A SEGMENTATION ANALYSIS AND SEGMENTS PROFILE OF BUDGET AIR TRAVELERS

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ABSTRACT

Many Spanish destinations are now considering low cost airlines (LCA) important for attracting tourists. However, there is little evidence on the characteristics travelers using low cost airlines and their flight preferences. Typical segmentation of air travelers are business versus leisure travelers and business versus tourist fares. The aim of this paper is to obtain a deeper understanding of the demand of LCA through a segmentation analysis, based on 808 foreign travelers who used Girona airport, that focuses on low cost travelers' valuations of different flight attributes and trip related characteristics.

Key words: Low-cost airline, segments, segments profile, tourism, cluster analysis, flight characteristics, ANOVA.

Un análisis de segmentación y perfil de los segmentos de los usuarios de vuelos de bajo coste

RESUMEN

Muchos destinos turísticos en España consideran a las compañías de bajo coste como un elemento de atracción para los turistas. Sin embargo no se sabe demasiado sobre las características de los viajeros que las utilizan ni de sus preferencias. La segmentación

habitual de viajeros diferencia entre *business* y turista o entre tarifas *business* y turista. El objetivo de este artículo es profundizar en el conocimiento de la demanda de este tipo de compañías mediante un análisis de segmentación, sobre 808 viajeros extranjeros que utilizaron el aeropuerto de Girona, centrado en las valoraciones de los diferentes atributos del vuelo y de otras características relacionadas con el viaje de los usuarios de vuelos de bajo coste.

Palabras clave: compañía de bajo coste, segmentos, perfil segmentos, turismo, análisis de conglomerados, características del vuelo, ANOVA.

1. INTRODUCTION

Low-cost flights to Spanish airports are a relatively new phenomenon, and have been rising at very high and increasing rates since they first began. Low cost airlines (henceforth, LCAs) transported 31.6% of all foreign air passengers arriving in Spain in 2006 (Instituto de Estudios Turísticos, 2007). The market share of LCAs for intra-European flights is around 30% in Spain, well above that of France and similar to Italy, although still far from those of Ireland or the UK. All predictions tend to point to an increase in their market share in the near future, not due solely to cannibalization of the legacy airline markets but also through the capturing of a share of the latent demand and creating new demand. LCAs have offered travelers the opportunity to travel at more convenient times than charter flights and select the duration of their holidays, which, when combined with cheap fares, generates many short-break trips.

However, not much is known about the profiles of those travelers or the preferences they have among different flight characteristics. There are some analyses that are done quite regularly by the Spanish Tourism Institute (Instituto de Estudios Turísticos) on the characteristics of inbound tourists and LCAs ones in particular. But they are descriptive and do not provide information on specific attributes of LCA and how travelers value them, nor provide information on market segmentation of LCA travelers. We can also find some also descriptive studies on LCA users for some airports in Spain (e.g. Martínez, Prats and Barceló, 2004), or some cluster analysis on all inbound tourism in Spain (e.g. Guardia and Huéscar (2005). However, to our knowledge, there are not studies on market segmentation of travelers that use LCA in Spain. Nor there seems to be many studies for other countries that analyze LCA solely and generate market segments, and even less when those segments are done according to the value that their users place to flight attributes.

Market segmentation is indeed a useful tool for the design of future public or private policies. This is particularly relevant here, as low cost air travel is a fairly new way of attracting tourists to destinations and not much is known about differences in low cost customer preferences. Managers of these companies do also need information about the existence of different segments and their preferences in order to target these more effectively and increase customer loyalty and log-term profitability.

The limited published research on low cost users segments is in contrast with the high number of studies on tourist segmentation (Cha et al, 1995, Formica and Uysal, 1998; Frochot, 2005; Jeffrey and Xie, 1995; Sung, 2004; Molera and Albaladejo, 2007), or ad-prior market segmentation on flight users (Dresner, 2006; Evangelho, Huse and Evangelho, 2007; Huse and Linhares, 2005; Loo, 2008; Mason 2001). As Wedel and Kamakura (2000) describe there are many different approaches and types of segmentation. The broader approach distinguishes between ad- prior segmentation in which groups or segments in the population are settled based on intuition or known characteristics (i.e. demographic or economic criteria such as age, gender, level of income or price sensitivity) and ad- post segmentation in which empirical data and multivariate techniques are necessary to identify the segments based on the customer behavior and product preferences.

The objective of this study is to provide information on LCA tourists by identifying market segments applying an ad-post approach. Segmentation is done through cluster analysis techniques applied to data gathered from a previous survey. In the study, we will focus on (low) fares as a key element for clustering travelers/tourists flying to Girona with the LCA Ryanair but also we will also use valuation on other key characteristics of the flight, as well as the perceived quality of the destination and other relevant information on travel characteristics. To the best of our knowledge, no other study has been conducted that provides this type of information. This segments identification may provide low cost managers and tourism decision makers valuable information for marketing strategies, including product customization.

The paper is organized as follows. The literature review, which focuses basically on segmentation and demand of air travelers, is presented in the following section. Section three presents the research questions and the methodology of analysis, while results are included in section four. Section five finally concludes with some final remarks.

