
TOURIST EXPENDITURE DETERMINANTS IN A CROSS-SECTION DATA MODEL*

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RESUMEN

Se pretende obtener los determinantes del Gasto turístico en las Islas Baleares a través de un modelo microeconómico estimado a partir de los datos obtenidos de la Encuesta de Gasto Turístico en 1996. En el trabajo se plantea que en un destino turístico de masas es de especial importancia desglosar el gasto total en sus dos componentes: gasto turístico en origen y gasto turístico en destino y por ello se modelizan ambas componentes. La especificación de los dos modelos estimados con datos individuales incluye mayoritariamente variables explicativas ficticias que recogen las características del turista y de su viaje.

Los resultados muestran que existen diferencias significativas en el gasto según diferentes perfiles de consumidores y que sería conveniente crear estrategias de desarrollo y promoción basadas en la repercusión del gasto turístico en la economía del destino turístico

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1. INTRODUCTION

The new tourism development which started in the 80s, consumers show substantial changes in their motivations and travel patterns and a new set of services has emerged.

An analysis of recent trends indicates that the mass tourism model with its essential characteristics persists (Ioannides and Debbage, 1997) in many tourist areas, as it is the case of the Balearic Islands. However, despite the rigidity attributed to this model, certain sectors of these economies have adopted alternative competitive strategies that have made them more flexible. One of the consequences of this changing process is that the traditional tourism holidays have become an integrated product made up of more complex complementary services.

Poon (1993) has argued that the tourist market has become increasingly segmented along demographic and socioeconomic lines, and even along psychographic lines as the tourist's motivations, hobbies, opinions, etc. As a result, the analysis of tourist markets has become increasingly complex and it demands more sophisticated tools. The characterisation of the tourists that each market receives and thus that of the tourist product on offer cannot be undertaken on the basis of isolated consideration of each attribute like nationality, age, type of accommodation, etc. Rather, we have to differentiate one tourist from another via the complex combination of characteristics that define them.

In a tourist market, the fundamental variable to undertake a profitability analysis is the tourist expenditure of its visitors. This paper aims to analyse this expenditure in a cross-sectional dimension to look for those characteristics that define different tourist profiles according to expenditure levels, with consideration to the increasing complexity of markets discussed earlier.

To conduct this kind of analysis in a rigorous way appropriate statistic and econometric tools are needed. The methodology proposed in this paper is the estimation of a cross-sectional regression model for the tourist expenditure in which this variable is supposed to be a result of the different characteristics of the individual and their travel, their motivation, satisfaction, etc. Such a model allows to determine different tourist profiles from the observation of the coefficients that turn out to be significant. In this way one can create tourist profiles specific to the reality of each tourist destination and investigate relevant differences in their expenditures.

The literature has a large number of empirical studies aimed at measuring the demand for tourism, both in terms of number of tourists and their expenditures. The greater part of these studies use time series data and their objective is to appraise the temporary development of the demand. Lim (1997) classified 100 models of international tourism demand according to the type of data used for estimation. This classification showed that only nine models used cross-sectional data and nine used panel data; all the rest used temporal data. Crouch (1994 a, b) finds in this survey papers that only the study by Mak, Moncur and Yonamine (1977) is based on information from a sample of tourists, their personal individual characteristics and those of their holiday. In contrast, cross-sectional data taken from surveys is often used in studies which analyse market segmentation when trying to identify homogeneous groups from among a heterogeneous population. There are many examples of this type of study on tourist markets.(e.g. Andereck and Caldwell, 1994; Juaneda and Sastre, 1999), but they do not normally rely on causality type models.

The aims of the present research are similar to the study by Taylor, Fletcher and Clabaugh (1993) who investigated the differential characteristics of visitors to four counties in Wyoming, depending on whether they visited historical sites and on their different levels of expenditure. In order to determine the profiles corresponding to the different levels of expenditure

(the dependent variable), they also used a regression model with quantitative and qualitative independent variables. This model was estimated using the data obtained from a survey given to visitors to the four areas. The survey gathered information on personal characteristics and on the trip itself.

