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STRATEGIC ANALYSIS OF THE PASSENGER AIR TRANSPORT MARKET IN SPAIN

ANÁLISIS ESTRATÉGICO DEL MERCADO DE TRANSPORTE AÉREO DE PASAJEROS EN ESPAÑA

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Ten siempre a Ítaca en tu mente.
Llegar allí es tu destino.
Mas no apresures nunca el viaje.
Mejor que dure muchos años
y atracar, viejo ya, en la isla,
enriquecido de cuanto ganaste en el camino
sin aguantar a que Ítaca te enriquezca.

(Constantino Cavafis)

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RESUMEN

Atendiendo a los informes emitidos por agentes de referencia, el mercado de transporte aéreo de pasajeros se encuentra en pleno proceso de expansión. Las previsiones de la IATA son muy positivas y el tráfico aéreo podría duplicarse en apenas veinte años. Sin embargo, existen dudas relevantes acerca de la capacidad de las aerolíneas para hacer frente a este crecimiento exponencial del mercado si mantienen su modelo de negocio actual. El objetivo de este trabajo es, precisamente, analizar en qué situación se encuentra el mercado español desde una visión holística (perspectivas estratégica, comercial y financiera-contable), sin olvidar nunca la profusa y compleja regulación legal del sector que condiciona todas las acciones que llevan a cabo sus agentes. Para ello, se han aplicado diversas metodologías de investigación, destacando la realización de paneles de expertos y una encuesta de percepción de los consumidores. Además, para el análisis de los datos, se han usado numerosas fuentes tanto de carácter gubernamental como de asociaciones de relevancia, tales como la ICAO o la IATA. Por otro lado, las operadoras del mercado tendrán que hacer frente a numerosos retos en un futuro cercano en varias áreas. Así, innovación, medio ambiente, competencia, mantenimiento de la flota, posicionamiento estratégico o globalización son sólo algunos de los temas que estarán encima de la mesa de los Consejos de Administración de las aerolíneas. En cualquier caso, dado el dinamismo del mercado, no cabe ninguna duda de que, si quieren mantener su posición en él, tendrán que realizar constantes esfuerzos de mejora. En este sentido, hay importantes áreas de desarrollo en términos de eficiencia en la gestión, así como en relación con las oportunidades de desarrollo de mercado, las cuales, hoy en día, aún se encuentran en proceso de diseño.

ABSTRACT

According to reference reports from expert agents, the passenger air transport market is currently in a process of expansion. IATA forecasts are very positive and air traffic could double in just twenty years. However, there are serious doubts as to whether airlines will be able to cope with this exponential market growth if they continue following their current business models. The objective of this project is precisely to provide a detailed assessment of the situation in which the Spanish market is, from a holistic perspective (strategic, commercial and financial-accounting points of view). The analysis should be

conducted bearing in mind the extensive and complex regulation of the sector, which in turn conditions any of the actions taken by agents. With this objective in mind, various research methodologies have been applied It is worthwhile noting that an expert panel was consulted and that a customer perception survey was carried out. In addition, for the analysis of the data, numerous sources from both governmental and relevant associations have been used, such as ICAO or IATA. On the other hand, market operators will face numerous challenges in the near future in several areas. Thus, innovation, environment, competition, fleet management, strategic positioning or globalization are just some of the main issues that will be on the table in the meetings held by airlines' Boards of Directors. In any case, there is no doubt that, given the dynamism of the market, companies will have to make efforts constantly if they want to maintain their position. In this sense, there are areas of improvement in terms of management efficiency, as well as market development opportunities, which are still in the design process.

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1. INTRODUCTION

The air transport sector has grown steadily and substantially in the last century. It was initially an institutional or military means of transport, but it has now become very popular for work, leisure, tourism and even short journeys within the same country. The increase in safety and security and also the progressive reduction in ticket prices have made this sector accessible to all kinds of people, regardless of their economic situation.

As a result of the factors mentioned above, the number of passengers, operations and goods transported has been increasing progressively year by year. Using data from ACETA, an association that represents the nine biggest Spanish airlines, the aeronautical sector in our country constitutes the 9,1% of the Gross Domestic Product (GDP) in 2018. It also generates, directly and indirectly, more than 1,5 million jobs. Considering these numbers, we can state that the economic and business interest of this sector is undoubtable.

1.1. Research objectives

Analyzing a sector is not a simple task and it requires a multidisciplinary vision. Therefore, our main aim has been to study the current situation of the aeronautical market in Spain and the most important future perspectives and risks. But, before approaching this, it is necessary to know how the sector has evolved in the last years and to understand what the main factors affecting its functioning and performance are.

The study is divided in three different parts:

- Context and evolution: this is explained in sections 2 and 3, where we will focus on the main factors conditioning how the aeronautical sector behaves. Factors such as legal regulation, operational cost or number of airports will be discussed in this part. Once the context has been studied, it is possible to investigate the market evolution focusing on the Spanish case.
- Current situation: this is the core of the document because it is where most of the business management techniques and concepts are applied. So, in section 4, we will analyze the aeronautical Spanish sector using three different perspectives: (i) strategic, (ii) commercial and financial, and (iii) accounting.
- An uncertain future: to finish the work, and using all the conclusions obtained in the previous sections, we will show the most important factors and risks that have

been detected, trying to identify ways to improve business management for the future of the sector. The results will be detailed in section 5.

Therefore, our objective is to obtain a global analysis of the sector, using economic and business management techniques which will allow us to make recommendations for improvement for the future.

1.2. Research methodology

As previously mentioned, this is a multidisciplinary study and, consequently, to achieve our goals it has been necessary to use different research methodologies.

It is first necessary to emphasize that, taking into account the page limits, in most cases the information that has been analyzed refers to the companies with highest presence in the Spanish aeronautical market. In this sense, the five main airlines, attending to the number of passengers (data from the Ministry of Development), which operated national and international commercial flights in Spain in 2018 were, from higher to lower market share, Ryanair, Vueling, Iberia, Air Europa and Easyjet. On the other hand, given the important contrasts between different airline models, on many ocassions we will make comparisions between full-service and low-cost companies.

Having made this clarification, in the next sub-sections, we explain the most important methodologies used in our work.

1.2.1. Literature review

The first step taken before starting the research project was to conduct a literature review, which consisted in analyzing recent literature such as official publications (specially from the Spanish Government and AENA), reports from recognized associations and companies that work in the sector (such as IATA, EASA, Boeing or Airbus), articles published in important academic journals and other resources so that we can get a general idea of what areas and subjects are the most important ones to study and analyze. All relevant references are included in the bibliography section.

1.2.2. Official data analysis

One of the most challenging parts of the project was to collect different data with the goal of analyzing the real situation of the market. The data used comes from several recognized market agents: (i) the Spanish Ministry of Development (Ministerio de Fomento); (ii) AENA as the principal airport operator; (iii) Aviation Safety Network; (iv) Airhelp and Skytrax, which are two of the most recognized quality rankings of airlines; (v) SABI, to

obtain financial results of the airlines that have their headquarters in Spain; (vi) OAG, to collect data related to the punctuality of the companies; (vii) INE (Statistics National Institute), which provides information on tourist movements in the last years; and (viii) AECFA, which is the agent designed by the government to assign the slots.

All collected information has been used to create several unique relevant databases (appendix 1), which have been analyzed individually and jointly with the sole objective of obtaining relevant conclusions. Also, all results extracted from the analysis and obtained through the application of various statistics techniques were depicted in graphics.

1.2.3. Survey

One of the perspectives of the market that, from the beginning, we wanted to analyze was the commercial one, because it conditions how the market operates. Taking this into account, we thought that it would not be reliable to obtain real conclusions using only secondary data. Therefore, it has been necessary to develop a mechanism that allows us to have a real view of customers' perceptions for each airline.

With this intention in mind, we created a survey (appendix 2) using Google Forms. The survey was divided in two different parts. The first one was dedicated to collecting personal information from the customers, such as gender, age, income level or employment situation. The second one focused on the perception that customers have of the most important airlines cited above. To this aim, the respondents were asked three different questions for each airline: (i) if they have travelled or not with the company; (ii) in case of a negative response, if they knew or not the company; and finally, (iii) we offered them fifteen positive characteristics of an airline, of which they had to say which ones they would associate with the company.

In the end, we got a total of 255 responses, a sufficient number to regard the results as statistically representative. For a more detailed explanation, see section 4.2.

1.2.4. Expert Panel

When the time of studying the market environment came, we noticed that we had a partial knowledge to make an integral analysis that allows us to obtain a complete PESTEL analysis or a rigorous study of the five forces of Michael Porter. Therefore, we decided that it could be interesting to develop a strategy to contact with different professionals linked to the aeronautical market. So, we created an expert panel, formed by active pilots,

pilot degree students and aeronautical engineers. Also, we contacted workers with other profiles, such as air traffic controllers or cabin crew, who, despite not having participated in the panel sessions, gave us their opinion of the factors that affect the market.

The work sequence of the panel started with two work sessions in which the panelists, guided by the moderator, debated about aspects that they consider affect the daily functioning of the market (appendix 10). After this two-hour sessions, we generated a survey with a summary of the principal factors identified. This survey was sent to all panelists and they valued the impact of each factor in a five degree scale (appendix 10). For a more detailed explanation, see section 4.1.

2. CONTEXT OF SPANISH AERONAUTICAL SECTOR

In this section, our objective is to make a general analysis about the surrounding context of the aeronautical sector. For this, we will begin studying the regulation, both at European and national level. Then, we will analyze the most important conditioning factors for airlines: the airports and their management. Finally, we will make a summary of the main operational costs, showing the relevance of each one in the total costs of the company.

2.1. The importance of the Single European Sky

The Single European Sky (from now onwards, SES) is a regulatory project of the European Union created in 2004 (the basic regulation is composed of the following European laws: Regulations (EC) 549/2004, 550/2004, 551/2004 and 552/2004). Its main objective is to restructure the management system of aeronautical navigation with the intention of improving its efficiency. It is considered the legal framework of the market and it affects its development in a considerable way. To consult the current full regulation in detail you can check the following webpage: https://www.eurocontrol.int/search?keywords=single%20european%20sky.

An in-depth study of this relevant project could take us a long time. Thus, considering that this is beyond the scope of this work, we will focus on describing the main initiatives covered by the project, with special emphasis on their economic and business impact.

Following the information provided by ENAIRE[1], the air navigation manager in our country, the initial project of the SES had several lines of action: harmonization of the air

[1] ENAIRE. (2019). *Cielo Único Europeo*. Obtenido de http://cort.as/-M97y.

navigation services, increase in air control capacity, strengthening of safety, reduction in the airspace fragmentation and promotion of the implementation of innovative and modern technologies, such as PBN (Performance Based Navigation) or Unmanned Aerial Vehicle (UAV).

On the other hand, according to Eurocontrol and AESA[2], the Spanish air safety agency, the SES has three main pillars:

- Performance evaluation system: the SES establishes some control variables to measure performance in different areas, such as environment, safety, profitability or capacity. It works for reference periods (RP), now we are in the second one (2015-2019), and the objectives are established by regions or FABs (in our case, SW FAB Spain-Portugal). Undoubtedly, this benchmarking system affects airline's business management because it forces them to reach a minimum standard imposed externally by the public authorities.
- Establishment of a European Network manager: this network manager assumes several functions with an important impact on the airlines performance such as: route design in the European territory, air traffic flow management (ATFM) or the management of frequencies and radar codes. Obviously, all these instructions have to be respected if a company wants to operate within the SES.
- Establishment of cross-border Functional Airspace Blocks (FABs): they are based on operational requirements and pursue a rational organization of air space. As we indicated before, our country belongs to a FAB that comprises Spain and Portugal (South West -SW- FAB).

But the SES is not only a project based on regulation. It also affects economic and business performance. According to the European Commission, the current fragmentation of the European airspace costs 5.000 million euros per year. Following one of the reports of the International Air Transport Association (IATA) about the SES[3], if we had a real union of airspace (planned as a maximum for 2035), the cost saving per passenger in a flight of approximately two hours and 138 people on board, on average, could reach 74 euros in business class and 48 euros in tourist class (i.e., it could result in a price reduction

[2] AESA (2019). *Cielo Único Europeo*. Obtenido de http://cort.as/-M986
[3] IATA. (s.f.). *A Blueprint for the Single European Sky. Delivering on safety, environment, capacity and cost-effectiveness.* // Fernández, S. (2 de junio de 2017). Implantar un cielo único en Europa supondría 36 euros menos por billete de avión. *El Mundo*.

of 69 euros in business class tickets and 36 in tourist class tickets). Besides this, it would also improve punctuality (8 minutes less of delay), reduce flights' duration (in more than 11 minutes), improve environmental performance (10% reduction in emissions), increase frequencies (they would grow a 35%) and reduce fuel consumption (almost 5 euros less per passenger).

2.2. Spanish regulation of the sector

As highlighted above, the aeronautical sector is mainly regulated at an International and European level. In fact, the basis of all regulation of the sector is the Convention on International Civil Aviation (Chicago, 1944), which establishes the freedoms of the air. With respect to the European area, the most important legal provision is the SES, discussed in section 2.1.

In our country, the most important laws related to the sector are the following:

- Ley 21/2007 (7th of July) related to aeronautical safety.
- Ley 48/1960 (21th of July) related to air navigation.

There are certainly many more legal and regulatory provisions, but they are not relevant to our investigation. A summary of them is available in the webpage of the Ministry of Development[4].

In any case, in our opinion, the most relevant actor in the sector at a national level is AENA, the Spanish airport operator and the biggest around the world by number of passengers. AENA not only manages Spanish airports, but also establishes the taxes that airlines have to pay in order to use the different services provided. To this aim, it has an annual fee guide[5], which details the cost of each service: landing and aerodrome transit, departure of passengers, aircraft parking, use of telescopic gangways, fuel, ground assistance and meteorological services.

Without doubt, all these taxes have a direct impact on the operational cost and, therefore, on the ticket price. In fact, the fixing of airport taxes is a typical source of conflicts between airlines and AENA. The last disagreement took place in mid-2018, when the Board of Directors of AENA decided to freeze the taxes in 2019 instead of reducing them,

[4] Ministerio de Fomento. (2019). *Normativa básica del Sector Aéreo*. Obtenido de http://cort.as/-M99q.
[5] AENA. (julio 2019). *Guía de tarifas.*

as planned in the Airport Regulation Document for the period 2019-2021[6] (DORA by its initials in Spanish) approved by the Ministry of Development. This decision prompted a public statement from ACETA[7], in which they emphasized the benefits achieved by AENA in the last year.

On the other hand, we have AECFA, the association created by the Ministry of Development to coordinate and facilitate the slots within the Spanish territory. AECFA is another key agent that must be taken into account when trying to understand how the Spanish market behaves and manages its air traffic flow.

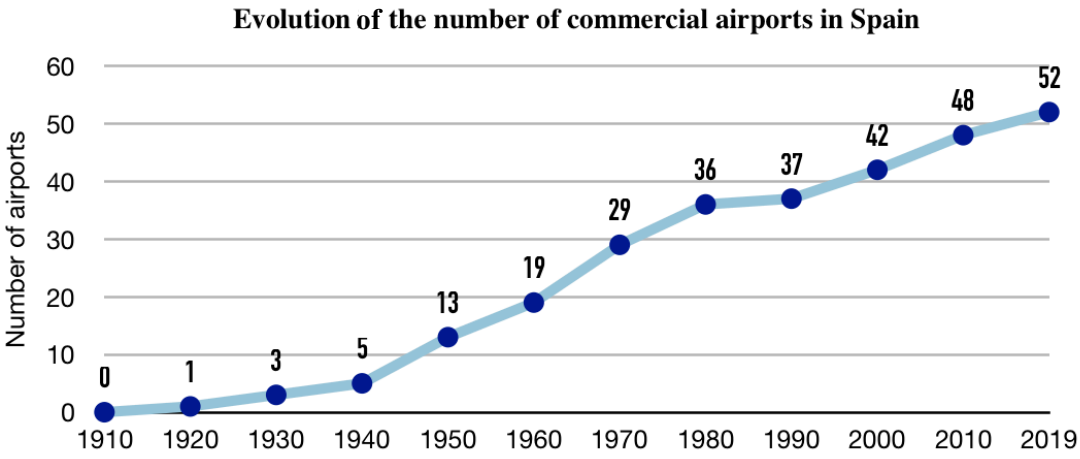
It is clear that too many aircrafts in the air at the same time and place could generate an unsafe situation. As a consequence, to prevent these situations, manager operators use CTOTs (Calculated Take-Off Times), also known as slot. The slot is the period of time during which a take-off has to take place. In Europe, the slot is defined as the period between 5 minutes before and 10 minutes after the CTOT. The assignment of slots to airlines is based on a series of criteria and it is made seasonally (twice a year: winter and summer). The most important one is the historical criterion: the slot will be assigned to the airline which had it in the past, as long as the company used it at least 80% of the times. When a company wants a new slot, it has to apply for it to AECFA and they will be assigned taking into account competitiveness criteria to avoid monopolies.

In brief, it is clear that AECFA has a central role in the market, as the allocation of slots determines the hours that an airline can operate, affecting its benefits and business opportunities. This situation is very positive for traditional flag companies, since they have used them for the longest time and are usually the most punctual ones.

2.3. Functioning and current situation of Spanish airports

If we want to analyze the context in which the commercial air transport market is framed, it is essential to study the evolution and current situation of Spanish airports. The first issue is to study the evolution in the number of Spanish airports opened to commercial air traffic, which is summarized in the following graph (2.1.):

[6] Ministerio de Fomento. (2017). *Documento de Regulación Aeroportuaria (DORA). 2017-2021.* Madrid.
[7] Webpage of the statement: http://www.aceta.es/wp-content/uploads/2019/01/1532682468.pdf



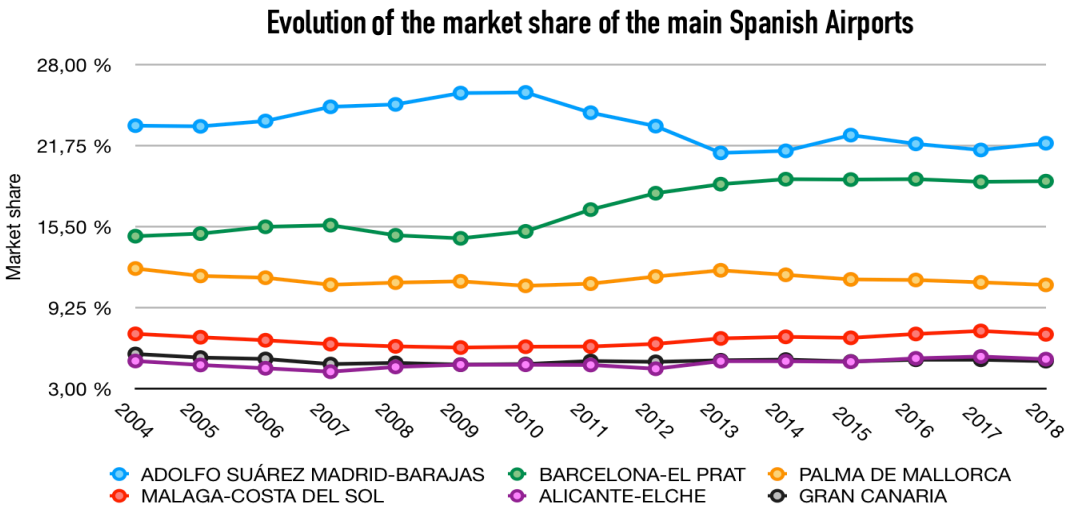
Graph 2.1. Own elaboration based on data from AENA

Looking at the graph, we can see that, nowadays, there is a total of 52 airports opened to commercial air traffic in Spain, 47 of them being operated by AENA. Following the classification established in the ORDEN FOM/405/2003, which modifies the Law 24/2001, there are three different categories of airports. This categorization influences the taxes and regulation that is applicable to the airports. So, in the first category (C1), we find the fifteen biggest airports according to the number of passengers. Then, there are ten following airports in the second category (C2) and twenty-two remaining in the third one (C3).

The growth in the number of airports has remained stable over time. However, the opening of some airports in the period prior to the last economic crisis has attracted broad media coverage in recent years. In this respect, none of the airports opened since 2000 is now considered a medium or big one, all of them having a flow of less than one million passengers per year. Accordingly, while the number of commercial airports grew, the proportion of medium and big airports fell. In conclusion, it is possible to conclude that most airports built in the present century were not really necessary (for further information about Spanish airports and their increase, you can check appendix 7).

