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Conference Paper

An econometric approach to urban tourism demand: The case of Barcelona

38th Congress of the European Regional Science Association: "Europe Quo Vadis? - Regional Questions at the Turn of the Century", 28 August - 1 September 1998, Vienna, Austria

Provided in Cooperation with:
European Regional Science Association (ERSA)

Suggested Citation: Andre, Maria Encarnacion; Artis, Manuel (1998) : An econometric approach to urban tourism demand: The case of Barcelona, 38th Congress of the European Regional Science Association: "Europe Quo Vadis? - Regional Questions at the Turn of the Century", 28 August - 1 September 1998, Vienna, Austria, European Regional Science Association (ERSA), Louvain-la-Neuve

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Mitglied der Leibniz-Gemeinschaft

38th European Congress of the Regional Science Association

August 28 - September 1, 1998, Vienna, Austria

AN ECONOMETRIC APPROACH TO URBAN TOURISM DEMAND. THE CASE OF BARCELONA.

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Abstract:

In the last years, tourism has experienced deep transformations, so searching new alternatives is an absolute necessity. Urban space has become a very interesting option, as its enormous range of possibilities may respond to many demand patterns changes.This paper is concerned with the study of urban tourism, focused on demand analysis, as a way to economic growth in cities and regions in general. A previous review of urban tourism features and strategies is presented, applied to the Barcelona case. One of the main questions to take into consideration when designing urban strategies is demand segmentation. In cities, the repetition factor or the *fidelity* of visitors in Barcelona, may help to discriminate the two main tourist segments: return visits (consolidated tourism) and first visits (attracted tourism). Therefore, the probability of a return visit is estimated, on the basis of several variables including individual ones. Conclusions prove that the repeated visits in Barcelona are closely linked to the notion of *captivity*. So the presence of two very different demand segments is demonstrated.

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1. Introduction

In the last years it has become more and more common hearing or reading expressions such as *new tourist modalities* or *altenative tourism*. This is just a little proof that tourism is experiencing deep transformations. Demand patterns have changed and the new ones require a supply fitting to current circumstances. At the same time, changes in policy making have occurred. Tourist authorities are more worried about long term results and another questions, like externalities, than they were some decades ago. So tourist benefits and costs are perceived under new parameters, such as sustainability or endogenous growth.

In this context, urban space has become one of the most important options. On one hand, cities may offer an enormous range of tourist possibilities, so most people may satisfy their tourist demands there. On the other hand, cities have changed enormously. Industry, which had been centralized in metropolis for centuries, has fled to new destinations, led by recent location theories. Moreover, some services activities are also escaping from central dictricts to peripherial areas, and so is doing resident population. Finally, a large number of reasons to visit cities are dissapearing with new technologies. So tourism has become a very important activity to promote for an economic upswing.

2. Urban Tourism Features and Strategies. The Revisitation Phenomenon.

Urban tourism presents a lot of specific features. These features are mainly related to tourist resources and demand behaviour.

In relation to resources[1], it is worth to stand out the following aspects: *primary product*, that is to say, the one which motivates the visit, is enormously heterogeneous, so it may satisfy very different types of demand. It is important to denote the predominance of the socio-cultural resources, outcoming from human activity. *Complementary product*, meaning those products which permit the development of tourist activity (catering, accomodation, etc.), is, in general, more expensive, but also with a higher quality level, than in other tourist destinations. *Image*

is one of the main factors to take care of, as tourist demand has appeared to be really sensitive to it and, moreover in a context of an increasing and every day more competitive urban destinations supply. It is quite difficult to gain and enjoy a world-wide good reputation, but it is rather easy to fall into discredit. In the case of cities it becomes more important, as events acquire a greater and faster propagation. *Internal accessibility*, which includes all those aspects that make easier the development of the tourist activity once in destination (saturation, traffic, etc.), implies aspects such as defining an optimum threshold, a good urban public transport system or implementing the tourist districts theory in future urban planification. Finally, *external accessibility*, i.e. connection with the rest of the world in all senses, implies the presence of the most advanced technologies, telecommunications network and means of transport.

