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## Personal aircraft: a more affordable luxury

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### Abstract

*Access to luxury products has been limited traditionally to the upper classes. Products and services related to the means of transport have usually been considered of luxury and industrialization has made accessible to much of the population in developed countries. An emerging market is personal aircraft which is currently restricted to certain layers of society but it is expected that their use will represent the next great advance in transport. This article has the object of presenting the results of ongoing research and it focuses on possible demand and the tendency to use this transport option in Spanish society.*

**Keywords:** small aircraft, transport, market, luxury

### 1. Introduction

Traditionally access to the luxury products has been limited to the upper classes. Since World War II, and recently with the phenomenon of globalization and mass industrialization, this market is changing and emerging new types of customers. One of these cases was the car that, at the beginning, its acquisition depended on the level of buying power and it is now accessible to all layers of society.

Personal mobility is an aspect which has been present throughout the history and the change of the horse to the car was a great milestone. In this context personal aircraft is beginning to provide an alternative for personal transport and it is expected that, in the coming years, it emerges as a real and accessible option.

This type of transport is within the scope of general aviation that includes activities such as personal air transport, business aviation, or air-taxis. All of them are related to the concept of having transport more flexible and comfortable. Currently it represents 9% of movement of aircraft in Europe (2006) and its demand is expected to grow over the coming years, according to air traffic trends and aircraft orders.

The object of this article is to present the results of a research in course that is focused on possible use of small aircraft, analyzing the tendency in the Spanish society as an alternative of other transports modes, taking in account the restricted access to the certain layers of the society so far. The research is going to be made in the following phases:

1. Literature review. Search and analysis based in articles published in scientific journals with JCR impact on utilization and demand personal aircraft within the context of luxury goods market.

2. Data collection. Search of documents and official data related to transport in Europe and Spain.
3. Analysis and assessment of data collected. It consists in the analysis and evaluation of the data collected.

To achieve the objective of the paper, it is organized as follows. First, it provides some information about the market for luxury products and how is changing. Section 4 analyses the small aircraft as a mean of transport. Next section provides an analysis of the use of personal aircraft in Spain and finally section 5 concludes.

## **2. The market for luxury products**

Nowadays consumers are changing their tastes and needs, and companies are offering new luxury products that are more accessible to the general public. As a result, the trend of the demand for these articles has changed in developed countries and it has been caused, among others, by demographic, cultural and emotional aspects. It could be highlighted the following factors (Silverstein, Fiske, 2003) :

- The average level of income has increased enabling people to access to products and services that were not previously available.
- There is a need to satisfy emotional aspects via consume, which did not previously exist. Stress is a relevant example.
- Luxury brands have released priced products and that are affordable to medium market. Cases of BMW and Mercedes are significant.
- Emerging entrepreneurs with sophisticated tastes and high training that create products and services on this line.
- The incorporation of women into the workplace and their economic independence that gives them the possibility of consuming expensive products
- Increase in the number of divorces. Divorced couples change their consumption needs and they access to different products and services.

All these circumstances are conditioned by cultural and geographical location. In developed countries basic needs are covered and the consumer needs new experiences and goods to improve the quality of life, while in emerging countries (India, China, Brazil, etc.) still sees as a differentiator of social status. Independently of the country, a need of the modern world is the mobility of people and goods, and all means of transport have contributed to make the world smaller. Initially they were restricted to certain sections of society and in some cases were considered luxury, but they are evolving towards greater accessibility for the general public.

## **3. Small aircraft as a mean of transport**

Transport sector generates 7% of the GDP and near of 5% of the jobs in the European Union. For the prosperity of Europe it is essential to have effective transport systems and it should have the following characteristics (Commission of the European Communities, 2006):

- High level of people's mobility, private and business, in the whole Union.
- Environmental protection.
- Innovation in support to the previously mentioned objectives.

- International connection that reinforced the sustainable mobility, the protection and the innovation.

