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Teresa Garín-Muñoz*
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Abstract

Conscious of the central role of satisfaction in the success of a destination, we choose Barcelona – a city with world tourism – to investigate how the perceptions of tourists about destination attributes determine overall customer satisfaction. We use a survey of 2,484 interviews with information of satisfaction over 19 destination attributes and overall satisfaction. A principal factor analysis identifies 5 dimensions to explain overall satisfaction. Estimation of the relationship between the dimensions of such attributes and overall satisfaction identifies "Accommodation and restaurant services" as the key factor. Our results suggest that the estimated relationship is very stable and do not detect significant differences across types of tourists, trip features or purpose of travel. This knowledge allows for efficient allocation of resources in order to achieve maximum satisfaction. Empirical findings may also be useful for policy makers designing strategies to select targets for the promotion and attainment of high destination competitiveness.

Keywords: Tourist Satisfaction, Destination Attributes, Urban Tourism, Factor Analysis.
JEL Classifications: L83, D12, R5, Z3, C38.

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1. INTRODUCTION

In the last decades, urban tourism has become the main engine of tourism development. With an increase of 58 percent over the last five years, city trips have reached a 20 percent market share of international tourist arrivals worldwide.

The rapid growth of this type of tourism is largely due to the consolidation of business tourism and the popularization of short break trips. It is increasingly common that individuals do not enjoy their vacation only once a year but reserve certain days to make one or more short trips throughout the year. Often, this kind of short break trips have an urban destination.

Europe, the most visited regional destination in the world, also tops the list in what regards the urban tourism segment. And within Europe, the relevance of Barcelona as an urban tourist destination can be seen in Table 1.

Table 1
Europe´s Top Destinations Cities ranked by International Visitors and Cross-Border Spending

International Visitors			Visitors Spending		
RANK	**Destination city**	**Mill. of visitors**	**RANK**	**Destination city**	**US$ bn**
1	London	17.75	**1**	London	19.77
2	Paris	15.56	**2**	Paris	16.61
3	Istanbul	11.27	**3**	Barcelona	13.86
4	Barcelona	7.42	**4**	Istanbul	9.37
5	Amsterdam	7.29	**5**	Madrid	7.13
6	Rome	7.05	**6**	Munich	5.57
7	Milan	7.01	**7**	Rome	5.29
8	Vienna	5.66	**8**	Berlin	5.22
9	Prague	5.23	**9**	Milan	4.90
10	Munich	4.79	**10**	Vienna	4.6

Source: Self elaborated based on MasterCard Index of Global Destination Cities 2014.

According to MasterCard Index of Global Destination Cities 2014, Barcelona ranks fourth in Europe (only behind London, Paris and Istanbul) in terms of number of overnight international visitors and it ranks third when measured by spending volume (after London and Paris).[1] In sum, whatever the ranking considered, the relevance of Barcelona as a tourist destination is beyond any

[1]Several other rankings highlight the attractiveness of the city of Barcelona for foreign visitors. According to The European Cities Marketing Benchmarking Report 2013-2014, Barcelona ranks fourth on international overnight stays; for Trip Advisor, it is the fifth city in the world in terms of its attractiveness for tourists.

doubt. Therefore, the case study of Barcelona is entirely justified.[2] It worth trying to know what the determinants of success were and, above all, this study would be very helpful in designing the strategies that make it sustainable in the future.

Since we believe that success of Barcelona as a tourist destination is fully linked to the overall satisfaction experienced by tourists, this paper is set on studying this satisfaction thoroughly. In order to carry out this study we will use data from a survey on tourist activity in the city between January and December 2013. This valuable database was developed by the DYM institute, commissioned by *Turisme de Barcelona* (the Barcelona Tourist Board), which is the official organization for the promotion of tourism in the city.

The main aim of the paper is to provide a robust analysis of the relationship between tourist evaluations of different aspects of Barcelona as a tourism destination and their overall satisfaction. In particular, we investigate the relative weight of each destination attribute on overall satisfaction. The second aim of the paper is to examine whether this evaluation pattern differs between groups of tourists, segmented in terms of purpose of travel, tourist profile and trip features.

The rest of the paper is organized as follows. Section 2 will make a brief review of the existing theoretical and empirical literature on tourist satisfaction and show the interest of ascertaining the importance of each attribute pertaining to a destination in the overall satisfaction of its tourists. Section 3 presents Barcelona as a tourist destination by highlighting the recent growth in the number of tourists as well as some of the strategies and measures implemented in the field of tourism policy. Data are presented also in this section: characteristics and advantages of the survey used and a descriptive analysis. Section 4 offers an empirical model that establishes the relative weight of each destination attribute on overall satisfaction. In section 5, we analyse whether this relationship is stable across groups of tourists. And, finally, in section 6, we present our conclusions and their main policy implications, as well as possible lines of future research.

[2] Several papers have been published about different aspects of tourism in Barcelona: Camprubí and Prats (2013), Forgas-Coll *et al*., (2012) or Murillo *et al.,* (2013), among others.

2. TOURIST SATISFACTION

Customer satisfaction has always been considered an essential objective in all market sectors, and this is also true in the case of tourism. Once a destination has been established as such, it is very important to ensure that visitors have a positive assessment of their experience. There are many reasons to seek a high level of tourist satisfaction; these are some of them:

- Competitiveness analyses of international destinations are frequently based on tourist satisfaction with different attributes. (Kim, 1998; Kozak and Rimmington, 1999).
- Tourists are becoming more and more demanding in terms of service quality and its value for money. Therefore, tourist satisfaction has become a fundamental goal of any tourist-oriented business (Bernini and Cagnone, 2014).
- Tourists' loyalty to a destination depends largely on their satisfaction. Satisfaction is a direct driver of the intention to return and recommend the destination to others (Antón *et al*., 2014; Chi and Qu, 2008; Kozak and Rimmington, 2000; Yoon and Uysal, 2005).
- Tourists who are loyal to a destination happen to be the biggest spenders. Hence the interest in achieving this loyalty (Alegre and Juaneda, 2006).
- A higher level of satisfaction implies greater tolerance to price increases and enhanced reputation (Baker and Crompton, 2000).

Further evidence for the importance of tourist satisfaction is the large amount of previous research done on several aspects of it. Some authors have approached the issue of satisfaction trying to identify its antecedents or determinants (Alegre and Garau, 2010; Chi and Qu, 2009; Jarvis *et. al*, 2016; Kim, 2014; Kozak, 2003; Maunier and Camelis, 2013; Neal and Gursoy, 2008; Yüksel and Yüksel, 2002). Several empirical works try to quantify the impact of destination attributes in overall satisfaction. Having a clear understanding of the determinants of visitor satisfaction can be very helpful for the promotion and development of tourism destinations. Also, the extent to which tourists are satisfied with a destination's attributes reveals its strengths and weaknesses when it comes to influencing them. A comprehensive summary of the various

studies on the determinants of tourist satisfaction can be found in the appendix to Maunier and Camelis (2013).

There are also many studies on the moderating effects that certain traits in an individual have on satisfaction and loyalty. Thus some researchers try to assess the impact of travelers' sociodemographic features -age, gender, educational level, etc.- on achieved satisfaction (Cooil *et al*., 2007). Other studies focus on trip features as moderating factors of satisfaction with a destination. In this sense, motivation for the visit has been the most studied topic (Davesa *et al*., 2009).