On the other hand, some of the distinctive features of urban tourist demand are the following: there are very different motivations; duration usually implies short-stays; there is a rather important percentage of international visitors; expenditure per day is higher than the one incured in other destinations; there is less seasonality, and it is highly linked to the visitor's motivation, becoming very important the weekly seasonality; finally, it must be denoted that, in general, urban tourists are more strict in their requirements, so reaching full satisfaction levels is really difficult.

All these specific characteristics reveal the need to design suitable strategies. Nevertheless, before defining the tourist policy, there is a previous question which has to be taken into account: the trade-off between product diversification and identity upkeep. All policy makers know the advantages of product diversification. However, in an extreme, cities may loose their own identity, becoming *clonic* and, therefore damaging their charm and personality. Moreover, keeping the identity of the city is every day more important, according to the new tastes and requirements that tourist demand has revealed.

Thus the first step when designing tourist strategies implies drawing up an inventory of the city tourist resources, the products it may offer and its tourist potential. Then, policy must go towards the introducction of both quantitative and qualitative improvements as, simultaneously, promotion campaigns are to be launched. Likewise, different groups of

tourists need different marketing strategies. So a good tourist planning can't manage without a previous knowledge of urban tourists segments[2]. Finally, recent experiences show that the basis of an optimal tourist management consists of a strong collaboration between all the involved agents.

Summarizing, tourist strategies in general must be addressed to visitors' decision making process, which can be separated in two stages. A first group of strategies should influence the destination choice. Then, when an indivisual has already decided to visit the city, there are several aspects that tourist policy makers must take into consideration when designing the strategies, in order to maximise the profits of that visit. These aspects include factors such as expenditure, visit duration and revisitation phenomenon.

The last one, revisitating a destination, becomes specially relevant in urban context. Firstly, because repeated visits represent an important percentage of total urban tourism demand. Also because several studies have proven that repetition factor is linked with some visitors features, which may explain rather different behaviour patterns. Thus, the analysis of repetition factor may contribute to define urban tourist demand segmentation. In this sense, it is important to point out that urban revisitation phenomenon has been hardly dealt. There are some studies related to vacational tourism in other tourist destinations[3], which analyse return visits, focusing on the variables which influence tourists' decision to repeat their visit. However, as some literature contributions have stood out, most factors incorporated into those models would become useless for urban spaces, since return visits in urban tourism appear to be more closely linked to the notion of *captivity* than to fidelity. It means that most return visitors don't make a completely free decision when deciding to revisit a city, since it implies more or less an obligation. That is why they are ussualy called *captive visitors*. This obligation is mainly associated with the motivation of their visit (business, conferences, fairs, relatives, friends, etc.). Actually, a certain degree of captivity can be found in all destinations. Nevertheless, captive tourists represent an important percentage in global demand in cities.

Tourism research ussually skips the analysis of urban repeat visitors, as all of them are suposed to be captive tourists and, therefore, there is no need to worry about them; they will continue revisiting the city and no factors will modify their choice. Nevertheless, an analysis

of return visitors may help to increase the knowledge of urban tourism demand. Furthermore, this group of visitors plays a very important role in urban tourism, often contributing, for example, to decrease seasonality, partially absorbing hotels overcapacity, or to maintain a minimum demand level, as they are not so sensitive to some factors which may provoque fluctuations in other tourists groups.

In this context, the first question that should be analysed is whether all return visits in cities respond to captive behaviours. Depending on urban characteristics, percentage of return visitors which can be considered captive tourists will probably differ from one city to another. On the other hand, not all captive clientele behaves the same way, and sometimes their captivity may dissapear if no accurate tourist management is applied. Tourist managers must bear in mind that captive clientele may help to guarantee a sustainable tourism model, so keeping their captivity becomes an important goal. Moreover, this tourist segment often requires political measures which may rival with those required by the other segments (prices, saturation, hotel capacity, etc.). Therefore, a complete study of their features, behaviours, satisfaction degree, etc., would improve the global knowledge and forecast of urban tourism, with the subsequent implications on urban tourist planning.