2. LITERATURE REVIEW

Studies on air traveling demand and traveler segmentation tend to show that air traveler demand is influenced among others, by travel costs (monetary and time costs), such as fares, access time to the airport, flexible time schedules and schedule convenience, low waiting times at the airport, the time reductions from low congested airports, and on-time performance of air companies (Dresner, 2006; Fourie and Lubbe, 2006; Franke 2004; Hess and Polak, 2005; Loo, 2008; Mason, 2001, O'Connell and Williams, 2005; Oum et al, 1986; Proussaloglou and Koppleman, 1995; Ryan and Birks, 2005; Windle and Dresner, 1995).

In many of those studies on air demand, segmentation is done on a priori basis, where air fare is generally a segmentation criterion. Segments are then of the type «low fare» versus «business fare class». The analysis has also focused on the differences on consumption patterns among legacy companies that offer full services (FSCs) and LCAs. Differences in the characteristics offered by both types of companies are fundamental for that differentiation. Barbot (2006) and Mason (2001) studies for the European case, those by Evangelho, Huse and Linhares (2005) and by Huse and Evangelho (2007) for Brasil,

those for South Africa by Fourie and Lubbe (2006) or those for Asia by O'Connell and Williams (2005), show that LCA customers are more concerned with the flight fare than for time costs or other flight attributes. One interesting result obtained in Evangelho et al. (2005), Fourie and Lubbe (2005), and Mason (2001) is that part of the business passenger is becoming a client of LCAs. Therefore, it is relevant to generate new research that deepens on the analysis of the existence of potential different segments within each one of those broad groups, such as an analysis of segments within LCAs passengers. Moreover, in the study by Mason y Alamdari (2007), it is shown through a Delphy methodology, that the European airline market will probably reduce the number of airline companies operating in that market, both legacy and low cost ones. The business class fare segment will be drastically reduced within the European boundaries, mainly because many actual users will switch to low cost companies.

Among the studies on air travelling we will focus our attention in the ones by Mason and Grey (1995), and Teichert, Sheh and Wartburg (2008). Those studies use, in addition to fares, specific or behaviour criteria to generate groups of air companies' users, which will be useful for our analysis. In addition to that, they do a complete and broad analysis of a priori market segmentation.

Mason and Gray (1995) study was done before the generalization of LC flights to all or most European countries, both within each country boundaries and among countries. It focused on market segmentation of business class fare travelers in short hauls in Europe[1]. From 23 product attributes and employing a principal component analysis, the authors obtained the following preference factors: business travel exclusivity and added value, comfort and experience, air service user-friendliness, price, scheduling, and local airport. From those factors, they identified three market segments: Schedule Driven, Corporate Cog and Informed Budgeter. The first segment includes those who purchase their ticket from a business travel agent and are much more concerned with scheduling flexibility than with the cost of the flight, which seems not to be very important. Key benefits which members of this segment seek from an airline service are: flight timings, exclusive business class check-in, and exclusive business class lounge and flight frequency. The «corporate cog» segment members select the flight they wish to take and then leave the details of booking, paying for and collecting the tickets to others within the organization. This segment rates in first place local airport (the airport should be easily accessible) being the price and schedule the most unimportant. In-flight service, seat comfort and frequent flier schemes are valued most highly by this group than any other. The membership of this group seems to be composed of less involved or less interested users of airline services. The informed budgeter segment members are the most likely to use the lower classes of ticket and to purchase their airline tickets directly from the airline. Price and local airport are outstanding service attributes also. The members of this group seem to travel frequently, know the product well and try to spend as little as possible on their ticket.

The research done by Teichert, Sheh and Wartburg (2008) was on the airline market. Attributes to be valued were obtained from a meta-analysis of on-board and off-board

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1   The study used a simple of 827 passengers in Stansted (U.K.) airport.

surveys on relevant product features for air-travel demand. It consisted of the following ones: flight schedule and flexibility, air fare, frequent flyer program, punctuality, catering and ground services. According to the authors, the distinction between business class passengers and economy class ones is not sufficient to take into account all the selection criteria used by passengers and their preferences for the air lines products. It also makes it nearly impossible to improve the marketing objectives of airline companies, since it does not offer a sufficiently broad and realistic segmentation of needs and preferences among airline users. Their analysis used a sample of 5800 frequent-flyer passengers of an international long and short-haul airline who traveled on at least one of 11 selected European short-haul routes (Teichertet al. 2008, p. 230). Consumption behavior variables and also socio-demographic variables on travelers were used, in a latent class model, to obtain 5 market segments. Those were the following ones: the Efficiency/Punctuality one (business motivation and business class); the Confort one (leisure motivation and business class); the Price segment (business motivation and business class and leisure motivation and economy class); the Price/Performance segment (business motivation and business class and leisure motivation and economy class) and the Match all/Flexibility one (business motivation and business class and leisure motivation and economy class). Punctuality, flexibility and schedule were the most important features for choices in the Efficiency/Punctuality segment. For the Comfort segment, the most relevant features were benefits from FFP program, catering and flexibility and having lower price sensitivity than other segments. The most price sensitive belonged to the Price segment although they also liked punctuality. The members of the forth segment, Price/Performance were characterized by a mixture of price sensitivity and performance-related flight attributes such as schedule, flexibility and punctuality. Finally, the preferences of the Catch all/Flexibility segment were broadly balanced across product features. Passengers who belonged to this segment performed informed as well as extensive trade-offs between various utilitarian and hedonic product attributes.

