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Living "up in the air": Meeting the frequent flyer passenger

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ABSTRACT

This paper uses a large database of approximately 37,000 passengers and three different estimates to analyse the characteristics of the frequent flyer and the differences between frequent flyers and occasional flyers. The results show that frequent flyers are middle-aged men with a high level of education who take domestic flights for business reasons at both hub and regional airports, where they make a purchase and/or consume F&B. Frequent flyers fly on both low-cost and traditional airlines, are more likely to stay overnight at a relative's or friend's home and travel to the airport by private or rented car.

1. Introduction

Traditionally-speaking, one of the most profitable markets for airlines is the frequent flyer passenger and this is the reason why frequent-flyer programmes (FFPs) have been developed. Basically, by flying on the airline or its affiliates FFP members accumulate mileage credits that can be used for free flights or for upgrading to a higher class. From 1981, the year when American Airlines launched the first FFP in the US, benefiting from deregulation and computerisation, the programmes have grown significantly. The figures show how important they are with at least 130 airline loyalty programmes and more than 150 million members (IATA, 2012) driving increasing competition between rival programmes (Liu and Yang, 2009).

The most obvious advantages of FFPs for airlines that have been highlighted by the literature include their use as an effective marketing technique (de Boer and Gudmundsson, 2012, Yang and Liu, 2003), to increase the loyalty of airline passengers (Chang and Hung, 2013, Klophaus, 2005) and to have an evident influence on airline choice (Deane, 1988, Nako, 1992). They also help improve airlines' revenue streams (de Boer and Gudmundsson, 2012), reduce customer switching tendencies (de Boer and Gudmundsson, 2012, Klophaus, 2005) and increase the level of passenger satisfaction, pricing perception, and airline image formation (Park, 2010).

However FFPs have also been subject to much criticism. By affecting habit formation, they create major barriers to entry (Cairns and Galbraith, 1990, Hu et al., 1988), distorting air transport competition (Deane, 1988) and resulting in welfare losses due to switching costs (Carlsson and Löfgren, 2006). Moreover the FFPs do not only create problems between airlines. There are certain ethical issues involved with companies themselves due to the fact that the flight ticket is usually paid by the company while the points that stack up usually pass directly to the employee (Mason and Barker, 1996), turning FFPs into "bribes" offered to employees to book flights at higher prices (Caminal, 2012, Deane, 1988). Hu et al. (1988) detail a whole list of the most common abuses committed with FFPs by company employees to gain more frequent-flier points: higher fares, unnecessary travel or wasted time due to unsuitable timetables or indirect flight routes. Finally, FFPs have a negative effect for general passengers as they put up average fares, as has been proven in studies by Lederman (2007, 2008) and Escobari (2011). As is evident from the above discussions, FFPs have generally been studied in depth, but not specifically the passenger profile behind these programmes.

Frequent passengers are an especially important segment for the airlines (Teichert et al., 2008) and the typical frequent flyer passenger has often been identified as the business passenger. The justification for this is that FFPs are primarily devised to target full-fare business travellers (Cairns and Galbraith, 1990, Hu et al., 1988, Mason and Barker, 1996, Toh and Hu, 1990) and contribute positively to their lifestyles by in some way counterbalancing some of the downsides of frequent business travel (Long et al., 2003). However, the perception that the frequent flyer passenger is linked to the FFP business member passenger may be changing due to both changes in the airline market and in customer behaviour.

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To be specific, the low-cost carrier (LCC) phenomenon and growth in disposable income, especially in the developing world, have favoured not only growth in the leisure passenger market (Dresner, 2006) but also an increase in the popularity of "short breaks'' in the last few years (Martinez-Garcia and Royo-Vela, 2010, Papatheodorou and Lei, 2006) rather than the traditional two or three week break (Graham, 2008). Lower fares have meant that more frequent shorter holidays are not necessarily a more expensive option (Graham, 2006), with the consequent increase in the travel frequency of current passengers (Mocica Brilha, 2008). The second home phenomenon could also have encouraged more frequent flying (Graham, 2006). In fact, all the above could be generating a new type of frequent passenger, the "city breaker", in part as a sophisticated urbanite evolution of backpackers, albeit on shorter trips.

Apart from the leisure market, journeys made for the purpose of visiting friends and relatives (VFR) have also increased many times due to factors such as children moving away from their parents for educational or job opportunities in a distant location. VFR travellers are likely to travel more frequently than occasional leisure travellers (Chang and Hung, 2013), although they might come up against the obstacle of the relatively high cost of air services of traditional airlines (Papatheodorou and Lei, 2006). So, once more, the expansion of the LCCs may have increased the frequency of these types of journeys.

In other respects, although frequent-flyer members are, as their name implies, frequent flyers (Toh and Hu, 1990), the frequent flyer is not always an FFP member. The existence of this type of programme is not as important for some authors (Hu et al., 1988) as other factors in airline choice. Again this phenomenon may once more have become more pronounced with the arrival of LCCs as passengers of this type of airline focus almost exclusively on fare and do not place strong emphasis on FFPs (O'Connell and Williams, 2005). This is why a large part of the LCCs choose not to run these types of programmes if their customers do not value them and prefer cheaper fares (Kappes and Merkert, 2013). With the arrival of the LCCs the managers of tourist establishments likewise seem to no longer consider FFPs an important factor that defines an airline's quality (Castillo-Manzano et al., 2011). Differentiating by business travellers and leisure travellers, the former consider an FFP as key, whereas the latter place the biggest role on price (Dolnicar et al., 2011). Therefore considering the reduced importance now given to FFPs by both LCC passengers and leisure travellers, it would be restrictive to limit the research of frequent flyer passengers to FFP members.