3. Economic Analysis of Tourist Demand. Some relevant questions.

Tourist demand[4] has been widely studied, and there is a lot of contributions dealing with the analysis of the explanatory variables influencing tourist decisions. Of course, all theoretical formulation is based on global demand modelization, where the starting point is the maximization of individual utility. Nevertheless, tourism implies a rather different decision making process from other products, as *tourist product* itself is very different from most consumer goods[5].

Briefly[6], in the first stage of tourist's decision, when choosing destination, it can be said that individual *i* will try to:

$$\mathrm{Max} U_i = U_i(z_j) \quad \text{for } j = 1 \ldots m$$

where *U* is the utility and *z* is the vector of the trip characteristics desired by individual *i*. Therefore, only those characteristics which are demanded by visitors will influence the way they perceive a destination. Moreover, sometimes these characteristics are not so evident and

visitors must combine several tourist elements to get what they are searching for. This is called *consumption technology*, and implies an important restriction for tourism models. So:

$$z = g(x_k) \quad \text{for } k = 1...n$$

where *x* is the vector of elements forming the final required characteristic *z*. Thus, it can be concluded that utility depends on the tourist elements in destination. This modelization usually incorporates two main restictions: time and budget. Therefore, applying the classical demand models framework to tourism, tourist *indifference curves* can be obtained. The most distant curve from origin being compatible with the most strict restriction will determine the final choice.

However, revisitation analysis implies including another explanatory variables, such as satisfaction obtained in previous visits, a reduced uncertainty, the possibility of visiting relatives or friends, etc. When modelizing revisitation[7], individual *i* is suposed to repeat the visit if:

$$U_1 > U_2$$

where U_1 is expected utility associated to revisitation, while U_2 is expected utility associated to visiting a new destination, and the factors influencing them both are different. Gitelson and Crompton (1984) pointed out three sets of variables influencing repeat visits:

a) *Psycographic variables*, which basically include motivations.
b) *Sociodemographic variables*, including individual features, such as age, occupation,etc.
c) *Trip characteristics*, mainly distance, duration and the possibility to visit relatives or friends.

Starting from this framework, several authors have estimated the probability of revisitation, always applied to vacation tourism. Nevertheless, if it really exists a captive visitors group, the main restriction to incorporate in decision making process will be destination itself, with a large number of implications. So the aim of this paper is to determine whether there is a captive clientele, their specific features and the main factors which motivate captivity. This analysis refers to all urban tourism demand, not only vacational one, including an empirical application to the case of Barcelona.

4. Tourism in Barcelona.

Barcelona is one of the most paradigmatic examples of tourism growth during the last decade, with an increasing number of visitors. In the tourist area life cycle[8], Barcelona can be located in an expansion period. This period started in the 80's with the implementation of an important promotion campaign. In 1986, when the city was nominated to organize the XXVth. Olimpic Games, Barcelona experienced an important take off, being incorporated to international tours. Since that moment, Barcelona has been working hard on product diversification, resources improvement and gaining a good image and propagation.

By the same time *Turisme de Barcelona* was created, arising from the confluence of different tourist agents interests[9]. This local tourism agency join both public and privat sectors, and has elaborated and carried out successive Estrategic Tourism Plans. It has to be pointed out that two of the most important aims defined by this agency include the consolidation of current tourist demand, and attracting new one.

All data used in this paper has been provided by *Turisme de Barcelona*, and it comes from a survey addressed to a sample of 2.372 hotel customers.

Table 1. Tourist evolution in Barcelona 1990-1995

	Hotel beds	Tourists	Nights	Hotel occupation (%)	Duration (average)
1990	18.569	1.732.902	3.795.522	58	2.19
1995	27.988	2.906.224	5.674.580	55.1	1.95

Source: *Turisme de Barcelona*

Table 1 shows that from 1990 to 1995 figures corresponding to hotel capacity, number of tourists and nights spent in Barcelona experienced important increases. Nevertheless, percentage of hotel occupation fell, as visits increase was not enough to compensate growth in hotel capacity. In the same way, average duration also diminished.