Since tourist satisfaction is an important goal for many sectors of the industry, there are many reasons to proceed to measure it. Over the last years there has been an increased need for finding an appropriate methodology that measures visitor satisfaction experiences for individual tourism destinations and enterprises. However, this is not an easy task, given the multifaceted nature of the concept of tourist satisfaction and because it may be influenced by a wide range of factors (previous experiences, cultural level, and even the mood of the tourist while travelling).

The dominant approach in measuring consumer satisfaction has emphasized the gap between expectations and performance of individual attributes as well as the overall satisfaction of consumers. However, for experiences such as tourism, in which expectations are difficult to measure accurately, it is preferable to use some other approaches.

Instead of that, the most recent literature recommends the use of the attribute-level conceptualization for the analysis of overall tourist satisfaction at the destination. During their stay, tourists experience a variety of products or services and they may evaluate each aspect separately. Following Oliver (1993), overall satisfaction and attribute satisfaction are considered as distinct but related constructs, where attribute satisfaction has significant, positive and direct effects on overall satisfaction, capturing a significant amount of its variation.

The first step within this approach is to identify the most important attributes that characterize the destination. After that, a survey including all those attributes should be designed. Tourists will be invited to evaluate them on a symmetrical one-dimensional scale, where the lowest value indicates lowest satisfaction with

an attribute, and the highest value represents the greatest satisfaction. Finally, based on tourist evaluations and by using econometric models, it will be possible to detect the key variables in the generation of overall satisfaction. Those results are very helpful for destination managers in deciding on how to invest in order to improve overall satisfaction. Therefore, and given the importance of the survey as a tool in the decision making process, much attention should be paid to their design and implementation.

3. BARCELONA AS AN URBAN DESTINATION

With a population of more than 1.6 million inhabitants, Barcelona is one of the largest tourism cities in the world today. Every year, it attracts around 7 million international visitors[3] who stay in the city an average of 3.40 nights. The city offers a large variety of attractions that cater to different categories of visitors with diverse interests (historic buildings, shopping areas, cultural establishments, numerous restaurants and bars and a complete set of facilities for conferences and events). We must also highlight the consolidation of the city as a preferential destination for international congresses.

The boom of tourism in the city is largely due to its excellent transport links. With an international airport handling over 34 million passengers per year, Barcelona has one of the top 10 major airports in Europe.[4] Recently, it has also become a hub for high-speed rail, along the new link between Spain and France, which is currently the second longest in the world. Finally, Barcelona also has a large network of highways that make it easily accessible by car.

The city took off as a tourist destination as a result of hosting the 1992 Olympic Games. Barcelona took advantage of this opportunity. At that time, the city made an urban transformation, opening up to the sea, reshaping whole neighbourhoods, building new infrastructures and placing value on the work of Gaudí and other modernist buildings, while hiring the most remarkable architects at the time (Jean Nouvelle, e.g.) to build emblematic projects that helped shape the image of the city. All these actions led Barcelona to

[3] Data refer to visitors who stay in hotels, to which must be added those who stay in apartments and private homes, as well as cruise passengers (Turisme de Barcelona, 2013).

[4] There is another international airport in Girona (85 km from Barcelona) with 13 international destinations and 9 low cost airlines.

international recognition and have reported remarkable benefits in terms of tourism image.

While these changes were being made, policy makers were also aware of the need to pay close attention to marketing their product. Thus, in 1993, the private-public consortium *Turisme de Barcelona* was born: it was the organization responsible for promoting tourism in the city. From the generic promotion of Barcelona as a tourist destination, the consortium moved on to specific promotion aimed at different market segments (with a motivational and geographic segmentation by origin of tourists). Today, *Turisme de Barcelona* works to promote the city as a tourist destination through different programs: "Barcelona Convention Bureau" [5], "Barcelona Shopping City", "Barcelona Gastronomy", "Barcelona Culture and Sports" and "Barcelona Premium" [6], offering a range of products and services for both professionals in the sector and individual tourists. All these initiatives are very convenient because Barcelona is already a mature tourist destination and, in some way, needs to reinvent itself in order to avoid falling into a phase of stagnation.

Evidence of the success of such measures is the increase in tourist demand shown in Figure 1, which also shows the evolution of tourism in two other major competing cities: London and Paris. From 2002-2014, the number of foreign visitors in Barcelona has nearly tripled.[7] It is also noteworthy that the 3 cities overcame the effects of the economic crisis simultaneously and they are experiencing an uninterrupted growth since 2009.

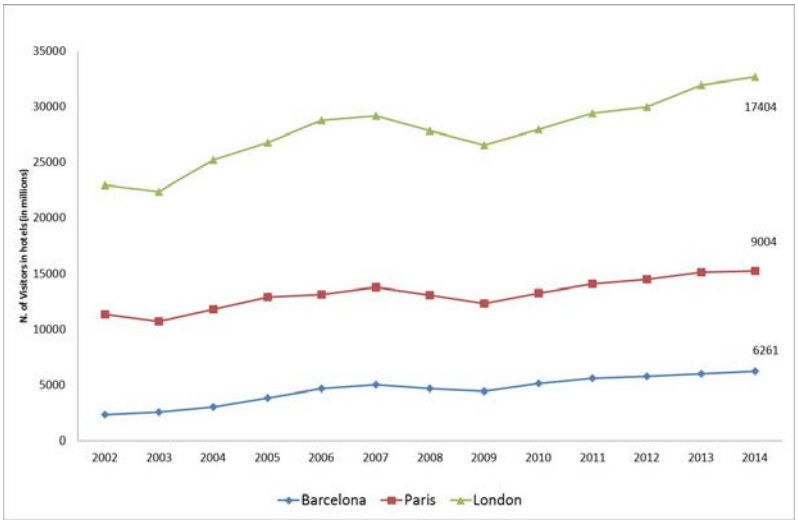
In addition, and in order to complete the picture of what tourism represents for Barcelona in economic terms, it should be said that the tourism sector accounted for 14 percent of the city's GDP in 2013 and employed 100,000 people (10.5 percent of total employment).

[5] Barcelona Convention Bureau has recently closed a deal to ensure the Mobile World Congress (MWC) is held in town until 2023. This is a great success, because MWC is the largest congress by number of delegates held in the city (101,000 attendees in the 2016 edition from 204 countries).

[6] *Barcelona Premium* offers a wide range of exclusive, luxury experiences for culturally aware visitors with high spending power who choose Barcelona to enjoy unique, tailor-made breaks.

[7] However, one should not forget that the numerical growth of the number of visitors must be accompanied by a simultaneous growth in spending, all of this without diminishing residents' quality of life.

Figure 1. Evolution of foreign visitors in Europe´s major tourist cities



Source: Self-elaborated. Data sources: Statistical Institute of Catalonia (Barcelona), International Passenger Survey, Office for National Statistics (London); Paris Tourism Research Department (Paris).

International tourism in Barcelona: Our database

Most of the information used in this research comes from the tourism activity survey conducted among visitors to the city by the Institute DYM throughout 2013.[8] This high quality survey was conducted through personal interviews to visitors staying in hotels and aged 14 or older. The final sample that we use includes 2,484 interviews[9] that have been raised to a theoretical universe of 4,997,860 tourists staying at hotels in the city, by using a random sampling on the basis of quotas by country of origin and purpose of travel.