To summarise, these changes in passenger behaviour and in the aviation environment clearly mean that frequent flyers no longer fall a well-defined static category. As a consequence, this paper is significant in that it profiles the frequent passenger (and the occasional passenger) in detail and considers the frequent passenger as a separate and independent category and does not place this type of passenger into the business passenger group or as an FFP member, as has been done in most other studies (Toh and Hu, 1990, Toh et al., 1996). For this we use a sample of over 37,000 passengers, to our knowledge the largest of any similar study.

The research is useful in two ways. On the one hand, following Dresner (2006), the presence of frequent passengers has major implications for the planning of airport infrastructure. On the other hand, the importance of attracting these types of passengers for airlines, knowing their profile and predicting their choice decisions is important for purposes of product differentiation and makes the marketing policies of airline companies more efficient by focusing their efforts towards a clearly defined passenger segment (Teichert et al., 2008, Toh and Hu, 1990).

2. Data and methodology

We used data collected through surveys conducted in summer 2010 by the Spanish Public Airport Authority (AENA). The key characteristics of AENA's survey activities are listed in Table 1 (see Castillo-Manzano and Lopez-Valpuesta, 2014 for another application for this database). In contrast to the limited sample sizes in similar studies (Nako, 1992; Teichert et al., 2008, Toh et al., 1996, Toh and Hu, 1990), our research uses a database of 37,226 passengers who were interviewed in the departure lounges at eight different Spanish airports. Included among these airports were the two main hubs, Madrid and Barcelona, which would a priori seem to be the natural habitat for the traditional frequent flyer for business reasons, and some of the main regional airports in the country that have seen most growth thanks to the development of the LCCs, including Alicante, Santiago, Seville and Valencia. As with similar databases, each observation was weighted according to the total number of passengers on the flight so that the sample could be expanded to the total population; see Dresner (2006) for an explanation of the weighting methodology.

Given the size of the sample and the wide geographical distribution of the eight airports included in the study, the conclusions can easily be extrapolated not only to the rest of the Spanish airport system, but also, with the logical caution, to other European countries, and especially the Mediterranean countries. This extrapolation is reinforced by the fact that almost 44 percent of the passengers interviewed, namely 16,300, were foreigners, most of them from other European Union countries, mainly France, Germany, Italy and the United Kingdom.

We focused on 39 different variables (one dependent and 38 explanatory) that were all available for 36,259 passengers. The dependent variable has been tabulated in four steps: the first represents the passengers who at the time of the survey had made no

Table 1
Survey of technical data.

Airport		Almeria	Alicante	Barcelona-El Prat	Madrid-Barajas	Santiago	Seville	Tenerife Sur	Valencia
Airport traffic in 2010		786,877	9,382,931	29,209,536	49,866,113	2,172,869	4,224,718	7,358,986	4,934,268
Sampling	General	Departing passengers >15 years of age							
	Questionnaire	Available in five languages		Available in six languages	Available in five languages	Available in six languages	Available in five languages		
	Sample size (before weighting)	1808	3202	6931	9096	3530	6027	3092	3540
	Sampling method	Stratified by traffic segments in which flights were selected for each route and a group of passengers was selected by means of systematic sampling.							
	Sampling error	±2.1%	±1.7%	±1.2%	±1.0%	±1.6%	±1.2%	±1.8%	±1.7%
Field work	Location	Departure lounges							
	Time period	6–12 May	22–28 July	9–15 June	9–15 June	30 June-6 July	10–16 July	9–16 July	12–18 July
	Timetable	Monday-Sunday. Shifts were conducted from 6am to 10pm with times extended during periods of high traffic							
	Year	2010							

Table 2
Description of explanatory variables.