Table 2 shows revisitation degree in 1996. It can be observed that only 33.6% tourists were new visitors, i.e. attracted visitors. Therefore, it is evident that there is an important revisitation phenomenon. Furthermore, 25.8% tourists come to Barcelona at least once a year. Figures suggest that there is a high percentage of captive visitors.

Table 2. Revisitation degree in 1996

Number of visits	Frequency	%
1st. visit	798	33.6
2nd. visit	305	12.9
3rd./4th. visit	264	11.1
5th./6th. visit	200	8.4
7th./11th. visit	192	8.1
Once a year	159	6.7
2/3 times/year	238	10
4/6 times/year	101	4.3
Once a month	73	3.1
2/3 times/month	32	1.3
Once a week	10	0.4
Total	2372	100

Source: *Turisme de Barcelona*

Table 3. Revisitation evolution (%)

	1st. visit	2nd. visit	3rd. visit or more
1989	17.4	18.6	64
1990	20.9	9.9	69.2
1991	21.4	6.2	72.4
1992	22.7	15.2	62.1
1993	25.9	9.5	64.6
1994	26.7	10.7	62.6
1995	28.6	12.4	59
1996	33.6	12.9	53.5

Source: *Turisme de Barcelona*

Table 4. Visitors motivations (%)

	Professional motivations	Vacation	Fairs and Congress	Family motivations	Others
1990	53.8	22.7	15.3	4.5	3.7
1996	35.9	43.4	11.3	2	7.4

Source: *Turisme de Barcelona*

However, table 3 shows that percentage of tourists coming for a first visit has doubled in few years. Tabla 4 shows changes in visitors proportions depending on their motivations. Percentage corresponding to visitors who came for business, fairs, congress or family reasons, have decreased, as vacation tourism ratio has increased. The first group could be easily identified with captive clientele. Despite this, global growth in tourist demand, mostly absorbed by new attracted clientele, explains the fall of return visitors ratio. Moreover, absolute figures reveal that return visits have increased.

5. The analysis of Revisitation Phenomenon.

5.1. Model Specification

The endogenous variable which is going to be analysed is *the number of visits an individual has made to a urban destination before the current one.* In the case of Barcelona, the question modelized is: *how many times have you been in Barcelona before?* refered to 1996 survey. So it is a multiple discret choice question, implying qualitative response data. All answer

possibilities are showed in table 2. However, they have been recoded into five categories; first four remain the same as they are in the original variable, and the last one includes all visitors who have come to Barcelona more than five times.

Methodology proposed in order to analyse this variable is the multinomial logistic regresion model, which is very appropriate when dealing with microdata. It must be pointed out that some previous studies, including a first stage of the current one[10], have applied the same methodology to study return visits, but with a dicotomic specification. The LOGIT model estimes the probability that an individual revisits Barcelona a certain number of times, depending on a list of explanatory variables.

The current model specification includes those three sets of independent variables which have been analysed previously. These are:

- *Psicographic variables*: motivation. This is the most explanatory variable, as it may detect if an individual has the obligation to revisit a city.
- *Sociodemographic variables*: occupation, nationality, age and expenditure (quantitative variable). Nationality is used as a proxy of classical variables in tourism demand modelization, such as relative prices, or exchange rate. Furthermore, nationality, expenditure and occupation may approximate accurately individual disposable income. Sex has not been included, because this variable is highly correlated to some other variables. Therefore, sex' effect is widely explained when analysing some occupation categories such as high executive or homewives.
- *Trip variables*: distance, the most important one, has also been approximated by nationality. Another variables considered are duration; season (a dummy variable has been created, defined as 1 if visit has taken place in June, July or August, and 0 otherwise); hotel category; whether individual is coming alone or accompanied and the percentage of expenditure destinated to leisure and cultural activities (quantitative variable).