Having clarified the number of airports in Spain and their distribution by categories, it is time to analyze the evolution in air traffic in each of them. To achieve this goal, we will differentiate three variables: passengers, operations and goods, with special emphasis in the first two. The time series used covers the last fifteen years.

Among the variables previously mentioned, the most relevant for our field of study is the number of passengers moved and its distribution among airports. So, the following graph (2.2.) represents the evolution in the percentage of total passengers moved in the most important airports in Spain:



Graph 2.2. Own elaboration based on data from AENA

As can be seen in the graph, the biggest airport in Spain, according to the percentage of passengers, is Adolfo Suárez - Madrid Barajas, although its predominant role has decreased in the last decade, currently representing about 22% of the market share. On the other hand, Barcelona - El Prat airport has increased its relevance, converging remarkably with Madrid Barajas airport in last years (its percentage of the total is greater than 19%). The rest of big airports represented (Palma de Mallorca, Málaga-Costa del Sol, Alicante-Elche and Gran Canaria) have remained stable over time. The concentration in this case is very high, accumulating the six biggest airports almost 70% of passengers moved in all Spanish territory.

The evolution in terms of operations is practically identical to the one described for passengers. In any case, the percentages are reduced, because in the smallest airports (specially dedicated to flight instruction or with a very low volume of regular flights) operations without passengers are common (for further information, you can see appendix 7).

Another area in which airports play an important role is the transport of goods. In this case, the predominance of Adolfo Suárez - Madrid Barajas, as the airport of the capital

of Spain, is much more accentuated (more than 51% in 2018). It is also worth noting that some airports seem to specialize in this type of operations, such as the cases of Vitoria and Zaragoza. The last one has increased its participation in this market from 1,44% to more than 16% since 2004, reaching the values of Barcelona - El Prat airport (further information is available in appendix 7).

After discussing the distribution of the market share among Spanish airports, it is convenient to analyze their position within Europe using the Top 30 European Airports ranking, published annually by Airports Council International (ACI). Nowadays (the last data available are from 2017), three Spanish airports appear in this ranking: Adolfo Suárez - Madrid Barajas (sixth position), Barcelona - El Prat (seventh position) and Palma de Mallorca (eighteenth position). All of them have worsened their position since 2007 with the exception of Barcelona - El Prat, which has advanced from the ninth position (for further information, please, refer to appendix 1).

Finally, we can check the information provided by Skytrax and AirHelp, two reference associations dedicated to evaluating airlines' and airports' quality of service. According to Skytrax, the best Spanish airport (only four are evaluated) in terms of quality is Barcelona - El Prat with a punctuation of 4 stars over 5. The remaining assessed Spanish Airports (Adolfo Suárez - Madrid Barajas, Málaga - Costa del Sol and Palma de Mallorca) have a punctuation of 3 starts. However, AirHelp rankings are slightly different. In this case, Adolfo Suarez - Madrid Barajas is the best one with a value of 7,91 over 10. Barcelona has 7,02 points and Palma de Mallorca stays gets 6,98. In all cases, the item with the worst punctuation is punctuality (for further information, you can consult appendix number 4).

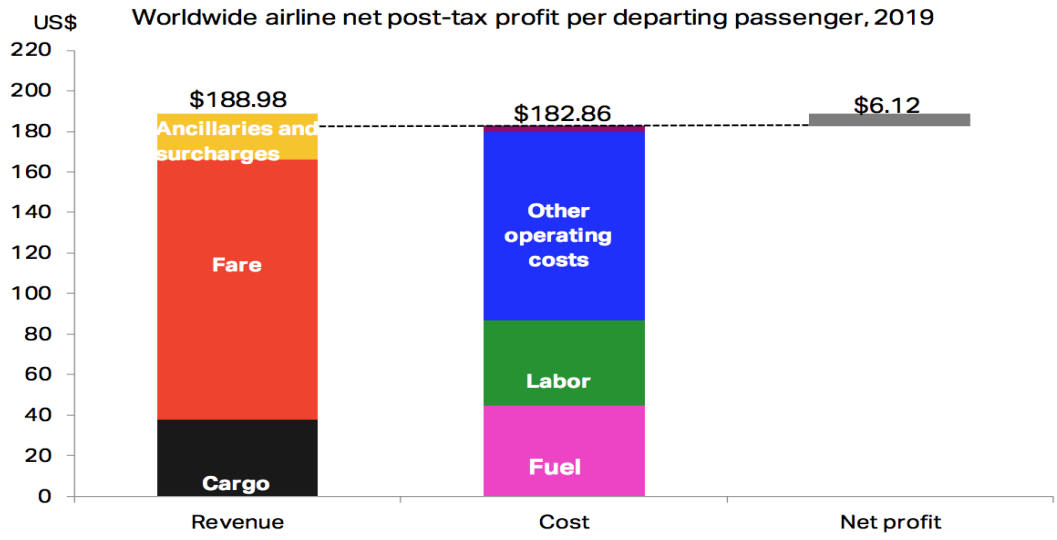
2.4. Main operating costs

To finish the section about the context of the Spanish aeronautical market, we will analyze the main operation costs; that is, the costs that airlines have to incur for each passenger on board. In addition to determining the most prominent ones, we will show their relevance as a percentage of the total cost.

Based on one of IATA Economics Charts published on the 7th of June 2019[8], on average, the total cost per passenger that an airline has to bear (including fuel, labor and other

[8] IATA. (7 de junio de 2019). Airline profit per passenger not enough to buy a Big Mac in Switzerland. *Economics Chart of the Week*.

operating costs) is almost 183$. On the other hand, the revenues (as the sum of base fare, ancillaries and revenue for any cargo carried) do not reach 189$. So, as a result of this situation, companies have a profit per passenger of just over 6$. Extrapolating this to a global perspective, the industry would generate worldwide a benefit of 28 billion dollars in 2019, the fifth best result ever. This situation is truly fragile, since a change in the price of fuel (the evolution in fuel price is analyzed in appendix 8) or in the level of profitability of a particular route could force an airline to file for bankruptcy.



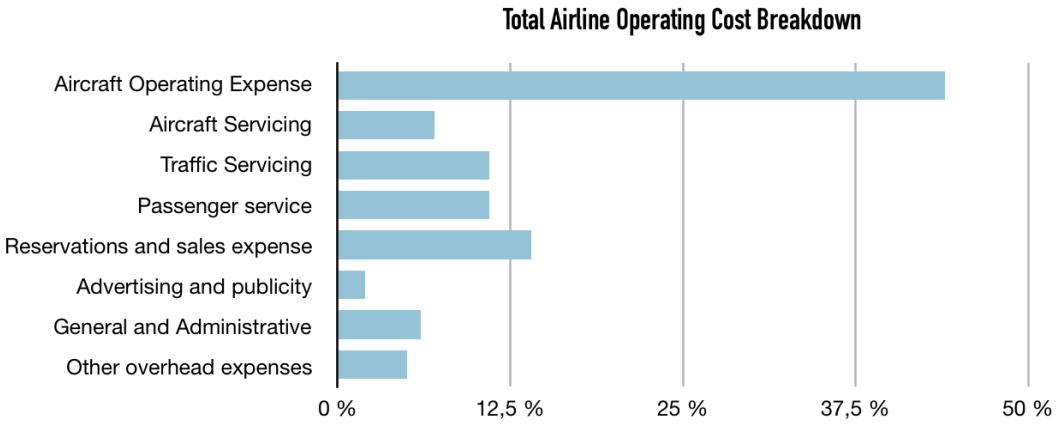
Graph 2.3. Source: IATA Economics

As can be seen in the previous graph, the fare does not cover a significant part of the operating costs and cargo revenues are not enough to pay fuel costs. Therefore, taking into account the high volume of fixed costs that airlines face (as fleet or labor), airlines need to design mechanisms to increase their revenues in order to have more room for maneuver. In this regard, Kenneth Button (Professor of Policy and Government at George Manson University), in his article entitled "The Economics of Cost Recovery in Transport"[9], suggests different alternatives to eliminate or, at least, reduce the importance of fixed costs (capital costs). These alternatives are the following: subsidies, monopolies, internal coalitions, long-term contracts between supplier and customer, advanced revenue with subsequent capital adjustments, vertical integration, discriminate pricing and two-part tariffs.

[9] Button, K. (2005). The Economics of Cost Recovery in Transport. *Journal of Transport Economics and Policy, 39*(3), 241-257.

In our opinion, two of these alternatives cannot be implemented or are not sustainable over time due to our economic model: subsidies and monopolies. Regarding internal coalition, there are nowadays different alliances that bring together several airlines that share some values and interests (the most well-known ones are Star Alliance, SkyTeam and Oneworld). Other alternatives, such as vertical integration, have the disadvantage that the airlines have to assume a higher level of risk. Therefore, keeping the current level of adjustment of prices in mind, we consider that the best options to increase revenues and/or to reduce the importance of fixed costs are those related with the application of pricing strategies (discriminate pricing and two-part tariffs) and those that focus on promoting the creation of new concepts such as the add-ons to the ticket price: bag fees, charging for meals, a premium for seats with extra leg-room, etc.

As regards the importance of the different operating costs, we refer to the conference offered by the International Civil Aviation Organization (ICAO) in Tehran in February 2017 about "Airline Operating Costs and Productivity"[10]. Using the example of the U.S. Major airline, ICAO establishes the following cost distribution:



Graph 2.4. Own elaboration based on data from ICAO

Using a functional cost classification, we can say that 50% of the operating costs is related to flight direct costs, 30% to ground costs and the remaining 20% to system costs.

To finish the analysis of the main operating costs, it is necessary to talk about the cost index, a measurement used to optimize the aircraft speed. It allows us to calculate the

[10] ICAO. (2017). Airline Operating Costs and Productivity. Tehran.

relationship between the unit "cost of time" and the unit "cost of fuel". With this ratio, it is possible to calculate the optimal speed of the aircraft to minimize the costs of the flight.

3. A VIEW ON THE DEVELOPMENT OF THE SPANISH AERONAUTICAL MARKET IN LAST YEARS

In this section, we will focus on analyzing the evolution of the Spanish aeronautical market in terms of number of passengers, operators and market shares and concentration. To achieve this objective, we will begin studying the air traffic by airlines, differentiating between national and international air traffic. Then, we will continue with an analysis of air traffic by markets, considering international markets and flights within the national territory.

In any case, we will start with some brief comments about issues that have a direct or indirect impact on the development of the market. So, first of all, let us see how the number of fatal accidents has evolved. To this aim, we have created a database of aircraft accidents both global and in Spain since 1975 (see appendix 3). The evolution is decreasing since the beginning of the time series, clearly tending toward 0 in the last ten years. This makes people perceive air transport as a safe means of transport, a fundamental feature for the proper functioning of the market. The negative impact of an accident in relation to the number of passengers and the social panic is contrasted by Li, Chen-Wei; Veng Kheang; Mio, Suzuki and Yai, Tetsuo (2015)[11].

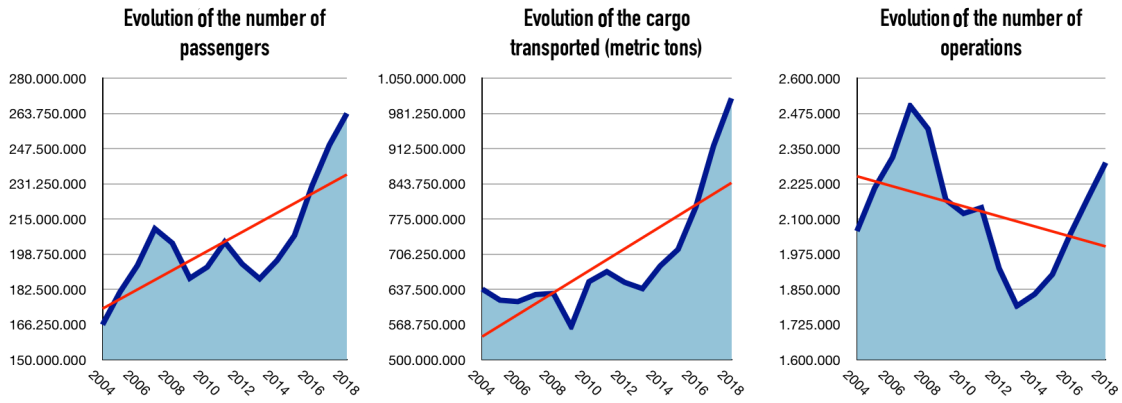
Another relevant feature of the market is its seasonality, marked by the importance of tourism for the number of passengers. If we check the statistics of the Statistics National Institute, we can observe that the plane is, without doubt, the preferred option to travel to Spain for foreign tourists, slightly increasing its predominance in recent years. Thus, in 2018 almost 82% of foreign tourists who arrived in Spain did it by plane (for further information about tourist movements by means of transport, please, refer to appendix 9).

Finally, another noteworthy issue nowadays is the airlines' integration in alliances. These alliances involve cooperation agreements between different companies with the aim of easing codeshare flights between airlines, using the same trademark. This strategy has clear benefits for both the client and the airlines[12]. In any case, it is necessary to control

[11] Li, C., Veng Kheang, P., & Suzuki, Y. T. (2015). The Effects of Aviation Accidents on Public Perception toward an Airline. *Journal of the Eastern Asia Society for Transportation Studies, 11*.
[12] Morrish, S., & Hamilton, R. (November 2002). Airline alliances—who benefits? *Journal of Air Transport Management, 8*(6), 401-407.

for the risk of creating monopolies. The two best-known Spanish airlines belong to one of the three most important alliances worldwide: Iberia is part of OneWorld and Air Europa of SkyTeam. In addition, we can find bilateral agreements between airlines nearby (e.g., Vueling and British Airways).

Having discussed these introductory aspects, from now on we will focus on describing and analyzing the evolution of the Spanish aeronautical market in the last years. As can be seen in the graphs below, the market presents a constant increase in the last fifteen years, both in terms of cargo and passengers (more than 50% growth since 2004), except for the period of intense economic crisis (2011-2014). However, the trend in the number of operations is decreasing. This is due to the closure of less profitable routes or those with fewer passengers. As a result, the number of passengers per operation has grown considerably.

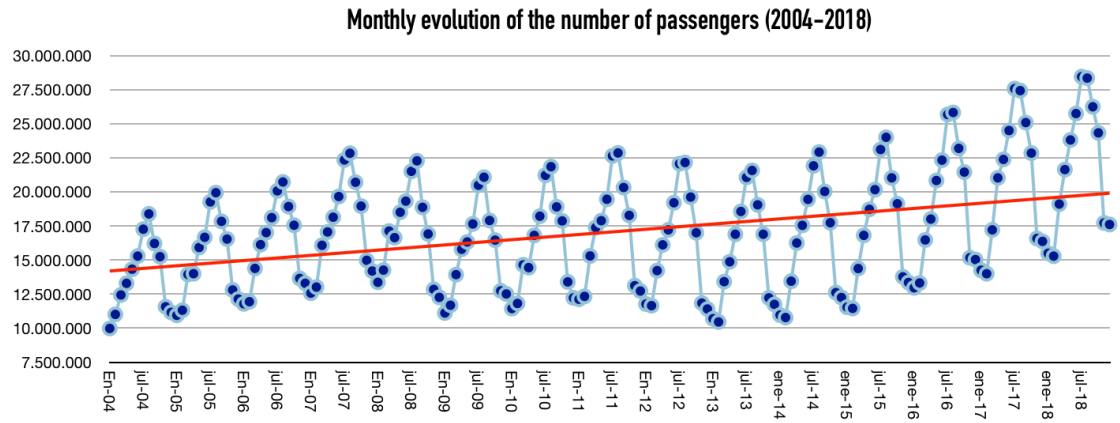


Graph 3.1. Own elaboration based on data from AENA

It is without doubt that the air transport market will continue to grow in the future. In this sense, IATA, in its last 20-Year Air Passenger Forecast[13], anticipates that in 2036 the number of passengers in the world will almost double, reaching the number of 7.200 millions per year. The largest increase in air traffic will be concentrated in the Asia-Pacific region.

Another key characteristic of the market, as previously anticipated, is its seasonally. In this regard, air traffic increases every year in the months between January and August, presenting a bearish trend in the second part of the year. This variability can be clearly seen in the following graph (3.2.):

[13] Webpage of the public statement: https://www.iata.org/pressroom/pr/Documents/2017-10-24-01-sp.pdf



Graph 3.2. Own elaboration based on data from AENA

To a large extent, this seasonality is due to the relevant impact that tourism has on the market. For this reason, and bringing up what was exposed at the beginning of this section, it is essential for the market that the plane maintains its prevalence as the preferred means of transport for leisure and tourism.

Let us continue now analyzing the air traffic in Spain by airlines. First, we will take into account the total number of passengers; then, we will break down the data into national and international air traffic (all this information is also exposed in a detailed way in appendix 6).

As previously noted, since 2004 (year when the studied time series began), there is an upward trend in terms of number of passengers in Spain. This increase in the passenger volume has been mostly absorbed by low-cost airlines, highlighting the role of Ryanair and Vueling. In this way, Iberia has lost its traditional sovereignty in the Spanish market, going from a market share of 25,18% in 2004 to 7,33% in 2018. Its commitment to a low-cost alternative has not been very successful, because Iberia Express represents a market share of just 3,62% (2018). In conclusion, the flag airline by excellence in Spain has lost more than 50% of its market share in the last fifteen years. The main reason could be its inability to offer a competitive alternative, especially in the national framework, adapted to market trends and customer requirements (new passenger profiles have emerged, whose main priority is only economic). On the contrary, Ryanair and Vueling nowadays have, respectively, a market share 7,76 and 48,5 times greater than fifteen years ago. The market share ranking is completed by Air Europa (6,59% in 2018) and Easyjet (5,78% in 2018). Finally, the disappearance of Spanair after the flight 5022 accident is remarkable, because it reached a market share of almost 10% (2006).

As regards the concentration of the market (calculated considering the five largest operators in the market each year), it should be noted that it has maintained a growing trend, developing from a 50,05% in 2004 to a 52,45% in 2018. It is worth mentioning a notable setback in the first years of the economic crisis (2011-2014).

This rise of low-cost companies is very unequal if we analyze the data of national and international passenger traffic separately (all this information about the market distribution by airlines is also presented in a detailed way in appendix 6). In this respect, although Ryanair and Vueling dominate the Spanish market in a global sense, Iberia continues being the reference in flights that connect Spain with third countries. This situation is due to two major factors. First, long-haul flights present greater difficulties in adjusting prices, due to the presence of higher fixed costs, such as crew or reserve fuel. In this sense, conventional airlines, attending to their strategic positioning and trajectory, have greater facilities to achieve low costs per passenger[14].

On the other hand, following what was exposed in the expert panel (see sections 4.1.1. and 4.2.2.), the psychological perception of passengers becomes very important. As we will see in the commercial analysis section, passengers perceive full-service airlines as safer than their low-cost counterparts. This aspect becomes even more relevant when the flight involves a high number of hours or in transcontinental routes. In addition, these are flights that, in any case, involve a greater economic outlay.

These arguments are supported by the fact that no recognized low-cost airline, with the exception of Norwegian, has opened routes beyond the European continent. A mistake in strategic planning in this area could have catastrophic consequences (a clear example is the financial results of Norwegian in 2018).

In summary, the international market is essential for full-service companies nowadays: it allows them to maintain a high market share with a considerable economic margin.

Going more deeply into the data, at an international level, Iberia has a market share of almost 27% (2018), doubling that of its main competitor, Air Europa (12,12%). However, in the national market, Vueling is the leader with more than 30% of market share, followed by Ryanair (14,37%) and Air Europa (13,80%).

[14] Pels, E. (December 2008). Airline network competition: Full-service airlines, low-cost airlines and long-haul markets. *Research in Transportation Economics, 24*(1), 68-74.

Another noteworthy aspect is the contrast in the evolution of national and international markets. So while the international market maintains a growing trend since 2004, the national market is in decline. The main reason is the development of substitute alternatives at competitive prices which provide greater comfort to travelers, especially the rail network.

Overall, there is an undisputed leader in the market since 2010: International Airlines Group (IAG), which comprises, among others, British Airways, Iberia, Iberia Express, Vueling, Air Nostrum, Aer Lingus and Level. This holding concentrates more than the 30% of the market share (almost 60% in the case of the national market).

To finish this section, we will make a synthetic analysis of the evolution of the main sub-markets that make up the Spanish aeronautical market (all this information is also exposed in a detailed way in appendix 5). The time series in this case consists of 5 years (from March 2014 to March 2019), as these is the only data available from the Ministry of Development. To begin, we can confirm that all sub-markets behave more or less homogeneously in the face of economic variability, although seasonality patterns are more pronounced in those markets that are more dependent on tourism (flights between Spain and Europe or North America).