Variable		Explanation	No. obs.	Mean	Median	Stand. Dev.
Frequent passenger		Number of flights taken by passenger in previous twelve months 1 = no flights; 2 = 1 to 3 flights; 3 = 4 to 12 flights; 4 = More than 12 flights.	–	2.397	2	0.959
Sex		1 if male, 0 if female.	19,701	0.529	1	0.499
Age		1 < 30; 2 = 31–49; 3 = 50–64; 4 > 65.	–	2.012	2	0.827
Spanish		1 if passenger is Spanish, 0 if passenger is foreign.	20,944	0.562	1	0.496
Employment status	Homemaker	1 if passenger is a homemaker, 0 otherwise.	786	0.021	0	0.144
Base category:						
Worker.	Student	1 if passenger is studying, 0 otherwise.	4012	0.108	0	0.310
	Unemployed	1 if passenger is an unemployed, 0 otherwise.	1599	0.043	0	0.203
	Retired	1 if passenger is retired, 0 otherwise.	3675	0.099	0	0.298
Education		1 = no formal or only primary education; 2 = completed secondary education; and 3 = holds university degree.	–	2.541	3	0.638
Reason for travel	Business	1 if trip is for business reasons, 0, otherwise.	9358	0.251	0	0.434
Base category:						
Visiting Friends or Relatives passenger.	Vacation	1 if trip is for vacation, 0, otherwise.	17,464	0.469	0	0.499
Airline	Low-cost carrier (LCC)	1 if passenger is flying by an LCC; 0, otherwise.	16,924	0.454	0	0.498
Base category:						
Traditional airline.	Charter	1 if passenger is flying on a charter airline, 0, otherwise.	2545	0.068	0	0.252
Connecting flight		1 if passenger is connecting to another flight at the airport, 0, if travelling no further.	4283	0.115	0	0.319
Destination	Eurozone international destination	1 if passenger is taking an international flight with a final destination in a Eurozone country, 0, otherwise.	17,812	0.478	0	0.500
Base category: domestic flight						
	Non-Eurozone international destination	1 if passenger is taking an international flight with a final destination outside the Eurozone, 0, otherwise.	4133	0.111	0	0.314
Directly from airline		1 if passenger has purchased his/her ticket directly from the airline with no mediation, 0, otherwise.	16,697	0.448	0	0.497
Phone		1 if passenger has purchased his/her ticket by telephone, 0, otherwise.	2701	0.072	0	0.259
Internet		1 if passenger has purchased his/her ticket over the Internet, 0, otherwise.	25,337	0.680	1	0.466
Length of stay	One-day trip	Same day return	2822	0.077	0	0.267
Base category:	Up to a week	2 = 2–7 days;	20,331	0.557	1	0.497
Passengers who travel 7–14 days	Long-term trip	15 to more days	6672	0.183	0	0.386
Waiting time prior to boarding		1 < 1 h; 2 = 1–2 h; 3 = 2–3 h; 4 > 3 h.	–	2.815	3	0.862
Weekend		1 if the survey was taken on a Saturday or Sunday, 0, otherwise.	10,878	0.292	0	0.455
Accessibility.	Taxi	1 if passenger has travelled to the airport by taxi, 0, otherwise.	8941	0.240	0	0.427
Base category: Private vehicle						
	Courtesy bus	1 if passenger has travelled to the airport by courtesy bus, 0, otherwise.	2896	0.078	0	0.268
	Rent-a-car		2387	0.064	0	0.245

Table 2 (*continued*)

Variable		Explanation	No. obs.	Mean	Median	Stand. Dev.
		1 if passenger has travelled to the airport by rental car, 0, otherwise.				
	Public bus	1 if passenger has travelled to the airport by public bus, 0, otherwise.	3764	0.101	0	0.301
	Public rail transport	1 if passenger has travelled to the airport by light train or metro, 0, otherwise.	3494	0.094	0	0.292
Group size		1 = travelling alone; 2 = 2 people; 3 = 3 or more people.	–	1.672	2	0.742
Children		1 if passenger is flying with children, 0, otherwise.	3026	0.081	0	0.273
Accompaniment	Work	1 if passenger is travelling with work colleagues, 0, otherwise.	1739	0.047	0	0.211
	Friends	1 if passenger is travelling with friends, 0, otherwise.	3629	0.097	0	0.296
Place of stay Base category: Passenger-owned home	Hotel	1 if passenger starts his/her journey from a hotel or other pay accommodation, 0 otherwise.	10,550	0.283	0	0.451
	Home of friends or family	1 if passenger begins his/her journey from the home of friends or relatives, 0 otherwise.	4490	0.121	0	0.326
Seen off		1 if someone attended the passenger's departure from the airport, 0 otherwise.	7008	0.188	0	0.391
Airport traffic		Thousands of passengers per week at each airport at the time that the surveys were taken.	–	205.744	104.721	195.506
Purchase		1 if the passenger makes a purchase, 0, otherwise.	8813	0.237	0	0.425
Consumes food/drink		1 if the passenger consumes food/drink, 0, otherwise.	17,608	0.473	0	0.499

other journeys in the 12 preceding months, i.e., these are very occasional passengers (comprising 19.26% of the sample); the second step represents travellers who had made between 1 and 3 journeys in the preceding 12 months (36.57% of the sample, i.e., the most usual passenger at Spanish airports); the third step represents travellers who had made 4–12 journeys (29.38% of the sample); and the last step, passengers who had made over 12, i.e., those who make more than one journey per month on average throughout the whole year, and whose description is the main aim of this study (these make up 14.79% of the sample).

The remaining 38 explanatory variables allow us to analyse the factors that define the profile of the frequent passenger and, in greater detail, each of the above passenger categories. Table 2 shows the case-specific independent variables, their different categories and the descriptive statistics. Our approach is typical of discrete choice model analysis but given the characteristics of the dependent variable, there are different alternatives that could be used a priori. A number of estimates have therefore been made, specifically, a Poisson model, a generalised ordered logit model and a multinomial logit model. The first would give us estimates of how each factor is related, on average, with a greater journey frequency, while the profile of each of the four traveller categories into which the dependent variable is divided is examined separately in the two others. To summarise, the two last estimates, a generalised ordered logit model and a multinomial logit model, do not force us to suppose that the effect of the explanatory variables remains constant (in fact a Brant Test subsequent to an ordered logit estimation provides evidence at 1% that the parallel regression assumption has been violated), but that it can vary freely to explain the changeover from one category to another. In the multinomial logit model, the initial hypotheses are further relaxed to the extent that there is no order or hierarchy among the four passenger categories that define the dependent variable.

To compensate for the weight of the large airports in the sample size and to prevent the results only providing a snapshot of the passengers who travel there, the standard errors robust to heteroscedasticity and clustered by airport of origin have been calculated.