Thus, reference category is defined by: free professionals; Spanish; between 35 and 49 years old; staying in hotels with 4 or less stars; coming accompanied and for vacational motivation, form September to May, and spending 2-3 nights in the city[11].

Obviously, this study has some limitations. The first group are data limitations; for instance, survey doesn't include day visitors, which is a very important urban tourist segment. Besides this, there isn't any available information about the features of previous visits, so all current answers are extrapolated to them. Finally, one of classical problems in this kind of studies is variables multicolineality, which has to be taken into account for a correct intrepretation of the results.

5.2. Model Estimation

Tables 5 and 6 show the maximum-likelyhood estimation results. The first table, which includes an analysis of variance, tests the global signification of variables.

It can be observed that only three variables appear as non significant: high executives, people elder than 50, and 5 stars hotels. Nevertheless, a previous descriptive analysis has demonstrated that some variables in the model are closely correlated to anothers. For example, people over 50 years old are very correlated to retired people. High executives also presented correlation with the professional motivations and with hotel top category. In spite of this, all these variables are relevant and improve the model forecasting capacity so they can not be excluded of the specification.

Table 5. Maximum-Likelihood Analysis-Of-Variance

Variable	Chi-Square	Prob
Intercept	37.21	0.0000
High skilled technician	12.17	0.0161
High executive	8.23	0.0836
Students and housewives	32.90	0.0000
Retired	9.89	0.0423
French	48.68	0.0000
Other European	322.09	0.0000
Rest of the World	344.42	0.0000
Younger than 24	18.63	0.0009
From 25 to 34	16.90	0.0020
Elder than 50	3.60	0.4626
Expenditure	11.37	0.0227
5 stars hotel	5.42	0.2472
Alone	22.45	0.0002
Professional motivations	98.54	0.0000
Family motivations	17.92	0.0013
Fairs and congress	44.61	0.0000
Other motivations	17.53	0.0015
June-July-August	12.69	0.0129
Leisure and cultural expenditure	12.07	0.0168

One night	22.74	0.0001
More than three nights	11.01	0.0265

Table 6 shows parameter estimations, and their significance. The model gives four parametre estimations per variable, corresponding to the four categories of endogenous variable included in the model. The reference category is defined by *first visits*. Then, the first value in every variable estimates the parameter when endogenous variable is defined as *more than five visits*. The second one refers to the category *4/5 visits*, the third one, to *2/3 visits*, and the last one, to *one previous visit*.

McFadden's F^2 coefficient is equal to 0,37, and the forecast capacity of the model has been estimated around 70% of correct forecast values[12]. These are quite good results in this kind of analysis, so the model is validated.

