Segmentation and characterization of tourists by spending composition in World Heritage Cities

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ABSTRACT

Spending has been one of the most frequently analyzed economic variables over the past decades in studies on tourism, and especially those related to cultural destinations. Over time, researchers has focused on identifying and understanding the factors that condition tourism spending as a key variable to ensure the multiplier effect of tourism on the territories and, therefore, the competitiveness of tourism destinations at a global level. Despite this, there are few studies on tourism segmentation according to tourists' spending patterns, and even fewer when it comes to World Heritage Sites. Using model-based Gaussian clustering, this study identifies six clusters, which are subsequently characterized according to the socio-demographic characteristics of the

tourists, the characteristics of these tourists' trip and their level of satisfaction with different aspects of the destination. The study has focused on Úbeda and Baeza (Spain), based on information from 2,126 surveys conducted between June and September 2016.

Keywords: tourism spending, tourism demand, segmentation, model-based Gaussian clustering, World Heritage Cities, Úbeda and Baeza (Spain).

Introduction

Many studies confirm the important growth experienced by cultural tourism in recent years. One of the most influential variables on this growth is spending and, indeed, it has been extensively analyzed over the past few decades in studies conducted into cultural tourism (Álvarez & Korzay, 2011; De Querioz & Faria, 2019; Pulido et al., 2013; Pulido-Fernández et al.,2016; Smith & Richards, 2013; Su & Cai, 2019; Richards, 2007; Richards, 2018; Richards & Wilson, 2008; Vong, 2016).

Regarding this variable, research interest has focused on identifying and understanding the factors that condition tourism spending as a key variable to ensure the multiplier effect of tourism in territories and, hence, the competitiveness of tourist destinations at a global level (Pulido-Fernández et al.,2019). However, very few studies have carried out a segmentation of tourists based on their spending patterns in tourist destinations. The same cannot be said of studies analyzing the demand for cultural tourism (Chen, 2003, Lee et al., 2004; Lee & Sparks, 2007; McKercher, 2008; McKercher & du Cros, 2002; Poria et al., 2001, 2003; Pulido-Fernández & Sánchez-Rivero, 2010; Richards, 2002; Sánchez-Rivero & Pulido-Fernández, 2012; Santa-Cruz & López-Guzmán, 2017).

Even fewer studies have carried out a segmentation of tourists in World Heritage Cities (Adie & Hall, 2017; López-Guzmám et al., 2019; Ramires et al., 2018). The scientific literature focuses on case studies, concluding that visitors to World Heritage Sites present very general demographic patterns and identifying different segments based on motivations, sociodemographic patterns or satisfaction.

The segmentation of tourists who visit World Heritage Site destinations makes for an interesting study owing to the increase in numbers of tourists travelling to these destinations, which drives economic activity, as is the case in Cordoba, New Delhi,

Yellowstone, Úbeda and Baeza (Cárdenas-García, Pulido-Fernández & Mudarra-Fernández, 2014). This increase in arrivals, in the case of Úbeda and Baeza, is due to the declaration of these cities as World Heritage Sites, by UNESCO, on 3 July 2003, on account of the quantity and quality of their heritage resources. Their new status provided a major boost to the brand image of these destinations. This came about through UNESCO's promotion of the development of advantages derived from the relationship between culture and tourism, through strategic partnerships that respond to the joint development of cultural experiences aimed at all Humanity.

The increase in tourism infrastructures in Úbeda and Baeza has diversified the existing tourism offer (Cárdenas-García et al., 2014), and these two cities now boast a wide range of tourism resources to meet the demands of tourists, which has increased visitor spending through the consumption of tourism products. This has resulted in an increase in average spending by tourists at these destinations, which in turn has increased the direct economic impact generated by tourist activity there. The reason for this lies in the consolidation of their image as cultural tourism destinations, and more specifically, as World Heritage Cities, attracting tourists characterized by a high level of disposable income.

Nowadays, tourists have a large volume of information and demands with regard to destinations, and they are looking for different high quality experiences, attributes guaranteed by the brand image created through the attainment of World Heritage Site status and the use of its logo (Adie et al., 2018; Poria et al., 2011). For this reason, public and private institutions work hard to consolidate the appeal and charms of the destination (UNWTO, 1998 and Pulido-Fernández et al., 2013). The attraction and lure offered by a destination must meet the needs of tourists by creating value for them (Pulido-Fernández, 2013).

So far no research has examined the types of tourists who visit Úbeda and Baeza, or how tourism spending is distributed across the different segments. The information currently available is very general, which makes it difficult for stakeholders to make management decisions. For the purposes of the research conducted here, a dual hypothesis was developed. On the one hand, it is possible to segment tourism demand in these two cities considering different categories of spending. And secondly, the different segments obtained can be categorized according to different aspects related with tourists, their trip, or the destination. Consequently, the primary aim of this article is to segment tourism demand in these cities according to their spending patterns during their trip. Having completed this process of segmentation, the second aim is to characterize the resulting segments according to sociodemographic characteristics, characteristics of the trip, and finally, the satisfaction expressed by tourists with different aspects of the destinations analyzed.