Unlike the coefficients in the Poisson model which can be interpreted directly as semi-elasticities, in general terms in discrete choice models, as would be the cases of the generalised ordered logit model and the multinomial logit model, only the arithmetic sign of the coefficient has a direct interpretation. To be specific, for the case of estimates obtained by these two last models a positive sign in the estimated coefficient of a regressor for any given passenger category (0 other journeys; 1–4 other journeys; 4–12 other journeys and over 12 journeys) indicates that the greater the value of the said explanatory variable, the greater the likelihood that the passenger will belong to said passenger category. Furthermore, for the case of a generalised ordered logit model and a multinomial logit model, a further factor limits the coefficients' utility. In particular, they only allow us to study the substitutability relations between options set in pairs, that is, the relation between each category of traveller and the category of traveller that is taken as the base category for the estimates (see Cameron and Trivedi, 2009 for a broader overview of the topic).

For these reasons we have chosen to estimate the marginal effects at the mean (MEMs) for the two models. As can be observed in

Table 3, their interpretation is not only much clearer and much more direct, but it is also more comparable with that of the Poisson model coefficients. Thus the coefficients in the Poisson model indicate the extent to which the value of the dependent variable (the four journey categories) increases (or decreases) when the regressor increases by one unit. The MEMs, however, show us that the likelihood that the passenger belongs to each of the four categories, examined separately, increases (or decreases) when each of the explanatory variables increases by one unit. As such, the MEMs for the multinomial logit and the generalised ordered logit models enable not only the profile of frequent flyer passengers to be analysed, but also the profiles of the three other categories of passengers under study, i.e., less frequent passengers, infrequent passengers and occasional passengers (with the last being, in our analysis, passengers who have not taken any other flight in the previous twelve months).

3. Results and discussion

Table 3 gives the results. Over and above the initial hypotheses that underlie the models that were estimated, the findings are fairly robust in all the estimates with respect to the variables that they influence, even with such a strict criterion as correction for heteroscedasticity by clusters. This robustness is influenced by the quality and breadth of the sample. In other respects, as can be seen in Table 3, the results of the generalised ordered logit model and the multinomial logit model lead us to reject the parallel effects hypothesis for many of the variables, with a more complex dynamic being produced between the different categories of the dependent variable. In fact, these results would support more the hypothesis that what we are seeing is, in general terms, different market niches. The category of travellers who have only taken one flight in the last year –specifically the flight that they are taking when surveyed- is especially unique. For these reasons we shall quantify the conclusions on the basis of the results of these two estimates.

It is evident from Table 3 that there are a large number of significant results. Broadly-speaking, it can therefore be concluded that the frequent passenger has particular characteristics that are clearly differentiated from those of the occasional passenger. We highlight the following results in this respect:

1. Firstly, there are a series of socio-demographic characteristics. As such, the frequent passenger, that is, the passenger who makes over 12 journeys per year, has a 3–3.8% likelihood of being male rather than female, whilst being female raises the likelihood of being in the category of occasional passengers who make 1–3 journeys per year by around 6%. It is also striking that the frequent passenger is older than the occasional passenger. To be precise, an older passenger is almost 4–5% (obtained by multiplying the coefficients of the age variable, 1.619% or 1.259%, by three) more likely to make more than 12 journeys per year than someone under 30. These results for gender and age are similar to those obtained by Weber (2005). Additionally, the frequent flyer is much more likely to be in employment (an unemployed person is 5.6% more likely to be in the first passenger category, i.e., to have made no journeys during the previous year). In fact, people who are not active in the labour market are more frequently found in the categories of less travel, although there are some notable exceptions, as students and housewives are most likely to be among travellers who make between 4 and 12 journeys per year.
Another of the most notable characteristics is the fact that the frequent passenger is the traveller with the highest level of education (which coincides with Weber's (2005) findings) in both the >12 journeys category and, especially, in the 4–12 journeys category. Most noticeable in this last category is that a traveller who has studied at a university is 23–25% (obtained by multiplying the coefficients of the education variable, 11.764% or 12.424%, by two) more likely to be in this category than a passenger with no education. This result can be read in two ways. On the one hand, it can be considered a proxy of a higher economic status (as stated by Weber, 2005), but another series of variables have already been used that in theory will also capture such status (including both direct variables, such as being in employment, and indirect variables, such as arriving at the airport by taxi, staying in a hotel or making purchases at the airport). The inclusion of these explanatory variables will correct for any income bias in the sample. Secondly, we may have obtained empirical proof that a passenger's formal education is closely linked to a greater number of journeys, whether for reasons of work, which would seem logical, or for pleasure. In the latter case, we have a passenger whose level of education would allow them to appreciate the benefits of travelling to a greater extent (see for example Stone and Petrick, 2013 on the educational benefits of travel and tourism) and who better tolerates its inconveniences and risks (see for example Lepp and Gibson, 2003 on the risks associated with international tourism).
2. The results also show that the frequent passenger does correspond to the stereotype of travelling to a greater degree for reasons of work compared to the other two types of passenger studied, VFR and vacation, on short trips of a day or under a week. This is the least surprising result since, as commented in the introduction, the frequent passenger is usually identified with the business passenger. Most studies highlight the fact that business passengers fly more frequently than leisure passengers (Chang and Hung, 2013, Dresner, 2006, Nako, 1992).
3. The frequent flyer does not discriminate between airlines and is just as likely to be found using traditional airlines as LCCs or charters. This is a new finding, as it breaks with the idea that the frequent flyer would seek to benefit from the advantages offered by the FFPs, which are more commonly found with traditional airlines and whose use can be the cause of some problems and inefficiencies, as commented previously (Hu et al., 1988). The results show a passenger who has no particular preference for any type of airline (traditional, LCC or Charter). This result would therefore seem to indicate that the frequent flyer is an experienced passenger who uses the services of the airline that most suits them at any given moment with no regard for accumulating points on FFPs, cheaper fares or any other flight attribute. However, 4–12 journey passengers are easier to find on LCCs, while charter flights seem to be the ideal option for the very sporadic passengers that make only one journey every so-many years. This last result can easily be explained by the security that the all-inclusive tourist package (with transfers, hotels, meals and even flying to 'all-inclusive' Spanish sun-and-sand destinations) offers to these passengers who are unused to the usual dynamics of the airport, and this product is generally a requirement for the use of charter airlines.
4. It is also noticeable that the findings support the assumption that the frequent passenger is a domestic flight passenger whilst the occasional passenger, when obliged to fly, is most likely to make continental journeys and, especially, intercontinental journeys. These latter passengers are around 10% more likely on average to have made three or less journeys in the last year. This is linked to these passengers' greater tendency to make longer journeys, whilst one-day trips or, failing this, trips of less than a week, are especially more likely among frequent passengers, particularly over 12 journeys a year travellers. The existence of a certain 'wedding effect' should not be ruled out either as the