As the IATA report (2017), Asia-Pacific is the region with the greatest potential for future growth. In the case of Spain, the passenger flow with this region has almost quintupled in 5 years (from 22.000 passengers in March 2014 to 102.000 passengers in March 2019). It is expected that two markets that belong to this region will grow quite fast until 2036: China, which in 2022 will already be the world leader, is expected to reach 921 million new passengers and Indonesia will reach 235 million, according to the forecast.

This new business opportunity has increased competition to such extent that the numbers of operators in this market (operate flights from Spain to Asia-Pacific countries) has increased from 5 in 2014 to 12 in 2019. Something similar has happened with the Middle East (this market has almost doubled its passenger traffic flow and has increased the number of operators by 5).

Due to space limitations, a deeper discussion is beyond the scope of this section. However, the main conclusion that derives from this analysis is that the aeronautical market is in a situation of great dynamism, which requires a strategic planning effort by airlines if they want to maintain their market share.

4. CURRENT SITUATION OF THE SPANISH AERONAUTICAL MARKET

The main objective of this section is to provide an in-depth analysis of the current situation of the Spanish aeronautical market. To this aim, we will consider three complementary perspectives: (i) strategic, (ii) commercial, and (iii) financial and accounting. In this way, we will get a holistic view, which will allow us to later analyze the impact of the changes that are forecasted for the medium and long term.

4.1. Strategic perspective

The analysis of both the environment and the strategic positioning of the airlines operating in Spain is essential if we want to understand the dynamics of the market. Thus, we will begin by studying the environment. The general environment is analyzed first and then we examine the specific one. After this part is addressed, we will identify the distinctive resources and capabilities of each airline and, finally, we discuss the competitive advantages and strategies that are currently successful in the market.

4.1.1. Strategic analysis

To conduct the analysis of the environment, we have used two classic techniques of strategic business management: the PESTEL analysis for the general environment and the Porter's five forces analysis for the specific one. In order for the analysis to be much more complete and close to the current reality of the market, an expert panel has collaborated with this research project (its operation and development is detailed in section 1.2.4). Together with this technique, we carefully collected information about the environment from multiple studies and several sources widely recognized in the sector. Finally, and as usual throughout the project, we have differentiated between full-service and low-cost models when studying the impact of the sector and drawing conclusions.

As explained previously, for the study of the general environment, we have applied a PESTEL analysis, which has allowed us to identify the factors that affect, directly or indirectly, the market aim for this study. These factors have been classified into six exclusive categories: (i) political-legal, (ii) economic, (iii) socio-cultural, (iv) technological, (v) demographic and (vi) environmental. The full definition of factors and the graphs of their impact on each of the models, according to the expert panel assessments, can be seen in appendix 10.

The current political-legal environment has a significant impact on the entire market, with the following factors, among others, playing a prominent role: the internationalization of the sector, being the Single European Sky the best example of this trend; and the high control and tax level of the market. In any case, the impact of most of the variables is uneven on the two airline models. Thus, for the data given, the influence on the low-cost model is much more extreme, both positively and negatively. In this way, the labor regulation and the strong unionization of workers is one of the factors in which more striking differences exist between both models. As could be expected, its impact on the low-cost model is much more significant, since the labor policies of these companies are usually, due to their characteristics, much less developed, both at the salary level and regarding the rights of workers contained in their collective agreements. This in turn causes frequent labor conflicts. On the other hand, the increase in the number of airports, especially of small and medium size, based on the answers of the experts, has a very positive impact on the low-cost model, while its influence on the full-service model is non-existent. This is due, among other things, to the fact that full-service airlines have focused their efforts on long-haul flights, which generally departures from large airport terminals.

As in the political-legal dimension, economic factors have an asymmetric effect on the two models studied, especially in those that are directly related to the income statement. Take, for example, volatility in the price of fuel. It has a more negative result in low-cost airlines, since its profit margin is much tighter. Another great contrast derives from the creation of hub models and the integration of companies in alliances with global presence. Both variables have a very positive impact on the full-service model, while this is virtually negligible in the case of the low-cost model, due to the impossibility of these types of airlines to get access to these new strategies, which are changing the way airlines interact within the sector and with the competition. In this sense, if we check the presence of low-cost airlines in the main alliances, it is almost insignificant. Also, most low-cost companies do not have sufficient resources to develop hub models, especially because of their limited focus on international long-haul flights.

In the case of the aeronautical market, the demographic dimension does not have a special relevance, having only identified two factors (the aging of the population and the population concentration in big cities). Both variables have a much more positive impact on full-service airlines. In the case of the first variable, a positive effect exists because

middle-aged population prefer to fly, whenever possible, with full-service airlines (see the study on the perception of airlines contained in section 4.2.2.). In relation to the concentration of the population in large cities, according to the panel of experts, it benefits traditional airlines to a greater extent. The reason is that, in general, it is more difficult to operate in first category airports, due to both its costs in terms of taxes and to the level of slots assigned to companies with longer history in the market.

Let us continue now analyzing the impact of the factors contained in the socio-cultural dimension, which generally have a positive impact on both models, although it is notably more pronounced in the case of the full-service one. In this category, it should be noted that the globalization of society is valued very positively for the market as a whole, according to the experts. Indeed, this change in the cultural view of the world increases the connection between countries in economic, social and labor terms, increasing passenger traffic flow globally. However, we find a great contrast in the variable called "social alarm generated by aeronautical accidents". This factor, despite generating a negative result in both models, has a more penalizing effect on the low-cost model, as a consequence of consumers associating safety with traditional companies (this fact is quantitatively investigated in section 4.2.2.). This aspect is associated with another environment variable that benefits full-service companies considerably: customer perception of safety based on the cost of the ticket. Finally, it should be stressed that in recent years the plane has begun to be perceived as a means of transport commonly used and accessible to everyone from an economic perspective. This mainly benefits low-cost airlines, which are more geared toward the middle class.

Continuing with the technological dimension, it is necessary to emphasize that all variables identified (simplification of procedures, reduction in the number of aircraft models, crew reduction in transatlantic flights, technological advances associated with the reduction of fuel consumption and implementation of the electronic flight bag) have a positive influence, without exception, on the operation of airlines, regardless of their strategic model. The most remarkable difference is found in the reduction in the number of aircraft models. The impact of this dimension is greater in low-cost companies, since they are the ones that tend to bet on this type of strategy, which reduces costs in several areas such as maintenance or pilot training.

Finally, we will consider the environmental dimension. Although less relevant until the last few years, it is currently gaining importance and its impact on the market is expected

to grow in the future (the challenges of the sector in environmental terms are analyzed in section 5.1.). In general, it is a dimension with a negative impact on the sector, being the effect slightly more significant in the low-cost model. This negative connotation is related to the additional disbursement and the increase of operating limitations entailed by the implementation of environmental responsibility programs by airlines. The five factors identified are: (i) possible development of environmental regulations of the sector, (ii) noise control in airport areas, (iii) increasing concern of European authorities in this regard, (iv) risk of taxation of emissions and (v) development of green operating procedures.

In short, the general environment, according to the opinions of the experts consulted, has a relatively similar impact on both models. However, apparently, full-service airlines are better prepared to face the current challenges revealed by the PESTEL analysis. The contrast in the impact of the economic dimension (mainly due to differences in profit margins) and the socio-cultural one (derived from the better social perception of full-service companies) are especially relevant.

Having finished the analysis of the general environment, we continue with the study of the competitive environment, for which we will follow a very similar dynamic. In this case, we will evaluate the impact of each one of the five Porter's competitive forces on the identified models. Once this process has been carried out, we will try to determinate the current attractiveness of the sector. The attractiveness, given the imperfect competition that characterizes the market, offers the possibility of obtaining higher incomes, if the company is able to detect and take advantage of opportunities and protect itself from threats.

The first force is the intensity of the current competition, whose increase affects negatively the attractiveness of the sector. As we have seen in previous sections, we are discussing a market of high concentration, which, in principle, tends to reduce the level of competition. With respect to the speed of growth, it is a mature but expanding market. On the other hand, it is almost impossible for airlines to move from one market segment to another, as they are clearly associated by customers to a model (full-service or low-cost). In this sense, it can be noted that the success of the low-cost divisions of full-service companies is questionable (the best example is the recurring failed attempts by Air Europa to launch a low-cost subsidiary). In the case of the aeronautical sector, there are also relevant exit barriers, especially related to the specificity of assets and fixed exit costs

(labor intensive industry). These are the main factors that, in our opinion, influence the current market competition. Thus, we can say that, while competition is at medium levels between companies of different models, it is remarkably high among airlines that belong to the same model.

To analyze the risk of entry of new competitors, we will consider two dimensions: the barriers to entry and the reaction of competitors already established in the market. Regarding entry barriers, the most relevant one are product differentiation (associated with the models and the prestige and good name of some companies) and the high capital requirements needed to compete in the industry. In addition, the profuse legal regulation also acts as a deterrent to the entry of competitors. Moreover, it is undeniable that, in the case that a new competitor decides to enter the market, actions will be taken by the airlines that already operate, in order to force the suspension of its activity. Actions by existing airlines are strong as a result of a number of factors: the tradition of reprisals in the form of price war or aggressive offers; companies with many resources to defend themselves (the best example is the IAG holding); and established companies with high fixed costs (this fact constitutes an additional motivation to start a price war, making use of all the available installed capacity). Taking into account the foregoing, we can conclude that the threat of new competitors is remarkably limited nowadays, which positively affects the attractiveness of the sector.

To continue with the analysis of the competitive environment, it is necessary to identify whether or not there is a real threat of substitute products. The relevance of this threat is limited to flights within the peninsular territory (i.e. high speed trains), since, as we have seen in other sections, the international arrival of travelers both by train and by road is very small. Therefore, as far as this factor is concerned, the aeronautical market can be considered an attractive market.

Finally, the negotiating power of both suppliers and customers should be taken into account. The negotiating power of suppliers is considerable because they provide resources that are essential to operate (e.g., fuel or airport services). In addition, suppliers are frequently in monopoly (i.e.: AENA is the only airport operator in Spain). As regards the negotiating capacity of customers, it is generally very small. This is due to the low concentration of customers, which prevents them from influencing the price, except in the case of large tour operators, whose bargaining power is relevant.

As a conclusion, we can state that, based on the analysis of the specific environment, the aeronautical market is a profitable market for the companies operating within it. However, it is not particularly attractive for the entry of new competitors. If a company decides to enter the sector, it will most likely get a low market share.

4.1.2. Competitive advantages and strategies according to resources and capabilities

After a study of the environment surrounding the passenger air transport market, it is convenient to perform an internal analysis of the top airlines in the market, focusing on their resources and capabilities. To this aim, we will apply the original theory presented by Penrose and Andrews (1959) and developed, mostly, by Barney and Grant (1991). This will enable us to see the level of adjustment to the context in a strategic plan, being able to draw conclusions on their ability to achieve competitive advantages.

In order to structure the analysis, we will define four categories of resources: (i) tangibles, (ii) intangibles, (iii) human and (iv) organizational capital. Moreover, we will classify the different capabilities in three categories: (i) of the human resources management, (ii) of the organization and (iii) of the corporate culture...

Without any doubt, Iberia stands out for their intangible resources, being its brand and reputation especially relevant. Moreover, it is noteworthy that it counts with valuable tangible resources such as its fleet, recently renovated with the purchase of the brand new Airbus A320 NEO (New Engine Option) and A350, or the terminal T4 at Adolfo Suárez Madrid-Barajas airport. Furthermore, its human resources are usually characterized by a vast knowledge because the airline's selection processes are quite stringent. In addition to this, the organizational culture of the company can be regarded as its greatest capability, having a direct impact on all its activities and being internalized by its employees.

Regarding Air Europa, the other main flagship full-service airline operating in the Spanish market, its resources and capabilities are not as strong as in Iberia's case. It is nonetheless true that its brand and image is a valuable resource that must be protected.

Concerning the low-cost airlines, none of them has intangible resources worth mentioning, neither related to the brand nor to the reputation or culture. However, we can stress that they have valuable tangible resources. Ryanair, thanks to the leasing practice, counts with one of the most modern fleets in Europe. Along these lines, after the purchase order of 200 new airplanes to Boeing by IAG, Vueling fleet is expected to be practically

wholly renovated. Finally, we must highlight that we have not been able to find any differentiating resource in Easyjet's case. In terms of their capabilities, the most notable of them in the low-cost model is the management capability and organization. Ryanair is a good example since it counts on a solid control system, which is able to guarantee low prices without jeopardizing its profits.

Having identified the most relevant resources and capabilities, it is time to focus on the competitive strategies. As we have highlighted throughout this project, there are two big models in the airline business: (i) the low-cost, which relies on a competitive strategy of cost leadership, and (ii) the full-service, whose principles are based on a competitive strategy of differentiation. Nonetheless, we should also mention that several studies and specialists of the sector contend that intermediate models that bring together different characteristics of both models also coexist[15]. In fact, we can identify the following models: ultra low-cost (e.g., Ryanair), low-cost (e.g., Vueling), hybrid (e.g., JetBlue), soft full-service (e.g., Air Berlin) and full service (e.g., Iberia). The intermediate categories convey important risks. In this sense, it is as risky to charge a high price for a low feature service as it is to offer full features with low fares. This last strategy is what brought Air Berlin to the bankruptcy. This airline offered practically the same product as a full-service firm, but with rather low prices, thus destroying its commercial margin.

In our opinion, there are two airlines that enjoy substantial competitive advantages and that are worth noting: Ryanair shows a clear competitive advantage in costs, which enables it to sell low fares without jeopardizing its profits. On the contrary, Iberia has a differentiation competitive advantage since, as we will see later in the study, its customers associate the airline's brand with a quality service. Both competitive advantages are based on the recently analyzed resources and capabilities (Ryanair achieves its competitive advantage thanks to its organizational capacity and Iberia thanks to its intangible resources). The other airlines studied do not stand out for having a clear competitive advantage, according to their resources and capabilities.

We can assure that the competitive advantages identified are relevant and have a substantial impact on the market performance, improving the dominance that both airlines have in each respective market model. On the one hand, Ryanair's competitive advantage

[15] Stoenescu, C., & Gheorghe, C. (2017). "Hybrid" airlines – Generating value between low-cost and traditional. *De Gruyter Open*. // Corbo, L. (2017). In search of business model configurations that work: Lessons from the hybridization of Air Berlin and JetBlue. *Journal of Air Transport Management, 64*, 139-150.

is relatively sustainable over time, although it is subject to risks derived from changes in the general economic environment. On the other hand, the sustainability of Iberia's competitive advantage, based on the differentiation strategy, cannot be granted if the company does not intensify its efforts toward stronger customer fidelity, especially in a market context where decisions are taken based on prices by the majority of travelers. On top of that, both competitive advantages can continue providing revenues in the future, as they have been doing until now. Taking all this into account, along with the difficulty of imitation of these strategies, we can conclude that they comply with all of the requirements stated by Barney and Grant in their theory, in order to be considered as competitive advantages.

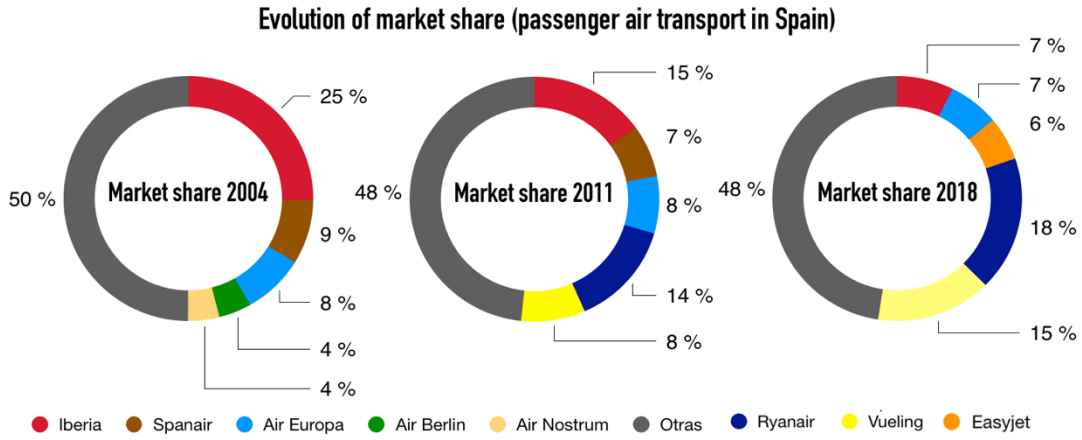
4.2. Commercial perspective

In this section, we will focus on analyzing the current situation of the Spanish passenger air transport market from a commercial perspective. To do this, we will begin by briefly reviewing its structure, emphasizing the distribution of market shares and its concentration. After this introduction, we will proceed to study the most important commercial and marketing strategies applied by the main airlines operating in Spain.

4.2.1. Market structure

As we have exposed throughout the study, the market we are analyzing has been in a process of continuous expansion for several decades. As a result, it has become one of the markets with the highest contribution to GDP in our country.

The creation and closure of airlines is relatively common within the market. The main failures are due to inadequate market positioning (e.g., Air Berlin), errors in business strategy (e.g., Norwegian) or air accidents with media relevance (e.g., Spanair). In addition, the growth of companies is usually exponential, being able to reach relevant market shares in a short period of time. These frequent changes in the market domain can be seen in graph 4.1., which includes the distribution of the market share in three different periods of recent years.



Graph 4.1. Own elaboration based on data from AENA

As can be seen, only two of the five largest airlines in 2004, according to the number of passengers, continue in those top positions, being the bankruptcies of Air Berlin and Spanair especially prominent. All key aspects related to the evolution of the market structure can be found in section 3.

Regarding the competition level in the industry, it has boosted for two major reasons: (i) the increase in market concentration by almost 2,5 percentage points and (ii) the increase in the total number of operators in the market in 126. Thus, the largest operators, such as IAG, Air Europa, Ryanair or Easyjet, have balanced their forces, being in constant voracious competition to try to capture customers from other companies, especially from those belonging to the same business model (full-service or low-cost). For their part, other airlines with lower presence in the Spanish market have a greater number of competitors, which makes it difficult for them to gain a foothold in the market.

4.2.2. Commercial strategies

Our aim in this subsection is to study the main commercial strategies that airlines apply in the Spanish market. To achieve this goal, we have used two techniques. First, a social survey of social perception of airlines consisting in two large blocks:

- Socio-demographic variables: we collected information about the respondent in order to control for the representativeness of the sample and to conduct partial analysis of the data. The variables considered are: gender, age, employment situation, income, frequency of use of air transport services and purpose of the use of the service.

- Perception of the five main airlines: in different sections, a series of questions were repeated for each of the five major operators in our country. First, the respondent was asked if s/he had travelled with the company and, in case of a negative response, if s/he knew that the airline existed. Both in the event that s/he had travelled and in which s/he knew the airline, s/he was asked an additional question related to her/his perception of the company. In that question, s/he was asked to mark, among a list of fifteen positive qualities (low price, quality of the service, professional attention on land, high benefits, luggage transport facilities, punctuality, cleaning, clarity on price tickets, professional crew, comfort, safety, attractive loyalty programs, multiple discounts and promotions, prestige and numerous destinations[16]), all those associated with the airline.

The number of responses was 255, with a balanced representation of the population (appendix 1), which reduces the risk of biases. Once the response collection period was closed, using the coding template, all results were codified.

The fact of stating all qualities in a positive way allows us to obtain an indicative measure of the level of positivity with which customers perceive each company, through the average of the number of characteristics that respondents grant to each one. Thus, the higher the average, the better the social perception of that operator.