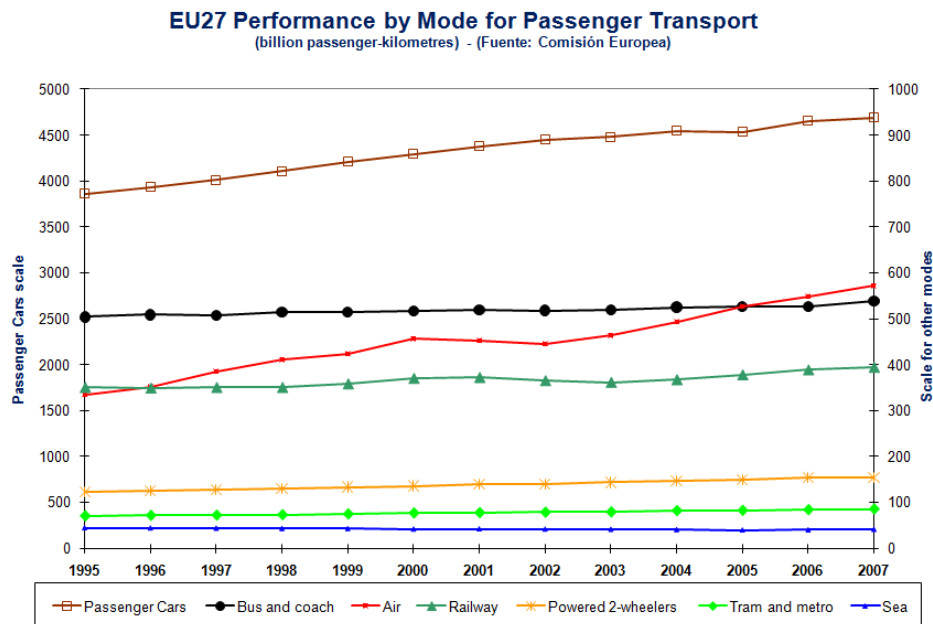


Figure1.- Passenger transport in Europe EU27

The evolution of the European transport has given as consequence the following results (Commission of the European Communities, 2006):

- A continental dimension as a consequence of the enlargement of the EU.
- Transport sector has changed and there is a consolidation at European level, especially in the sea and air transport.
- Transport is transforming rapidly in a field of technology, making research and innovation in critical to its continued development.
- The international context has changed and economic globalization has affected trade flows and the demand for international transport to and from the emerging economies has increased.
- The basic legal framework of the internal market is already largely established.

In Europe the transport has been characterized by a predominance of the car with an uninterrupted growth since 1995 (Figure 1). The same trend has air transport, being modes that most have increased in recent years.

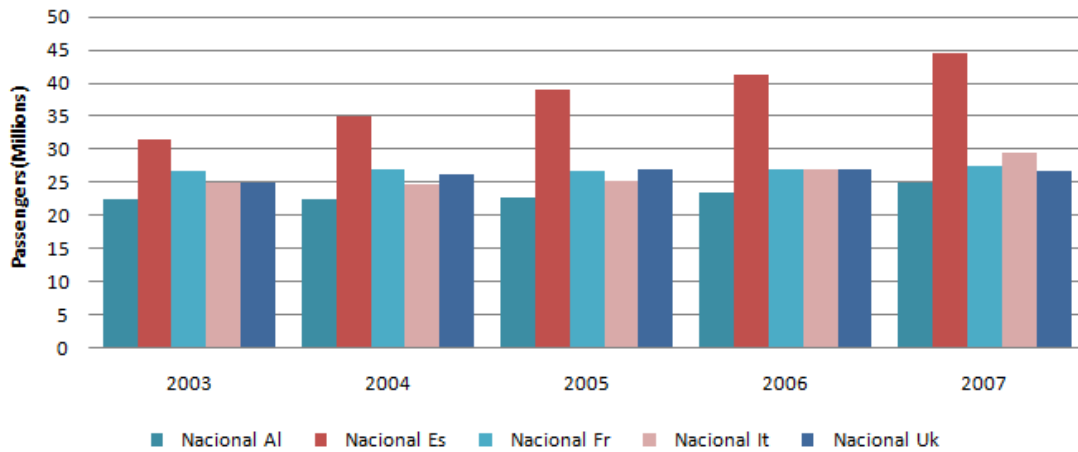


Figure 2. – National flights passengers in GE, FR, IT, UK and SP  
Source: EUROSTAT