Table 3
Coefficients and Marginal effects at the Mean (%).

Variable	Poisson	Multinomial logit				Generalised ordered logit			
		0	1–3	4–12	>12	0	1–3	4–12	>12
Sex	Δ 6.893***	∇ 0.378%	∇ 5.710%***	Δ 2.274%*	Δ 3.815%***	∇ 0.191%	∇ 6.268%***	Δ 3.418%**	Δ 3.041%***
	(1.343)	(0.292)	(1.410)	(1.211)	(0.409)	(0.146)	(1.664)	(1.400)	(0.306)
Age	Δ 3.014***	∇ 0.947%***	∇ 1.033%***	Δ 0.362%	Δ 1.619%***	∇ 0.913%***	∇ 1.56%***	Δ 1.214%***	Δ 1.259%*
	(0.649)	(0.228)	(0.253)	(0.605)	(0.58)	(0.158)	(0.473)	(0.364)	(0.650)
Spanish	∇ 1.585	Δ 1.649%	∇ 0.724%**	∇ 1.180%	Δ 0.254%	Δ 1.298%	∇ 0.233%	∇ 1.090%	Δ 0.025%
	(1.426)	(1.136)	(0.351)	(1.062)	(0.248)	(0.889)	(0.392)	(1.004)	(0.241)
Homemaker	∇ 8.615***	Δ 2.0%	Δ 2.89%**	Δ 0.899%***	∇ 5.89%***	Δ 0.827%	Δ 3.200%***	Δ 1.896%***	∇ 5.922%***
	(2.821)	(1.393)	(1.228)	(0.314)	(0.485)	(1.338)	(0.795)	(0.530)	(0.468)
Student	∇ 2.721	Δ 1.817%	∇ 2.882%**	Δ 4.579%*	∇ 3.514%***	Δ 1.467%*	∇ 3.277%****	Δ 5.140%**	∇ 3.330%***
	(1.763)	(1.105)	(1.228)	(2.508)	(0.522)	(0.806)	(1.154)	(2.201)	(0.520)
Unemployed	∇ 14.746***	Δ 5.667%***	Δ 1.189%	∇ 2.700%	∇ 4.156%***	Δ 4.949%***	Δ 1.938%	∇ 3.076%	∇ 3.811%***
	(2.341)	(0.725)	(3.132)	(1.871)	(0.672)	(0.752)	(3.414)	(2.154)	(0.599)
Retired	∇ 13.339***	Δ 1.621%**	Δ 5.151%***	Δ 1.249%	∇ 8.022%***	Δ 1.160%*	Δ 6.052%***	Δ 0.273%	∇ 7.485%***
	(1.828)	(0.797)	(0.491)	(0.845)	(0.304)	(0.677)	(0.613)	(0.890)	(0.300)
Education	Δ 22.876***	∇ 8.999%***	∇ 8.079%***	Δ 11.764%***	Δ 5.314%***	∇ 6.963%***	∇ 10.097%***	Δ 12.424%***	Δ 4.636%***
	(2.018)	(0.707)	(0.836)	(1.105)	(0.292)	(0.403)	(1.072)	(1.170)	(0.194)
Business	Δ 28.136***	∇ 10.273%***	∇ 12.436%***	Δ 10.489%***	Δ 12.220%***	∇ 11.114%***	Δ 14.220%***	Δ 14.366%***	Δ 10.968%***
	(1.948)	(1.422)	(0.35)	(1.923)	(0.949)	(1.388)	(0.463)	(1.727)	(0.901)
Vacation	∇ 6.136***	Δ 1.520%***	Δ 4.238%***	∇ 4.339%***	∇ 1.419%***	Δ 1.180%***	Δ 4.359%***	∇ 4.255%***	∇ 1.284%***
	(1.007)	(0.372)	(0.676)	(0.718)	(0.418)	(0.334)	(0.782)	(0.718)	(0.359)
Low-cost carrier (LCC)	Δ 2.344	∇ 13.829%	∇ 1.079%***	Δ 2.167%**	Δ 0.336%	∇ 1.169%	∇ 1.323%***	Δ 2.299%***	Δ 0.194%
	(1.884)	(1.285)	(0.346)	(0.833)	(0.420)	(1.110)	(0.389)	(0.872)	(0.307)
Charter	∇ 7.703*	Δ 4.451%**	∇ 0.724%	∇ 3.630%***	∇ 0.098%	Δ 3.674%**	∇ 0.157%	∇ 3.441%***	∇ 0.076%
	(4.603)	(2.167)	(0.918)	(1.197)	(0.319)	(1.685)	(0.330)	(1.275)	(0.405)
Connecting flight	Δ 4.115*	∇ 14.652%	∇ 3.544%	Δ 4.470%*	Δ 0.539%	∇ 0.412%	∇ 4.027%*	Δ 3.805%	Δ 0.634%
	(2.318)	(0.932)	(2.396)	(2.664)	(0.497)	(0.682)	(2.338)	(2.742)	(0.301)
Eurozone international destination	∇ 5.256***	Δ 1.474%	Δ 2.843%***	∇ 2.108%***	∇ 2.209%***	Δ 0.978%	Δ 3.043%***	∇ 2.036%***	∇ 1.985%***
	(1.342)	(1.239)	(0.679)	(0.580)	(0.304)	(1.178)	(0.550)	(0.758)	(0.280)
Non-Eurozone international destination.	∇ 12.297***	Δ 5.398%***	Δ 4.253%***	∇ 6.909%***	∇ 2.743%***	Δ 4.160%***	Δ 5.703%***	∇ 7.343%***	∇ 2.520%***
	(0.580)	(0.752)	(1.243)	(0.617)	(0.247)	(0.940)	(1.368)	(0.624)	(0.294)
Directly from airline	Δ 6.838***	∇ 3.491%***	∇ 2.544%***	Δ 4.166%***	Δ 1.869%***	∇ 2.729%***	∇ 2.966%***	Δ 4.300%***	Δ 1.395%**
	(0.404)	(0.35)	(0.175)	(0.655)	(0.490)	(0.238)	(0.287)	(0.58)	(0.556)
Phone	Δ 13.140***	∇ 4.789%***	∇ 5.611%***	Δ 7.197%***	Δ 3.204%***	∇ 3.951%***	∇ 6.726%***	Δ 7.875%***	Δ 2.802%***
	(1.011)	(0.343)	(0.687)	(0.567)	(0.850)	(0.346)	(1.052)	(0.443)	(0.981)
Internet	Δ 10.788***	∇ 5.725%***	∇ 1.485%***	Δ 5.465%***	Δ 1.745%***	∇ 4.546%***	∇ 2.566%***	Δ 5.347%***	Δ 1.765%***