Our database is an excellent input for the study of tourism in Barcelona for many reasons and it offers important advantages over data used in other studies. Firstly, we are working with a big number of observations that represent 82.5% of the total relevant population; moreover, our data show a distribution by countries of origin that is practically identical to the total data. Secondly, the survey was conducted throughout the entire year, so we can study perfectly trips with different purpose (business versus vacations, mainly); with data collected only over the summer, for example, we would probably face the

[8] A yearly summary of the tourist activity is available on the website of Tourism of Barcelona (see Turisme de Barcelona, 2013).
[9] Initially, we had 2,949 observations for international tourists, but some of them do not respond to all satisfaction indicators used in this study. Interviews were conducted in hotels, conference centres, various tourist attractions and points of access/exit to the city.

problem of overrepresented leisure trips. Thirdly, the survey was conducted in person and it was a real time on-site survey, and there is evidence that this type of surveys is better for incorporating the affective dimension of satisfaction, particularly important in the tourism experience (Coghlan and Pearce, 2010). Finally, the survey questionnaire asked tourists about their overall satisfaction with the trip, but also asked them to evaluate 19 particular destination attributes in terms of satisfaction.

The profile of the international tourist who visits Barcelona and the distribution of his/her overall satisfaction valuation are presented in Table 2. Given this information, we know that among these visitors there is a greater proportion of men than women and that most of them belong to the middle age group (36-45), even though the range between 46-60 years old is also relevant. The largest community is represented by people from Germany, followed by people arriving from France, Italy and United Kingdom. In fact, these four source markets represent 36 percent of total international tourism. Other important sources of tourism for Barcelona are the Netherlands and Ireland, among European countries, and Japan and the US from the rest of the World. The preferred type of accommodation is a 4-star hotel and most of the tourists fly into the city. While most of them also travel to Barcelona for leisure reasons, it should be noted that they are closely followed by business travellers, who accounts for 38 percent of the total. Another feature worth highlighting is the high degree of repeat tourists: only 59 percent are first time visitors and, among repeaters, close to 10 percent have previously visited the city 3 or more times. Finally, we observe that although there is a wide majority of short trips -only 22.9% of tourists stay for five or more nights in Barcelona-, there is also a predominance (46.38%) of trips with 3 or 4 nights stays (versus 30.7% that represent 1 or 2 nights stays).

The last two columns in Table 2 show the overall satisfaction index averaged by category and their respective standard deviations. The first thing that stands out is the high value attributed by tourists to their experience. Also noteworthy is the low variability of satisfaction among different groups.

Table 2

Profile of international tourists visiting Barcelona and their reported levels of satisfaction (2013)

	Categories	Frequency	Percentage	Overall Satisfaction	
				Mean	Std. Dev.
TOURISTS PROFILE	**Gender**				
	Male	1.373	55.27	8.51	0.02
	Female	1.111	44.73	8.41	0.02
	Age				
	15/26	145	5.84	8.01	0.06
	27/35	408	16.43	8.31	0.04
	36/45	1.012	40.74	8.49	0.02
	46/60	835	33.62	8.58	0.02
	65 and older	84	3.38	8.51	0.07
	Country of origin				
	Germany	230	9.20	8.42	0.05
	UK	217	8.74	8.45	0.05
	France	227	9.10	8.37	0.05
	Italy	227	9.10	8.30	0.05
	Rest of Europe	1.026	41.30	8.41	0.02
	Rest of the World	557	22.40	8.63	0.03
	Professional Status				
	Self-employed	323	13.00	8.40	0.04
	White collar	351	14.13	8.35	0.04
	Skilled worker	1470	59.18	8.58	0.02
	Other worker	140	5.64	8.02	0.06
	Inactive	200	8.05	8.30	0.06
					Visits
	First time visitors	1463	58.90	8.34	0.02
	1 or 2 previous visits	861	34.66	8.70	0.02
	3 or more previous visits	160	6.44	8.41	0.06
TRIP FEATURES	**Accommodation**				
	1 star	61	2.46	7.90	0.12
	2 stars	107	4.31	8.01	0.07
	3 stars	611	24.60	8.28	0.03
	4 stars	1.430	57.57	8.56	0.02
	5 stars	275	11.07	8.67	0.04
	Purpose of travel				
	Business	944	38.00	8.54	0.02
	Leisure/recreation/vacation	1.279	51.49	8.42	0.02
	VRF	261	10.51	8.44	0.05
	Means of transportation				
	Airplane	2.144	90.92	8.49	0.02
	Car	77	3.27	8.14	0.08
	Others	137	5.81	8.30	0.06
	Travel Planning				
	On their own	1090	43.88	8.35	0.02
	Via tour operator/travel agency	560	22.54	8.53	0.03
	Company	834	33.57	8.58	0.03
	Length of travel				
	1 or 2 nights	763	30.72	8.35	0.03
	3or 4 nights	1.152	46.38	8.51	0.02
	5 nights or more	569	22.91	8.56	0.03

Note: Number of observations is 2,484 that represent at 4,997,860 international tourists in Barcelona.

Table 3 presents the descriptive statistics for all 19 particular indicators of satisfaction in the survey, in addition to overall satisfaction. The excellent valuation that Barcelona enjoys among international tourist is again evident, given the very high average values and the fact that standard deviations are very small. The worst item values correspond to “Noises”, with an average valuation 7.23 out of 10, and the best aspect of Barcelona is “Architecture”, with an average valuation 9.26 out of 10. Some of the worst valued attributes could be related to the saturation of the tourist destination: this is the case of “Noises”, “Pollution”, “General cleaning”, and even “Citizen Security”, all of them clearly below the average of satisfaction. It should be taken into account that these effects of congestion also have a negative impact on quality of life for residents. From now on, only a quality tourism model that strengthens the balance between residents and visitors can ensure sustainability and continuity. In other words, the limit of tourism growth is marked by the ability of the city to absorb it. The visitor / resident ratio in Barcelona is today at 1.5 (in 2009 it was 1.0), a value higher than those for cities like Paris or Rome, with a ratio of 1.3 in both cases.

Table 3: Average Satisfaction valuation for Barcelona attributes

Satisfaction indicators	**Mean**	**Std. Err.**
1. Architecture	9.261	0.016
2. Culture	8.843	0.019
3. Entertainment	8.531	0.017
4. Hotels / Accommodation	8.464	0.019
5. Price / quality accommodation	8.288	0.021
6. Restaurants	8.490	0.016
7. Price / quality restaurants	8.356	0.018
8. Bars	7.940	0.020
9. Price / quality bars	7.882	0.022
10. Shops	8.610	0.014
11. Price / quality shops	8.327	0.019
12. Signalling/ Information	8.564	0.016
13. Infrastructures	8.489	0.016
14. Character and kindness of residents	8.787	0.016
15. Public transportation	8.341	0.017
16. Citizen Security	7.518	0.025
17. Noises	7.226	0.023
18. Pollution	7.641	0.020
19. General cleaning	7.985	0.023
Overall Satisfaction	**8.470**	**0.015**

Note: Satisfaction measured in a 1 to 10 Likert scale.