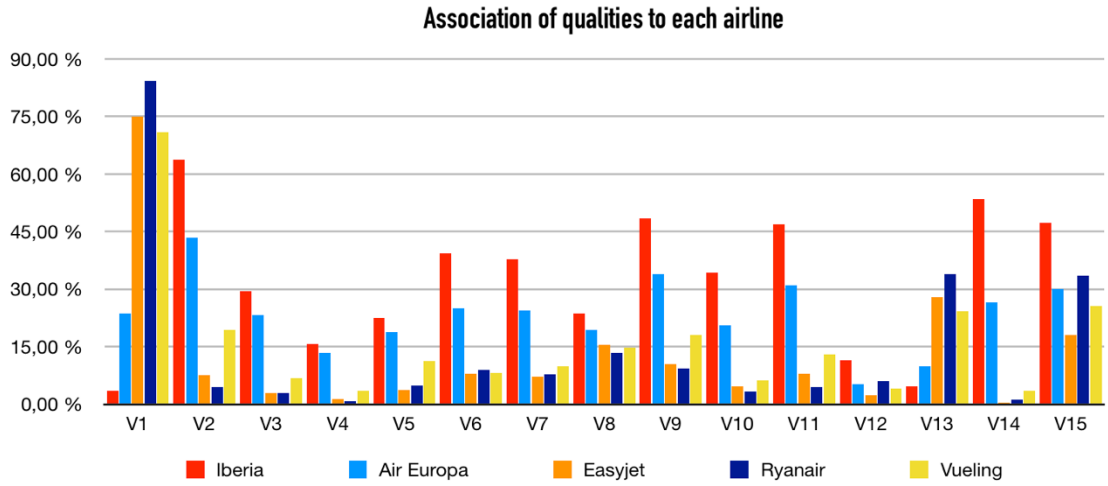
Once the results of the survey were treated and analyzed, we did a search work related to the brand image that the chosen airlines intended to give. To do this, we check their corporate website, specifically regarding their mission, vision and values, and analyze some of their latest commercials. This has allowed us to evaluate the rate of success regarding the advertising techniques of the companies, by assessing if they get the customer's perception they wish to convey.

Regarding the knowledge of the airlines by respondents, all are above 80%, with Easyjet obtaining the lowest recognition (83,1%). It is especially noteworthy that Ryanair (97,3%) is more recognizable than Air Europa (91,4%) by the market, although the latter has been operating for substantially many more years.

On the other hand, the results of the survey in terms of association of qualities to each airline can be found in graph 4.2. As can be noted, except for the characteristics called

[16] The variables described were coded as dichotomous variables and identified with V1 to V15 in the order in which they were mentioned. This aspect is relevant for data analysis.

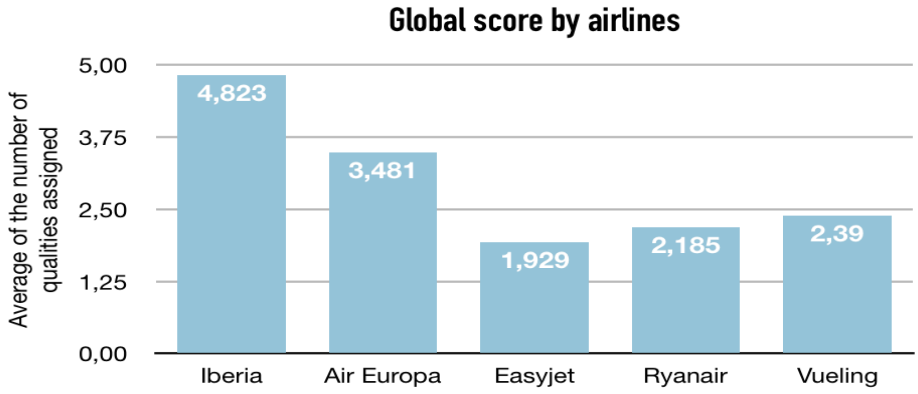
"low price" and "multiple discounts and promotions", Iberia leads the ranking in all variables. This lets us conclude that, in addition to being the best known airline by respondents, Iberia is also the most valued of the five, maintaining its position as a reference company in the Spanish market.



Graph 4.2. Own elaboration based on the results of the survey

Another conclusion we can draw is that companies are conveying an image to the market consistent with their business model. In this way, low-cost airlines lead the classification in economic variables, being Ryanair the most prominent one. Among the group of low-cost airlines (consisting of Ryanair, Vueling and Easyjet), Vueling is perceived as a hybrid company, which, while maintaining low prices, offers a better service than the others.

Graph X shows the value obtained by each of the studied airlines in the previously described measures (average number of variables assigned per respondent). It is worth noting that this information is useful to identify which companies are preferred by consumers, regardless of the cost of the ticket. However, it is not possible to extrapolate the results to obtain scores. As expected, Iberia leads the ranking followed, in this order, by Air Europa, Vueling, Ryanair and Easyjet. Surprisingly, despite continued media criticism of Ryanair, it is very close to Vueling.



Graph 4.3. Own elaboration based on the results of the survey

If we split the sample, we can obtain partial results, which will allow us to check if the perception of the airlines is different according to the population considered. For this purpose, in our opinion, the two most relevant socio-demographic variables are age and income level.

In the case of age, we have divided the sample into two groups: young people (under 35 years old) and people over 35, in order to test the hypothesis that older people value more travelling with full-service companies. The results in this regard are conclusive: the members of the first group identify to a greater extent some of the low-cost companies, such as Vueling. However, the most relevant conclusion has to do with the score (calculated in the terms described above) that each group gives to companies. That is, low-cost airlines are better valued by young people than by those over 35 (e.g., Vueling receives a score of 2,88 from the youngest, while those over 35 give it a 1,83). On the other hand, and contrary to what one might expect, young people are those that value Iberia's full-service model most (5,36 versus 4,21 of clients over 35 years old).

Let us focus now on the impact that personal income has on the perception that customers have of airlines. For this, we will consider a group of the population with income below 30,000 euros per year and another above that amount. First of all, it should be noted that people with high income levels are expected to travel much more by plane, regardless of the airline model. This makes us think that this means of transport is not such accessible as it might seem at first glance. Second, although the scores given to the full-service model are very similar in both groups, the one with the lowest income is less reluctant to the low-cost model (e.g., the first group assigns Vueling a 2,32, while the second a 1,70).

Once we know customers' perception of the different airlines, it is time to check whether such perception is consistent with the brand image that the companies want to convey. To this aim, we will go, as anticipated at the beginning of this section, to their corporate websites and check some recent commercials[17].

On its website, Iberia emphasizes that its values are: affinity, thrust and talent. On the other hand, in the ads consulted, it highlights the comfort and services offered on board (Wifi, individual USB connections, etc.). In addition, it presents a new class, the premium tourist. For its part, Air Europa is defined on its website as an airline "committed to the environment and the latest technology, which has the highest standards of quality and safety." Its corporate video refers to the need of always offering the best service. In short, in what refers to full-service airlines, the image they want to convey to the market and the one perceived by customers coincide.

Among the low-cost model, the company that most insists on low prices is, undoubtedly, Ryanair, an aspect that also stands out in its ads. The other feature that they highlight is punctuality. On the contrary, both Vueling and Easyjet, despite their low price bet, prefer to refer to other features associated with their brand. In the case of Vueling, they cite the following as their values: efficiency, closeness, nonconformity and feet on the ground. Nonetheless, its commercial, after showing numerous destinations, highlights the low price of tickets. Finally, Easyjet makes no reference to prices in its commercial and states on the web that its values are: safety, simplicity, one team, integrity, passion and pioneering. Undoubtedly, Ryanair's and Vueling's commercial actions are being effective, each in its business model. In this way, Ryanair has become the quintessential low-cost company, while Vueling is progressively consolidating as a hybrid airline. Lack of coherence, however, is found in Easyjet's case. Despite the fact that its brand position prevents it from being placed as a low-cost company, this is the only characteristic that customers value from the airline.

Therefore, it is necessary for the company to make an effort to achieve a greater fit between customer perception and its brand image. This could be achieved through a greater presence in Spanish media, as it is currently very much focused on the English market.

[17] The main commercial ads analyzed are in the following links: Iberia (http://cort.as/-M1iL and http://cort.as/-M1iP); Air Europa (*http://cort.as/-M1ia*); Ryanair (*http://cort.as/-M1ic*); Vueling (*http://cort.as/-M1ij*); and Easyjet (*http://cort.as/-M1in*).

4.3. Financial and Accounting Perspective

In this last subsection, we will approach the real situation of passenger air transport market in Spain from an accounting and financial perspective. For that, we have collected the financial statements of the five airlines during the last five years. With the gathered information, we have calculated a series of ratios, which enable us to draw conclusions and establish comparison. These ratios are directly associated with profitability (Return on Assets -ROA- and Return on Equity -ROE), also with the company operations (collection period and payment period) and with their financial structure (solvency ratio, acid test or liquidity ratio, medium and long term financial autonomy ratio, debt ratio and working capital). To obtain valuable data from the airlines based on Spain (Iberia, Vueling and Air Europa) we have used the SABI database. For the rest of the companies, we have searched their financial statements on their respective corporate websites.

4.3.1. Financial and Accounting Analysis

In the financial and accounting analysis we are going to develop in this subsection, we will have a similar structure to the previous subsections. We will begin by briefly studying the evolution of the indicators for each airline. Then, we will focus on the situation at date of closure for 2017 (last financial year-end available data when analyzing the information). We will finish by comparing the values of the ratios by business model, in an effort to draw conclusions. All data is also available in appendix 11.

Beginning with Iberia, although at the start of the time series (2013) it shows negative values in terms of profitability, both financial and economic, in the last year of the considered period (2017) values are close to 4% in ROA and 16% in ROE. This enables us to confirm that the indebtedness of the company is being useful in order to create wealth inside of the company. Another positive aspect is the increase in its liquidity ratio, reaching values close to 1. Previously it did not get to this reference value, thus questioning the ability of the airline to cope with its short term economic commitments. Finally, the decrease in its debt ratio (nearly 10 points) is remarkable, which comes with an increase in the financial autonomy ratio (0,68 in 2017).

In relation with Air Europa, its profitability ratios have worsened notably, reaching values close to 0 in 2016. In any case, in 2017 the airline has managed to improve the numbers by achieving a financial improvement of more than 10%. The debt is very high, exceeding Iberia's level (87,76% in 2017).

As far as Vueling is concerned, it has reached high ROE values (over 60% in most of the analyzed years). It exhibits a high capacity to face its short term commitments, with a high liquidity ratio over 1,5. Lastly, as a consequence of its investment in new fleet, the debt ratio is higher than 80%.

In terms of profitability, Easyjet's situation is the least promising one. Since 2015, both its ROA and ROE ratios have been dropping (its ROE has plummeted from 24,47% to not more than 11%). Nonetheless, it manages to maintain acceptable solvency and liquidity ratios and its indebtedness remains relatively low (53,07% in 2017).

Lastly, Ryanair is the company that presents, in general, the highest stability in the ratios. Although it has a low ROA level, its ROE reaches values close to 50% in some years. Its financial structure is robust, with high liquidity and solvency ratios (on average, higher than 1,6). Finally, its indebtedness is around 60%.

Taking the analyzed data into account, we can conclude that the low-cost airlines show a healthier accounting-financial situation. Except for Vueling, the profitability of airlines in this category is higher, which is explained by their lower investment in high value assets. On the other hand, they usually exhibit shorter collection periods and longer payment periods, compared to their full-service counterparts, which may reflect a higher negotiation capacity with suppliers.

Regarding how they face their debt levels, low-cost companies enjoy higher liquidity and solvency ratios, being both over 1,5. This may indicate some kind of idle resources, something understandable taking into account the low investment level of this kind of companies.

Finally, low-cost airlines show lower indebtedness, except for Vueling, which, as previously stated, has carried out substantial investments in new fleet. The lower indebtedness levels may also be associated with the existing trend among low-cost airlines to rent their aircraft through leasing contracts.

To sum, having made a detailed analysis of the financial and accounting situation of the main airlines, we can conclude that the Spanish passenger air transport market is, except for some minor exceptions, healthy and capable of facing the future challenges that lie ahead. Such challenges will involve high efforts in terms of investment. All of the companies studied in this project exhibit strong payment capacity, both in the short term as well as in the long and medium terms. Finally, given that the indebtedness levels are

quite high (over 60%), special care and control must be taken to avoid financial difficulties in the future.

5. THE SPANISH AERONAUTICAL MARKET IN THE FUTURE

In this last section, after an in-depth analysis of the current market situation, we will proceed to discuss some of the most significant issues regarding its future. Therefore, we will analyze three broad areas. First, we will assess the short and medium term challenges that the industry must overcome, considering at the same time other variables and factors that, undoubtedly, will constrain its functioning. Then, we will analyze the possibility of formulating different market development strategies. To this aim, we will rely on the Ansoff matrix. Lastly, we will propose, briefly, some ideas for an improvement in management and to achieve greater efficiency. This approach will ensure a holistic perspective of how, in our opinion, the market will develop in the coming years.

5.1. Risks and determining factors

Safety continues to be one of the most remarkable challenges for airlines. In this sense, the exponential increase in traffic flow will require the development of state of the art technology with sophisticated IT systems to prevent the over congestion of airports. Likewise, events in the last year have shown that breakthroughs in technology do not always necessarily ensure a decrease in accident rate. The most well-known example is the Boeing 737-MAX incidents. This aircraft provoked two fatal accidents in less than five months (i.e., Ethiopian Airlines flight 302 with 157 fatalities -March 10, 2019- and Lion Air flight 610 with 189 fatalities -October 29, 2018-). These fatal events highlight the need to improve pilot training and, at the same time, to increase control during the flight tests prior to the marketing of a new type of aircraft.

But the 737-MAX incident does not only have safety implications. It also threatens the future solvency of Boeing, which will have to offer compensations to the families of the victims, and to the airlines that have been forced to ground this type of aircraft until software problems have been solved (just Norwegian has 18 planes parked, which will generate estimated losses between 31 and 52 million euros in 2019). It also jeopardizes the execution of pending orders, valued at almost 600.000 million dollars. To relieve the damage suffered by Boeing's corporate image, some operators, such as IAG, have decided to support the company buying new aircrafts. Without any doubt, an eventual

and inconceivable bankruptcy of Boeing would change the actual market view, opening a paradigm never seen before.

Another notable challenge that the market will face is the adaptation to the prevailing environmental policies and their application. Therefore, it is necessary to apply the so called "green procedures" and to continue supporting the design of strategies that will, eventually, decrease pollution, in terms of emissions and noise. Nonetheless, these efforts do not seem to be enough and public administrations are beginning to impose more stringent requirements. In this sense, we have recently known that the French Government will impose an environmental tax on departing flights, which will be levied on tickets starting from 1,5 euros for flights within the European region and 18 for the ones leaving the European Union. Taking into account that the profit per ticket is roughly 6 euros, according to IATA (see section 2.4.), this measure will not be borne by airlines, especially low-cost companies. They will be forced to pass the tax burden to their customers by increasing ticket fares. In our opinion, instead of setting a punishment system with fines and other similar measures that ultimately affect customers, public authorities should commit to a system of incentives, which may result attractive for airlines.

As a final note on this issue, the slow steps being taken by a group of Spanish researches for an Israeli business[18] are worth mentioning. The objective of their project is to develop the first electric commercial aircraft with a seating capacity for 9 passengers and 2 crew members.

According to Deloitte, another big challenge to be overcome is related with the fleet obsolescence, which hampers the ability to make progress in cost reduction initiatives. In any case, it is becoming very common for airlines to lease aircraft (the most remarkable example being Ryanair). This strategy allows them to renew their fleet more frequently, thus acquiring more fuel efficient aircraft as well as allowing them to mitigate their indebtedness burden.

Another issue that could affect the market substantially as we know it today is the entry of low-cost companies in the long-haul flights market. This market segment has not been a target for low-cost airlines until now, mainly because it is complicated to maintain low fares when a solid and well developed infrastructure is lacking. In any case, in the medium term one could expect that they enter this market, since nowadays the price is becoming

[18] Este avión eléctrico es el futuro de la aviación no contaminante. (June 21, 2019). *El Español*.

the most influential factor in customers' purchase decision. This will force full-service airlines to restructure their business model in order to maintain their market share[19]. There are numerous socio-cultural aspects, previously analyzed, that will work as an entry barrier.

Other factors that may play a significant role in the future are: the exit of big aircraft models from the market (Airbus has already announced the cease of the A380 superjumbo production), the progressive increase in seating capacity and the shortage of pilots.

Despite all these challenges, the main obstacle in the coming years to the European market, where Spain is located, is the Brexit (the exit of Great Britain from the European Union -EU). A no-deal Brexit could seriously limit the existing connections between both regions and could also restrain British airlines from operating flights between two points of the EU territory[20]. In this sense, IAG and Easyjet would be the most seriously affected airlines, and this might eventually lead to the paradoxical situation that Iberia, the Spanish flagship airline, could not perform a cabotage in Spain; that is, to fly between two point of the same state. Obviously, Iberia, as a member of the British holding IAG, has already activated an actuation protocol based on legal and financial engineering, which may apparently address this contingency. Proving that the company is managed for the most part from the Spanish capital, although having its headquarters in the United Kingdom, would allow it to continue operating inside the Single European Sky as usual.

5.2. Market development strategies

In this subsection, we will focus on analyzing which of the market development strategies contained in the Ansoff matrix can be implemented in the near future of the Spanish aeronautical market. First of all, it is important to define what we will consider as market and as product. In this case, and continuing with our study line, we will differentiate between two markets: National and International (we could also consider as market every destination a company offers, but this would be rather complex for the maximum length permitted). On the other hand, the product will be defined by the multiple distinctive characteristics that can be associated with the commercial air transport service.

[19] Blanco, Y. (July 27, 2019). Lufthansa, Air France e IAG pinchan en sus vuelos transoceánicos 'low cost'. *Expansión*.
[20] European Commission. (2018). *Questions and Answers: the consequences of the United Kingdom leaving the European Union without a ratified Withdrawal Agreement (no deal Brexit).* // IATA. (2018). *A study of the effects of the United Kingdom leaving the European Union on airlines flying to and from the UK.*

Market penetration, which consists of making efforts to increase market share, is a latent strategy carried out in a permanent fashion in this sector. It is quite common among low-cost airlines, which make use of aggressive price strategies to rise their presence in the market. In either case, full service operators also use this kind of actions to strengthen their strategic position. These companies are also making an effort to adjust their prices as much as possible in order not to lose their loyal customers. Another way to try to penetrate the market is to develop cross-selling alternatives; that is, to offer flights together with other products. Thus, it is relatively common nowadays that vacation packages are sold that, in addition to including the flight, incorporate hotel accommodation or other transport services.

Product development, consisting in offering products with different characteristics in the same markets, is quite limited. Innovation in companies is limitless though. As a matter of fact, Iberia has just launched its brand new "premium tourist" class, which is midway between the traditional tourist class and business. It offers services such as more space, larger screens for the on-board entertainment or more freedom when it comes to baggage check-in. This strategy tries to extend the business service to a wider population base, in an effort to avoid vacant seats and to increase the profit margin per seat.

With respect to market development, the full-service airlines, according to what we have previously defined as market, could never implement this strategy since, in general, they are present in both markets (if instead we define market as destination, both Iberia and Air Europa would be constantly developing new markets). On the contrary, as we discussed before, it is very likely that low-cost airlines try to put this kind of strategy into practice, by offering their low fares and reduced services for long-haul flights. In the event that this type of airline is able to adjust their business model and manages to successfully operate long-haul flights (e.g., less luggage restrictions), we will find ourselves in a diversification strategy.

5.3. Strategies to improve business management efficiency

Finally, let us briefly discuss some strategies that are being applied or that may be applied in order to improve the airline business management efficiency. To start with, a better use

of new technologies can increase cost savings significantly. For instance, the Boeing 737-MAX, according to the producer, saved 90 million tons of fuel per year[21].

Along the same line, a key aspect in order to achieve higher efficiency is, undoubtedly, an appropriate use of financial derivatives, which will allow airlines to hedge their prices against volatility in the market. Therefore, a proper risk hedge, by enabling firms to control their costs, will not only favor an improvement in efficiency, but will also make more accurate financial planning and forecasting possible.

Another interesting measure that full-service airlines can adopt, taking low-cost airlines as a reference point, would be the fleet model unification. Reducing the variety of aircrafts as much as possible, a significant decrease in maintenance and pilot training costs can be achieved.

On the other hand, taking the opinions discussed in the expert panel into account, a change in taxi procedures at airports and/or an improvement in the airway system could translate into a substantial improvement in efficiency. In either case, such policy changes are extremely complicated since they involve multiple agents and any decision minimally inadequate could jeopardize passengers' safety and security.

Likewise, the integration of airlines into alliances enables them to enjoy remarkable cost savings, due to sharing common resources and the use of codeshare agreements, impacting directly on management performance.

Lastly, the hub model has been developed in recent years (especially among full-service airlines). This model consists in first establishing a reference airport where passengers concentrate and then in connecting them to other airports. This model assures that companies can service all of their destinations, achieving great advantages in terms of workers and infrastructure. Moreover, the use of this model helps companies to fill a larger number of seats per flight (for the same destination, they can bring together passengers coming from multiple origins).