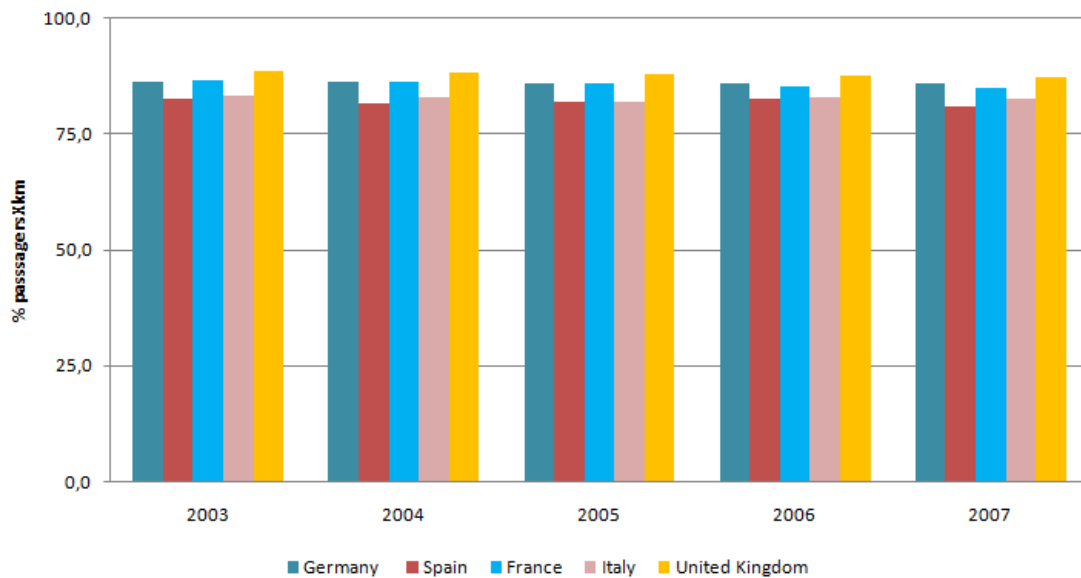


Figure 3. - Car passengers in GE, FR, IT, UK and SP

Once analyzed a more global context and having noted the influence of the car and the airliner, it proceeds to compare the behavior of the automotive and commercial aviation with countries such as Germany, Kingdom, France and Italy (Figure 2 and 3). The use of the car in Spain is similar to other countries but the tendency of use of commercial aviation, at the national level, is higher than in the rest of the countries. One reason may be that it is a country where tourism, greater than in those countries, encourages the use of the aircraft.

The process of globalization has allowed shrinking distances and air transport represents the main mode associated with it, and during the twentieth century, it has replaced other modes of transport (L'Hostis, 2009). In this context the car has dominated local and in long distance the air transport.

In this context, personal mobility is characterized by self-propelled movements that can range from walk to those who use different types of technologies, such as the bicycle, car, aircraft,

etc. The use of personal air vehicle is related with the demand of more flexible transport and the factors that most influence are (Commission of the European Communities, 2008):

- Need greater mobility, flexibility and service point to point.
- Congestion in major airports.
- Protection and security needs.
- Need to increase productivity in companies, making its executives to travel more efficiently.
- Development of new technologies that improve efficiency and costs of aircraft.

In rural and regional level in the United States, there is a need for interurban transport less than 500 km distance in which the trend is to use the car rather than another mode of transport, mainly due to the lack of infrastructure. Personal aircraft provides mobility, capacity and quality of life that can generate demand and whereas the concept door to door has a very large potential up to distances of 400 km (Moore, 2003). Today it is much more expensive than a car but this gap is narrowing.

An important aspect in the United States is that airports should increase its capacity (Baxley et al., 2008) to be able to absorb the large number of operations caused by small aircraft that can reach triple within the next 15 to 20 years. This increase can saturate their 35 major airports and the local infrastructure could be benefited due to they are closer to private houses.

In regard to the EU major airports capacity is very limited and new construction is complex. On the other hand when the distance reaches 400 km other modes such as the high-speed train make competition. An option that arises is the helicopter that can compete with conventional aircraft and high speed train between medium and long distances between 400 and 800 km (Correnti et al., 2007). Nowadays, the use of helicopters is limited to a certain purchasing level, constituting an opportunity for personal aircraft provided that there are the necessary infrastructures.

So far small aircraft has been traditionally limited to fans of general aviation and not as a means of transport for the public in general. The current personal air vehicle are expensive, noisy, not comfortable, difficult to operate and unsafe (Moore, 2003). Widespread access will be when it would become secure, easy to use and maintain vehicle. Its use can give substantial time savings as a result and improve quality of life and, in these circumstances, it has emerged as a competitive transport business travel (McGrath, Young, 2002). Reduction of time between origin and destination is the main factor for its election to the automobile. Today, one of the services that are rising in this area is the air-taxi, especially for businessmen or rich people.

Finally, the literature review shows that the possible use of the personal aircraft as a means of transport would be intended to be an alternative to the car and the airliner. Factors that influence more are the following:

- Passenger Type.
- Flight distance.
- Alternative transport modes.
- Seasonality.
- Population density.
- Size of airports and aerodromes.

- Legislation and normative.

All the above with the exception of the size airports and aerodromes, and legislation and normative are objects of this study.