	(0.898)	(0.730)	(0.382)	(0.417)	(0.341)	(0.615)	(0.316)	(0.419)	(0.383)
One-day trip	Δ 7.125***	∇ 0.480%	∇ 6.560%***	Δ 3.384%	Δ 3.656%***	∇ 1.260%	∇ 7.040%***	Δ 4.955%**	Δ 3.345%***
	(1.058)	(0.816)	(1.277)	(2.464)	(1.231)	(0.817)	(1.524)	(2.345)	(1.189)
Up to a week	Δ 5.643***	∇ 1.019%***	∇ 4.665%***	Δ 3.493%***	Δ 2.191%***	∇ 0.498%**	∇ 4.678%***	Δ 3.324%***	Δ 1.852%***
	(1.012)	(0.374)	(0.414)	(1.065)	(0.866)	(0.242)	(0.591)	(1.051)	(0.712)
Long-term trip	∇ 5.855*	Δ 2.097%**	∇ 0.616%	∇ 0.299%	∇ 1.992%***	Δ 2.827%***	∇ 0.036%	∇ 1.260%	∇ 1.530%***
	(3.313)	(1.436)	(1.699)	(3.116)	(0.256)	(1.09)	(2.317)	(3.411)	(0.291)
Waiting time prior to boarding	∇ 4.033***	Δ 0.873%***	Δ 2.044%***	∇ 0.785%	∇ 2.131%***	Δ 0.813%***	Δ 2.414%***	∇ 1.368%***	∇ 1.858%***
	(0.344)	(0.224)	(0.768)	(0.486)	(0.248)	(0.219)	(0.732)	(0.398)	(0.238)
Weekend	∇ 1.005***	Δ 0.080%	Δ 0.304%	Δ 0.590%**	∇ 0.974%***	Δ 0.108%	Δ 0.287%	Δ 0.299%	∇ 0.694%***
	(0.392)	(0.485)	(0.764)	(0.238)	(0.221)	(0.477)	(0.978)	(0.481)	(0.186)
Taxi	Δ 2.207***	∇ 0.195%	∇ 3.248%	Δ 2.862%***	Δ 0.581%	∇ 0.081%	∇ 3.740%	Δ 3.256%***	Δ 0.565%
	(0.358)	(2.019)	(2.32)	(0.453)	(0.570)	(1.820)	(2.275)	(0.334)	(0.467)
Courtesy bus	∇ 9.809	Δ 5.285%	Δ 1.463%	∇ 5.430%	∇ 1.318%	Δ 3.716%	Δ 3.008%	∇ 5.631%	∇ 1.093%
	(10.045)	(5.139)	(2.591)	(4.358)	(1.218)	(4.074)	(2.855)	(4.721)	(1.528)
Rent-a-car	Δ 10.000***	∇ 1.991%	∇ 7.480%***	Δ 3.371%	Δ 6.101%***	∇ 1.110%	∇ 9.590%***	Δ 5.216%**	Δ 5.485%***
	(1.134)	(1.233)	(1.98)	(2.829)	(1.673)	(0.110)	(1.9599)	(2.102)	(1.528)
Public bus	∇ 5.603***	Δ 1.287%	Δ 2.508%***	∇ 0.938%	∇ 2.857%***	Δ 1.145%	Δ 3.160%***	∇ 2.008%	∇ 2.297%***
	(1.554)	(1.410)	(0.504)	(1.244)	(0.470)	(1.049)	(0.455)	(1.232)	(0.413)
Public rail transport	∇ 0.878	∇ 1.184%	∇ 0.533%	Δ 4.243%***	∇ 2.525%***	∇ 0.857%	∇ 0.056%	Δ 3.162%***	∇ 2.250%***
	(1.445)	(1.154)	(0.791)	(0.797)	(0.195)	(1.012)	(0.478)	(0.818)	(0.258)
Group size	∇ 19.430***	Δ 7.123%***	Δ 7.091%***	∇ 7.777%***	∇ 6.437%***	Δ 5.719%***	Δ 8.511%***	∇ 8.571%***	∇ 5.658%***
	(0.940)	(0.622)	(0.462)	(0.447)	(0.421)	(0.572)	(0.628)	(0.491)	(0.271)
Children	∇ 3.088	Δ 0.392%	Δ 1.437%***	∇ 2.492%**	Δ 0.663%	∇ 0.422%	Δ 2.551%***	∇ 2.154%*	Δ 0.024%
	(2.922)	(1.204)	(0.361)	(1.072)	(1.834)	(0.858)	(0.321)	(1.169)	(1.516)
Work	Δ 15.538***	∇ 8.136%***	∇ 1.844%	Δ 6.341%***	Δ 3.639%***	∇ 5.569%***	∇ 3.035%	Δ 4.892%***	Δ 3.713%***
	(1.335)	(1.203)	(1.689)	(1.181)	(0.325)	(1.307)	(2.05)	(1.315)	(0.295)
Friends	Δ 9.130*	∇ 4.595%***	Δ 1.135%***	Δ 2.081%***	Δ 1.379%	∇ 4.138%***	∇ 0.465%	Δ 3.462%***	Δ 1.141%
	(3.343)	(1.456)	(0.214)	(0.775)	(0.959)	(1.182)	(0.383)	(0.726)	(0.910)
Seen off	∇ 5.949***	Δ 1.39%**	Δ 3.281%***	∇ 2.148%**	∇ 2.523%***	Δ 1.177%**	Δ 3.774%***	∇ 2.824%***	∇ 2.127%**
	(0.629)	(0.579)	(0.789)	(0.839)	(0.872)	(0.576)	(0.743)	(0.936)	(0.833)
Hotel	Δ 1.015	∇ 1.961%	Δ 1.602%**	Δ 0.599%	∇ 0.240%	∇ 1.560%	Δ 1.541%***	Δ 0.144%	∇ 0.125%
	(2.195)	(1.850)	(0.692)	(0.869)	(0.707)	(1.586)	(0.336)	(1.037)	(0.620)
Home of friends or family	Δ 7.473***	∇ 4.561%***	Δ 0227%	Δ 0.272%*	Δ 1.617%***	∇ 3.888%***	∇ 0.506%	Δ 2.753%*	Δ 1.641%***
	(1.631)	(1.204)	(0.484)	(1.484)	(0.361)	(1.089)	(0.726)	(1.657)	(0.284)
Airport traffic	∇ 0.002	Δ 0.002%	∇ 0.003%	Δ 0.000%	Δ 0.000%	Δ 0.002%	∇ 0.004%	Δ 0.001%	Δ 0.000%
	(0.007)	(0.005)	(0.002)	(0.005)	(0.002)	(0.004)	(0.003)	(0.005)	(0.002)
Purchase									