Literature review

Scientific literature (Levin and Zahavi, 2001; Rodríguez and Molina, 2007; Thong et al., 2018) from tourism perspective, established that segmentation involves dividing the market into groups of people who present homogeneous spending behaviours, taking into account the preferences, desires and needs of tourists. Wyner (1995) examines the differential forms of treatment and service that must be provided to different segments of tourists, whereas Fredline and Faulkner (2000) and Hsu and Kang (2007) examine the marketing and commercialization problem-solving capability provided by segmentation. Through segmentation, destinations can offer goods and services specifically targeting each group of tourists who visit, which will resolve their needs. This indicates that segmentation will provide estimations with a competitive

advantage (Dolnicar, 2008), achieving greater market depth in defined and penetrated segments (Smith, 1956) and greater efficiency and effectiveness of investments in destinations (Ramires et al., 2018).

The correct choice of target groups, in order to find similarities between the tourists included in these groups, is one of the key ways for a destination to grow, since it has been demonstrated that tourists who travel to the same place at the same time spend in very different ways, following different spending patterns, with very different impacts on the economy of tourism destinations (Ferrer-Rosell et al., 2016; Logoherel, 1998; Logoherel & Wong, 2006, Rabasa et al., 2018). Tourism segmentation according to tourists' spending patterns has an important practical potential for the tourism industry (Vinnciombe & Sou, 2014), because tourism expenditure is a determining factor of the economic viability of tourism in a destination (Pulido-Fernández et al., 2019). Ferrer-Rosell et al. (2018) also affirm that it is important to know tourist spending behavior in terms of trip budget composition allocated to transportation, accommodation or other activities.

From the perspective of demand, interesting research has been conducted with a view to obtaining as much information as possible about tourists who visit a destination. With regard to previous studies conducted into tourism segmentation, there is a certain similarity between the conclusions they have reached regarding spending at the destinations (Ferrer-Rosell et al. 2018; Logoherel, 1998; Pizam & Reichel, 1979; Spotts & Mahoney, 1991). However, there is not an extensive range of literature analyzing tourist spending on accommodation, cultural activities, etc., which has segmented demand according to this type of spending. Aguiló et al. (2017), Lima, el al. (2012), Ferrer-Rosell et al. (2016) and Park et al., (2019) have conducted studies regarding the segmentation of tourism demand in relation to the components of tourism spending at

the destination. However, other issues such as the economic impact of tourism spending have been studied in greater depth (Ferrer-Rosell, Coenders & Martínez-García, 2015; Fleischer, Peleg & Rivlin, 2011). Numerous authors, such as Chiang et al., (2015); Cluzeau (2000), Gnoth and Zins (2013), Greffe (2002), Minghetti (2001), McKercher (2002), McKercher and du Cos (2002), Poria et al. (2003), Prentice (1993), Rejón-Guardia et al. (2018) and Silberberg (1995) have segmented tourists who visit cultural destinations according to numerous classifications, determining types of tourists.

World Heritage Cities are increasingly drawing tourists who are looking for cultural activities. In general, these tourists usually present medium to high levels of spending, mainly in accommodation, car rental, food and transportation, with high education and a medium income level, traveling for leisure and vacations, for the first time and as a couple, spending the night between 2 and 3 nights in hotels and the seasonality of their trips is less marked than in other types of destinations, although it is true that these destinations see tourist numbers decline in winter and summer (Carrillo-Hidalgo et al., 2019; Cordente et al., 2008).

Written scientific literature related to the segmentation of tourists who visit World Heritage Sites is very scarce. Adie and Hall (2017) segmented tourists who visit Independence Hall (USA), the Studenica Monastery (Serbia) and the Archaeological Site of Volubilis (Morocco), reaching the conclusion that visitors to World Heritage Sites present very general demographic patterns: from both genders, highly educated, employed, prefer travelling in small groups of two to five people, and originating mainly from Europe. Also Ramires et al. (2018) identified three different segments of tourist that visit Porto based on motivations, which differ by demographics, travel behaviour, satisfaction, destination assessment and loyalty. López-Guzmán et al., (2019) segmented the tourism demand of Quito based on three motivational dimensions:

cultural, circumstantial and hedonic-gastronomic. King and Prideaux (2010), on the other hand, studied tourists who visit the natural parks of Queensland (Australia). Palau-Saumell, Forgas-Coll, Sánchez-García, and Prats-Planagumà (2012) segmented tourists who visit the Sagrada Familia. And, finally, Remoaldo et al. (2014) studied tourists who visit the historic centre of Guimarães. It should also be noted that the segmentation carried out by these authors is not related with the spending patterns of visitors to these types of destinations. Pulido-Fernández et al. (2019) studied the general characteristics of tourists that visit Úbeda an Baeza but without segmenting demand into specific clusters.

In all the studies carried out, the variables that determine the most common tourist profile are also set down. These variables can often differ from one study to another, and of course, also between the segmentations of tourists that visit cultural destinations and tourists that visit World Heritage destinations. To verify this, the variables are presented in Table 1. This indicate that there as many similarities as there are differences between tourist's characteristics that visit World Heritage destinations. Prior to this study, in relation to World Heritage destinations, tourists have not been segmented by spending composition.