[21] Boeing. (2018). *La nueva gama Boeing 737 MAX: Eficiente, fiable y atractiva* . Obtenido de http://cort.as/-M9Tp

6. CONCLUSIONS

First, we conclude that the passenger air transport market is strongly conditioned by its regulatory framework, in terms of safety, air navigation and customer service. In this sense, the Single European Sky and the allocation of slots by AECFA are vital.

As a second important conclusion, we can confirm that the Spanish airport capacity is oversized relative to market demand. In fact, most Spanish airports opened to commercial traffic in the last two decades are really unnecessary.

Our third main conclusion is that the commercial margin of the airlines is extremely tight, making it necessary that companies implement techniques that enable them to reduce the importance of fixed costs. Pricing strategies are the ones that can be more easily applied. It is worthwhile, in this respect, to differentiate between discriminate pricing and the two-parts tariffs.

In fourth place, we conclude that the passenger air transport market in Spain is currently characterized by its growing trend and its seasonality. Regarding market shares, there are important differences between the national and international markets. Thus, at the national level, low-cost airlines dominate, while at the international level, full-service companies continue to maintain their sovereignty. As a whole, the IAG holding maintains its status as the main market operator.

Fifth, from a strategic perspective, we can conclude that the general environment affects both analyzed airline models in a similar way. On the one hand, full-service airlines seem to be better prepared to face future challenges. On the other hand, according to the competitive analysis conducted, the market situation is profitable for current operators, but not especially attractive for the entry of new competitors.

As a sixth important conclusion, from a commercial perspective, we can state that customers value full-service companies more positively. However, the image that consumers perceive does not always coincide with the one that airlines intend to convey (e.g., Easyjet). In any case, there are differences in the perception based on variables such as age or income.

Our seventh main conclusion is that the financial situation of low-cost companies is healthier. In this sense, they present better indebtedness and financial structure ratios. Anyway, the market in general is in a good financial state to face the expected future challenges that lie ahead.

Eighth, the main challenge that the market faces in the short term is the exit of the United Kingdom from the European Union. In addition, other relevant issues are the Boeing 737-MAX crisis, concerns over the environment and fleet management.

Finally, airlines are nowadays working on powerful market development strategies. In this sense, the constant attempts to offer low-cost alternatives for long-haul flights are remarkable. On the other hand, airlines must continue working on the development of efficient business management systems, especially aimed at reducing fuel consumption. Another issue that promotes efficiency is the creation of hub models by full-service airlines.

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APPENDICES

LIST OF APPENDICES

Appendix nº 1. DATABASES

Password: TFG_Evaluación_2019

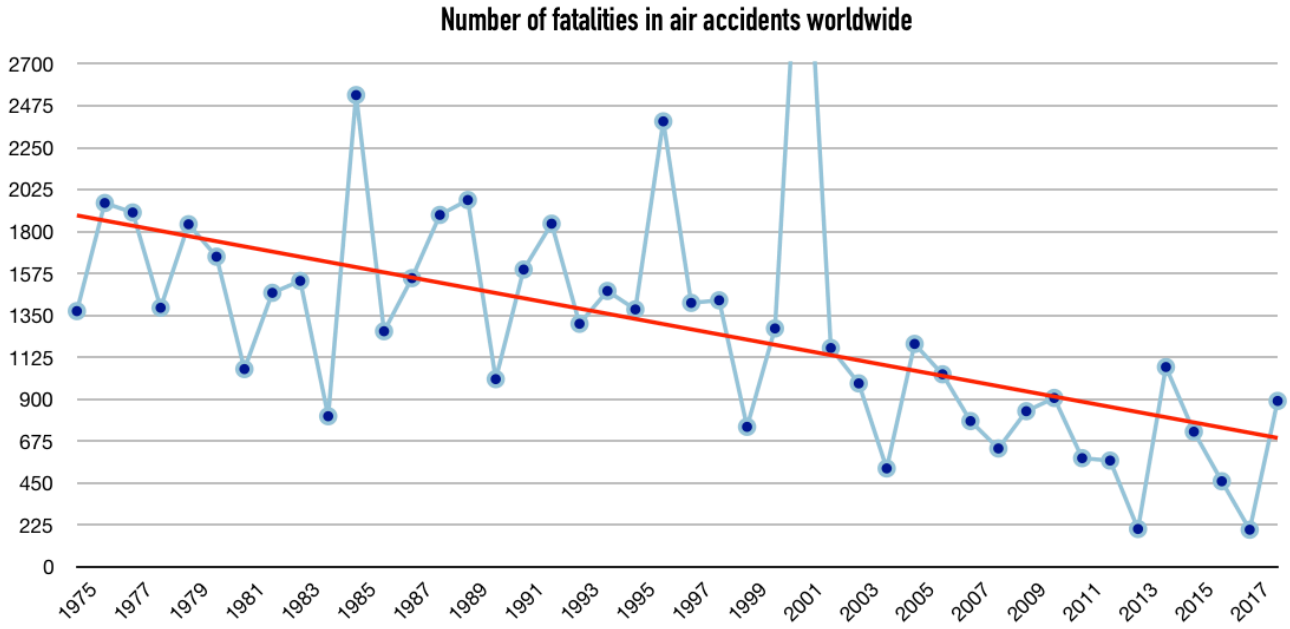
ID	**Database**	**Link**
DB-1	Aeronautical accidents in the world since 1975	Link
DB-2	Submarket Analysis	Link
DB-3	Air traffic statics by airlines	Link
DB-4	Air traffic statics by airports	Link
DB-5	Evolution of fuel's cost price	Link
DB-6	Tourist movements in borders	Link
DB-7	Financial ratios	Link
DB-8	Results of the survey	Link
DB-9	Spanish airports	Link
DB-10	Top 30 European Airports	Link
DB-11	Expert panel questionnaire. Results	Link

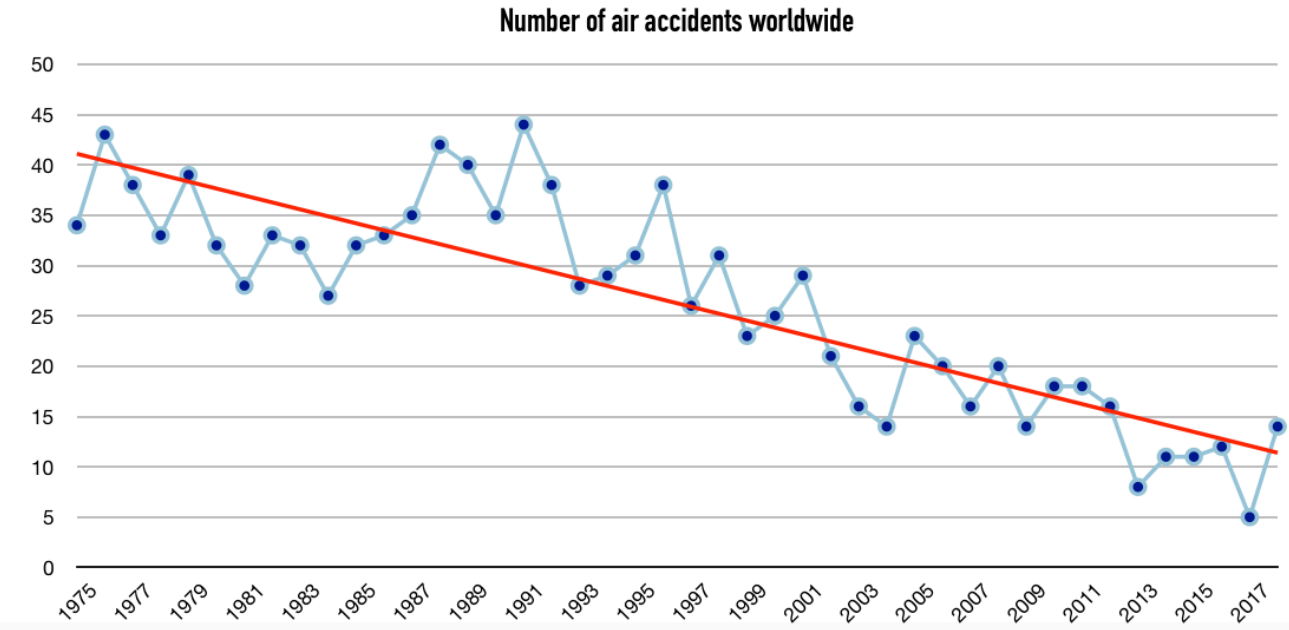
Appendix nº 2. SURVEY

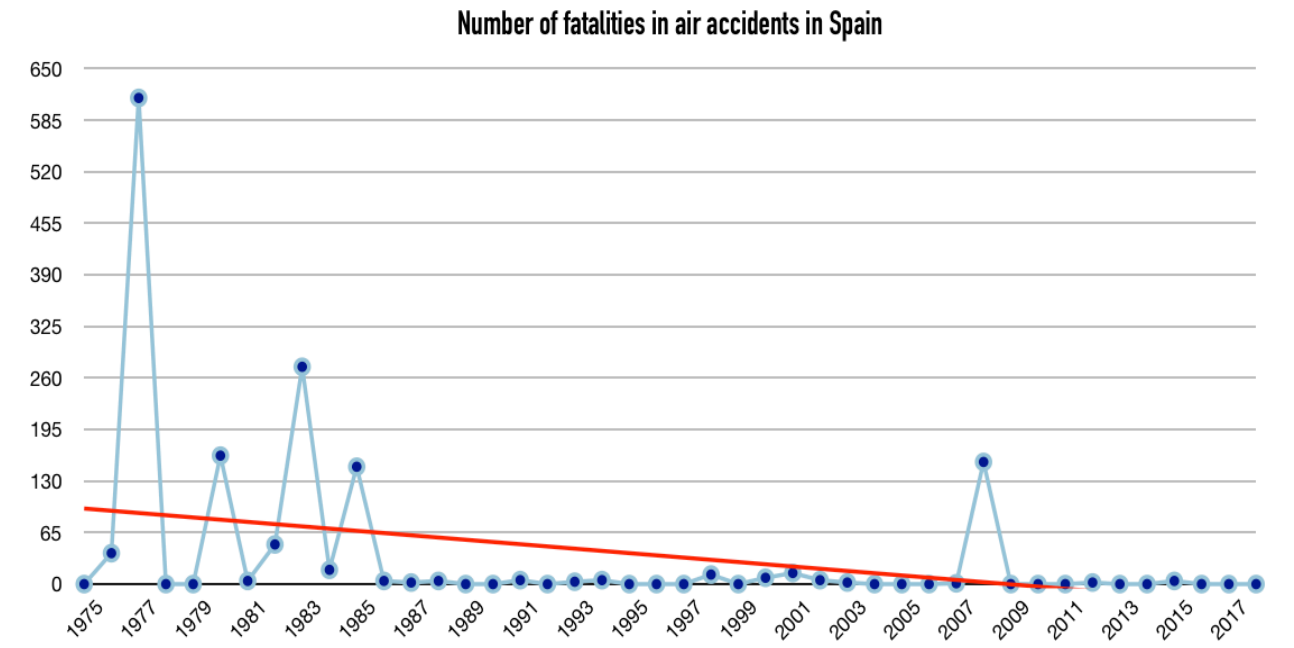
Access to Google Forms:
https://docs.google.com/forms/d/e/1FAIpQLSfqiV2HQ_waaxWys6i6P7q_w_q7xX9v2cz9gC3u6fBmKvuNoQ/viewform

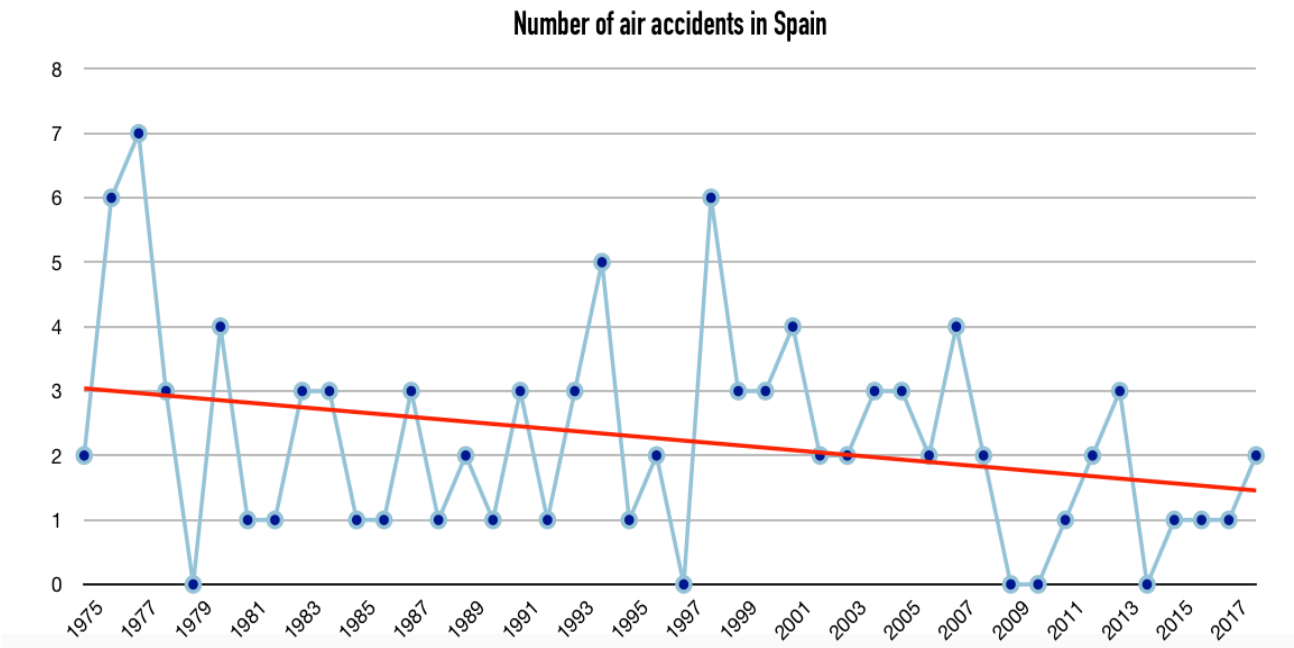
Appendix n° 3 AVIATION ACCIDENTS

Source: own elaboration based on Aviation Safety Network data





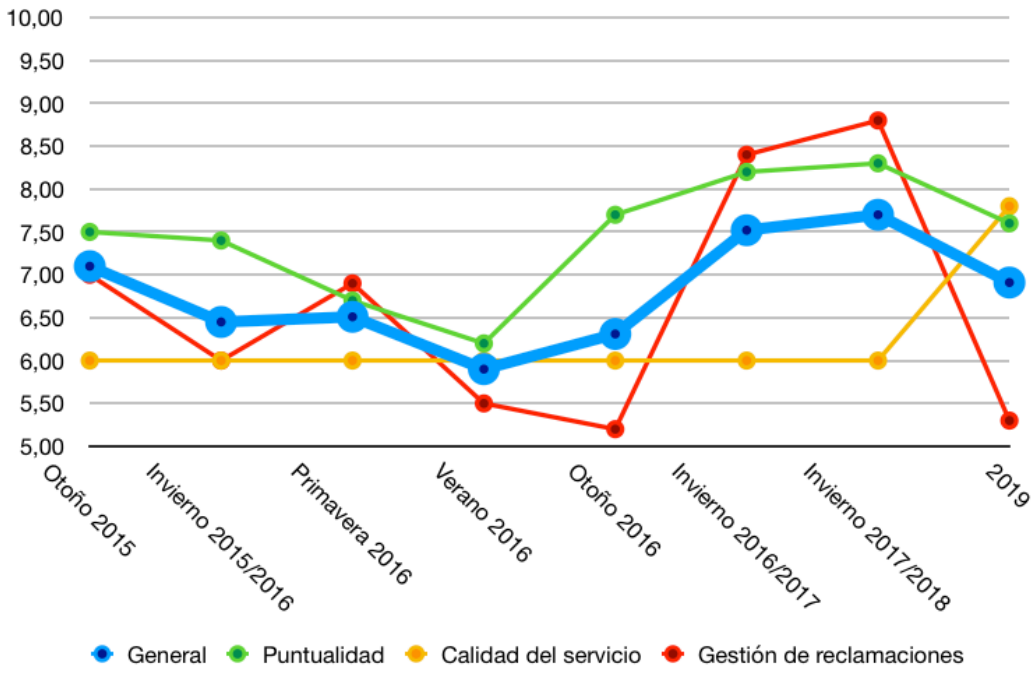

Number of fatalities in air accidents in Spain
650
585
520
455
390
325
260
195
130
65
0
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017


Number of air accidents in Spain
8
7
6
5
4
3
2
1
0
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017

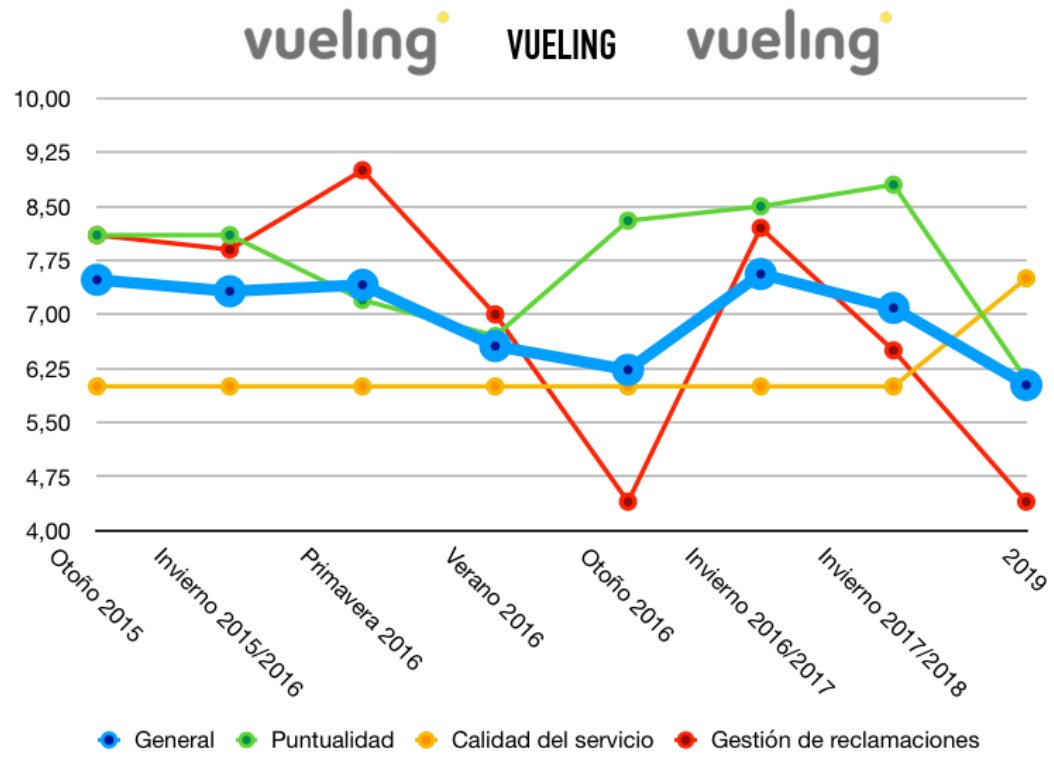
Appendix nº 4. AIRLINES'S QUALITY AND SERVICES

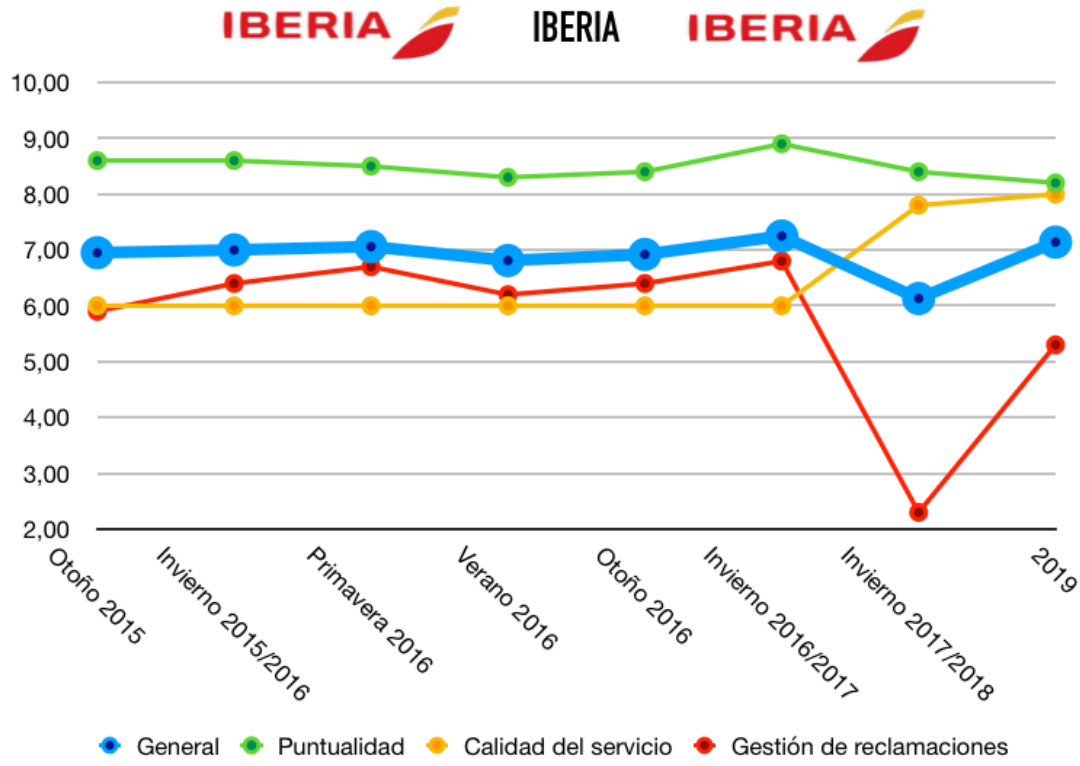
***Data**:* value obtained in the AirHelp rating
Source: own elaboration based on AirHelp data