#### 4. Personal aircraft in Spain

The use of the personal aircraft in Spain is lower than in its neighbour's countries, mainly due to the lack of infrastructure to enable an increase in relation to the population and GDP per capita. On the other hand, Spain presents an ideal climate for its development and it has considerable distances between their important urban centres which can lead to a growth in line with other European countries (MITYC/CDTI, 2008).

In relation with Spain, the study uses data from the survey of mobility of the people resident in Spain (Spanish Ministry of Public Works and transport) for the years 2001 and 2007 which aims to obtain sufficient information to enable the knowledge of mobility patterns characteristics and their determinants. Mobility inquiry is organized into two distinct phases. The first phase has primary purpose study the characteristics of "everyday" mobility, i.e. which is for any reason in one day. The second phase has as main objective study long-distance mobility and mobility involving pernoctation in a location other than the residence.

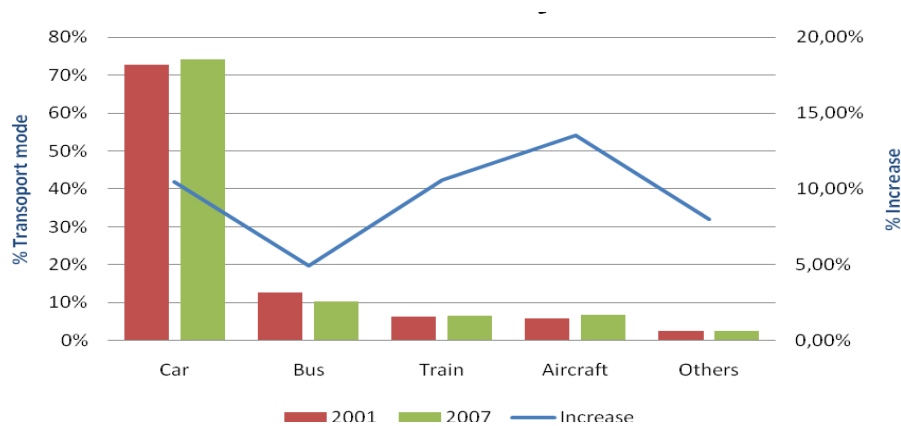


Figure 5.- Travel in the different modes of transport in Spain

Source: Movilia – Spanish Ministry of Public Works and

Then proceeds to make a comparison of the use of different modes of transport in Spain that personal aircraft could capture market share, mainly airliner and car, in distances up to 1000 km. where it could have more impact. It could be observed that the car is the greater weight and aircraft is whose has more increment is use, facts that are in line with other European countries (Figure 5).

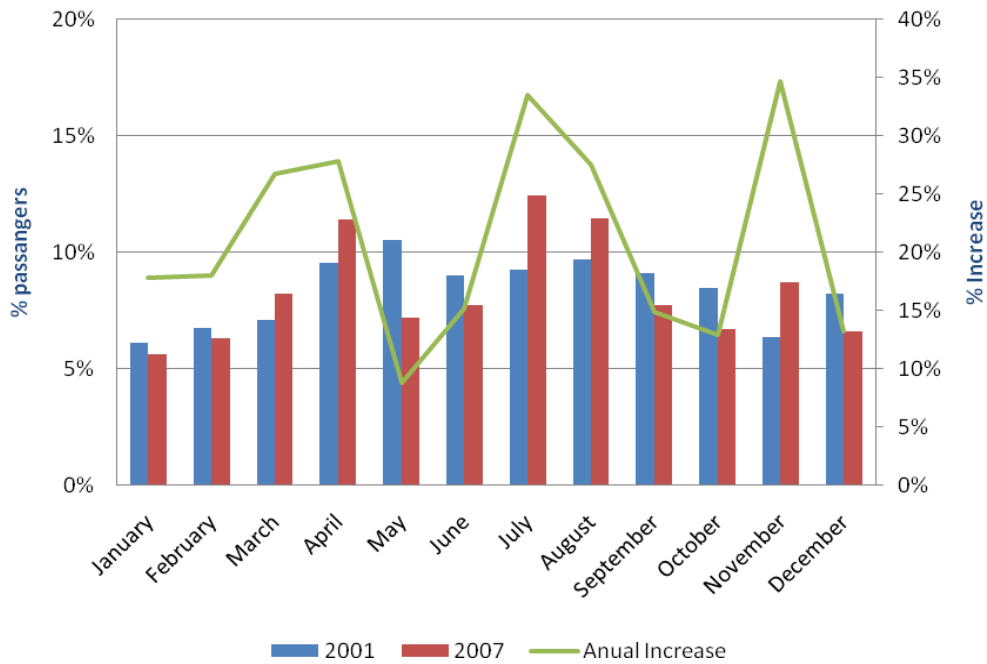


Figure 6.- Seasonality of the flights in Spain

Source: Movilia - Spanish Ministry of Public Works and Transport

Once compared the different modes of transport, both, automotive and aircraft, are evaluated over the year (Figures 6 and 7). It could be observed that do not match the periods of the year in which most have increased. In the case of car correspond to March, June and November and in the case of the plane to April, July, August and November. As regards the utilization it highlights the decrease in the use of the car in the months of April, May and August while the aircraft considerably decreases in May, June, September, October and December. Both modes of transport in Spain have some complementarity along the year.