3. HYPOTHESIS

According to the evidence presented in the literature review, tourists choose LCA flights because of a set of product attributes of those flights. However, valuation of those attributes is not equal among tourists, so that segments of tourists can be found among the LCA passengers which differ among them in the valuations of those attributes. These segments could be targeted by a more customized marketing including more preference variables than the air fare (price). Therefore we will focus on (low) fares as a key element for clustering travellers, but other key characteristics of the flight will also be taken into account, as well as the perceived quality of the destination. We establish our hypothesis as: The (low) fare is not the only key variable in consumer choice regarding LCC. There are other variables related to flight, trip or destination, which are also perceived as important by consumers.

4. METHODOLOGY

To tackle the hypothesis, we use the information provided by a survey conducted on European travelers that use LCAs to travel to Spain. Travelers were segmented using the cluster technique and an ANOVA analysis was conducted to test for significant differences among clusters. Segmentation was based on the values travelers gave to different trip and flight attributes. A farther profiling of traveler segments was done with socio-economic and other relevant information on travelers.

4.1. The questionnaire

The questionnaire included information on the valuation of travelers of flight attributes such as flight fares, waiting times, and flight duration. Also information on the valuation given to trip and flight related attributes such as the proximity of the airport to trip destination was also asked. Variables which are also valuable for destinations' management and marketing were also included, such as traveler's valuation of the destination and satisfaction with the stay at destination, the length of the stay at destination and the number of times that the individual had previously flown with that type of flight (which is a proxy of tourists' familiarity with the characteristics of low cost flights). Finally, the questionnaire also asked for socio-demographic and economic information such as age, sex, nationality, civil status, level of educational attainment and occupational status. The attributes which travelers were asked to value and entered the cluster or segmentation analysis can be found in Tables II and III. Other relevant information or variables used to profile segments of travelers can be found in Table V. More information on variables is provided in section 3.3 Sample description.

The questionnaires were written in four languages: English, French, German and Italian. Moreover, there were personnel to support respondents in case they had any doubts on the questions formulated in the questionnaire. Destinations of flights were cities located in England, Scotland, Ireland, France, Germany, Holland, Belgium and Italy. Those were also the countries of origin (residence) of most travelers.

The clustering variables are: the (low) price of the flight, flight quality, the proximity of the airport to trip destination, reduction in waiting times, flight duration, tourist package or organized trip, the quality of the destination and tourists' level of satisfaction with their stay. Valuations were obtained using a 5 point metric scale (5 = very important; 1 = unimportant).

4.2. Population, sample and sampling

Data was obtained from a survey to travelers. For the purpose of this research, and given that it affects only LCA travelers, one airport was selected, the Girona airport. It is a secondary airport, located very close to three main tourist destinations in Catalonia (Northeast of Spain): Costa Brava, the Maresme Coast and the city of Barcelona. It is one of the most relevant Spanish cases of airports where low cost carrier business has enjoyed great success. Low cost carriers started operating at Girona airport at the end of 2002,

with Ryanair leading the way. In 2004, 4 535 076 passengers were transported in regular flights and 4 257 688 of them by Ryanair. In the year 2007, 4.8 million passengers were transported in the Girona airport. That figure means that Girona airport is the tenth Spanish airport with more passenger traffic, out of a total of 45 Spanish airports (AENA, 2008).

Questionnaires were distributed to cover the different flight hours and destinations from 6.30 am to 10.25 pm, in July, August and September 2005, and administered randomly among passengers on the different flights. Flights were chosen to cover all destinations and all tourists' nationalities. Potential respondents were identified randomly on the basis of the destinations they were traveling to. A total of 808 questionnaires were usable for the analysis (z=2; p=q=0.5; sampling error=±1.5%).

4.3. Sample description

Most tourists in the sample (N=808) did not have much experience with low-cost flights (59.65% had previously flown at most 7 times). When asked to value flight characteristics, it was confirmed that generally the most valued one was its (low) price (with an average of 4.5 points out of a maximum of 5); there followed the proximity of the airport to trip destination (3,2), the quality of the destination (3,2) and flight duration (3,0). Other characteristics received lower values: the reduction in waiting times (2.8), the quality of the flight (2.5) and the tourist package (2). As far as socio-economic characteristics are concerned, most tourists were quite young, up to 39 years of age (78.3%), with university level education (60.7%) and followed by secondary education (32.5%). Nearly a third (32.1%) were students, and half (49.1%) were employees; most employees occupied high level job positions (28.1% of the total sample). Most of them traveled for leisure/vacation purposes (79.1%) and to visit friends and relatives (11.3%). Their stays were not long: most of them stayed between 4 and 7 days (44.1%), followed by 8-15 days (28.9%) and 2-3 days (14.0%). For accommodation they chose hotels (44.61%), friends' and relatives' homes (18.6%), rented houses/apartments (16%) and campsites (11.8%). Some stayed at their own property (7.6%); other types of accommodation were of little significance. Most of those who stayed at hotels chose 3-star hotels, which are the most common category level of hotels in Catalonia. Another relevant factor for Catalonia is the widespread phenomenon of houses owned by foreigners, which could explain the relatively high number of tourists staying at their own property and at homes of friends and relatives. With regard to destinations, coastal destinations where chosen by 51.41% of tourists in the sample, and the city of Barcelona by 29.8%. Both are well-known and well-established tourist destinations located near Girona airport. Tourists were from U.K. (19.3%), Holland (14.5%), Germany (14.2%), Italy (12%), Belgium (13.2%), Ireland (7.18%) and France (8.9). Other European origins were collapsed in this study to «other European countries» and there were also some but far fewer visitors from America, Africa and Asia. Finally, we should point out that most of them did not travel alone (80.7%), were very satisfied with their stay (with an average value of 4.2) and most (85.2%) had the intention of traveling with low-cost airlines in the future.