Table 6. Analysis Of Maximum-Likelihood Estimates

Variable	Parameter	Estimate	Standard Error	Chi-Square	Prob
Intercept	1	1.8115	0.3228	31.50	0.0000
	2	0.6953	0.3723	3.49	0.0618
	3	0.3969	0.3272	1.47	0.2251
	4	0.3550	0.3030	1.37	0.2414
High skilled technician	5	-0.3210	0.2270	2.00	0.1574
	6	-0.8882	0.2829	9.86	0.0017
	7	-0.1214	0.2289	0.28	0.5958
	8	-0.4383	0.2216	3.91	0.0480
High executive	9	0.8379	0.3165	7.01	0.0081
	10	0.5201	0.3454	2.27	0.1321
	11	0.3480	0.3439	1.02	0.3116
	12	0.4731	0.3234	2.14	0.1435
Students and homewives	13	-0.9813	0.2771	12.54	0.0004
	14	-1.3636	0.3421	15.89	0.0001
	15	-0.8116	0.2479	10.72	0.0011
	16	-0.8183	0.1978	17.11	0.0000
Retired	17	-0.0938	0.4405	0.05	0.8313
	18	-1.3980	0.5883	5.65	0.0175
	19	-0.0246	0.4085	0.00	0.9519
	20	-0.7952	0.4001	3.95	0.0469
French	21	-1.6612	0.3245	26.22	0.0000
	22	-0.7298	0.3697	3.90	0.0484
	23	-0.0667	0.3435	0.04	0.8461
	24	-0.4451	0.3498	1.62	0.2032
Other European	25	-4.2412	0.2494	289.26	0.0000
	26	-2.5362	0.2744	85.42	0.0000
	27	-1.6638	0.2547	42.68	0.0000
	28	-1.2830	0.2429	27.90	0.0000
Rest of the World	29	-4.6416	0.2595	319.89	0.0000
	30	-2.9271	0.2882	103.16	0.0000
	31	-1.9438	0.2642	54.12	0.0000
	32	-1.5622	0.2524	38.30	0.0000
Younger than 24	33	-1.2599	0.3796	11.02	0.0009
	34	-0.7833	0.4390	3.18	0.0744
	35	-0.9589	0.3289	8.50	0.0036
	36	-0.6615	0.2549	6.74	0.0094
From 25 to 34	37	-0.7971	0.1965	16.46	0.0000
	38	-0.5137	0.2280	5.08	0.0243
	39	-0.4967	0.1977	6.31	0.0120
	40	-0.2940	0.1752	2.82	0.0933
Elder than 50	41	0.3875	0.2800	1.92	0.1663
	42	0.5547	0.3105	3.19	0.0740
	43	0.1846	0.2983	0.38	0.5359
	44	0.1653	0.2849	0.34	0.5617
Expenditure	45	0.00831	0.00303	7.50	0.0062
	46	0.00492	0.00368	1.79	0.1812
	47	0.00572	0.00310	3.42	0.0645
	48	0.00863	0.00277	9.68	0.0019
5 stars hotel	49	0.5235	0.2604	4.04	0.0444
	50	0.4283	0.3014	2.02	0.1553
	51	0.3559	0.2626	1.84	0.1753
	52	0.4851	0.2420	4.02	0.0450
Alone	53	0.8005	0.2248	12.68	0.0004
	54	0.7885	0.2538	9.65	0.0019
	55	0.5284	0.2375	4.95	0.0261
	56	-0.0724	0.2524	0.08	0.7742
Professional motivation	57	2.7704	0.2866	93.47	0.0000
	58	1.7923	0.3201	31.34	0.0000
	59	1.6370	0.2706	36.60	0.0000
	60	1.1167	0.2499	19.97	0.0000
Family motivation	61	2.1569	0.5569	15.00	0.0001
	62	1.3590	0.7000	3.77	0.0522

	63	1.4590	0.5744	6.45	0.0111
	64	0.4204	0.6582	0.41	0.5230
Fairs and congress	65	2.1255	0.3262	42.45	0.0000
	66	1.4840	0.3641	16.61	0.0000
	67	0.9368	0.3306	8.03	0.0046
	68	0.6467	0.3067	4.45	0.0350
Other motivations	69	1.0645	0.3272	10.58	0.0011
	70	0.8680	0.3977	4.76	0.0291
	71	1.0537	0.2946	12.79	0.0003
	72	0.3113	0.2860	1.18	0.2764
June-July-August	73	-0.6675	0.1932	11.93	0.0006
	74	-0.3607	0.2259	2.55	0.1102
	75	-0.4032	0.1893	4.54	0.0332
	76	-0.1667	0.1605	1.08	0.2990
Leisure and cultural	77	-0.0204	0.00827	6.06	0.0139
expenditure	78	-0.0196	0.0102	3.72	0.0537
	79	-0.00942	0.00771	1.49	0.2216
	80	0.00618	0.00640	0.93	0.3342
One night	81	0.5844	0.2126	7.56	0.0060
	82	0.1250	0.2464	0.26	0.6120
	83	-0.2716	0.2371	1.31	0.2520
	84	-0.1904	0.2270	0.70	0.4016
More than three nights	85	-0.5461	0.2073	6.94	0.0084
	86	-0.5791	0.2459	5.55	0.0185
	87	-0.4619	0.1952	5.60	0.0180
	88	-0.3678	0.1706	4.65	0.0311

Estimation brings the following conclusions: *high executives* have a higher probability to be return visitors than other groups, and this probability grows when increasing the number of previous visits. They are followed by the reference group, *free professionals*. The rest of occupation categories in the model (*students, homewives, retired and technicians*) reveal that they are less expected to be captive clientele. In this group, it can be observed that *high skilled technicians* parameters present smaller negative values than the other categories. Notice also that parameters corresponding to this variable are not significative because of the high correlation with the motivation variable *fairs and congress.* There are some occupations not included in the model, such as *farmers* or *sportmen/women*. They were previously tested, appearing as non relevant and that is why they were excluded of the analysis.