The methodology of causal modelisation that we propose allows the easy implementation of an analysis that differentiates between expenditures paid for in the country of origin and those made at the destination. This is simply done by specifying a regression model for each type of expenditure. This decomposition is especially relevant in certain mass tourist destinations for which the tourist typically purchases in the city of origin a package comprising transport and accommodation. As a result, the only payments made at the destination consist of pocket money expenditures, i.e. extra expenditures made at the accommodation or outside it (restaurants, bars, souvenirs, etc.). Of the two types of expenditures only the second one becomes in its entirety inbound tourist income in the balance of payments of the destination. The first type of expenditure becomes tourist income only partially through the payments that touroperators made to the providers of lodging and locally arranged transport and other related payments.

In view of this, the authors argue that in mass tourism destinations which are contracted out mainly through package deals one should contemplate a decomposition of expenditure in its components (transport, accommodation, etc.) in order to obtain an estimation of tourist income at the destination. However, this may be a difficult task specially when the information about the nature of this expenditure is obtained from the tourists themselves via a survey as they know the total amount they paid for their package but not how it breaks down into these different components.

The present work aims to make a contribution towards the study of mass tourist destinations lead by a tourist product which is offered mainly through package deals. We suggest the study of the tourist expenditure as the key variable for the economic analysis of tourism, and specifically we propose :

- a) a methodology for the estimation of the tourist expenditure per person and per day via a cross-sectional sample of individuals which allows the characterisation of expenditure groupings corresponding to different tourist profiles appropriate to each specific tourist destination and reflecting the complexity of the current segmentation in today's tourist markets;
- b) the estimation of tourist expenditure decomposing origin and destination expenditures as a means to obtain an approximation to the estimation of tourist income ;
- c) testing the existence of significant differences in expenditure profiles.

We present an application of this methodology to the case of the Balearic Islands, a traditional mass tourist destination in the Mediterranean the economy of which depends mainly on this activity. This makes the analysis of tourist expenditure and of the portion that becomes tourist income for the local economy specially relevant.

2. THE SURVEY DATA AND THE MODEL

The sample of the survey group of 5,500 tourists were interviewed in 1996 at the end of their holiday at Majorca, Menorca, and Ibiza Airports. From the information collected in the *Survey of Tourist Expenditure in the Balearic Islands*, two expenditure variables can be obtained. One variable is *Tourism Expenditure in the country of origin* per tourist and day (TEO) and the second is *Tourism Expenditure in the Balearic Islands* (TEBI) per tourist and

day. If both figures are added the *Total Expenditure* per tourist per day can be obtained. This decomposition is very relevant, as it is estimated from the Survey that 85% of tourists visiting the Balearics purchase a package in their country of origin.

The survey also provides basic information on the characteristics of the visitors with different levels of expenditure. Thus it can be studied to what extent factors such as nationality, age, profession, type of accommodation, type of booking, paid for items, opinion on prices and the trip itself, etc., influence Tourism expenditure and, in this way, the differences in spending levels between groups classified according to those factors can be established.

On the basis of this information we carry out an estimation of tourism expenditure through a regression model with dummy variables and two quantitative variables, the number of days corresponding to the length of the stay (*days*) and the number of people included in the declared expenditure (*people*). The proposed regression models are as follows:

$$LTEO_i = a_0 + \sum_{j=1}^{32} a_j X_{ij} + a_{33} days_i + a_{34} days_i^2 + a_{35} people_i + a_{36} people_i^2 + u_i$$

$$LTEBI_i = g_0 + \sum_{j=1}^{32} g_j X_{ij} + g_{33} days_i + g_{34} days_i^2 + g_{35} people_i + g_{36} people_i^2 + w_i$$

Both of them use the same independent variables, but different dependent variable, TEO and TEBI in logarithms. X_{ij} is a dummy variable that equals one for individuals belonging to category j and zero otherwise.

The constant in the model gives the figure for the average expenditure for a tourist of a *reference group* whose characteristics correspond to all the categories omitted to avoid the dummy variable trap. In our regression the reference tourist is German, aged between 30 and 45 years, working as employee, staying in Balearic Islands in a hotel on their second or further visit to the island, who have paid for transport and accommodation on a half-board basis. As regards their booking procedure, reservations were made between three and six months in advance, and were bought at a travel agent office. Based on survey results their opinion about price is that it is 'normal' and their impression of the holiday is good.

3. STUDY RESULTS

Table 1 presents the results of the estimation of each model with the values of the estimated parameters associated to each category and the t-statistic values. To aid in a better interpretation of the results, the *Average Tourist Expenditure* per person and day has been calculated for the reference group from the estimated value of the parameters in both models. It has been assumed that the number of people is two and that the length of the stay is 14 days. As a result, the ATEO (a_0) results in 70.27 \$ and the ATEBI (c_0) in 31.79\$. The next step will be to identify which categories, different from those of the reference group, significantly influence variations of these average expenditure levels.