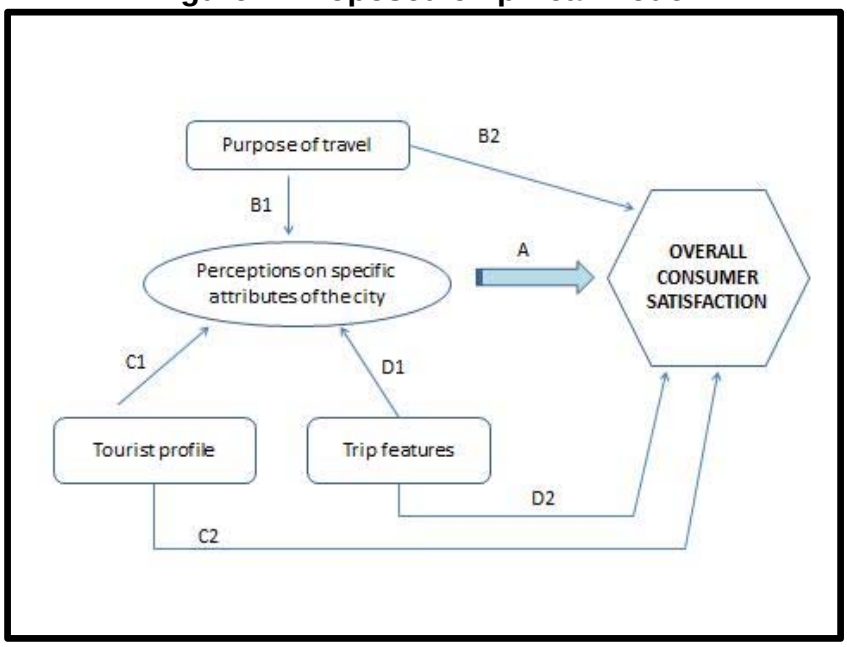
4. ATTRIBUTES OF THE CITY AND OVERALL SATISFACTION

As mentioned in section 2, previous studies offer abundant evidence of the fact that traveller profile, as well as motivation and other trip features, influence overall satisfaction for tourists. On the other hand, it has been largely proven that overall satisfaction depends on the perceptions that tourists have of the attributes of their destination. Since these correlations are not mutually exclusive, it is interesting to analyse in a comprehensive manner how overall tourist satisfaction is determined, taking into account all of these factors simultaneously. However, literature rarely proposes and tests a model that specifies overall satisfaction according to all of these conditions (sociodemographic, attributes of the destination and motivation) and, in addition, its results are inconclusive. Bernini and Cagnone (2014) analysed the competitiveness of Rimini (Italy) as a destination and found that, when taking into account the evaluation of its attributes, the sociodemographic profile of tourists becomes irrelevant for explaining satisfaction. Meng *et al.,* (2008) test the effects of motivation and destination attributes on overall satisfaction using a jointly estimation; their results suggest that while purpose of travel is not very relevant in terms of overall satisfaction, the perceptions of destination attributes determine overall satisfaction to a greater extent. Recently, Jarvis *et al.,* (2016) found that trip satisfaction is affected by environmental, social and economic factors, in addition to income, for the case of tourists visiting the Great Barrier Reef in Australia. Following this new line of research, this paper attempts to fill this gap in order to shed some light against the apparently contradictory results that we have just mentioned.

Our goal is to perform a comprehensive analysis that explains how overall satisfaction is determined (Figure 2 represents the proposed empirical model). In this section, we will focus first on identifying which destination attributes (facilities, cultural heritage, security, transportation, etc.) are more relevant in terms of overall tourist satisfaction. In the next section, we will check if purposes of travel, sociodemographic profile or trip features can modify that relationship, and whether these new explanatory variables provide additional information that explains global satisfaction. In order to do this, we specify a totally flexible structural model including dummy variables for exploring all those asymmetric

effects.[10] This methodology is very demanding in terms of the information required,[11] but precisely this is one of the strengths of this study. Fortunately we have a wide database that allows us to include several sets of dummy variables and still have enough degrees of freedom to deal with the specification.

Figure 2. Proposed empirical model



Given that we had 19 perception scores for the performance of destination attributes, we computed an exploratory factor analysis (EFA) in order to reduce the dimension and the potential multicollinearity without loss of relevant information. The principal factor analyses was performed with Varimax rotations and our findings show that the optimal number of orthogonal factors to pick up information from those 19 items is 5 (see Table 4). These 5 factors show eigenvalues greater than one and they explain 62.31 percent of the overall variance of original satisfaction indicators. The communality of each variable was relatively high, ranging from 0.43 to 0.86 and with a median equal to 0.71. The appropriateness of the factor analysis was determined by examining the

[10] All estimations where performed using STATA 13.0.
[11] Other studies on satisfaction develop a structural equation model (SEM) following some of the approximations available in packages usually used in strategic management. However, in Hair *et al.* (2012) the reasons for using this methodology are studied, as well as the important implementation problem represented by sample size. In fact, they examine a total of thirty seven studies and the average size of the sample was below 250 observations.

Kaiser-Meyer-Olkin (KMO) measures of sampling adequacy, which yielded a result of 0.8595 (KMO values between 0.8 and 0.9 are described as *meritorious* by Kaiser, 1974). Finally, the Cronbach's alpha values confirm high reliability of the constructs.

Table 4: Exploratory Factor Analysis on destination attributes performance				
	Loadings	**Eigenvalues**	**Variance**	**Reliability**
FACTOR 1. *Accommodation and restaurants*		6.666	15.98	0.8528
Hotels	0.843			
Price/quality hotels	0.867			
Restaurants	0.649			
Price/ quality of restaurants	0.671			
FACTOR 2. *Shops and Bars*		1.630	14.34	0.7958
Bars	0.809			
Price/quality of bars	0.806			
Shops	0.581			
Price/quality of shops	0.604			
FACTOR 3. *Security and environmental issues*		1.374	13.12	0.7610
Public transportation	0.472			
Citizen Security	0.707			
Noises	0.763			
Pollution	0.745			
General cleaning	0.561			
FACTOR 4. *Cultural offerings & entertainment*		1.114	9.75	0.6396
Architecture	0.771			
Culture	0.757			
Entertainment	0.431			
FACTOR 5. *Ease in getting around the city*		1.056	9.11	0.6156
Signalling / Information	0.817			
Infrastructures	0.713			
Character and kindness of residents	0.529			
KMO (Kaiser-Meyer-Olkin) =0.8595; Variance explained= 62.31				

In sum, all of this indicates that variance of the original values was captured fairly well by these five factors, defined according to the features of their main composing attributes. We will name them as follows:

- ✓ Factor 1 "Accommodation and restaurants": It is characterized mainly by perceptions of hotels, price/quality of hotels, restaurants and price/quality of restaurants. This factor explains 15.98 percent of the total variance and has an eigenvalue of 6.666.
- ✓ Factor 2 "Shops and Bars": It is defined mainly by valuations for bars, price/quality of bars, shops and price/quality of shops. It explains 14.34 percent of the total variance with an eigenvalue of 1.630.

- ✓ Factor 3 "Security and environmental issues": This shows mainly valuations for public transportation, citizen security, noises, pollution and general cleaning of the city. This construct explains 13.12 percent of the total variance and presents an eigenvalue of 1.374.
- ✓ Factor 4 "Cultural offerings and entertainment": It is markedly formed by perceptions on architecture, culture and entertainment. This factor explains 9.75 percent of the total variance and has an eigenvalue of 1.114.
- ✓ Factor 5 "Ease in getting around the city": This refers to satisfaction on all things that make it easier to move around the city, because it depends heavily on attributes like signalling/ information, infrastructures and kindness of residents. Its contribution to the total variance is 9.11 percent with an eigenvalue of 1.056.