4.4. The Cluster analysis

To cluster tourists, we followed the recommendations on combining a hierarchical and non-hierarchical cluster technique (Hair et al., 2000; Johnson, 1998; Kotler at al, 1996; Uriel and Aldás, 2005). A hierarchical cluster (using the squared Euclidean distance and the Ward method) was conducted first and, taking the centers of its solution, we then did a K-means cluster (non-hierarchical cluster). After clusters were obtained and analyzed, they were profiled by socio-demographic and trip related characteristics.

Taking into account practical considerations for segmenting the tourist market, we decided that a reasonable number of clusters should be specified in order to make it manageable and easier to interpret. Therefore, a range from 2 to 6 possible solutions was first established. The clustering coefficients and dendogram solutions showed that there was one group of 18 cases (tourists with a long stay at destination) identified in all solutions, from the six-cluster solution to the four-cluster solution. Therefore we maintained those 18 cases in one cluster and the 4 cluster solution was finally selected. The centers of each cluster were then typified and a K-means optimization procedure was applied. Results were obtained after 14 iterations: they are shown in table I. The optimum solution showed cluster centers that were different and higher than the ones initially obtained with the hierarchical procedure. The ANOVA analysis in Table II shows the significance of all the variables and differences among clusters. All the variables included appeared to make statistically significant contributions to the creation of clusters, but length of stay (with an F-value of 1034.46) and the importance given to the price of the flight (with an F-value of 492.391) were the most relevant. Mean values by variable and cluster are shown in Table III.

Table I
CLUSTER SIZE AND COMPOSITION

Clusters	Hierarchical method (Ward method)					
Optimization procedure (K-means)	1	2	3	4	TOTAL	
1	285	76	7	0	368	45.5%
2	43	271	13	0	327	40.5%
3	14	9	70	0	93	11.5%
4	2	0	0	18	20	2.5%
TOTAL	344	356	90	18	808	100%

Table II
ANOVA ON TYPIFIED CENTERS

Variable	F-value	Significance
Length of stay	1034.46	0.001
Valuation of flight price	492.391	0.001
Valuation of closeness of the airport to destination	44.101	0.001
Valuation of flight duration	98.653	0.001
Valuation of tourist package	66.048	0.001
Valuation of quality of destination	91.862	0.001
Valuation of flight quality	174.596	0.001
Valuation of reduction in waiting times	148.809	0.001
Stay satisfaction	57.319	0.001
Nº of times that have flown with low-cost airlines	2.740	0.042

Levene's test showed the existence of heterokedasticity, therefore the hypothesis of homokedasticity for the application of the ANOVA analysis on the clusters' initial mean values is not fulfilled. Accordingly, a Mann-Whitney non-parametric test was conducted for two independent samples in order to detect significant differences among clusters and variables. The test was applied by pairs of clusters. Results are shown in Table IV.

5. RESULTS

The four clusters obtained on their different valuations of fares, flight, trip or destination attributes give support to the hypothesis. We have found that in general, clusters differ significantly in all variables, except for length of stay (only cluster 4 is different, with a significant longer stay), valuation of the low price of the flight (only cluster 3 is different, with a significantly lower value) and the valuation of the closeness of the airport to destination (only cluster 2 is different with a significantly higher value).

5.1. Segments profile

To delineate the principal features of the four clusters detected, we have completed the information provided above with the information on the frequencies for the socio-

Table III
MEAN VALUES BY VARIABLE AND CLUSTER

	Clusters			
	1	**2**	**3**	**4**
	Price-sensitive tourists	**Destination and flight conscious tourists**	**Non sensitive and business tourists**	**Educational and second residence tourists**
Valuation of fare	4.82	4.78	2.25	4.70
Valuation of closeness of the airport to destination	2.69	3.88	2.83	2.90
Valuation of flight duration	2.33	3.90	3.06	2.30
Valuation of reduction in waiting Times	1.98	3.75	2.80	2.85
Valuation of flight quality	1.69	3.43	2.90	2.40
Valuation of the quality of the destination	2.46	4.01	3.34	2.40
Valuation of tourist package	1.37	2.55	2.77	1.70
Stay satisfaction	4.30	4.44	3.25	3.75
Length of stay	8.60	8.32	8.42	85.80
Nº of times that have flown with low-cost airlines	2.21	2.73	1.68	3.95

demographic characteristics of tourists and trip related attributes. All those were selected taking into account the information already available through the questionnaire and according to previous studies on tourism and travelers demand and segmentation (Barbot 2006, Becken and Gnoth, 2004; Collins and Tisdell, 2002; Decrop and Snelders, 2004; Evangelho, Huse and Linares, 2005, Fourie and Loubbe, 2006; Huse and Evangelho, 2007; Kozack, 2002; Mason y Grey, 1995; O'Connell and Williams, 2005; Opperman, 1995; Seongseop and Prideaux, 2005; Sung et al, 2001; Teichert, Shehu and Wartburg, 2008). Chi-squared tests revealed that all the characterizing variables were significant.