(Table 1)

Methodological framework

Territory data

The practical case study was conducted in Úbeda and Baeza, two cities located in the province of Jaén, specifically in the south-eastern quadrant of Spain, as shown in Figure 1.

(Figure 1)

The economy of both cities is based on tourism, agriculture, and artisan workshops. Furthermore, Úbeda is the seat of certain administrations, and Baeza is a university town. The conservation and survival of the olive growing and artisan sectors was promoted by residents of both destinations, in order to preserve the cultural practices inherited from their forebears. For this reason, they have been able to preserve the historical and/or cultural memory of these territories.

Both cities have been tourist destinations since the 19th and 20th centuries on account of the quantity and quality of their monumental heritage. For this reason, in 1930, Úbeda was chosen by the Spain's national network of historic hotels "Paradores de España" to set up a hotel in one of the city's numerous palaces and ancestral homes. However, it was not until 2003, when UNESCO declared both cities to be World Heritage Sites, under the title of "Urban duality and cultural unity of Úbeda and Baeza", that the tourism sector of these destinations received a major boost through public and private initiatives to launch and diversity the existing offer.

Today, Úbeda and Baeza boast a wide variety of tourism resources capable of meeting the needs of cultural tourists, owing to their wealth of archaeological, cultural, ethnographic and natural heritage, and the multitude of festivals, fairs, and conferences that take place in both destinations. As well as accommodation businesses, both cities have a large number of restaurants, transport, and information services infrastructures, both public and private in nature, which are helping these destinations to reduce seasonality by raising the profile of tourism products such as olive oil, arts and crafts, congresses, conferences, trade fairs, and other events held in this territory. To raise awareness of these products among tourists who will then decide whether to visit the destination or not, both Úbeda and Baeza, often working jointly, are making huge commercial efforts through their presentation at tourism fairs such as World Travel

Market, Internationale Tourismus Börse, and International Tourism Fair, among others. In such endeavours, they are supported by the World Heritage Cities group, of which they have been members since 2014, and which includes the majority of cities that have been awarded this status in Spain. Hence, both cities are achieving greater efficiency in raising awareness among potential tourists of the different resources and activities offered by Úbeda and Baeza and in convincing them to visit and enjoy the experiences available in both destinations.

Questionnaire

To ascertain which factors influence spending among tourists in these two cities, data gathered through 2,126 surveys conducted in the cities between June and September of 2016 were analyzed. The technical specifications of the survey are given in Table 2.

To this end, given the impossibility of delimiting the subject of this study (all tourists who visited these cities during the months over which the survey was conducted) and, therefore, given that this is an infinite population, simple random sampling was applied, in which the only selection criteria was having spent at least one night in either of these cities. The surveys were conducted in the most visited places in each city: the Plaza de Santa María in Úbeda and the former University of Antonio Machado in Baeza. The tourists surveyed were randomly selected, according to the nationality, sex and age group quotas to guarantee the representativeness of the sample.

The survey was structured into seven blocks, four pertaining to the different types of variables to be analyzed (socio-economic, related with the characteristics of the trip, related with the destinations, and the tourist's judgements and opinions), and three blocks related with the tourist's spending budget for the trip and spending carried out by tourists at origin and in the destination. Different types of questions were used: open

ended, closed (dichotomies and multiple choice) and mixed. Furthermore, different types of scales were employed to measure the variables studied: one the one hand, a Likert-type measurement scale, and on the other, non-metric nominal scales to identify the categories or options with which the behaviour of the interviewee is justified, when analyzing qualitative variables that lack a quantitative meaning.

(Table 2)

Analytical model

In order to study the possible tourist cluster segments according to their spending, a cluster model was applied to spending data, considering spending on accommodation, transport at the destination, food, leisure/recreation/visits, and other types of spending, as reflected in the survey carried out.

Given that spending values are characterized by containing zero values in the case of zero spending, transformations were made to the data to standardize and normalize their values. Spending data in euros were relativized using the percentage of spending assigned to each of the sections considered with regard to the total amount spent, in order to analyze normalized spending on the same scale of values. Regarding zero values indicating no spending, said values were replaced by negligible values, and parallel analysis was conducted to ascertain the sensitivity of the results to variations in the estimations of the replaced zeros. The zeros were replaced, in accordance with the suggestions of Ferrer-Rosell et al. (2016), by the minimum value spent on the item by the group of tourists that did carry out some spending, divided by the total estimated spending per individual, or replaced by means of random values obtained by a normal truncated distribution in a non-informative 0, with average 0 and variance of less than 0.01.

It was verified that the modification of zero values to amounts of said order did not alter the total computation of the spending percentage estimated for each of the items. In particular, owing to the fact that the replacement amounts were negligible, said change in the percentage of spending per item represented a change in the thousandths of total spending values; hence these changes did not influence total spending, reaching 100% (rounding the values to 2 decimals) (Jeffreys, 1946; Kass & Wasserman, 1996; Tibshirani, 1989).