The next step is to explore how satisfaction with destination attributes determines overall satisfaction (Relationship "A" in Figure 2). In order to do this, we use directly the overall consumer satisfaction reported by each tourist (OCS_i) as the dependent variable in two different models: (1) one in which the explanatory variables are the 5 factors obtained from the factor analysis presented above ($FACTOR_k$), and (2) one that includes satisfaction with each one of the 19 attributes (IS_k) as explanatory variables:

$$OCS_i = \alpha_0 + \sum_{k=1}^{5} \beta_k FACTOR_k + \epsilon_i \quad (1)$$

$$OCS_i = \alpha_0 + \sum_{k=1}^{19} \beta_k IS_k + \epsilon_i \quad (2)$$

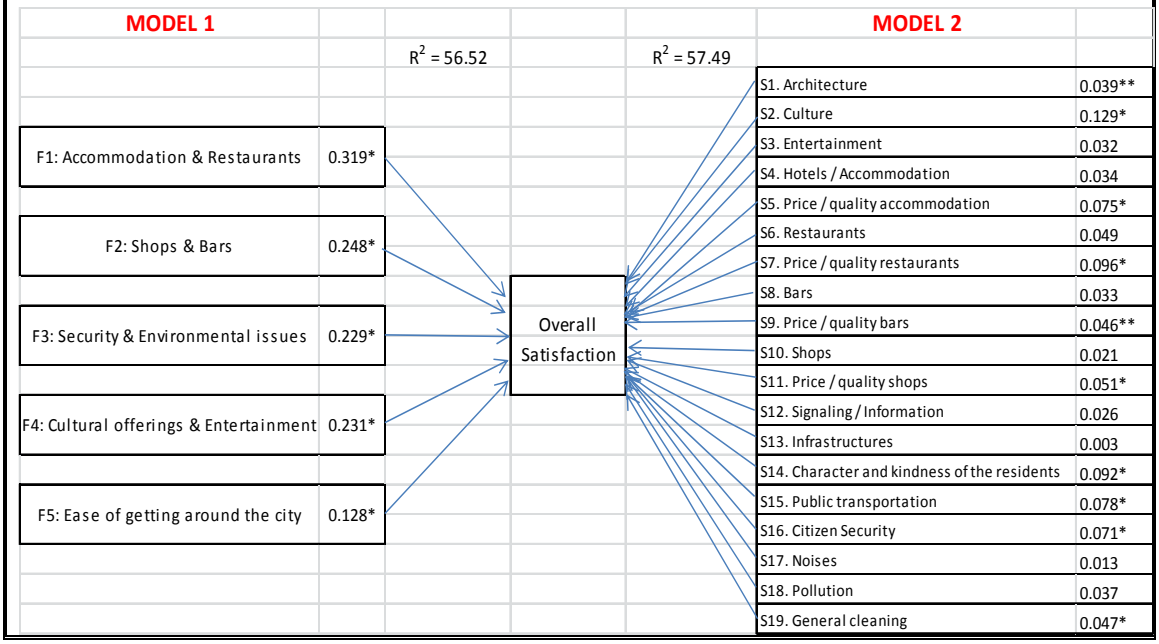
In order to approximate both relationships, general linear models are estimated by weighted least squares, using heteroskedasticity consistent covariance matrix estimators weighted by their frequency in the total number of tourists that arrive in Barcelona. Satisfaction is treated as cardinal, assuming that the differences between adjacent values of the satisfaction indices are constant across values of the index.[12]

[12] See Anderson and Fornell (2000) for an excellent discussion of cardinality versus ordinality; and Ferrer I Carbonell and Fritjers (2004) and Gijón *et al*., (2013) for empirical applications corroborating such statements.

The comparison between the two estimations is very enlightening. Moreover, it allows us to confirm the robustness of the principal factor analysis (see Figure 3). First, it confirms that all perceptions for destination attributes have a positive impact on the OCS. Second, we verify that adjusted R-squared value for equation (1) is equal to 56.52, with all the coefficients being statistically significant; meanwhile, adjusted R-squared for equation (2) is equal to 57.66, but in this case only 10 out of 19 attributes are significant for explaining overall satisfaction. [13] Therefore, given that both models have about the same explanatory power, we chose Model 1 in order to avoid potential problems of multicollinearity between the explanatory variables.

Figure 3

Alternative models for overall satisfaction based on attributes of the city



The estimated beta coefficients for Model 1 can be used to measure the relative importance of the five dimensions (independent variables) in explaining overall tourist satisfaction. In view of the results, Factor 1 is the one with the greatest impact (β_1=0.319; t-ratio= 20.89) on the overall satisfaction of tourists. It is

[13] The explanatory power of these models could be improved by incorporating some personal questions that register visitors' moods during the trip, which obviously influence their satisfaction. Although we do not address this issue in this work, we must say that there is a whole literature on the subject of "subjective wellbeing". The inclusion of objective data on the weather during the stay could have improved the estimates as well.

followed in order of importance by Factor 2 (β_2= 0.248; t-ratio= 15.34), Factor 4 (β_4=0.231; t-ratio= 16.00) and Factor 3 (β_3= 0.229; t-ratio= 15.39). These three last factors have rather similar weight as determinants of tourist overall satisfaction. Finally, Factor 5, while statistically significant (t-ratio= 9.74) and with a beta of 0.129 is the least important among the determinants of satisfaction included in this model (see left-hand side of Figure 3).

Framework on how factors determine overall satisfaction sheds light for designing policies that aim at increasing tourist satisfaction. Thus, findings suggest that the best target for policymakers should be -in the following order-:

(i) To act upon the situation of "Accommodation and restaurants" in Barcelona, for example, by offering appropriate incentives to hotel entrepreneurs and restaurant managers that show and indicate their quality standards. It must not be forgotten that some visitors choose Barcelona as tourist destination for gastronomic purposes and, therefore, special care should be taken of this aspect.

(ii) Since "Bars and Shops" intervene decisively in travel experience satisfaction, we should devise some measures in this regard. For example, it is possible that extending stores' opening hours leads to greater satisfaction of tourists. Obviously, this type of measures may have a downside for the resident population (especially workers from the commercial sector) that should be considered.

(iii) Our results show that "Cultural Offerings & Entertainment" has a significant positive effect on tourist overall satisfaction. In this sense, policymakers should encourage and facilitate the development of any type of event (cultural, sports, etc.).

(iv) Local authorities should also strive to enhance attributes such as cleanliness, public safety, public transport and noise pollution. In addition, any improvement in these areas would also increase the quality of life for resident population.

(v) Finally, any effort to improve infrastructure and information and signalling will lead to greater satisfaction among tourists, since it facilitates movement around the city. Simultaneously, such investments are highly profitable because they also improve quality of life for residents.

At this point we want to emphasize that in the F1 and F2 constructs, in addition to the quality of service, value for money as perceived by the tourist has been included (quality/price of accommodation and quality/price of restaurants in the case of F1 and quality/price of shops and quality/price of bars in the case of F2). This may be the reason why in this paper the estimated effect of these factors on overall satisfaction is above those obtained in other studies (see Meng *et al.*, 2008). On the other hand, the few studies that include quality and quality / price as explanatory variables found that, by including the latter, quality is no longer significant. In our case, we can see that Model 2 (right-hand side of Figure 3), in which we use satisfaction over 19 different destination attributes, shows that what really matters is the quality / price, but that perceived quality is not significant. A similar result can be found in Moital *et al.*, (2013).