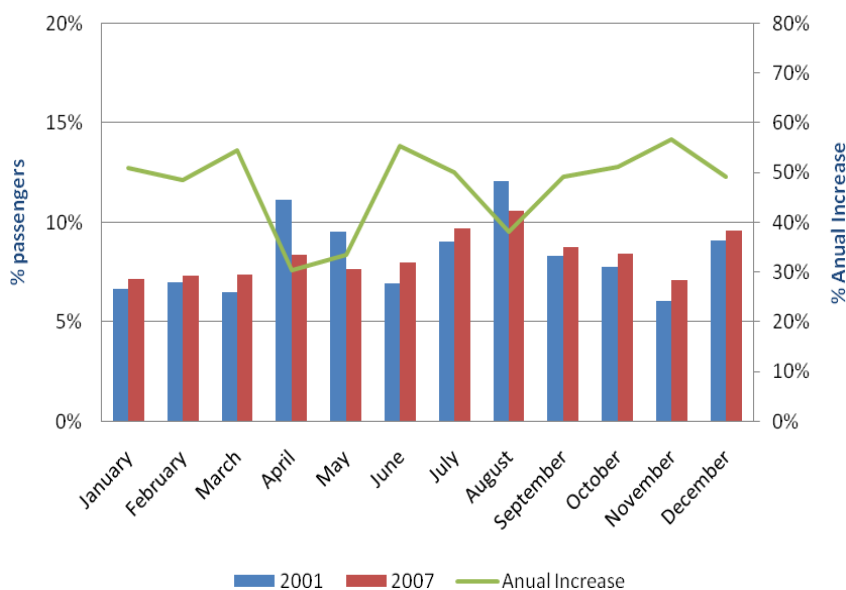


Figure 7.- Seasonality of the use of the car in Spain

Source: Movilia - Spanish Ministry of Public Works

It can be concluded that automobile and aircraft in Spain are the most important modes in terms of weight, the first, and the second on growth. As a result, if both modes may be the source for a possible use of small aircraft, as suggested by the literature review, it is clear that Spain has the right context and must follow the path of other European countries which is more established.

However, it can be considered that there is a tendency of using individual transportation, automotive, and air transportation at distances up to 1,000 km. It could be inferred that, as in other developed countries, the personal aircraft demand could increase and represent a real alternative in the coming years, even more if regulation would adapt and it would build the infrastructure needed.

These circumstances pose challenges to access to this emerging market of small and medium-sized enterprises as well as countries with little tradition in aeronautics. As a result it can be a source of new entrepreneurs who perceive a market with great potential that will depend on what to capture other means of transport such as the car or the commercial aircraft.

Finally, an issue to be taken into account is the potential impact of the current financial crisis since it can affect the country's economic growth, and as a result, to the possible growth of air transport that is expected to be recovered with economy and it returns to be one of the sectors with the greatest increase like in the past (Marazzo et al., 2010).

Future research could be made through an analysis of opinions of industry experts to compare the results obtained and the possible application to other countries.

## **5. Conclusions**

Today's society of developed countries is changing consumption trends, and there are new luxury products that are accessible to the majority of the population, which are intended to meet the emotional needs and improve quality of life. These products and services traditionally reserved for high society.

In this framework, the personal air vehicle was restricted to the general public and its utilization is conditioned to the development of new models that are more accessible, easy to use and maintain. There is also a need to create new infrastructures since the current could saturate due to the large number of potential operations.

The use of a personal air transport in Spain system is not as developed as in other countries. However the use of the individual transport and greater use of the aircraft preference indicates the growth potential of the use of the personal aircraft which is expected to be more affordable as it was the case of the car.

Finally, it should be mentioned that the obtained conclusions are conditioned by the limitation on the information available regarding the survey Movilia (Spanish Ministry of Public Works and Transport), since it only reduces to two years data (2001 and 2007). Future research could be to contrast the results and the potential application to other countries.

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