To determine which cluster model statistical technique fits best with the data of this study, the distribution densities of spending variables for each of the items were verified and estimated, once spending in each item had been relativized to the percentage of spending over the total, and the zeros had been replaced, as described previously. Estimated densities behaved like Gaussian multimodal density distributions; hence it was possible in this case to apply a cluster model based on mixed Gaussian distributions, using the Mclust R package (Fraley & Raftery, 1999; Fraley & Raftery, 2007a).

The mixed Gaussian model is generally expressed as follows (Banfield & Raftery, 1993; Celeux & Govaert, 1995; Murtagh & Raftery, 1984):

$$\prod_{i=1}^{n} \sum_{k=1}^{G} \tau_k \ \phi_k(\mathbf{x}_i \mid \mu_k, \Sigma_k)$$

,

where **x** represents the data, G is the number of components (classes), τ_k is the probability that an observation belongs to component k:

$$\tau_k \geq 0; \quad \sum_{k=0}^{G} \tau_k = 1$$

,

and ϕ_k :

$$\phi_k(\mathbf{x} \mid \mu_k, \Sigma_k) = (2\pi)^{-\frac{p}{2}} |\Sigma_k|^{-\frac{1}{2}} \exp\left\{ -\frac{1}{2} (\mathbf{x}_i - \mu_k)^T \Sigma_k^{-1} (\mathbf{x}_i - \mu_k) \right\}$$

.

The application of the cluster model based on the Gaussian mixture was initiated considering the distribution a priori conjugated for the mean and matrix of covariance, defined by Fraley and Raftery, (2007b).

The specification of the distribution a priori allows the data fit to be standardized, reducing the errors in the computational estimations of EM caused by singularities and/or reduction of components. With the inclusion of the distribution a priori, the likelihood function and BIC are smoothed. The model was selected using the Bayesian Information Criterion (BIC), where it is expressed as the function of maximized verisimilitude for the model and the data penalized by the number of independent parameters estimated in the model and the total number of observations in the data (Fraley & Raftery, 1998; Schwarz, 1978).

Subsequently, a multinomial logistic model was fitted to the cluster results in order to study the association of the sociodemographic variables with the classification cluster. Finally, the characteristics of the trip and satisfaction levels of the tourist were described according to the cluster or segmentation, in order to characterize the type of trip made by tourists in each of the clusters.

Analysis of results and discussion

The results of applying the cluster model showed the solutions that best fit the data. The best solution was the model VVV (ellipsoidal, varying volume, shape, and orientation). Figure 2 shows the BIC values depending on the cluster model used and for the different numbers of classes; see Fraley and Raftery (1999) for more information about the different models compared. Regarding the number of classes or solutions proposed, solutions based on the BIC, we see that classes of six or more groups provided similar results for the BIC (Figure 2).

According to the exact values of the BIC, the initial proposal should be formed of eight segments. However, some of the classes formed are very small segments of the populations studied, and so a six-class segmentation was chosen as a compromise between a good BIC fit and an adequate sample number in each of the classes. In turn, a sensitivity analysis was carried out, replacing zero spending values with different variations, as described in the methodology section, giving the same segmentation solution for each class.

(Figure 2)

Table 3 shows the mean percentage of spending per item with regard to the total used in each of the specific clusters or segments. Cluster 1 contains the lowest percentage of spending on accommodation with its major areas of spending being food and recreation, in contrast with cluster 3, where the main source of spending is accommodation. Cluster 2 has similar spending characteristics to cluster 3, with the difference of its 9% spending figure on other items. Cluster 5 is made up of tourists who use the highest percentage of spending on transport, followed by accommodation. Cluster 6 is made up of a group of tourists with a more evenly distributed spending pattern between the different items, with the highest spending on accommodation, followed by food, transport, recreation and other items. Cluster 4 distributes spending in a similar way to cluster 6, with the difference that tourists in this cluster do not spend anything on other items, in comparison with 8% in cluster 6.

(Table 3)

In order to find associations between the sociodemographic characteristics of tourists and the cluster to which they have been assigned, a multinomial logistic model was used. The results of the model and the variables that are significantly associated

with the discrimination of classes are shown in Table 4. Cluster 4 has been used as a reference in the model, as it was the largest cluster in size.

(Table 4)

Tourists aged 19 to 65 are more likely to be classified in clusters 2, 1 and 3 than in cluster 4 (reference cluster). Hence, cluster 4 is more likely to contain tourists aged 18 and under. Tourists over the age of 65 only have the advantage of belonging to cluster 2 - the only significant coefficient - with respect to reference cluster 4 and young people. The increase in age, with respect to the young group, does not indicate membership advantage over clusters 5 and 6 compared to cluster 4.

Values lower than 1 in the estimation of parameters (exp (B), according to the study group, indicate a lower probability that tourists will belong to the segment; hence tourists with a university education or vocational qualifications are less likely to belong to clusters 1, 2 and 3, with regard to cluster 4. For clusters 1, 5 and 6, individuals classified into these segments are more likely to possess an honours degree, masters' degree, or a PhD than a high school diploma only, whereas clusters 2 and 3 are more likely to contain individuals with a university diploma.