5. STABILITY OF THE RELATIONSHIP BETWEEN DESTINATION ATTRIBUTES AND OVERALL SATISFACTION

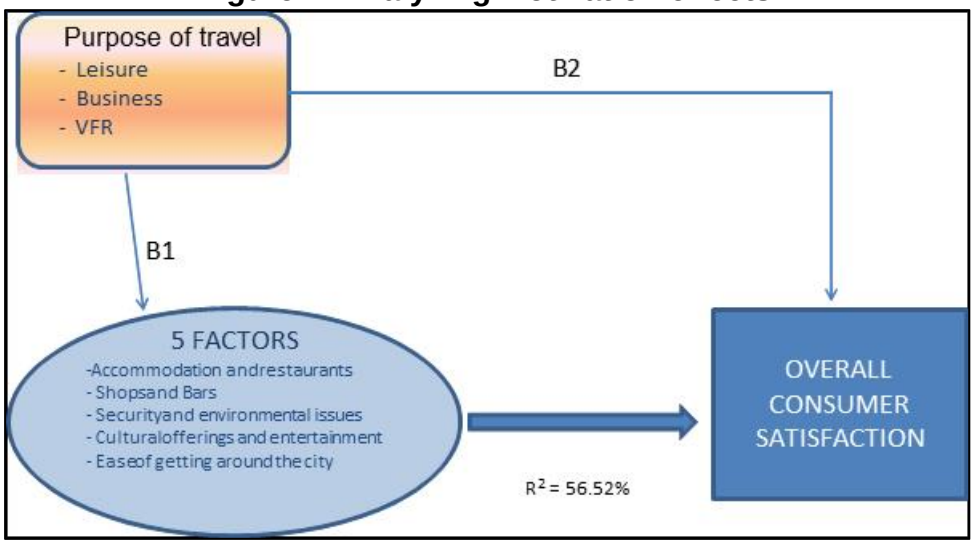
Once we have estimated the relationship between overall satisfaction and satisfaction with the attributes (relationship A of Figure 2), the next step would be to test whether that relationship is influenced by factors such as purpose of travel, tourist profile or trip features (relationships B, C and D of Figure 2). It should be noted that although these contrasts indicate that there are not differential effects attributable to these variables, it cannot be inferred that the explanatory variables are not relevant in determining satisfaction. On the contrary, it would mean that the exclusive use of partial satisfaction perceptions is enough to have identified overall satisfaction correctly.

5.1. Purpose of the trip as a moderator ("Relationship B")

Barcelona is a benchmark destination for both business and leisure tourism. In consequence, the city offers an excellent opportunity to explore if valuation of destination attributes has a different effect on overall satisfaction according to the purposes of the trip. We will focus on checking two hypotheses (Figure 4 represents this aim):

- B1: Purpose of the trip can modify the way in which perceptions of destination attributes determine overall tourist satisfaction.
- B2: Purpose of the trip can explain an additional part of OCS which is not explained by destination attributes.

Figure 4. Analyzing Motivation effects



In order to achieve this objective, we will distinguish between three purposes: 1) Business, 2) Leisure and 3) VFR (visiting friends and relatives) by using dummy variables. Starting from equation (1), the mean effect of each attribute destination factor (β_k with k=1... 5) interacts firstly with that set of dummy variables; secondly, other set of dummy variables is added, as shown in equation (3):

$$OCS_i = \alpha_0 + \sum_{k=1}^{5}\{\beta_k Factor_k * \sum_{m=1}^{3}\gamma_{km} MOT_m\} + \sum_{m=1}^{3}\rho_m MOT_m + \epsilon_i \quad (3)$$

Equation (3) is estimated by weighted OLS, taking into account a robust variance-covariance matrix.[14] Significance tests of indirect and direct effects (hypothesis B1 and B2, respectively) are presented in Table A.1 of the Appendix. The results are clear and allow to conclude that regardless of the purpose of travel is, tourists appreciate and transfer their perception scores in order to define their overall satisfaction in the same way (this result agrees with the one obtained in a previous paper by Meng *et al.*,2008).

[14]All results are available on request from the authors.

A more intuitive way of presenting the above results is shown in Table 5. To verify that purpose of travel does not affect significantly the impact of the 5 constructs on *OCS*, equation (1) is estimated for the aggregate market and segmenting tourists by purpose of travel: business, leisure and VFR.[15] Table 5 makes it clear that estimated coefficients do not vary greatly depending on the considered segment. In sum, policy makers have to take into account that improvements in attractiveness and facilities of destination have a relevant and similar impact on satisfaction whatever the purpose of the trip may be.

Table 5:
Regression of OCS respect to destination attributes, segmenting by motivation

Factors	ALL TOURISTS	DISTINGUISHING BY MOTIVATION		
		BUSINESS	LEISURE	VFR
Accommodation and restaurants	0.319	0.308	0.323	0.363
	(20.888)	(9.671)	(17.900)	(8.919)
Shops and Bars	0.249	0.244	0.249	0.259
	(15.341)	(8.166)	(11.824)	(7.856)
Security and environmental issues	0.229	0.248	0.221	0.207
	(16.004)	(9.386)	(11.934)	(7.047)
Cultural offerings and entertainment	0.231	0.248	0.226	0.208
	(15.391)	(9.709)	(10.491)	(7.004)
Ease in getting around the city	0.128	0.125	0.128	0.138
	(9.743)	(5.270)	(7.505)	(4.030)
Constant	1.166	1.054	1.244	1.021
	(5.531)	(2.636)	(4.441)	(2.201)
Number of obs.	2,484	944	1,279	261
Adj. R^2.	0.565	0.599	0.526	0.644
F-value	281.89	82.51	166.40	68.48
Prob.>F	0.000	0.000	0.000	0.000

Notes: Weighted OLS with robust standard errors (t-ratios below coefficients).

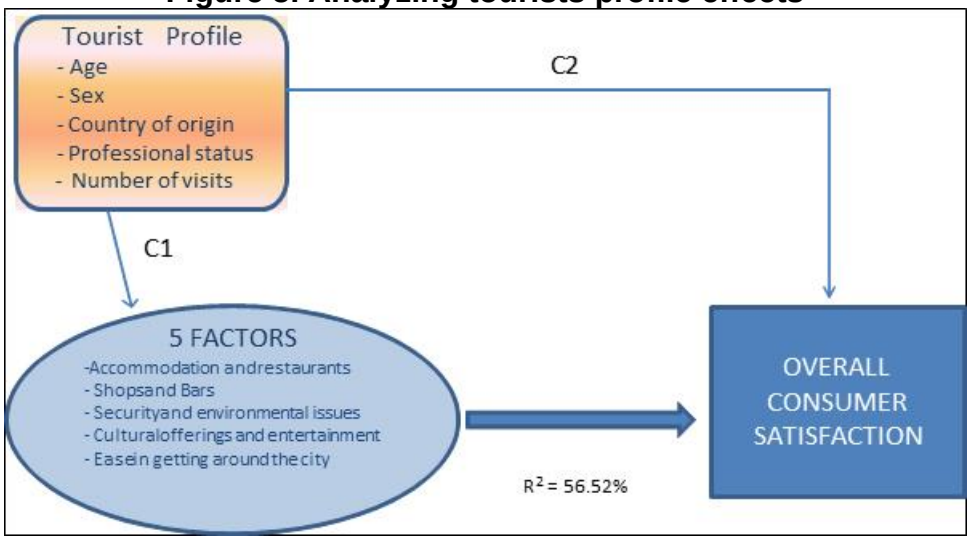
5.2. Tourist profile as a moderator ("Relationship C")

In principle, one would think that the relationship between perception of destination attractiveness and overall satisfaction can be modified by tourist sociodemographic characteristics. In this subsection, we test this hypothesis, as shown in Figure 5. This fully flexible model checks, on the one hand, if individual tourist features affect the estimated coefficients of destination attributes and, on the other hand, if such features explain directly part of the

[15] Evidently, the number of observations for estimations by groups corresponds to figures registered in Table 2.

overall satisfaction.[16] Following proposals from previous literature, selected sociodemographic features are age, sex, country of origin, professional status and number of previous visits.