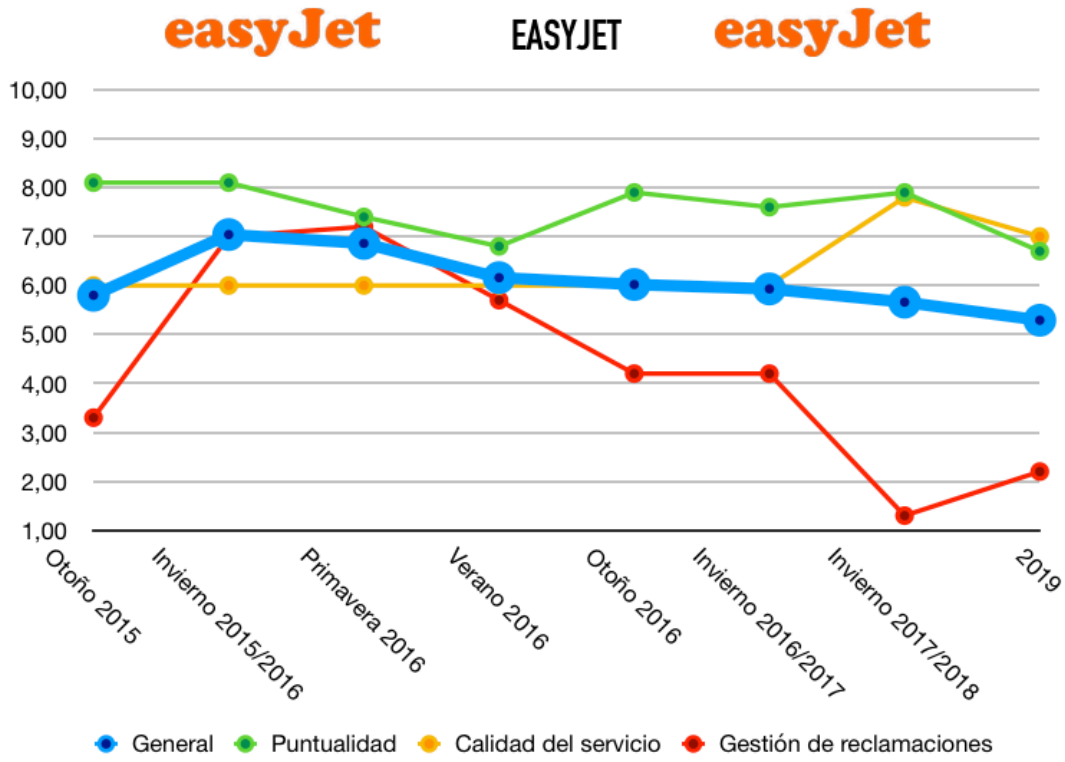
AIR EUROPA

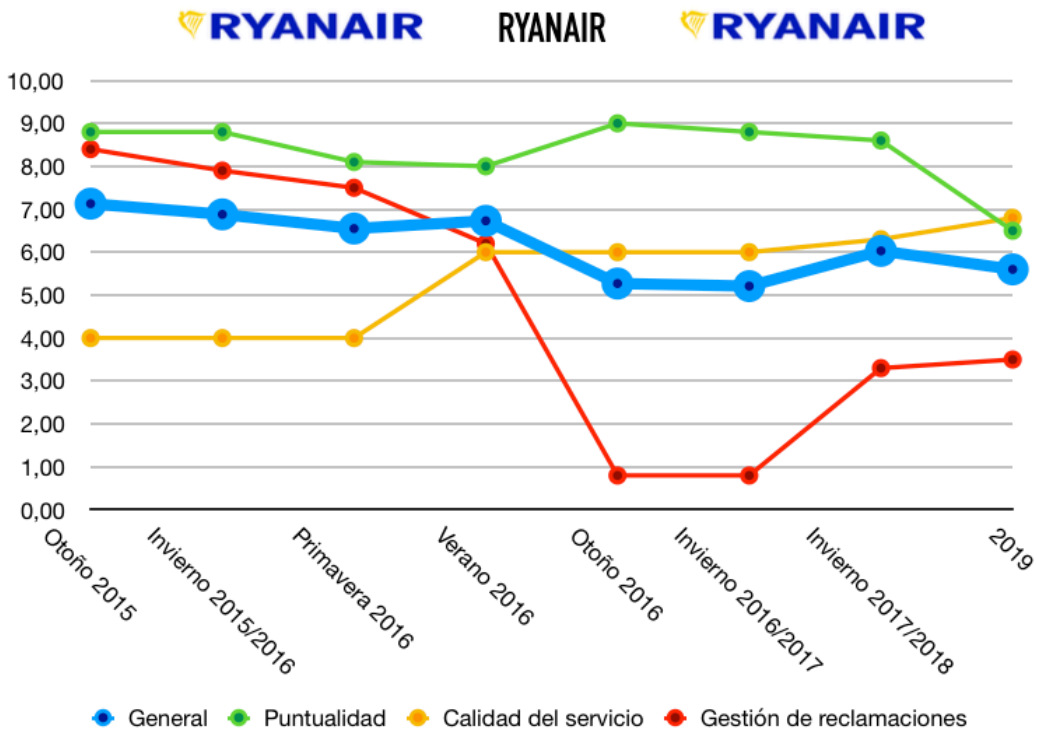


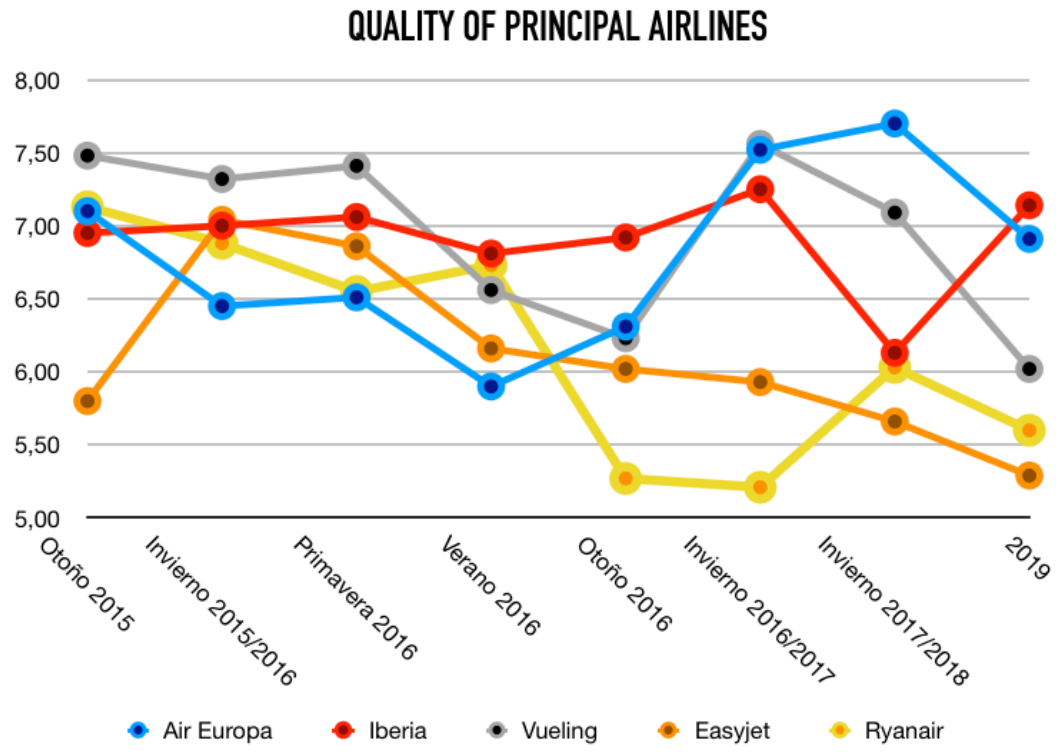
VUELING




IBERIA
IBERIA
IBERIA
10,00
9,00
8,00
7,00
6,00
5,00
4,00
3,00
2,00
Otoño 2015
Invierno 2015/2016
Primavera 2016
Verano 2016
Otoño 2016
Invierno 2016/2017
Invierno 2017/2018
2019
General
Puntualidad
Calidad del servicio
Gestión de reclamaciones

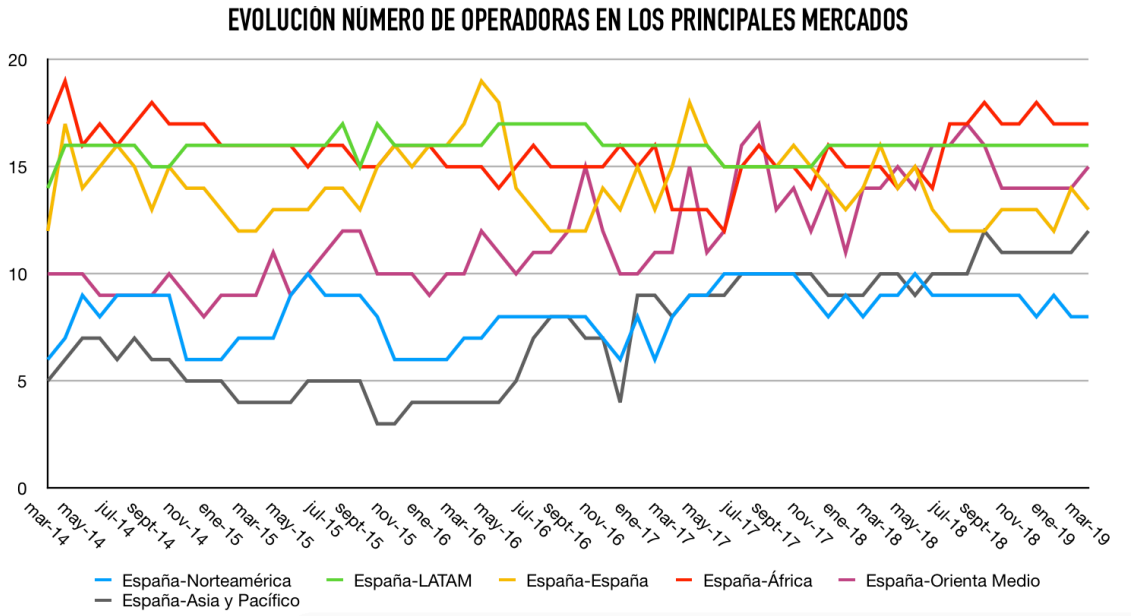

easyJet
EASYJET
easyJet
10,00
9,00
8,00
7,00
6,00
5,00
4,00
3,00
2,00
1,00
Otoño 2015
Invierno 2015/2016
Primavera 2016
Verano 2016
Otoño 2016
Invierno 2016/2017
Invierno 2017/2018
2019
General
Puntualidad
Calidad del servicio
Gestión de reclamaciones

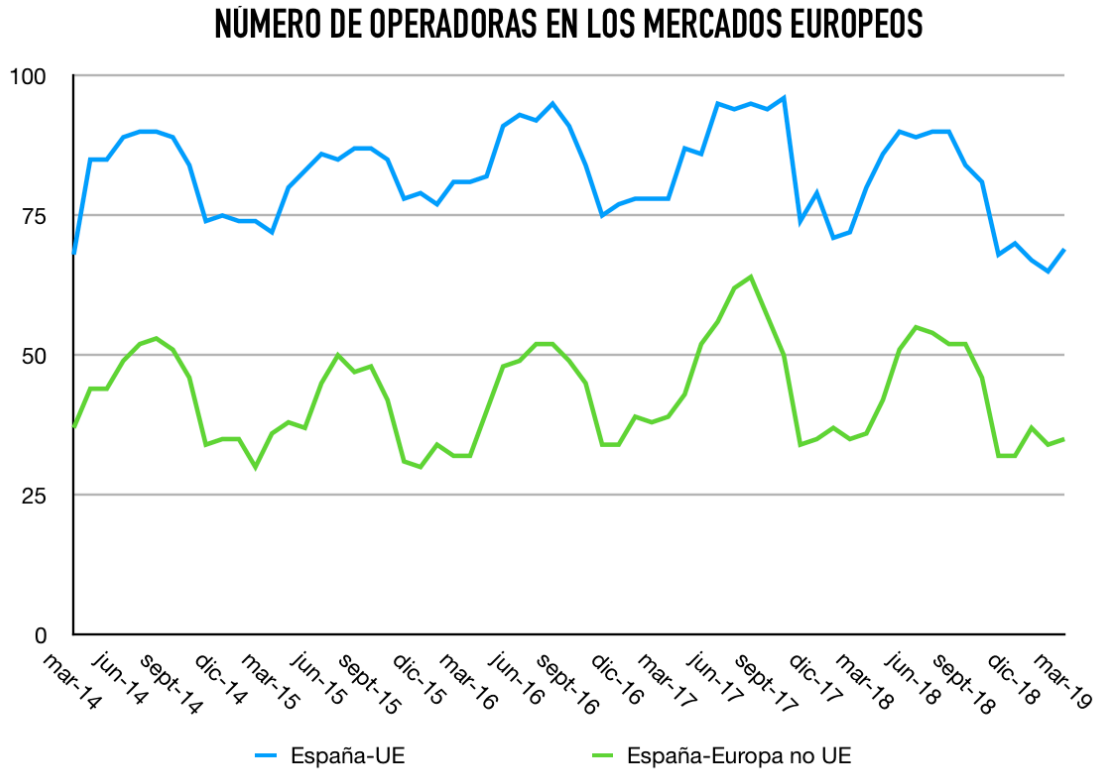

RYANAIR
RYANAIR
RYANAIR
10,00
9,00
8,00
7,00
6,00
5,00
4,00
3,00
2,00
1,00
0,00
Otoño 2015
Invierno 2015/2016
Primavera 2016
Verano 2016
Otoño 2016
Invierno 2016/2017
Invierno 2017/2018
2019
General
Puntualidad
Calidad del servicio
Gestión de reclamaciones


QUALITY OF PRINCIPAL AIRLINES
8,00
7,50
7,00
6,50
6,00
5,50
5,00
Otoño 2015
Invierno 2015/2016
Primavera 2016
Verano 2016
Otoño 2016
Invierno 2016/2017
Invierno 2017/2018
2019
Air Europa
Iberia
Vueling
Easyjet
Ryanair

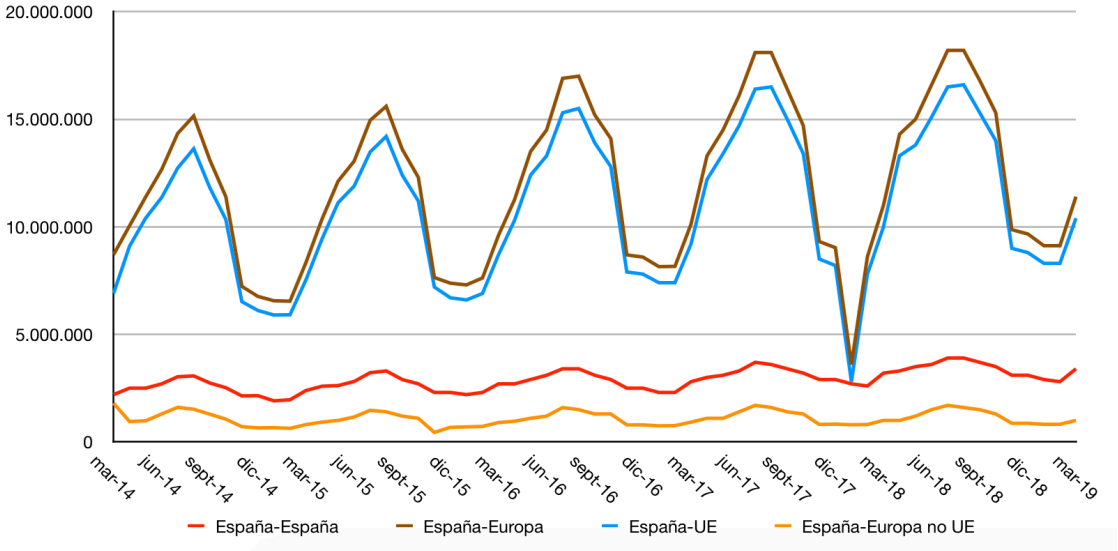
Appendix nº 5. SUBMARKET ANALYSIS

Source: own elaboration based on Ministry of Development data

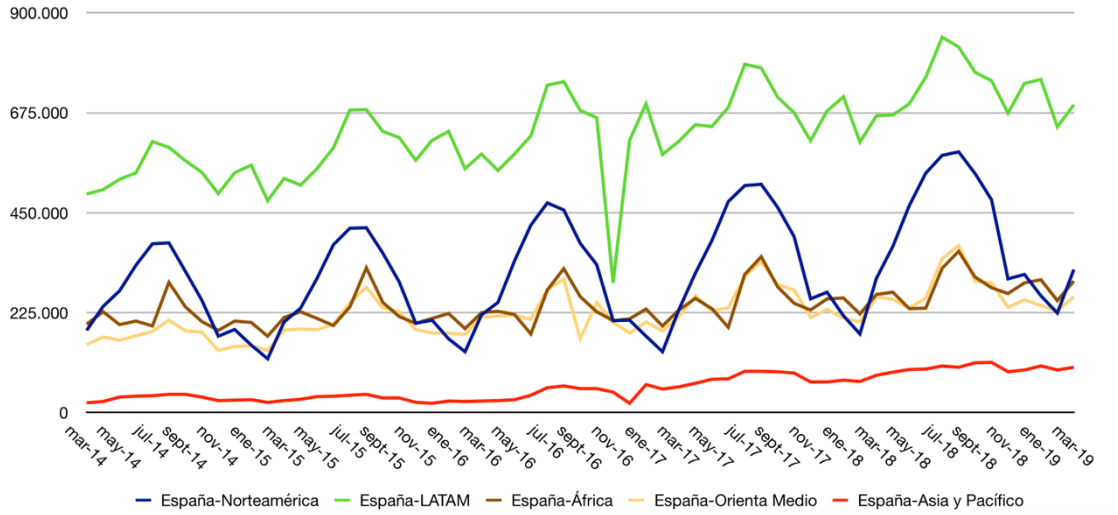




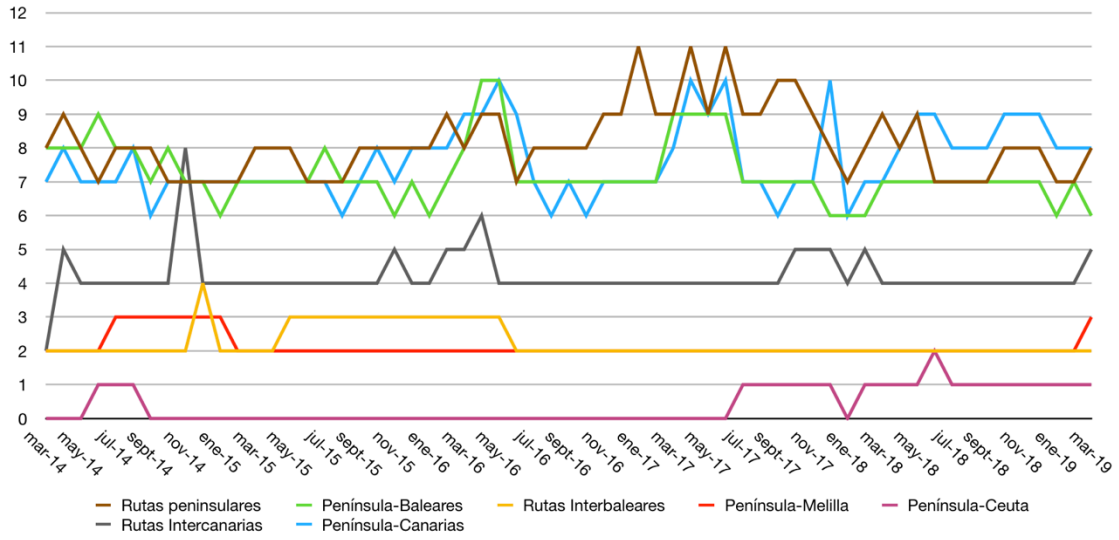
EVOLUCION NUMERO DE PASAJEROS EN LOS PRINCIPALES MERCADOS



EVOLUCION NUMERO DE PASAJEROS EN MERCADOS "SECUNDARIOS"