Students, the unemployed and the retired are more likely to be found in cluster 1 than in cluster 4. Hence, employed tourists are more likely to be classified in cluster 4. And within the active sector of the population, the members of segments 1, 3, and 5 are more likely to be executives or managers, whereas those in cluster 2 and 6 are more likely to be retired or homemakers, but if jointly it is considered the two blocks of employers, there is a high probability of finding managers, liberal professions and civil servants. Tourists with average earnings (901-1800) are more likely to be members of clusters 1, 3, 5 and 6, whereas those in segment 2 are more likely to have earnings in excess of 1,800 euros. Foreign tourists are more likely to belong to clusters 1, 2, 5 and

6, and less likely to be found in cluster 3, in comparison with cluster 4. Tourists with an exciting life are more likely to be members of cluster 2 than of cluster 4. Tourists with a stressful life are more likely to be found in segments 2, 3 and 5, than 4. Tourists who are planning to spend the night in Baeza are more likely to be members of clusters 3 and 5, in comparison with cluster 4.

Table 5 provides a description of the characteristics of tourists' trips depending on the cluster into which they were classified. Cluster 1 is largely families with children and older relatives, whereas clusters 2, 3, 5 and 6 are dominated by childless couples. One of the characteristics presented by Cluster 1 is that its members have visited the destination three or more times, and members of the other clusters had not previously visited the destination. Regarding the organization of the trip, in all segments, the majority of tourists arranged their trip individually, and in terms of reserving services required by tourists during the trip, only Cluster 1 contains tourists who made no reservations whatsoever, whereas in the other clusters some reservations were made through an agency. As for accommodation, Cluster 1 contained a higher percentage of tourists who stay in rented holiday cottages/apartments, whereas clusters 2, 3 and 5 comprise mainly tourists who stay in hotels with a 3 star categorization or higher.

Tourists in cluster 4 make the greatest used of the Internet to book accommodation and transport services, accommodation, infrastructures and places to visit, whereas those in cluster 5 make the most use of the Internet for transport services.

Tourists in cluster 1 stay at the destination for the most days, whereas tourists in cluster 5 travel in larger groups, and also have a higher average daily budget. Finally, tourists in cluster 1 stay for the most number of nights.

(Table 5)

Table 6 shows the average levels of satisfaction with each of the aspects considered by tourists from the different clusters. With regard to tourist information and signage, tourists in clusters 2 and 3 are the most satisfied. With regard to recreation and fun, as well as value for money, tourists in clusters 1, 2 and 3 noted the highest levels of satisfaction. As for roads and transport links, the most satisfied visitors are in clusters 2 and 3.

Members of clusters 1 and 2 are the most satisfied with accommodation, restaurants, cultural activities and shows; whereas the members of clusters 2 and 3 are the most satisfied with the service they have received. Tourists who value public safety the most are in clusters 2 and 5, and the most satisfied with cleanliness levels are in clusters 3 and 5. Tourists included in clusters 2 and 3 are satisfied with levels of peace and quiet, traffic and parking, and public transport, whereas tourists in clusters 2 and 1 are more satisfied with the landscape of the destination, and those in clusters 2 and 6 are most satisfied with healthcare. Tourists who are satisfied with the urban environment of the destination and ease of Internet access belong to clusters 2, 3 and 5, and 2, 5 and 6, respectively.

In general, tourists in clusters 2 and 3 are the most satisfied, whereas those in clusters 4 and 6 are the least satisfied, although their average minimum score for the different aspects is 4.96 out of 10. Note that cluster 4 contains the largest grouping of tourists, although the variability of satisfaction responses is similar to the other groups, indicating the homogeneity of its members regarding their low opinion.

In short, the data contained in Table 6 indicate that, for tourists belonging to cluster 1, the factors that require improvement in order to increase their satisfaction are tourist signage, roads and transport links, and cleanliness. For those in cluster 2, their satisfaction would increase with an improvement in tourist signage, roads and transport

links, and restaurants, and for those in cluster 3, with the improvement of the first two factors, in addition to traffic and parking. Improving the satisfaction of members of cluster 4 would depend on improving tourist information, roads and transport links, and traffic and parking. However, for tourists in clusters 5 and 6, their satisfaction would increase by improving tourist information, tourist signage, and traffic and parking. (Table 6)

Conclusions

Given the importance of segmentation in redirecting the efforts of destination managers, in order to channel them more effectively towards attracting tourists who spend the most in the destination, this article has segmented tourism demand in Úbeda and Baeza, medium-sized cities, both World Heritage Cities since 2003.

The results have corroborated the hypothesis set out by this research, achieving the results proposed herein. Indeed, it is possible, as shown in this article, to segment tourism demand in Úbeda and Baeza into different spending categories. Secondly, the different segments obtained can be characterized according to different aspects related with tourists themselves, the trip, or the destination.