One of the most important factors is that of the items that have been paid in the home city. It is obvious that ATEO increases with the number of services contracted in origin (transport, room and meals), and this fact is reflected in the results. Besides, differences in average expenditure for each arranged service can be calculated. It is found that the payment in origin of the full package (*transport, room and full board*) increases ATEO by 8.36%. While only contracting *transport and room* causes its reduction by 15.57%. When only *transport* is

contracted, then the reduction goes further to 62,88%. The effects on the ATEBI are obviously the opposite. The tourist only contracting transportation spends a 26.71% per cent more in the islands than the reference tourist (which had paid for *transport, room and half-board*). The tourist contracting transport and room spends 20.18% more.

Professional classifications are typical proxies of the socio-economic status of the individual. The results support that higher professional levels result in significant increases of ATEO and ATEBI. This is the case for the *Post-graduate and executive* and the *Middle-manager levels*, which increase ATEO by a 9.48% and a 4.54%, respectively. ATEBI increases in a 12.19% for the first category.

Another important factor influencing expenditure levels is the visitor's nationality. The reference group, of German nationality, represents one of the most important sources of international tourists for the Balearic Islands (40%). The second country in order of importance is the UK (33%). From the exploitation of the results it can be obtained that in the two expenditure variables, the British spend less than the Germans, namely 31.84% less in ATEO and a 5.54 less in ATEBI. A similar result occurs with Spanish tourists, ATEO decreases by 57.75% and ATEBI by 8.35%. This is the third group in the ranking of visitors to the Balearic Islands. For the ATEBI variable, the Italian are the group with highest average expenditure, 22.04% more than the reference German group. Visitors from the Scandinavian countries also show a higher expenditure level in the islands (11.45%). Finally, the French and the Belgian spend a 10.26% less.

The results also show that tourists under 30 years old spend 9,62% less in their countries and a 16.09 % less in the Balearic Islands. One of the outstanding variables explaining differences in expenditure is *When Reservation was made*. Thus, late reservations are associated to a lesser expenditure. For instance *same day and Less than a week before* reservations show expenditure reductions of 21.71% and 24.58%, respectively. Those made *between one week and a month before* imply a 15.22% decrease in average expenditure.

To finish, it should be stressed that those people declaring negative opinions about their holiday experience spend 31.70% less than the reference group. Likewise, the tourist who considers the Balearic Islands an expensive to very expensive destination spend more money in the destination than those in the reference group.

4. CONCLUSION

In this paper we have considered the Tourist Expenditure as a key variable in the economic analysis of the costs and profits associated to the tourist trade. We have argued that the study of this variable should take into account the increasing complexity of tourist demand and supply. The estimation of the different spending levels per tourist and per day by means of a causal model that reflects the influence on this variable of different attributes of the individual tourists can be found to be useful. The main advantage of such model is that it allows estimation of the average expenditure for typical tourist profiles specific to each destination and to test the existence of significant differences in expenditure levels among them. The methodology offered in this report also allows us to forecast (from a controlled sample group with a great number of characteristics), the changes made in the tourist expenditure when any of these characteristics change.

By establishing these tourist profiles, the tourist product may be understood not only as potential demand, but also in terms of profitability considering the tourism expenditure. Aguiló (1990) warned that a cost-benefit analysis for the Balearic Islands as a mass tourist destination

showed that 10% of its visitors spent very little, resulting in a negative addition to the net social benefit of the tourist activity. This line of argument reinforces the need of an exhaustive study of which part of the tourist expenditure reverts to the local economy as tourist income. There is a certain type of clientele whose spending power is limited and it is doubtful whether catering to this group is profitable. In contrast, other types reflect levels of spending which can be compared with those who traditionally have been dubbed 'quality tourism'.

Thus, our work supports the idea that at business level it is necessary to develop a product strategy that takes into account the productivity in terms of expenditure. At the same time, the public administration, which in many cases makes generic promotion campaigns, should target its promotion on consumers that have a superior level of expenditure.