(*continued on next page*)

Table 3 (*continued*)

Variable	Poisson	Multinomial logit				Generalised ordered logit			
		0	1–3	4–12	>12	0	1–3	4–12	>12
	Δ 6.308***	∇ 4.635%***	∇ 0.223%	Δ 3.191%**	Δ 1.22%***	∇ 3.992%***	∇ 0.375%	Δ 3.363%***	Δ 1.004%***
	(0.229)	(0.116)	(1.089)	(1.367)	(0.348)	(0.119)	(1.029)	(1.298)	(0.341)
Consumes food/drink	Δ 5.096***	∇ 3.544%***	Δ 0.303%	Δ 2.76%***	Δ 1.086%***	∇ 2.959%***	∇ 0.534%	Δ 2.61%***	Δ 0.884%**
	(0.672)	(1.155)	(0.982)	(0.544)	(0.385)	(1.037)	(1.134)	(0.34)	(0.414)

Note: Standard errors robust to heteroscedasticity and clustered by airport of origin are presented in brackets. One, two or three asterisks indicate coefficient significance at the 10%, 5% and 1% levels, respectively.

surveys were conducted between May and the beginning of July, which is the busiest period of the year for weddings in Spain. This means that the findings could be influenced by the 'classic' honeymoon to intercontinental destinations such as the Caribbean, the USA and south-west Asia. These results can be equated to those of Toh and Hu (1990), which highlight the fact that FFP members tend to fly on shorts trips.