Segments obtained with the cluster analysis are of different size: there were many more cases in segment 1 (n= 368; 45.5%) and 2 (n=327; 40.5%) than in segments 3 (n=93; 11.5%) and 4 (n=20; 2.5%). As expected, tourists in all segments except segment

Table IV
MANN-WITNEY TEST. DIFFERENCES AMONG CLUSTERS

Variables	Pairs of clusters					
	1-2	1-3	1-4	2-3	2-4	3-4
Length of stay	0.757	0.621	0.001*	0.771	0.001*	0.001*
Valuation of price	0.171	0.001*	0.715	0.001*	0.465	0.001*
Valuation of closeness of the airport to destination	0.001*	0.201	0.610	0.001*	0.012*	0.935
Valuation of flight duration	0.001*	0.001*	0.991	0.001*	0.001*	0.022*
Valuation of tourist package	0.001*	0.001*	0.183	0.140	0.012*	0.001*
Valuation of quality of destination	0.001*	0.001*	0.813	0.001*	0.001*	0.008*
Valuation of flight quality	0.001*	0.001*	0.001*	0.001*	0.001*	0.099
Valuation of reduction in waiting times	0.001*	0.001*	0.001*	0.001*	0.001*	0.966
Stay satisfaction	0.008*	0.001*	0.018*	0.001	0.002*	0.067
Nº of times that have flown with low-cost airlines	0.208	0.949	0.013*	0.416	0.044*	0.015*

* Significant.

3, considered the low flight price as the most valued flight characteristic, with mean punctuations near five which is the highest value of the scale. Satisfaction with the stay was quite high, with values higher than three (which is the middle value of the scale) and quality of the destination was less valued. Average length of stay was around 8.5 days, except for segment 4 which includes those tourists with long stays (85.8 days on average). In general, tourists have not flown many times with low-cost companies.

Segment 1, which is the bigger one (368) compiles the «price sensitive tourists». It comprises tourists who do not generally lend great importance to those items related to the flight as factors for choosing their flight and destination, except for the price. Their average length of stay is between 8 and 9 days. They are young (meaning up to 39 years of age), and a significant proportion are either studying at the university or are working as a high level employee. They are from different European countries, but there are comparatively more tourists from Belgium, «other European countries» and «other countries» and less from Holland. They travel for vacation or VFR (like most tourists in all segments). This segment stands for being the one with a bigger proportion of tourists that chose Barcelona as their main destination, and compared to other segments, more of

Table V
SEGMENTS PROFILE

	Segment 1	Segment 2	Segment 3	Segment 4	TOTAL
	Price sensitive tourists	Destination and fight conscious tourists	Non sensitive and business tourists	Educational and second residence tourists	
Socio-demographic characteristics					
Gender					
male	49,44	47,20	63,04	30,00	49,60
female	50,56	52,80	36,96	70,00	50,4
Civil Stauts					
singles	59,87	47,20	65,33	72,22	55,59
married	40,13	52,80	34,67	27,78	44,41
Age (years)					
≤24	42,90	30,53	41,57	56,25	37,96
25-29	20,89	18,69	12,36	37,50	19,36
30-39	21,45	21,81	20,22	0,00	21,02
40-49	9,47	15,58	11,24	0,00	11,97
50-59	2,79	9,97	7,87	0,00	6,24
60-64	1,67	1,56	3,37	0,00	1,78
≥65	0,84	1,87	3,37	6,25	1,66
Education					
primary	4,96	6,73	15,48	5,00	6,80
secondary	24,79	41,99	36,90	5,00	32,48
university	70,25	51,28	47,62	90,00	60,72
Country					
Belgium	16,58	9,17	12,90	20,00	13,24
U.K.	18,21	23,55	12,90	0,00	19,31
France	7,07	8,56	13,98	25,00	8,91
Germany	13,32	13,46	21,51	10,00	14,23
Holland	10,87	17,43	18,28	15,00	14,48
Italy	11,41	13,76	8,60	10,00	12,00
Irland	7,34	7,65	6,45	0,00	7,18
Other Europeans	7,34	2,75	1,08	0,00	4,58
Others	7,88	3,67	4,30	20,00	6,06
Occupation[1]					
students	38,36	23,55	31,87	60,00	32,13
self-employed	9,59	10,40	10,99	10,00	10,09
employee 1	6,85	11,62	8,79	0,00	8,84
employee 2	10,96	14,07	13,19	0,00	12,20
employee 3	29,04	28,44	27,47	10,00	28,14
retired/`pensioner	1,64	4,28	5,49	5,00	3,24
unemployed	1,92	2,14	1,10	0,00	1,87
others	0,27	1,83	0,00	5,00	1,00

Table V. Segments profile (cont.)