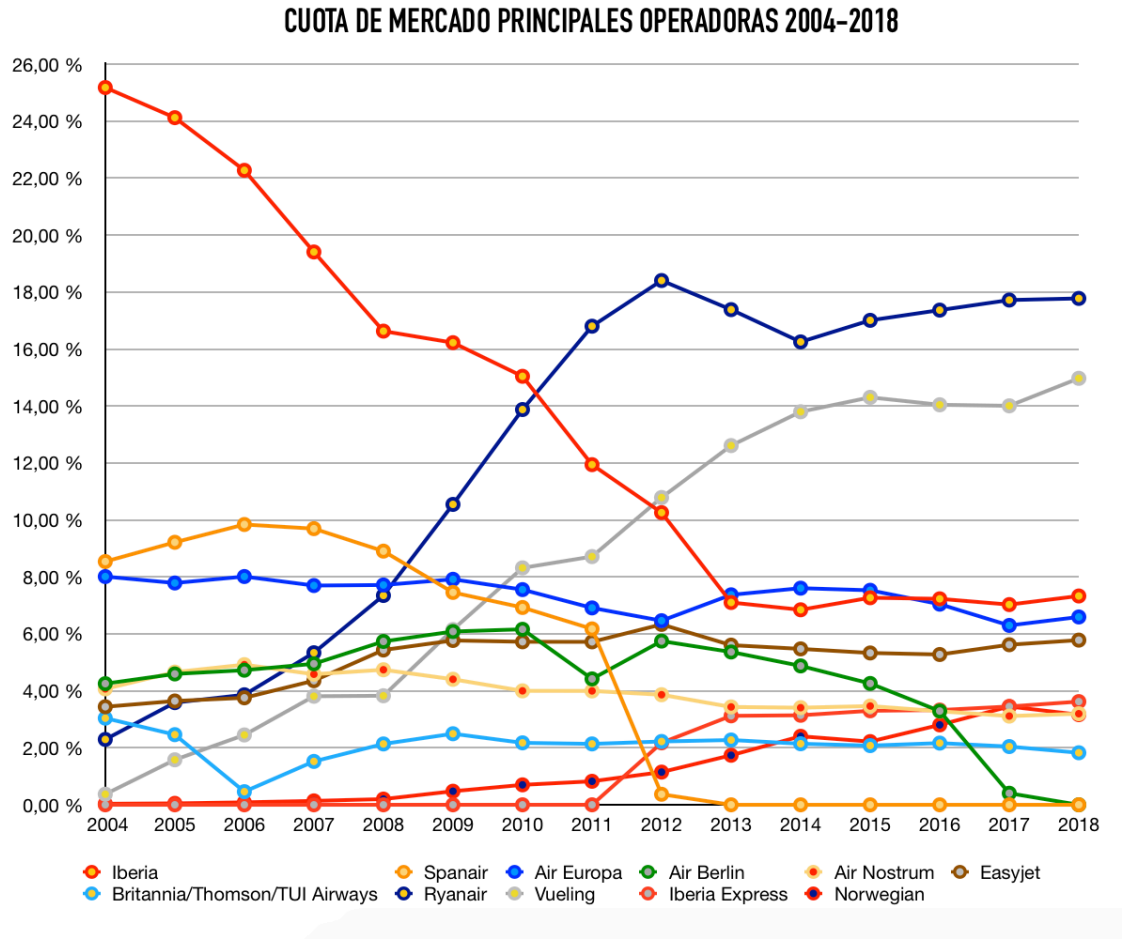


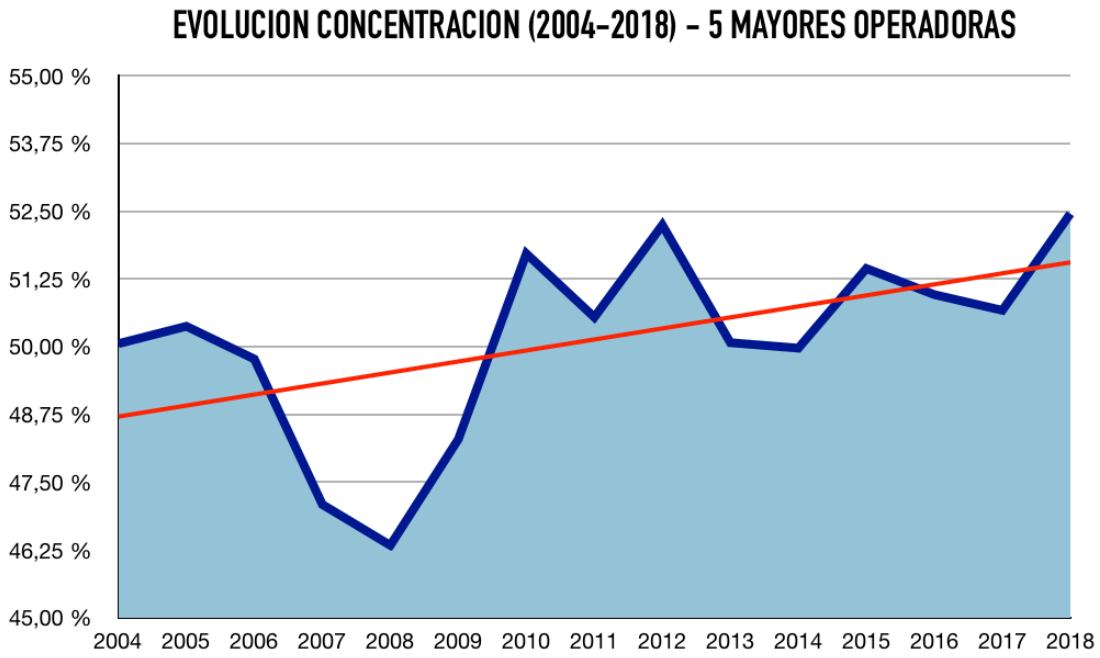
NUMERO DE OPERADORAS EN MERCADOS NACIONALES

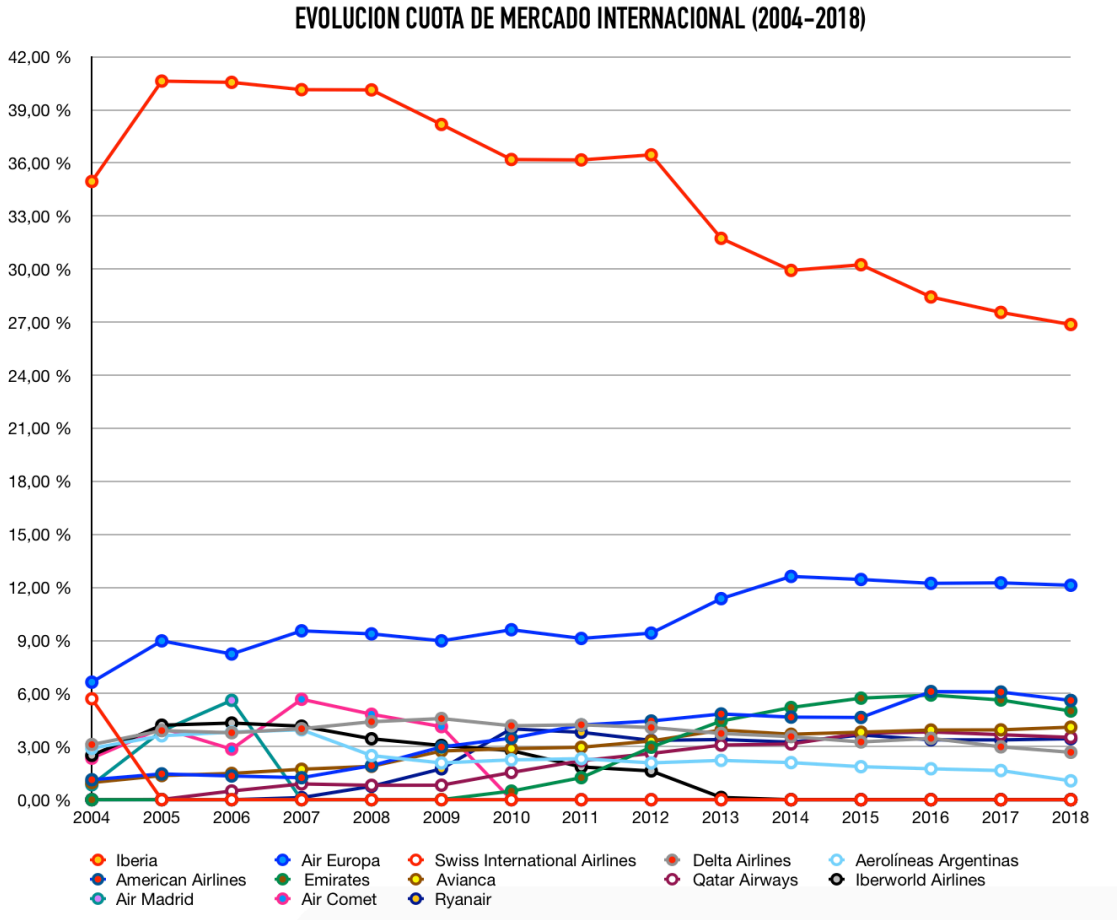


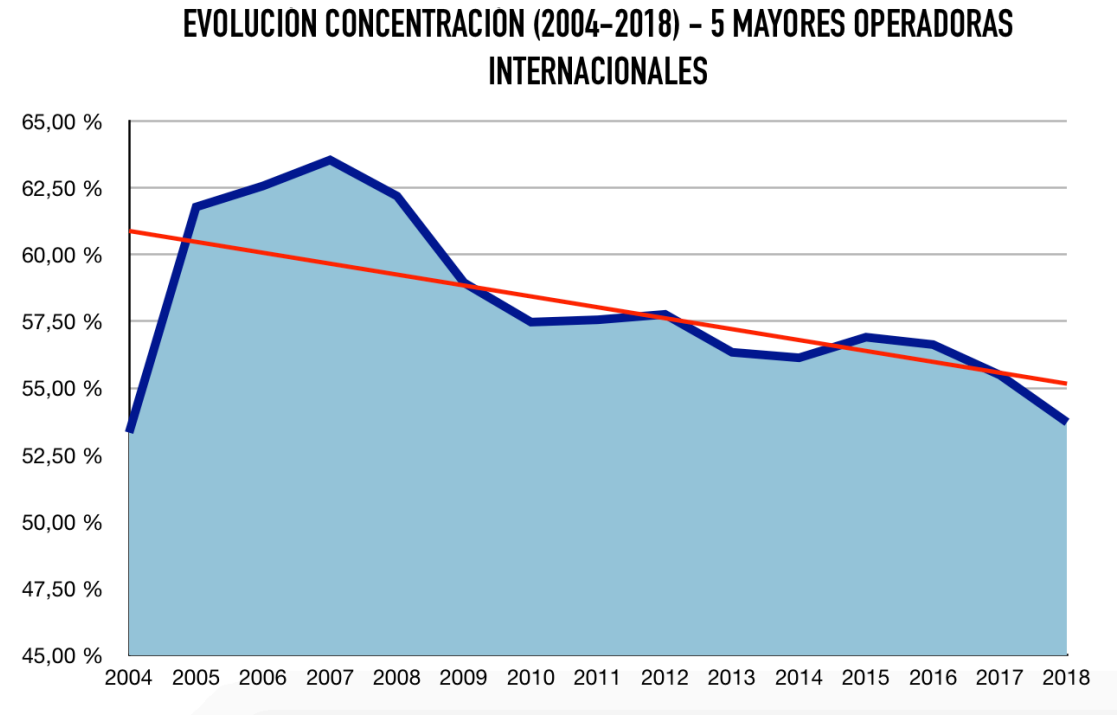
Appendix nº 6. AIR TRAFFIC STATICS BY AIRLINES

Source: own elaboration based on AENA data

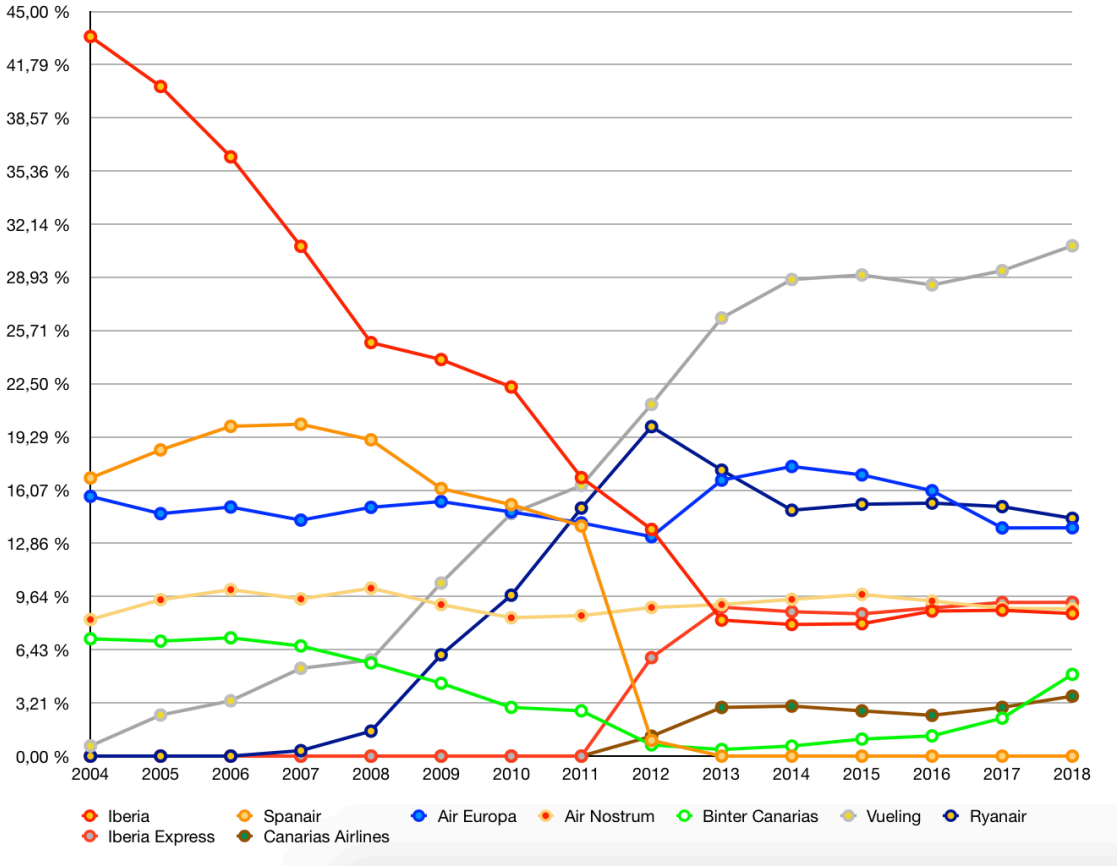




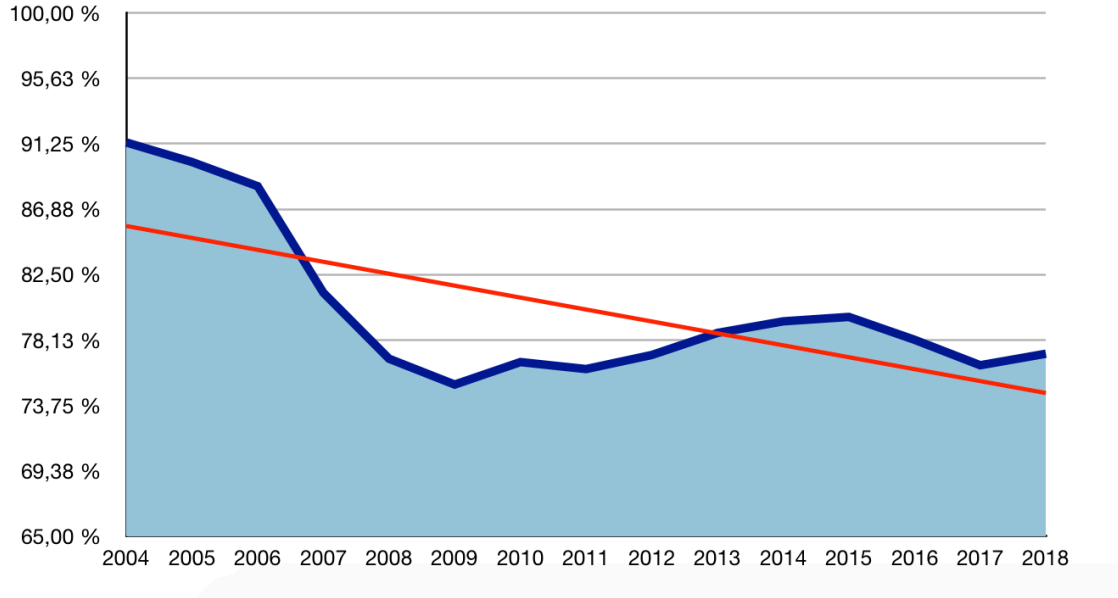

EVOLUCION CUOTA DE MERCADO INTERNACIONAL (2004-2018)
42,00 %
39,00 %
36,00 %
33,00 %
30,00 %
27,00 %
24,00 %
21,00 %
18,00 %
15,00 %
12,00 %
9,00 %
6,00 %
3,00 %
0,00 %
2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018
Iberia
American Airlines
Air Madrid
Air Europa
Emirates
Air Comet
Swiss International Airlines
Avianca
Ryanair
Delta Airlines
Qatar Airways
Aerolíneas Argentinas
Iberworld Airlines

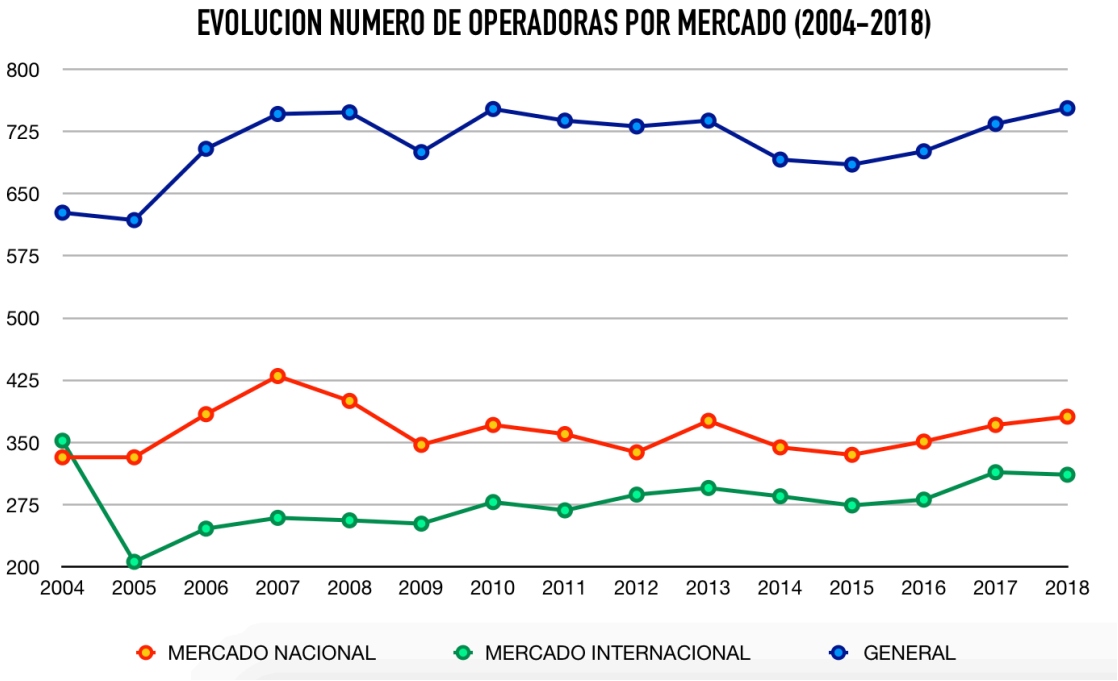

EVOLUCION CONCENTRACION (2004-2018) - 5 MAYORES OPERADORAS INTERNACIONALES
65,00 %
62,50 %
60,00 %
57,50 %
55,00 %
52,50 %
50,00 %
47,50 %
45,00 %
2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

