (2011). *Measuring economic impacts of historic preservation.* Advisory Council on Historic Preservation.
Shoval, N., McKercher, B., Ng, E., & Birenboim, A. (2011). Hotel location and tourist activity in cities. *Annals of Tourism Research, 38*(4), 1594–1612.
Stebbins, R. A. (1996). Cultural tourism as serious leisure. *Annals of Tourism Research, 23*(4), 948–950.
Tkaczynski, A., Rundle-Thiele, S. R., & Beaumont, N. (2009). Segmentation: A tourism stakeholder view. *Tourism Management, 30*, 169–175.
Um, S., Chon, K., & Ro, Y. (2006). Antecedents of revisit intention. *Annals of Tourism Research, 33*(4), 1141–1158.
United Nations. Statistical Division (2010). *International recommendations for tourism statistics 2008.* United Nations Publications.
Velasco González, M. (2009). Gestión turística del patrimonio cultural: Enfoques para un desarrollo sostenible del turismo cultural. *Cuaderno De Turismo, 23*, 237–253.
Wanga, Y., & Davidson, M. C. G. (2010). A review of micro-analyses of tourist expenditure. *Current Issues in Tourism, 13*(6), 507–524.
Wedel, M., & Kamakura, W. A. (2000). Market segmentation: Conceptual and methodological foundations. *Journal of Classification, 17*(1), 143–145.
Wu, C. F. J. (1986). Jackknife, bootstrap and other resampling methods in regression analysis. *The Annals of Statistics,* 1261–1295.
Yüksel, A. (2007). Tourist shopping habitat: Effects on emotions, shopping value and behaviors. *Tourism Management, 28*(1), 58–69.
Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing, 60*, 31–46.
Zhang, H., Zhang, J., & Kuwano, M. (2012). An integrated model of tourists' time use and expenditure behaviour with self-selection based on a fully nested Archimedean copula function. *Tourism Management, 33*(6), 1562–1573.
Zhu, Y. (2002). Latent total consumption expenditure, unobservable individual preferences and panel data. *Economic Modelling, 19*(2), 277–293.

José-Alberto Castañeda García is Associate Professor in the Department of Marketing and Market Research at the University of Granada. His research interests encompass tourism, ICT and cross-cultural research. He is author of several academic papers published in reputed journals in such areas, ie. Internet Research, Information & Management, Online Information Review, Tourism Management, Journal of Travel Research, among others.

Julio Vena-Oya is a PhD student in the Department of Marketing and Market Research at the University of Granada. His research interests encompass tourism, ICT and customer behaviour.

Miguel-Ángel Rodríguez-Molina is Senior Lecturer in the Department of Marketing and Market Research at the University of Granada. His research interests encompass tourism, consumer behaviour, and mobile marketing. He has written several academic articles published in reputed journals in such areas, ie. Tourism Management, Journal of Travel Research, Internet Research, Journal of Advertising Research, and Journal of Small Business Management, among others.

Rocío Martínez-Suárez is a PhD student and Assistant Professor in the Department of Marketing and Market Research at the University of Granada. His research interests encompass tourism, ICT, consumer behavior and sport marketing.