5. The way that the two categories of occasional and frequent passengers prepare for their journeys is also different. The latter tend to purchase their tickets using the telephone and the internet as purchasing channels and without the need to physically visit an office. Specifically, passengers who buy their tickets by telephone are 10.5% more likely to belong to the most frequent traveller categories, 4–12 and >12 whereas those who purchase their tickets over the internet are 7% more likely to do so. Moreover, frequent passengers usually buy their tickets directly from the airline (an almost 6 percent greater likelihood of belonging to the 4–12 or >12 categories) without the mediation of a travel agency. In this respect, Toh et al. (1996) also emphasise that FFP members are very familiar with airline schedules and used to selecting their own flights and rely less on travel agents.

6. The frequent passenger has clearly differentiated social habits. To begin with, it is less likely that anyone will go to the airport to them off, they are more likely to travel alone, but should anyone accompany them, it is more likely to be a colleague from work. However, the stereotype assumption down with regard to accommodation as, compared to less frequent travellers is not supported, as frequent passengers are less likely to stay overnight in hotels and more likely to do so at the homes of friends and family. This point is significant in as much as some hotel chains have joined airline loyalty programmes and allow points to be accumulated or give discounts, which makes staying at these hotels more attractive for frequent passengers. In other respects, the most frequent passengers, those who make over 12 journeys per year, use public transport less to get to the airport and for the most part choose to drive there in their own cars or a rented vehicle. As with the hotels, car hire firms tend to be part of the FFPs and the frequent passenger's choice of one company or another may in part be influenced by this. However, the likelihood that a 1–3 journeys-per-year passenger opts for a hire car falls by 7.5–9.5%.

7. It cannot be concluded that the hub is the natural habitat of frequent passengers either, or, rather, the likelihood of finding them at any airport is the same, irrespective of its size. This result reinforces the idea that frequent travellers are more domestic flight than international flight passengers, resulting in their being equally present at all the airports analysed.

8. Finally, there is one particularly interesting finding regarding their potential for generating non-aeronautical revenue. Frequent passengers are more linked to the likelihood of making purchases or consuming food/drink at airports. This is logical to a certain extent as they are in an environment to which they are accustomed and so can devote some of their waiting-time to interacting in the airport as if they were in a shopping centre, showing no fear of moving away from the security of the boarding gate. A very similar finding was obtained by Castillo-Manzano (2010), which proposes creating more commercially-friendly airports to make the experience less stressful for infrequent passengers. However, traditionally the opposite has been believed (see for example Dresner, 2006), specifically that less frequent passengers feel the need to arrive at the airport earlier than more frequent travellers, and this could result in major spending on cark park services or retail and food/drink concessions. Therefore, according to the results of the present study, perhaps fear would seem to be a bigger factor than the availability of time when it comes to shopping and consuming food and drink.

Linked to this topic, it can be seen that less experience of air journeys can result in a greater likelihood of long waits at airports. In an extreme case of a wait that exceeds 4 h, the passengers with an over 9% more likelihood of being subject to such a wait are the occasional travellers (in the 0 and 1–3 journeys per year categories). As discussed above, the less frequent travellers usually get to the airport earlier in order to familiarise themselves with airport facilities and procedures (Dresner, 2006), which could result in their waiting times being longer than for more frequent travellers. However, if we take into account waiting times caused by delays, according to Ferrer et al. (2012), FFP members are more prone to experiencing them because they fly more often with the carrier than non-members.

4. Conclusions

Using a database of more than 37,000 passengers, this study has revealed the particular characteristics of frequent travellers (both Spanish and non-Spanish nationals) in the Spanish airport system and their differences from occasional travellers. A study of this type contributes to airlines, airports and even travel agencies having a greater knowledge of frequent passengers, their best customers, and therefore adapting to their demands and needs when travelling.

One future extension of this research could be to replicate these models in other airport systems. Only when new studies have been conducted will we be able to know whether these results can be extrapolated outside the Spanish airport system, or if, to the contrary, certain biases have had any influence, such as the Spanish air transport market's specialisation in tourism (although this is a feature that is relatively prevalent in Mediterranean countries). Specifically, almost 47% of passengers in the sample stated vacation as the motive for their journey (43% at the Madrid-Barajas and Barcelona-El Prat hubs). Be that as it may, an attempt has been made to correct for any bias in this paper by including the vacation explanatory variable (see Table 2) and by carrying out a cluster-robust estimation by airport of origin to restrict any skew from airports that specialise in sun and sand tourism.

To summarise, the findings show that the frequent passenger is predominantly male, older in age, in employment and with a high level of education. This higher education status can be equated both to a higher level of income and to the fact that this education means they have greater work responsibilities and, therefore, make more business trips, or, alternatively, allows them to appreciate the pleasure of travelling to a greater extent. They continue to be passengers that mainly take short trips for business reasons and therefore, predominantly to a national destination. Furthermore, there is no category of airport (hub or regional) or airline (traditional or low cost) that is their natural habitat. It can also be concluded that charter flights are still the popular mode for less frequent travellers. In other respects, the frequent flyer's familiarity with airports means that they are more likely to make a purchase or consume food and/or drink at an airport's concessions. The frequent flyer's greater experience can also be seen in their preparations for the flight as, unlike the occasional passenger, a frequent traveller is more likely to purchase their tickets directly from the airline without the mediation of a travel agency. Finally, it should also be highlighted that the frequent passenger's use of the services offered by the airlines' usual FFP partners differs widely, with a greater use of rental cars, but a lesser likelihood of staying at hotels.

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