In relation to nacionality, *Spanish* (the reference category) are the ones with a higher probability to revisit Barcelona. The other categories have negative parameters, and their values become diminish when increasing the number of previous visit. Notice that *French* are the ones with higher values. Consequently, it suggests that distance is significative when explaining revisitation.

Parameters associated to age categories show that the group which is the most expected to revisit the city is the one formed by individuals *elder than 50 years*. However, the first

parameter (corresponding to *more than 5 previous visits*) is smaller than second one, but greater than third and fourth. Captive clientele is supposed to increase the probability of choosing one category when this category implies an increase in number of previous visits (as it occurs with high executives). So further explanation is required to explain this turn in figures. People elder than 50 years are highly correlated to some other variables which may be considered defining captive clientele features (such as high executives, or professional motivations). Nevertheless, age may include an important bias, because the elder an individual is, the more possibilities he/she has got to revisit one destination. Results incorporate this fact, with the higher probability associated to the second parameter.

Motivations analysis shows that those ones linked to captivity (*professional and family motivations*, and *fairs and congress*) present an increasing probability of revisitation when increasing the number of previos visits, and these parameters are the higher ones in the model. It clearly demonstrates the presence of a captive demand in Barcelona.

Captivity can also be explained by some other variables, such as *one night stays*, accomodation in *five stars hotels*, coming *alone*, from *September to May*. Estimation shows that people who had come more than five times incured in a higher expenditure. However, the higher number of revisitations, the less they spent in leisure and culture.

6. Conclusions

Empirical results evidence the existence of a captive clientele segment in tousist demand in Barcelona. They also demonstrate that this demand segment has specific features and behaviours, requiring specific tourist planning too, since this segment, less fluctuating than some others, may contribute to a sustainable tourism model.

Methodology and theoretical analysis proposed may be applied to study other tourist modalities and segments. A wider knowledge of tourist segments behaviour patterns and characteristics will improve demand analysis, by introducing further questions such as the estimation of different demand curves, associated to tourist segmentation.

Notes

[1]A large number of resources classifications have been introduced by tourism literature. The one used here is the contribution of Van den Berg *et al*.(1995).

[2] In Bull (1992) a brief analysis of tourist segmentationis carried out.
[3] See, for example, Gitelson and Crompton (1984), Juaneda (1996) or Moutinho and Trimble (1991).
[4]This work focuses on individual analysis. However there are some contributions dealing with the analysis of aggregated toursit demand. Obviously, available data used in this kind of modelization has not permitted including demand segmentation. Nevertheless, tourist economic theory suggests that different segments imply different demand curves, since they present different elasticities. Therefore, including this question in future studies will probably improve the results.
[5] See Gitelson and Crompton (1984) or Mountinho and Trimble (1991) for a further explanation of toutist product specific features.
[6] See Bull (1992).
[7]See Mountinho and Trible (1991).
[8] See Boniface and Cooper (1994).
[9] See Delàs (1995),.
[10]See André (1997).
[11] Other model specifications were tested previously, including some different variables. For example, in a first stage, the variable *hotel category* was included with five categories, corresponding to: *one star, two stars*, etc. Nevertheless, since there was no distinctive behaviour between people staying in less than 5 stars hotels, the variable was finally defined as a dicotomic one.
[12] It depends on the definition of a correct forecast. Using the most strict criterium, model brings 62% correct forecast values.

Acknowledgment

Authors thankfully aknowledge the support of *Turisme de Barcelona* for providing data used in the study.

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