Additionally, we have emphasised in the context of mass tourism markets the importance of breaking down the tourist expenditure of each individual in expenditure at the origin country and expenditure at the destination. The aim of this decomposition is to obtain an approximation to the expenditures that become tourist income for the destination's economy. Although splitting the total figure only into these two components may be insufficient for some applications, in future research we will investigate the possibilities of obtaining a more detailed decomposition of the expenditure at origin separating transport, accommodation, commissions and other expenditures

The Balearic Islands continue to be the leading Mediterranean holiday destination as regards the number of tourists. Nevertheless, the figures for the average expenditure per tourist make it clear that the quality of visitors - in terms of their spending power - diminished in the 80s and the beginning of the 90s. This makes this destination an appropriate example to apply the methodology that we propose for the analysis of consolidated mass tourism markets, in which the strategies of tourist policy, whether public or private, should seek an increase in per capita tourist expenditure rather than in absolute number of visitors.

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Table 1: Models estimations

Independents Variables	Dependent: LTEO		Dependent LTEBI		
	Parameters (per cent)	t-values	Parameters (per cent)	t-values	
Nationality:					
X1	British	-31.84	-19.093 ^a	-5.54	-2.56 ^b
X2	Spanish	-57.75	-19.96 ^a	-8.35	-2.36 ^b
X3	French and Belgian	-4.27	-1.44	-10.26	-2.67 ^a
X4	Scandinavian	-0.87	-0.299	11.45	3.05 ^a
X5	Italian	0.13	0.016	22.04	1.98 ^b
X6	Others	-14.56	-5.22 ^a	8.61	2.38 ^b
Age:					
X7	Less than Thirty	-9.62	-5.95 ^a	-16.09	-7.68 ^a
X8	Between forty-five to sixty	0.65	0.366	0.20	0.087
X9	More than sixty	4.17	1.43	-6.66	-1.76
Profession:					
X10	Post-graduate level professionals or executives	9.48	5.56 ^a	12.19	5.52 ^a
X11	Middle-management or civil-servants.	4.54	2.33 ^b	2.37	0.94
X12	Manual Workers	-0.66	-0.27	6.08	1.94
X13	Other	-2.75	-1.55	-11.12	-4.83 ^a
Type of Accomodation:					
X14	Appartment	-1.53	-0.78	-2.71	-1.07
X15	Other	-8.77	-2.58 ^a	-22.59	-5.13 ^a
Type of Reservation:					
X16	All with tour-operator	0.47	0.225	-0.31	0.115
X17	Transport with agency and direct accomodation	-16.53	-6.508 ^a	6.99	2.12 ^b
X18	No reservation	-18.05	-5.18 ^a	3.25	0.72
When Reservation was Made:					
X19	Same day	-21.71	-5.02 ^a	1.16	0.20
X20	Less than a week before	-24.58	-10.52 ^a	-4.15	-1.37
X21	Between one week and a month	-15.22	-8.25 ^a	-5.69	-2.38 ^b
X22	Between one month and three months	-1.86	-1.009	-4.46	-1.86
X23	More than six months	-0.18	-0.97	0.77	0.319
Items Paid For:					
X24	Only transport	-62.88	-19.03 ^a	26.71	6.23 ^a
X25	Transport and room	-15.57	-7.58 ^a	20.18	7.58 ^a
X26	Transport, room and full-board	8.36	3.41 ^a	-23.80	-7.50 ^a
Opinion of Prices:					
X27	Expensive or quite expensive	7.22	4.77 ^a	6.77	3.45 ^a
X28	Cheap or quite cheap.	-13.43	-6.57 ^a	-8.56	-3.23 ^a
Opinion of Holiday:					
X29	Very good	-0.36	-0.276	2.79	1.64
X30	Normal.	-7.63	-3.96 ^a	-1.44	-0.58
X31	Bad	-0.77	-0.139	-31.70	-4.40 ^a
Number of Times Visited the Islands:					
X32	First time	-3.14	-2.28 ^b	-5.05	-2.83 ^a
Quantitative Variables:					
X33	People	-12.77	-8.22 ^a	-35.22	-17.49 ^a
X34	People square	0.47	2.29 ^b	21.07	7.94 ^a
X35	Days	-7.45	-27.4 ^a	-3.80	-10.78 ^a
X36	Days square	0.00047	7.9 ^a	0.00036	4.70 ^a
Average Expenditure for Reference Group:					
	Constant	5.4035		4.5413	
	R ² =	0.72		0.72	

^ap_≤0.01^bp_≤0.05