As a consequence of the segmentation process carried out, a total of six segments or clusters were created. The first cluster is the one that makes the lowest pending on accommodation, with its major areas of spending being food and recreation. Its member are adults, mostly honours degrees, masters' degrees or PhDs, students, unemployed or retired, but those who are in employment are more likely to be executives or managers and they are foreign. They are faithful tourists and tend to travel in families with children and older relatives. They do not make any reservations, and they stay at rented holiday cottages/apartments for more nights than the tourists

included in the other clusters. They display lower levels of satisfaction with aspects such as tourist signage, roads and transport links, and cleanliness.

Cluster 2 is the second one that spends the most in accommodation, after cluster 3, without spending in transport and with a 9% spending figure. It is made up of tourists over the age of 19, with a university diploma, managers, liberal professions and civil servants, with earnings in excess of €1800. In this group, members are more likely to be foreigners, and to lead an exciting and stressful life. In general, they are childless couples, least satisfied with tourist signage, roads and transport links, and restaurants.

Cluster 3 is the one that spend the most in accommodation. It is made up of childless couples of adults, with a university diploma, employed in management positions, lead a stressful life and prefer to spend the night in Baeza. They display the lowest levels of satisfaction with tourist signage, roads and transport links, as well as traffic and parking.

Cluster 4 distributes spending between accommodation, food, transportation and recreation/visits, spending de most in the first one and with the particularity that tourists in this cluster do not spend anything on other items. It is made up of tourists who are more likely to be aged 18 and under. They are employed, and they make greater use of the Internet to book. In general, their lowest levels of satisfaction are related with tourist information, roads and transport links, and traffic and parking.

Cluster 5 s made up of tourists who use the highest percentage of spending on transport and the lowest in food, recreation and visits. It is largely made up of foreign tourists, childless couples, most probably holding a degree, masters' degree or PhD. They are employed in management positions and lead a stressful life. These tourists prefer to spend the night in Baeza, they travel in larger groups and they have a larger

daily budget. They make greater use of the Internet for transport services. Their greatest levels of dissatisfaction are with tourist information, tourist signage, traffic and parking.

Finally, cluster 6 is made up of a group of tourists with a more evenly distributed spending pattern between the different items, with the highest spending on accommodation. Mostly, their tourists are foreigners and childless couples. They have a degree, masters' degree or a PhD, and they are retired or homemakers. They spend the most on accommodation, and they are most dissatisfied with tourist information, tourist signage and traffic and parking.

The results obtained in this study and the characteristics found by other authors indicate that tourists who visit these medium-sized World Heritage destinations are in general middle aged, with a high level of education, foreigners, and prefer to travel in small groups. However, previous authors found differences with regard to gender, whereas no such differences were noted here, since practically the same proportion of tourists were women as men. Regarding the employment status of tourists, there are differences between the findings of previous literature and the results of this study; whereas in studies conducted previously, tourists were found to be largely employed, in this research there are segments in which tourists belong to non-employed groups.

Furthermore, this study indicates that tourism spending is related with other variables not previously analyzed, such as the type of group in which they are travelling, the tourist's type of occupation, their lifestyle, their level of happiness with the destination, whether they make reservations or not, where they stay, their daily budget for the trip, the number of days and nights they stay at the destination, what they use the Internet for, and the variables that determine their satisfaction.

Justification for this analysis can be found in the assistance it offers managers when making decisions about measures and policies, so that the efforts invested in the

application thereof are efficient for the tourism destination. Furthermore, they influence local businesses and administrative bodies in the destination, which will generate a more specific offer of services geared towards meeting the needs of tourists (Pulido-Fernández & Sánchez-Rivero, 2010). The importance of being able to focus different strategies developed by businesses, administrations and destination managers, lies in being able to meet the needs of tourists who visit the destination. However, in addition to the above, these agents must bear in mind that, the greater the levels of tourist satisfaction, the greater the level of spending they will be willing to make, during the trip itself and upon subsequently returning to the destination.

Thus, the segmentation of tourists who visit Úbeda an Baeza is very important to destination managers, policymakers and companies of medium-sized Wold Heritage Cities to inform decision-making. Managers and companies can identify the characteristics and feelings of tourists according to the distribution of their budget for the trip, understanding tourists needs and, therefore, to draw up strategies capable of meet these with the resources available in the destination or through the adaptation of other resources, attracting and retaining tourists with a higher mean daily spend, maximizing economic benefits. The result also helps the administration to choose the target group of visitors that best suits the destination and its development strategy.

In carrying out this research, certain limitations have been found, which do not diminish the importance of the results achieved. Firstly, the study is carried out over a period of time that leads to a certain seasonality of the data. In addition, the information is obtained only on the demand side, so it has not been possible to contrast with the data on the supply side. A third limitation is the fact of carrying out the study in Úbeda and Baeza, which are medium-sized Wold Heritage Cities, and to be able to generalize this study, it would be necessary to perform it in Wold Heritage Cities of different sizes and

importance. Another limitation is that a single multivariate model could not be adjusted with the information available in the four study blocks, due to the existence of parameters over-estimation problems and collinearity problems between variables of different blocks, as well as to asymptotic problems in the adjustment of the model, as a result of the high number of parameters estimated simultaneously. And finally, a compositional data analysis could be used to carry out statistical inference with regard to segment characteristics and their relationships with other variables. This opens a future line of research.