Figure 5. Analyzing tourists profile effects



In regard to age we distinguish the following five ranges: 15-26, 27-35, 36-45, 46-60 and more than 60 years old. This segmentation reflects a number of social and family factors that are related to age. For example, people under 26 can benefit from reduced rates in transportation and in museums. Regarding nationality, it has been segmented according to the market share of the origin countries. Specifically, we have distinguished between German, British, French, Italians, rest of Europe and rest of the world. Relative to the number of previous visits we distinguish three possibilities: none, 1 or 2 previous visits, and 3 or more. Finally, for the variable professional status the following categories are considered: self-employed, white collar, skilled workers, other workers and non-active workers.

In Table A.2 (Appendix) we show the results of F statistics which test whether each set of dummy variables associated with the moderator effect of each demographic characteristic on the average Factor coefficients is significantly different from zero (that is, hypothesis C1). On the other hand, coefficients and t-ratios of each demographics dummy variable that explain directly the *OCS*

[16] We compute an estimation for each characteristic of tourist in order to check if both direct and indirect effects of each variable are significant.

(that is, related to hypothesis C2) are also included in Table A.2. From this analysis we can draw several conclusions about the relationship between attributes and overall satisfaction:

- This relationship is not significantly different between genders or between age groups, and this is true for both direct and indirect effects (hypotheses C1 and C2, respectively).
- According to country of origin, a slightly different behaviour is observed in visitors from the United Kingdom. This applies both to indirect effect (its p-value is equal to 0.0020) and direct effect (its coefficient is significantly different from zero).
- Skilled workers also have a statistically different relationships between satisfaction with the attributes (the p-value of the hypothesis C1 is equal to 0.0783) and overall satisfaction (the coefficient is significantly different from zero at a 90% level of confidence).

Table 6: Regression of *OCS* related to destination attributes, according to significant controls of tourist features.

Factors	**ALL TOURISTS**	**Visitors from UK**	**Skilled workers**
Accommodation and restaurants	0.319	0.428	0.273
	(20.888)	(10.43)	(10.97)
Shops and Bars	0.249	0.341	0.243
	(15.341)	(11.07)	(9.53)
Security and environmental issues	0.229	0.188	0.223
	(16.004)	(5.52)	(10.88)
Cultural offerings and entertainment	0.231	0.271	0.233
	(15.391)	(9.37)	(9.03)
Ease in getting around the city	0.128	0.123	0.131
	(9.743)	(3.9)	(7.3)
Constant	1.166	-0.089	1.513
	(5.531)	(-0.21)	(4.76)
Number of obs.	2,484	217	1,470
Adj. R^2.	0.565	0.659	0.559
F-value	281.89	125.64	123.70
Prob.>F	0.000	0.000	0.000

Notes: Weighted OLS with robust standard errors (t-ratios below coefficients).

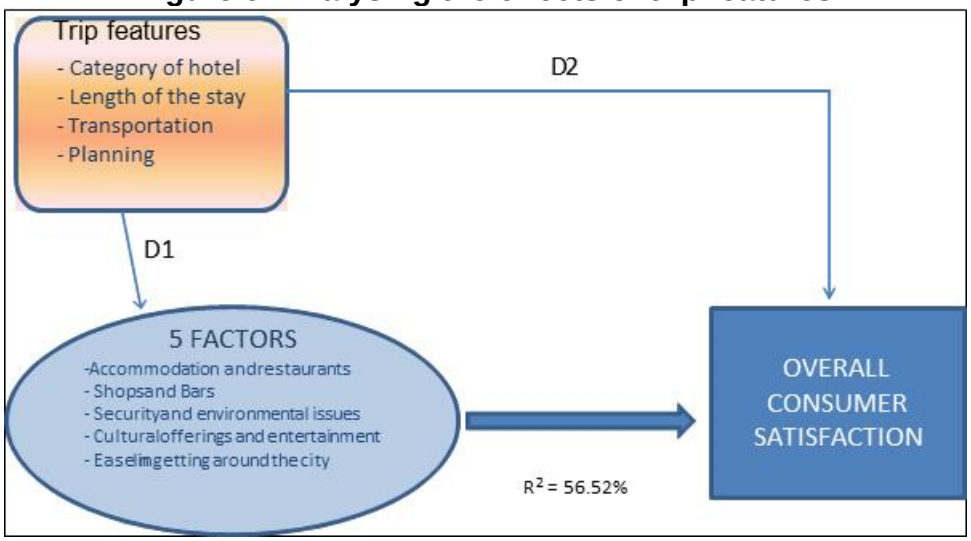
Table 6 shows regressions for these last groups of individuals which present a particular pattern. It can be verified at a glance that the estimated coefficients

diverge from the estimated average coefficients (first column). For example, tourists coming from UK are more concerned about accommodation, restaurants, shops and bars, as estimated coefficients for factors 1 and 2 are higher. That is, their total satisfaction depends more heavily than the average on their perception of these attributes. By contrast, for skilled workers, accommodation and restaurants are not so relevant in determining overall satisfaction.

5.3. Trip features as moderators ("Relationship D")

Finally, we are interested in testing whether some trip features affect the relationship between satisfaction with the attributes and overall satisfaction (Figure 6 represents this exercise). Following previous literature, we include hotel category, distinguishing two categories (low class with 1, 2 or 3 stars, versus high class with 4 or 5 stars), length of the stay (1 or 2 nights, 3 or 4 nights and 5 nights or more), type of transportation (car versus other, mainly by air), and the manner in which the trip was planned (completely on their own, by hiring services from a travel agency or if the trip has been organized by the company for which the traveller works).

Figure 6. Analysing the effects of trip features



As in previous cases, we analyse whether it is possible that trip features have an impact on tourist valuation of destination attributes (hypothesis D1) and also if such features may explain in part overall satisfaction (hypothesis D2). That is, we measure the indirect and direct effects of trip features on overall satisfaction. Table A.3 in Appendix shows the results of F statistics for every set of dummy variables tested corresponding to indirect effects and also the estimated coefficients for direct effects.[17] All p-values for hypothesis D1 suggest that tourists do not modify their mean impacts of destination factors on overall satisfactions according to the trip features analysed, while, on the other hand, all t-ratios for estimated coefficients of direct effects also indicate that these effects are not significantly different from zero.