	Segment 1 Price sensitive tourists	Segment 2 Destination and fight conscious tourists	Segment 3 Non sensitive and business tourists	Segment 4 Educational and second residence tourists	TOTAL
Trip characteristics					
Purpose					
vacation	81,20	80,86	75,00	30,00	79,08
VFR	10,35	12,96	10,87	5,00	11,33
business	3,00	1,85	5,43	5,00	2,86
to study	1,63	0,62	0,00	35,00	1,87
others	3,81	3,70	8,70	25,00	4,86
Destination					
Barcelona	36,80	24,51	23,53	21,05	29,85
coastal resorts	43,62	58,17	64,71	21,05	51,41
others in Catalonia	5,34	5,88	2,35	21,05	5,62
rest of Spain	6,53	3,92	3,53	15,79	5,35
Abroad	7,72	7,52	5,88	21,05	7,76
Trip duration (days)					
1	1,63	1,83	1,08	0,00	1,61
2-3	13,86	14,98	13,98	0,00	13,99
4-7	44,84	44,04	50,54	0,00	44,06
8-15	29,08	32,11	23,66	0,00	28,96
16-30	9,51	6,42	8,60	0,00	7,92
> 30	1,09	0,61	2,15	100,00	3,47
Accomodation					
4-5 stars hotels	7,07	11,93	6,52	0,00	8,80
3 stars hotels	13,86	22,63	28,26	0,00	18,71
1,2 star hotels and guest houses	20,38	14,68	15,22	5,00	17,10
campsites	14,95	8,56	11,96	5,00	11,77
rented apartment	16,85	12,84	17,39	45,00	15,99
own house	6,52	8,26	7,61	15,00	7,56
F&R houses	17,66	20,49	13,04	30,00	18,59
other	2,72	0,61	0,00	0,00	1,49

Table V. Segments profile (cont.)

	Segment 1	Segment 2	Segment 3	Segment 4	TOTAL
	Price sensitive tourists	Destination and fight conscious tourists	Non sensitive and business tourists	Educational and second residence tourists	
Trip characteristics					
Organized trip					
no	92,12	83,44	68,82	85,00	85,75
yes	6,25	14,11	19,35	5,00	10,90
does not know	1,63	2,45	11,83	10,00	3,35
Buying the flight ticket					
internet	92,93	80,73	73,12	95,00	85,77
travel agency	4,89	10,09	21,51	0,00	8,79
others	2,17	9,17	5,38	5,00	5,45
Travels alone					
yes	18,48	17,74	17,20	70,00	19,31
no	81,52	82,26	82,80	30,00	80,69
nº of times that has travelled with LCA					
0	42,12	40,37	34,41	25,00	40,10
1	20,65	17,43	35,48	15,00	20,92
2-4	23,10	25,38	21,51	10,00	23,51
5-9	7,34	7,34	4,30	40,00	7,80
≥ 10	6,79	9,48	4,30	10,00	7,67
Intention of repeating					
yes	82,83	90,77	79,57	65,00	85,22
no	2,18	1,23	7,53	5,00	2,48
doesn't know	14,99	8,00	12,90	30,00	12,30

1. Employee 1: low-level; 2: medium level; 3: high level.
2. Includes telephone, tele-text, airport office, etc.
Statistical tests show that characterizing variables are all significant.

them choose low category hotels as accommodation. Also campsites are relevant. They are «independent» travelers: most of them did not purchase an organized trip and bought the flight ticket through the Internet.

Segment 2 with 327 individuals, is the one in which tourists generally give greater importance to items related to the trip (included its price) and the quality of the destination. It is also the segment of tourists most satisfied with their stay at destination. They are the «Destination and flight conscious tourists». They are young tourists, but

a comparatively high proportion is of more senior tourists, and comparatively more of them have secondary education degrees and a lower proportion of students are in this group. They are from different European countries, but there stand those from U.K. and Holland. Main trip purpose was vacation and visit friend and relatives, like all tourists, and stayed mainly on coastal resorts (even though Barcelona was also chosen by a significant proportion of tourists). Tourists in this cluster stand out for having chosen high category hotels and for the use of tele-text for purchasing the flight ticket, apart from Internet.

Segment 3 (n=93) is the group of «Non-sensitive and business tourists». They generally give middle-low importance to items related to the flight and destination, and rate very low the (low) price of the flight as a determining factor in choosing the flight and destination. They are basically single men with university or secondary levels of education, but in comparison to other clusters a higher proportion of tourists have only primary school degrees. They are mainly Germans and Dutch (even though other origins are also important) who travel for vacation and VFR, but those traveling for business and «other» purposes stand out when compared to other clusters. They are the segment with a higher proportion of tourists who chose to stay in coastal resorts. The type of accommodation most chosen is three star hotels. With regard to the method of purchasing the flight ticket and intentions of repeating the flight experience, segment 3 stands out compared to other clusters for having a significantly higher proportion of those who purchased an organized trip and bought the ticket at a travel agency. A low but significant proportion of tourists in this segment said they would not fly again with low-cost airlines.