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Table 1. Variables that determine the majority segments of tourists that visit World Heritage destinations

Pulido-Fernández, Carrillo-Hidalgo, & Mudarra-Fernández, (2019).	Men and women	National	Highly educated	45-65 years old	Employed	Couples
Ramires, Brandao & Sousa (2018)	Women	Europe	Highly educated	26-35 years old	Employed	
Adie and Hall (2017)	Men and women	Europe	Highly educated		Employed	Small groups (2-5 people)
Remoaldo, Vareiro, Ribeiro and Santos (2014)	Women		1 or more university qualifications	26-45 years old		
Palau , Forgas, Sanchez and Prats al. (2012)	Men and women		1 university qualification	25-54 years old		
King and Prideaux (2010)	Women	International	1 or more university qualifications	26-45 years old		

Source: Authors' own, based on Adie and Hall (2017) and Pulido-Fernández et al. (2019) and Ramires et al. (2018)

Table 2. Technical details of the survey

Population	Tourists (national and foreign) who spend at least one night in the destination cities
Scope	Úbeda and Baeza
Type of survey	Structured questionnaire conducted by means of personal interviews
Sample size	2,126 valid surveys
Sample error	2.1%
Level of confidence	95 per cent (p = q = 0.50)
Period of fieldwork	June, July, August and September 2016

Source: authors' own.

Table 3. Percentage of spending per item in each cluster

	Cluster 1 (N=174)	**Cluster 2 (N=374)**	**Cluster 3 (N=332)**	**Cluster 4 (N=962)**	**Cluster 5 (N=164)**	**Cluster 6 (N=120)**
Accommodation	6%	40%	45%	42%	24%	39%
Transport	13%	0%	0%	15%	46%	16%
Food	39%	36%	37%	25%	16%	23%
Recreation/Visits	32%	15%	18%	17%	12%	14%
Other	10%	9%	0%	0%	2%	8%
Total Spending	100%	100%	100%	100%	100%	100%

Source: Authors' own.

Table 4. Results of the multinomial logistic model. Exp (B)

	Cluster 1	Cluster 2	Cluster 3	Cluster 5	Cluster 6
Age 19-29 vs. <=18	10.553**	12.579**	4.044**	0.215	0.554
Age 30-65 vs. <=18	5.290**	17.730**	5.202**	0.255	0.943
Age >65 vs. <=18	1.568	4.915*	2.309	0.499	0.742
Vocational Qualification vs. High School Diploma	0.057**	0.087**	0.261**	0.226*	0.976
University Diploma vs. High School Diploma	0.181**	0.099**	0.265*	0.239	1.280
Honours Degree/Masters/PhD vs. High School Diploma	0.216**	0.049**	0.252**	0.369	1.332
Unemployed/Student vs. Employed	4.452**	0.521	0.649	0.049**	0.477
Retired/homemaker vs. Employed	2.736*	1.534	1.431	1.627	1.920
Management vs. Liberal professions	6.810**	1.527	5.502**	1.835	0.740
Civil servants and workers vs. Liberal professions	1.204	1.243	1.231	1.378	1.134
Earnings 901-1800 vs. <=900	4.049**	0.641	0.820	2.617	1.188
Earnings >1800 vs. <=900	1.760	0.935	0.534	1.202	0.535
Foreign vs. Spanish	5.488**	1.550	0.186*	120.879**	5.956**
Exciting Life/Freedom vs. Comfort/Security/Pleasure/Wisdom/ Equality	0.723	2.073**	0.720	0.826	0.908
Stressful Life vs. Comfort/Security/Pleasure/Wisdom/ Equality	0.581	2.342**	1.762**	1.139	0.963
Baeza vs. Úbeda	0.997	0.966	3.700**	2.599**	1.476

Reference cluster 4.
** p-value <0.01; * 0.01< p-value <0.05
Source: authors' own.