In short, the effect of representative factors of the attributes on the overall satisfaction when controlling for additional variables (purpose of travel, tourist profile and features of trip) is very stable and varies in very few cases. This pattern shows that tourists' perceptions of destination attributes incorporate enough heterogeneity to account consistently for overall satisfaction. However, when there is not data on satisfaction attributes, those variables may become variables with a significant explanatory power of overall satisfaction. An extensive review of the literature in this regard is in the paper by Yoon and Uysal (2005).

6. CONCLUSIONS

The importance of satisfaction for the competitiveness of a destination reveals the interest in measuring it adequately and understanding its determining factors in depth. We are interested in the case study of the city of Barcelona since it is a world reference for urban tourism.

Using a survey of 2,484 interviews with international visitors, we established assessments of satisfaction in regard to19 destination attributes, as well as with overall satisfaction over the trip. Our results showed that all this information can be subsumed into five dimensions without losing explanatory power when explaining overall satisfaction. The next step of the study was the development

[17]We compute an estimation for each characteristic of travel in order to check if its direct and indirect effect of each variable is significant.

of a model showing the weighted impact of each of those 5 attributes on overall satisfaction. In this sense, for the case of Barcelona, the most important factor appears to be the so-called *Accommodation and restaurants* (β_1=0.319). Availability, variety as well as value for money in hotel and restaurant´s resources are aspects of crucial importance within tourist overall satisfaction. Next in importance is the degree to which tourists are satisfied with the range and quality of *Shops and bars* (β_2=0.248). *Cultural offerings and entertainment* (β_4= 0.231) in the city is also of significant importance to the tourism satisfaction. *Security and environmental issues* (β_3= 0.229) also influences the level of satisfaction with travel experience. Therefore local authorities should take steps to ensure public safety and strive for environmental indicators (general cleaning, pollution, noise, etc.) to remain at adequate levels. In order to achieve this, policymakers should try to avoid excessive growth is tourism, which would result in congestion problems and the subsequent deterioration in the aforementioned indicators. To a lesser extent, but also important, it is the impact of the *Ease in getting around the city* (β_5=0.128) on overall tourist satisfaction.

Another research finding is that the relationship between satisfaction with specific attributes and overall satisfaction is very stable regardless of purpose of travel, tourist profile or trip features. These findings indicate that, regardless of the type of tourists it wants to promote, the city will have to act on the same attributes. Thus, these results may be useful for all actors involved in the tourist development of the city of Barcelona. But over and above all, policy makers must give prominence to the wellbeing of residents taking their interests into account.

Our analysis on satisfaction is very comprehensive and robust. Nevertheless, there are several weaknesses in this study that should be disclosed to provide guidance for future research. On the one hand, we are only considering hotel accommodation. However, more and more tourists choose other accommodation options including collaborative platforms such as “Airbnb.” We are also leaving out cruise visitors, which represent an important proportion of total visitors and, above all, a high proportion in terms of spending.

It would also be highly desirable that the survey include questions about the intention to return, in order to measure the relationship between satisfaction and

loyalty to the destination. It would be no less important to conduct surveys about the level of resident satisfaction with tourism, since a large part of the costs (congestion, price increases, pollution, etc.) falls on them. The availability of data on the acceptance of tourism by residents, as well as their satisfaction with the different attributes of the city, would allow local authorities to make informed tourism policy measures.

Lastly, we would like to say that, with the necessary precautions, the results of this work could be transferred to other urban destinations.

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APPENDIX: FLEXIBLE STRUCTURAL ESTIMATIONS

We use B1, C1 and D1 (see Figure 2) to refer to hypotheses for testing whether additional variables such as motivation, tourist profile or trip features can modify the mean effect of attributes factors on overall satisfaction. We also classify this impact as an "indirect effect." On the other hand, we use B2, C2 and D2 to refer to hypotheses for testing whether those variables explain directly part of the overall satisfaction. We also classify this impact as a "direct effect."

In general terms, the following equation shows each model that we estimate in Section 4 for testing the indirect and direct effects of each control variable:

$$OCS_i = \alpha_0 + \sum_{k=1}^{5}\left\{\beta_k Factor_k * \sum_{m=1}^{C}\gamma_{km} CONTROL_m\right\} + \sum_{m=1}^{C}\rho_m CONTROL_m + \epsilon_i$$

Where "*CONTROL*" represents each discrete variable related to motivation, tourist profile and trip features. Notice those variables have a different number of categories (indicated by super-index "C"). In consequence, for each category *m*=1,…,*C* we estimate 5 coefficients ($\gamma_{m1}, \gamma_{m2,}\gamma_{m3}, \gamma_{m4}, \gamma_{m5,}$) to pick up the indirect effect of that group (that is, in total "5*C" coefficients). The direct effect is estimated through "C" coefficients ($\rho_1, \rho_2, \dots, \rho_C$). In order to present all the results in an intuitive manner, the following tables show the p-values of joint significance tests associated to each "C" category in the explanatory variable. This information allows us to verify hypothesis "1" associated to indirect effects. The last columns present estimated coefficients (and t-ratios) for direct effect. Obviously, this information allows us to verify hypothesis "2."

Table A.1.: Estimations including Purpose of the trip ("Relationship B")

Variables	Adj.-R^2	Categories	Testing indirect effect "B1 Hypothesis" (p-values)	Direct effect on OCS "B2 Hypothesis"	
				Coefficient	t-ratio
Motivation	56.72	Business	0.6338	0.033	0.05
		Leisure	0.9243	0.224	0.41
		VFR*(reference group)*			

Table A.2.: Estimations including tourist features ("Relationship C")

Variables	Adj.-R^2	Categories	Testing indirect effect "C1 Hypothesis" (p-values)"	Direct effect on OCS "C2 Hypothesis"	
				Coefficient	t-ratio
Sex	53.72	Male	0.3624	0.634	1.62
		female (reference group)			
Age	58.10	15/26	0.2254	-0.279	-0.20
		27/35	0.6461	-0.009	-0.01
		36/45	0.5317	-0.993	-0.80
		46/60	0.7670	-0.622	-0.49
		65 and older (reference group)			
Country of origin	57.62	Germany	0.6728	0.148	0.21
		UK	0.0020	-1.527	-2.30
		France	0.4984	0.708	0.74
		Italy	0.6574	-0.729	-0.90
		Rest of Europe	0.4054	-0.521	-0.89
		Rest of the World (reference group)			
Professional status	57.60	Self-employed	0.3494	0.958	0.12
		White collar	0.2147	0.754	0.84
		Skilled worker	0.0783	1.338	1.74
		Other worker	0.9966	-0.251	-0.24
		Inactive (reference group)			
Number of visits	56.88	First time visitors (reference group)			
		1 or 2 previous visits	0.8095	-0.143	-0.27
		3 or more previous visits	0.6300	0.583	0.73

Table A.3.: Estimations including trip features ("Relationship D")

Variables	Adj.-R^2	Categories	Testing indirect effect "D1 Hypothesis" (p-values)"	Direct effect on OCS "D2 Hypothesis"	
				Coefficient	t-ratio
Category of hotel	56.59	1-3 stars (reference group)			
		4-5 stars	0.9552	0.263	0.55
Duration	57.41	1 or 2 nights	0.2804	-0.845	-1.49
		3 or 4 nights	0.3419	-0.638	-1.24
		5 or more (reference group)			
Transportation	56.28	Car	0.5700	1.827	1.30
		By Air (and others) (reference group)			
Planning	56.94	By its own account	0.8670	0.134	0.25
		by tour operator/travel agency	0.6470	-0.429	-0.77
		Company (reference group)			