Finally, segment 4 (n= 20), the «Educational and second residence tourists» is made up of tourists that consider the different items related to the flight and destination of medium importance (with the exception of the price of the flight which is valued high), and is the one with a significantly longer stay at destination, much longer than the other three segments. It is characterized by having a large proportion of women (70%) and singles (72.22%) who travel alone. Most of them are university students, standing those from France and Belgium and non-European countries; who have traveled for vacation but there also stands out the «study» and «other» purposes. Tourists in this segment were not so much concentrated in two destinations; in fact they were quite equally distributed among destinations. With relation to the type of accommodation chosen, most of them chose rented apartments and friend and relatives houses. This segment also stands out because a large proportion of tourists bought the flight ticket through the Internet and is conformed by heavy users of low cost flights, but a high proportion declared that they did not know if they would fly with low-cost airlines again in the future.

6. CONCLUSION

There are a number of applied studies aimed at segmenting tourists and flight users, but little research is available that analyzes low-cost flight users preferences and segments, and even less in the case of Spain. This is particularly true for a case like Girona airport, where this is nearly the only type of commercial passenger flight and

where low-cost flights are considered of great importance for attracting tourists to the nearby mature destinations.

Considering flight and trip related attributes, the analysis done shows that the most valued one is the (low) price of the flight. It clearly stands out as the most valued item for all segments but segment 3, and received scores not lower than 4 out of a scale where 5 is the highest value. It is followed by the proximity of the airport to the destination, the flight duration and the perceived quality of the destination. In contrast, items such as the quality of the flight and the reduction in waiting times were not considered very relevant. It is also worth mentioning that stay satisfaction levels were quite high in all segments.

The clustering results also showed that segments of travelers/tourists can be made, which differ among them in their product preferences, destination valuations and also in their socio-demographic and trip related factors. The four segments obtained were: the *price sensitive traveler* (segment 1, the biggest one) that compiles travelers that are mainly motivated by the low fares; the *flight and destination conscious traveler* (segment 2, the second biggest) which includes those travelers or tourists who give great importance to items related to the trip (included its price) and the quality of the destination; the *non-sensitive and business travelers* (segment 3 with 93 individuals) who are the ones that less consider the price as an important benefit for choosing low-cost flights and in general are the most neutral in their valuations, tending to «indifference» in all the benefits and characteristics of the flight and destination; and the *educational and second residence traveler* (segment 4 with only 20 individuals) who are the ones that do long a stay at destination and give medium valuations to flight characteristics.

These behavior, socio-economic and trip related characteristics of LCA tourists may help to better setting and implementing marketing strategies driven towards those different identified market segments. In most of the LCA segments price is important but it does not discriminate enough for all low cost users' preferences: for Segment 1 only price is very relevant; those in Segment 2 also value a medium-high flight quality; Segment 3 is not much bothered by the fare (since business travellers do not pay the price but the company they travel for) and buy packages in travel agencies. Finally Segment 4 is basically generated by international students that use LCA during specific time periods and also by senior travellers that stay for long time at destination, mainly in own property houses.

However, more research will be needed in the future. It will be interesting to know if the results obtained are maintained for other LCA and other air routes and if the observed segments are maintained at other times of the year. The research here conducted and the results obtained can also be considered a first step for further studies that analyze possible trade-offs between flight and destination characteristics, information that could be of much importance for LCC but also for tourist destinations.

Acknowledgments

7. REFERENCES

AENA, (2005 y 2008): *Tráfico de pasajeros en los aeropuertos españoles, AENA*, Dirección de operaciones y sistemas de Red, Departamento de Estadísticas Operativa, Madrid (www. aena.es).

BARBOT, C. (2006): «Low-cost airlines, secondary airports and state aid: an economic assessment of the Ryanair-Charleroi Airport agreement», *Journal of Air Transport Management*, núm. 12, pp. 197-203.

BECKEN, S. Y GNOTH, J. (2004): «Tourist consumption systems among overseas visitors: Reporting on American, German, and Australian visitors to New Zealand», *Tourism Management*, núm. 25, pp. 375-385.

CHA, S., McCLEARY, K. W. Y UYSAL, M. (1995): «Travel motivations of Japanese overseas travelers: a factor-cluster segmentation approach», *Journal of Travel Research*, núm. 34, pp. 33-39.

COLLINS, D. Y TISDELL, C. (2002): «Age-related lifecycles: purpose variations», *Annals of Tourism Research*, vol. 29, núm. 3, pp. 801-833.

DECROP, A. Y SNELDERS, D. (2004): «Planning the summer vacation. An adaptable process», *Annals of Tourism Research*, vol. 31, núm. 4, pp. 1008-1030.

DRESNER, M. (2006): «Leisure versus business passengers: similarities, differences and implications», *Journal of Air Transport Management*, núm. 12, pp. 28-32.

EVANGELHO, F., HUSE, C. Y LINHARES, A. (2005): Market entry of a low cost airline and impacts on the Brazilian business travelers, *Journal of Air Transport Management,* núm. 11, pp. 99-105.

FORMICA, S. Y UYSAL, M. (1998): «Market segmentation of an international cultural–historical event in Italy», *Journal of Travel Research*, núm. 36, pp. 16-24.

FOURIE, C. Y LUBBE, B. (2006): «Determinants of selection of full-service airlines and low-cost carriers. A note on business travellers in South Africa», *Journal of Air Transport Management*, núm. 12, pp. 98-102.

FRANKE, M. (2004): «Competition between network carriers and low-cost carriers-retreat battle or breakthrough to a new level of efficiency?», *Journal of Air Transport Management*, núm. 10, pp. 15-21.