Table 5. Characteristics of the trip according to cluster

		Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6
		% (N)	% (N)	% (N)	% (N)	% (N)	% (N)
Mode	Childless couples	20.1(35)	31.8(119)	39.5(131)	27(260)	39(64)	53.3(64)
	Families with children and older relatives	41.4(72)	29.7(111)	27.4(91)	40(385)	20.7(34)	30(36)
	Friends	19.5(34)	30.2(113)	23.8(79)	32.8(316)	37.2(61)	16.7(20)
	Alone/Other	19(33)	8.3(31)	9.3(31)	0.1(1)	3(5)	0(0)
Return	Yes	88.4(145)	88.8(332)	83.1(276)	90(841)	86(123)	77.6(90)
Previous visits	None	20.7(36)	51.3(192)	54.2(180)	72.7(699)	64.6(106)	60(72)
	1 or 2	26.4(46)	15.2(57)	31.3(104)	18(173)	22.6(37)	20(24)
	3 or more	52.9(92)	33.4(125)	14.5(48)	9.4(90)	12.8(21)	20(24)
Organization of trip	Individual	100(174)	98.4(368)	98.8(328)	97.2(927)	87.2(143)	100(120)
	Travel agency	0(0)	1.6(6)	1.2(4)	2.8(27)	12.8(21)	0(0)
Accommodation	Hotels/apartments 3 or more stars	12.1(21)	57.5(215)	72(239)	47.6(448)	73.8(118)	44.2(53)
	Hotels/hostels/camping 1* or 2*	10.3(18)	24.9(93)	26.2(87)	48(452)	24.4(39)	50(60)
	Rented or owned holiday cottages/apartments	77.6(135)	17.6(66)	1.8(6)	4.4(41)	1.9(3)	5.8(7)
Reservations	None	57.6(99)	7.5(28)	2.7(9)	1.2(11)	7.5(5)	7(8)
	Agency	42.4(73)	92.5(346)	97.3(323)	98.8(928)	92.5(62)	93(107)
Use Internet transp plus accom	Yes	0(0)	3.2(12)	1.2(4)	4.5(43)	24.4(40)	0(0)
Use Internet transp	Yes	0(0)	3.2(12)	1.8(6)	5.5(53)	56.7(93)	1.7(2)
Use Internet accom	Yes	41.4(72)	99.5(372)	99.7(331)	96.7(930)	82.9(136)	96.7(116)
Use Internet restaurants	Yes	19.7(34)	55.8(207)	62.7(208)	48.6(461)	65.2(107)	39(46)
Use Internet places to visit	Yes	20.9(36)	74.6(279)	89.5(297)	45.3(436)	36.6(60)	61.7(74)

*p-value<0.001

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Number of days	6.4(5.6)	2.21(1.58)	2.7(1.62)	2.59(1.76)	2.13(1.22)	2.88(2.63)
Number of nights	7.26(5.87)	3.4(4.07)	4.94(5.13)	2.6(1.89)	2.1(1.23)	3.93(4.08)
Number of people	4.56(2.29)	4.05(2.31)	3.46(1.54)	4.23(2.38)	11.16(15.94)	4.11(3.05)
Trip budget	90.92(53.06)	131.53(63.85)	105.78(53.97)	122.41(33.57)	249.06(56.45)	137.01(47.71)

*p-values <0.05

Source: authors' own.

Table 6. Satisfaction in different aspects of the destination according to classification cluster (from 0 to 10)

Satisfaction	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Tourist Information	7.42(1.72)	8.24(1.32)	8.31(1.15)	5.59(1.34)	5.63(1.84)	6.2(1.64)
Tourist Signage	6.88(2.12)	7.55(1.68)	7.48(1.68)	4.96(1.1)	5.24(1.66)	5.28(1.67)
Recreation/Fun	8.57(1.14)	8.42(1.44)	8.42(1.09)	7.89(0.81)	7.98(0.88)	7.96(0.77)
Value for money	8.24(1.16)	8.51(1.41)	8.37(1.05)	7.86(0.91)	7.7(1.08)	8.13(0.88)
Roads and transport links	6.97(2.06)	7.72(1.5)	7.69(1.54)	6.09(1.48)	6.8(1.55)	6.97(1.55)
Accommodation	8.57(0.91)	8.95(1.09)	8.48(0.8)	8.01(0.88)	8.27(0.86)	7.98(0.81)
Restaurants	8.41(1.13)	8.34(1.59)	7.77(1.44)	7.98(0.82)	7.98(1)	7.97(0.73)
Cultural activities and shows	8.65(0.92)	8.64(1.16)	8.38(0.91)	8.06(0.78)	8.2(0.85)	8.08(0.83)
Level of service received	8.09(1.41)	8.51(1.49)	8.2(1.21)	7.57(1.16)	7.9(0.94)	7.78(1.34)
Public safety	7.88(1.1)	8.19(1.28)	7.87(1.27)	7.73(0.87)	7.99(0.94)	7.78(0.98)
Cleanliness	7.14(2.24)	7.91(1.44)	8.01(1.16)	7.87(0.87)	8.14(0.86)	7.88(0.89)
Peace and quiet	8.56(0.98)	8.78(1.33)	8.72(0.76)	8.04(0.84)	8.29(0.81)	8.22(0.83)
Landscapes	8.87(0.95)	8.9(1.15)	8.8(0.92)	8.38(0.89)	8.19(0.93)	8.44(0.89)
Urban environments	7.72(1.93)	8.24(1.31)	8.11(1.18)	7.74(0.92)	8.14(0.86)	7.63(1.05)
Traffic/Parking	6.73(1.95)	7.87(1.55)	7.95(1.61)	5.35(1.42)	5.68(1.88)	5.25(1.62)
Ease of Internet access	7.6(1.18)	7.91(1.3)	7.82(1.28)	7.71(0.91)	7.91(1.03)	7.93(0.9)
Public transport	8.17(1.04)	8.54(1.17)	8.48(0.92)	7.76(0.91)	8.07(0.89)	7.68(0.89)
Healthcare	7.81(1.06)	8.2(1.26)	8.03(0.99)	7.91(0.83)	8.02(0.88)	8.08(0.89)

*p-values <0.05

Source: Authors' own.