FROCHOT, I. (2005). A benefit segmentation of tourists in rural areas: a Scottish perspective, *Tourism Management*, núm. 26, pp. 335-346.

GUARDIA, T. Y HUÉSCAR, A. (2005): «El uso de la información estadística para el diseño de una campaña promocional», *Conferencia de la OMT, La Cuenta Satélite del Turismo, Comprender el turismo y diseñar estrategias*, Iguazú, Argentina, octubre 2005.

HESS, S. Y POLAK, J. W. (2005).: «Mixed logit modeling of airport choice in multi-airport regions», *Journal of Air Transport Management*, núm. 11, pp. 59-68.

HUSE, C. Y EVANGELHO, F. (2007): «Investigating business traveler heterogeneity: low-cost us full-service airline users?», *Transportation Research Part E*, núm. 43, pp. 259-268.

INSTITUTO DE ESTUDIOS TURÍSTICOS, (2007): *Balance del Turismo en España en 2006*, Madrid, http://www.iet.tourspain.es.

JEFFREY, D. Y XIE, Y. (1995): «The U.K. market for tourism in China», *Annals of Tourism Research*, vol. 22, núm. 4, pp. 857-876.

JOHNSON, D. E. (1998): *Applied multivariate methods for data analysis*, New York, Books Cole Publishing Company.

KOTLER, P., BOWEN, J. Y MAKENS, J. (1996): «Marketing for Hospitality and Tourism», Upper Saddle River, New York, Prentice-Hall.

KOZACK, M. (2002): «Comparative analysis of tourist motivations by nationality and destinations», *Tourism Management*, núm. 23, pp. 221-232.

LOO, B. (2008): Passengers' airport choice within multi-airport regions (MARs): some insights from a stated preference survey at Hong Kong International Airport», *Journal of Transport Geography*, núm. 16, pp. 117-125.

MARTÍNEZ, E., PRATS, LL. Y BARCELÓ, Mª. A. (2004): *El perfil dels usuaris dels vols de baix cost de l'aeroport de Giron. Anàlisi comparativa 2003 i 2004*, Girona, Patronat de Turisme Costa Brava Girona.

MASON, K. (2001): «Marketing low-cost airline services to business travelers», *Journal of Air Transport Management*, núm. 7, pp. 103-109.

MASON, K. J. Y GRAY, R. (1995): «Short haul business travel in the European Union: a segmentation profile», *Journal of Air Transport Management* , núm. 2, pp. 197-205.

MASON, K. J. Y ALAMBARI, F. (2007): «EU network carriers, low cost carriers and consumer behaviour: A Delphy study of future trends», *Journal of Air Transport Management*, núm. 13, pp. 299-310.

MOLERA, L. Y ALBALADEJO, I. P. (2007): «Profiling segments of tourists in rural areas of South-Eastern Spain», *Tourism Management*, núm. 28, pp. 757-767.

O'CONNELL, J. F. Y WILLIANS, G. (2005): «Passengers' perceptions of low cost airlines and full service carriers: A case study involving Ryanair, Air Lingus, Air Asia and Malaysia Airlines», *Journal of Air Transport Management*, núm. 11, pp. 259-272.

OPPERMAN, M. (1995): «Travel life cycle», *Annals of Tourism Research*, vol. 22, núm. 3, pp. 535-552.

OUM T. H., GILLEN, D. W. Y NOBLE, S. E. (1986): «Demands for fare-class and pricing in airline markets», *The Logistics and Transportation Review*, núm. 22, pp. 195-222.

PARK, J.W. (2007): «Passenger perceptions of service quality: Korean and Australian case studies», *Journal of Air Transport Management*, núm. 13, pp. 238-242.

PROUSSALOGLOU, K. Y KOPPLEMAN, F. (1995): «Air carrier demand: analysis of market share determinants», *Transportation*, núm. 22, pp. 371-388.

RYAN, C. Y BIRKS, S. (2005): «Passengers and low cost flights: evidence from the trans-Tasman routes», *Journal of Travel & Tourism Marketing*, núm. 9, pp. 15-27.

SEONGSEOP, S. Y PRIDEAUX, B. (2005): «Marketing implications arising from a comparative study of international pleasure tourist motivations and other travel-related characteristics of visitors to Korea», *Tourism Management*, núm. 26, pp. 347-357.

SUNG, H. (2004): «Classification of adventure travellers: behaviour, decision making and target markets», *Journal of Travel Research*, núm. 42, pp. 343-356.

SUNG, H. H., MORRISON, A. M., HONG, G. S. Y O'LEARY, J. T. (2001), «The Effects of household and trip characteristics on trip types: a consumer behavioral approach for segmenting the U.S. domestic leisure travel market», *Journal of Hospitality and Tourism Research*, núm. 25, pp. 46-68.

TEICHERT, T., SHEHU, E. Y VON WARTBURG, I. (2008): «Customer segmentation revisited: the case of the airline industry», *Transportation Research Part A*, núm. 42, pp. 227-242.

URIEL, E. Y ALDÁS, J. (2005): *Análisis multivariante aplicado*, Madrid, Thomson.

WINDLE, R. Y DRESNER, M. (1995): «The short and long run effect of entry on US domestic air routes», *Transportation Journal*, núm. 35, pp. 14-25.