EVOLUCION CUOTA DE MERCADO NACIONAL (2004-2018)



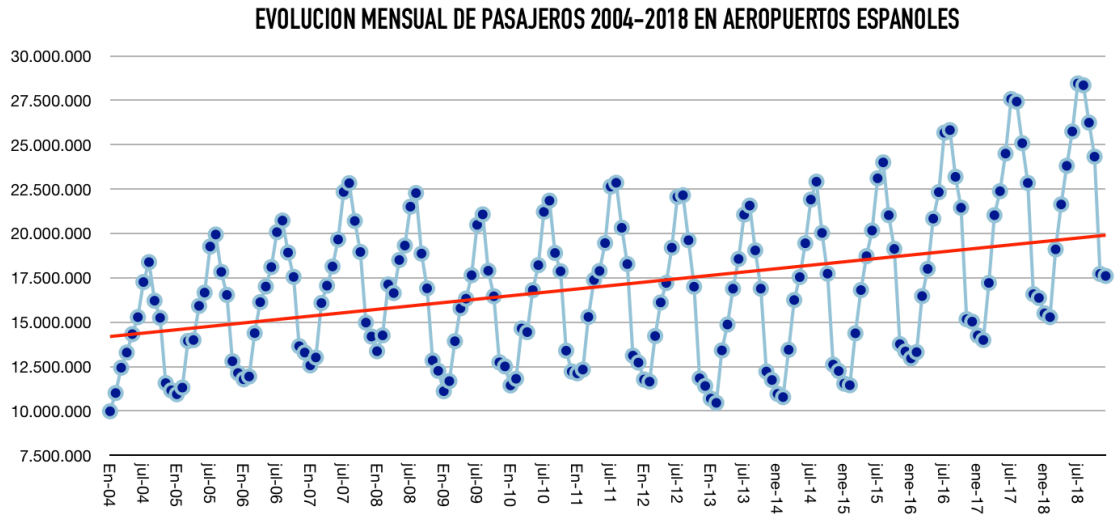
EVOLUCION CONCENTRACION (2004-2018) - 5 MAYORES OPERADORAS NACIONALES

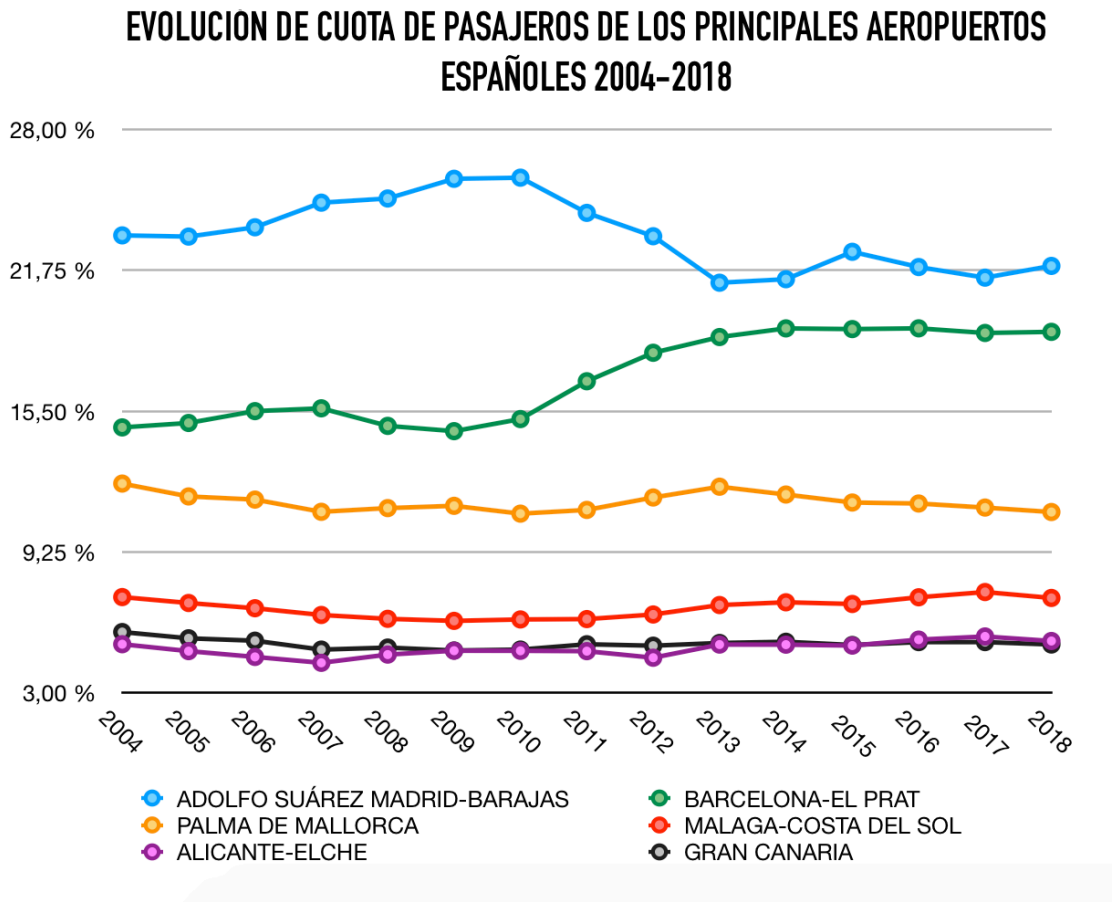


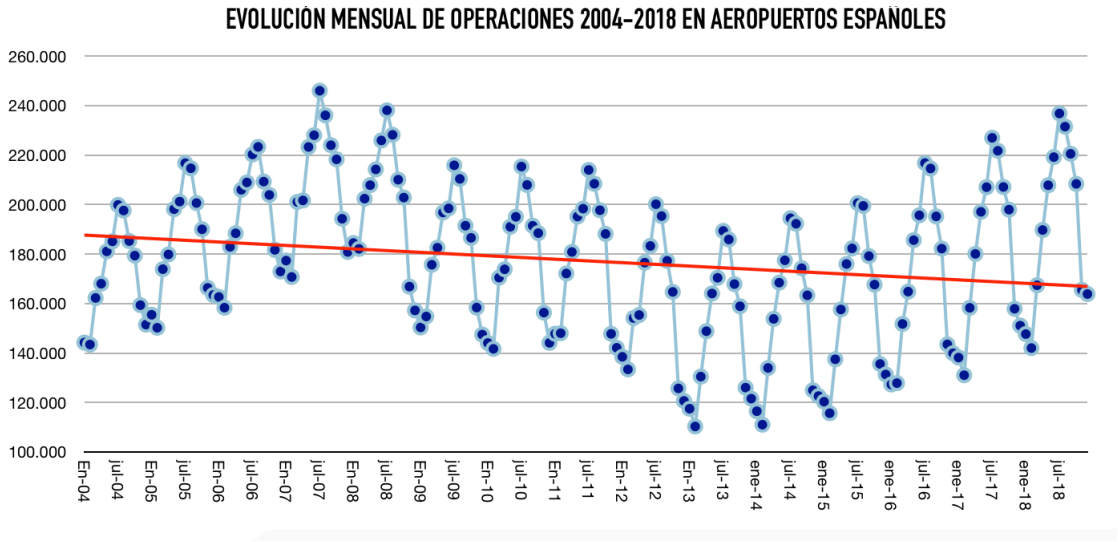

EVOLUCION NUMERO DE OPERADORAS POR MERCADO (2004-2018)
800
725
650
575
500
425
350
275
200
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
MERCADO NACIONAL
MERCADO INTERNACIONAL
GENERAL

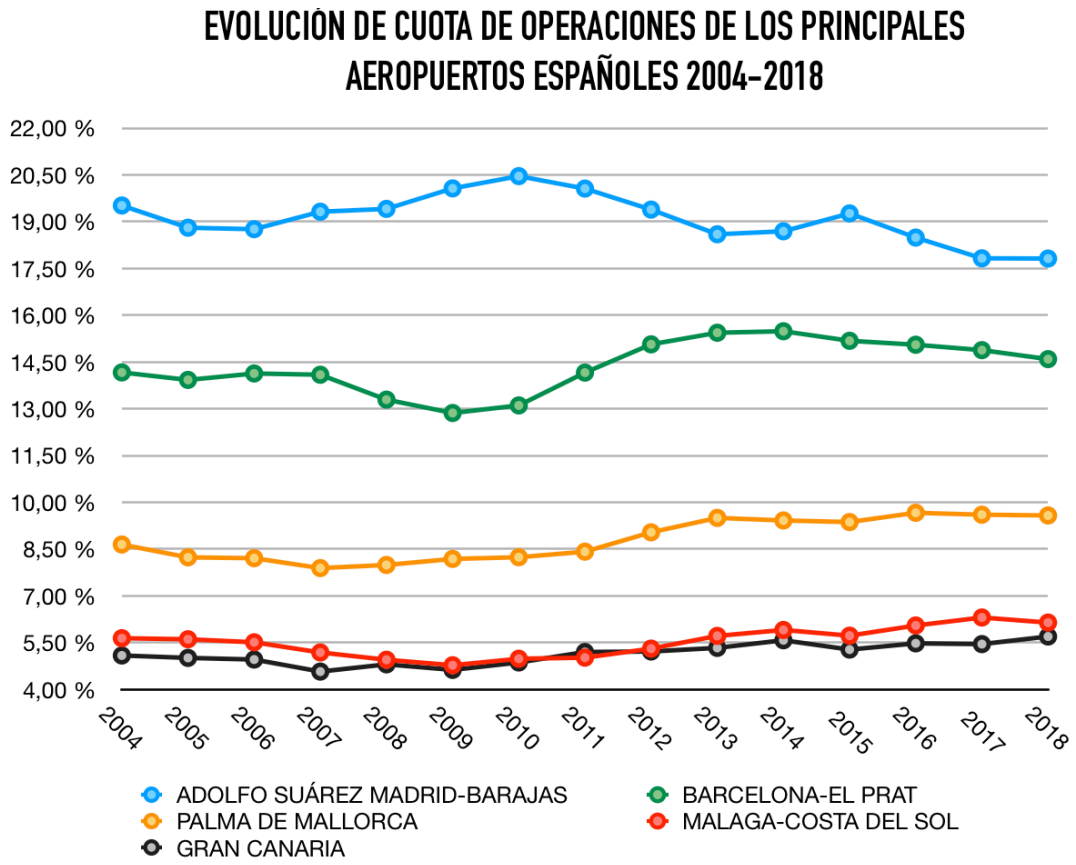
Appendix nº 7. AIR TRAFFIC STATICS BY AIRPORTS

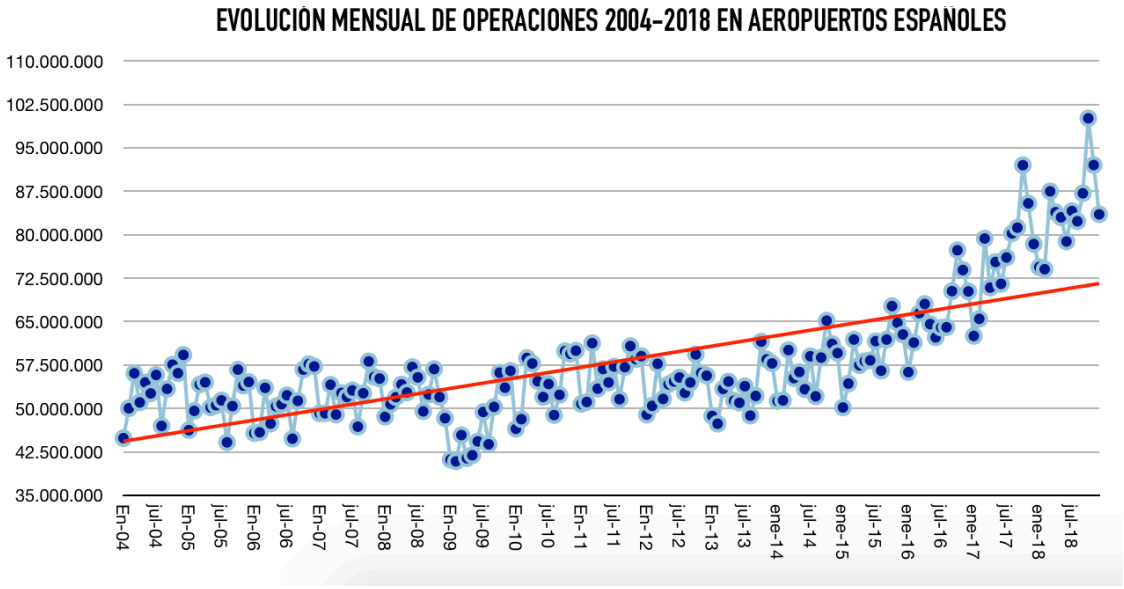
Source: own elaboration based on AENA data

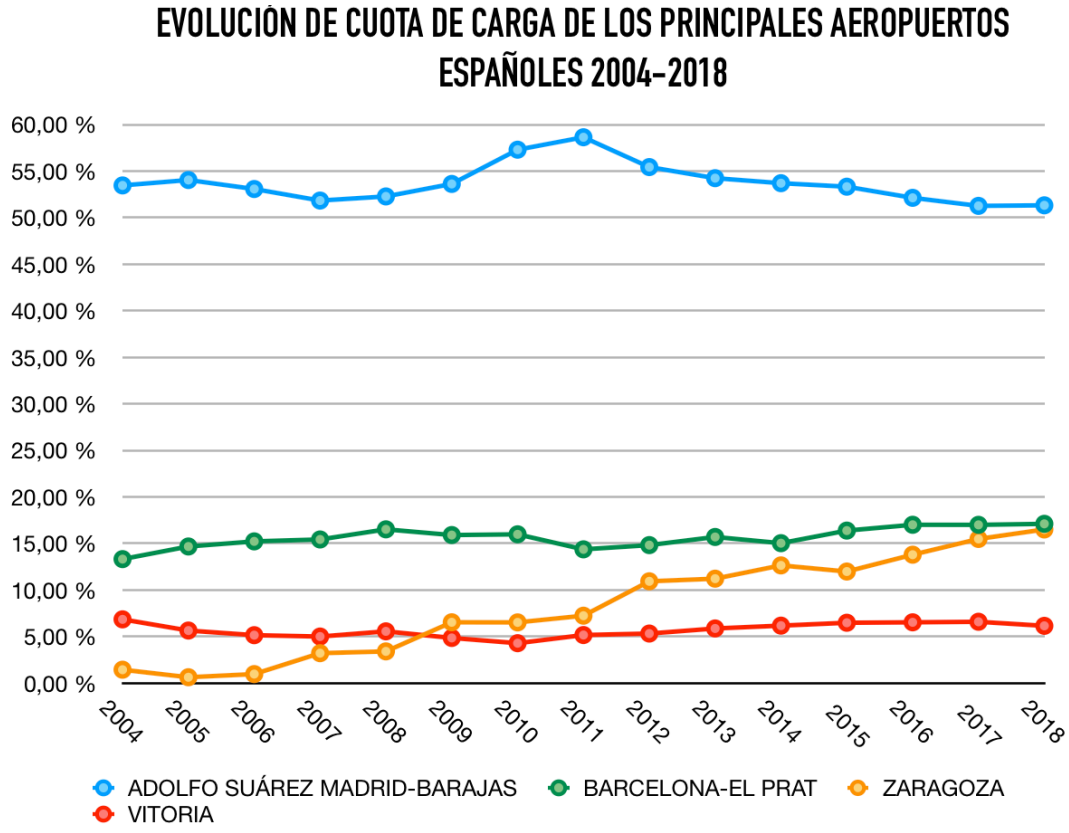





EVOLUCIÓN MENSUAL DE OPERACIONES 2004-2018 EN AEROPUERTOS ESPAÑOLES
260.000
240.000
220.000
200.000
180.000
160.000
140.000
120.000
100.000
En-04
jul-04
En-05
jul-05
En-06
jul-06
En-07
jul-07
En-08
jul-08
En-09
jul-09
En-10
jul-10
En-11
jul-11
En-12
jul-12
En-13
jul-13
ene-14
jul-14
ene-15
jul-15
ene-16
jul-16
ene-17
jul-17
ene-18
jul-18

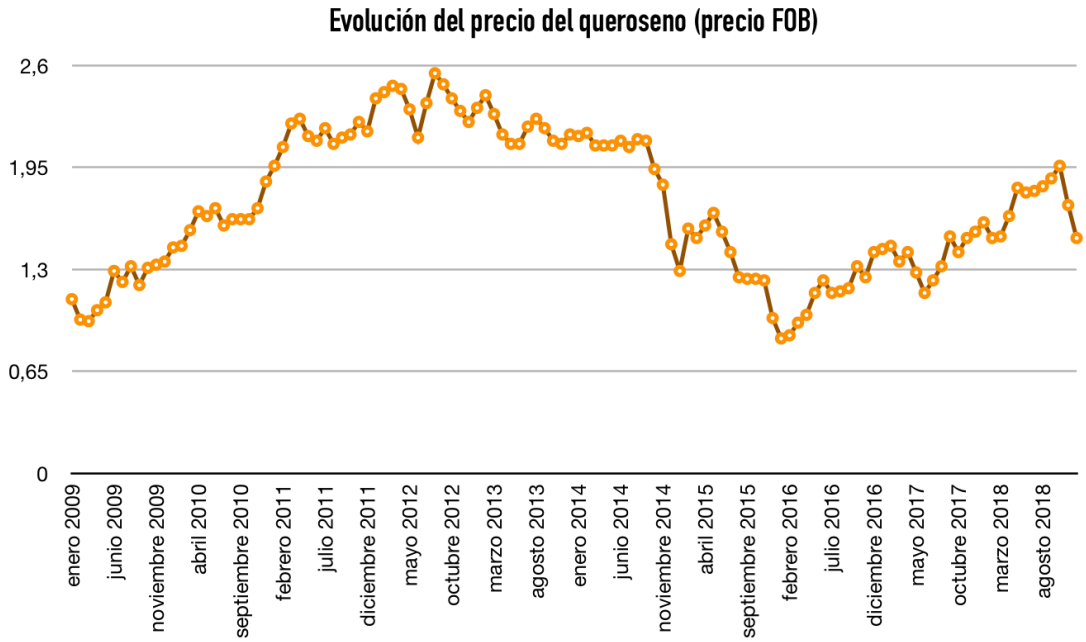

EVOLUCIÓN DE CUOTA DE OPERACIONES DE LOS PRINCIPALES AEROPUERTOS ESPAÑOLES 2004-2018
22,00 %
20,50 %
19,00 %
17,50 %
16,00 %
14,50 %
13,00 %
11,50 %
10,00 %
8,50 %
7,00 %
5,50 %
4,00 %
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
ADOLFO SUÁREZ MADRID-BARAJAS
BARCELONA-EL PRAT
PALMA DE MALLORCA
MALAGA-COSTA DEL SOL
GRAN CANARIA


EVOLUCIÓN MENSUAL DE OPERACIONES 2004-2018 EN AEROPUERTOS ESPAÑOLES
110.000.000
102.500.000
95.000.000
87.500.000
80.000.000
72.500.000
65.000.000
57.500.000
50.000.000
42.500.000
35.000.000
En-04
jul-04
En-05
jul-05
En-06
jul-06
En-07
jul-07
En-08
jul-08
En-09
jul-09
En-10
jul-10
En-11
jul-11
En-12
jul-12
En-13
jul-13
ene-14
jul-14
ene-15
jul-15
ene-16
jul-16
ene-17
jul-17
ene-18
jul-18


EVOLUCIÓN DE CUOTA DE CARGA DE LOS PRINCIPALES AEROPUERTOS ESPAÑOLES 2004-2018
60,00 %
55,00 %
50,00 %
45,00 %
40,00 %
35,00 %
30,00 %
25,00 %
20,00 %
15,00 %
10,00 %
5,00 %
0,00 %
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
ADOLFO SUÁREZ MADRID-BARAJAS
BARCELONA-EL PRAT
ZARAGOZA
VITORIA

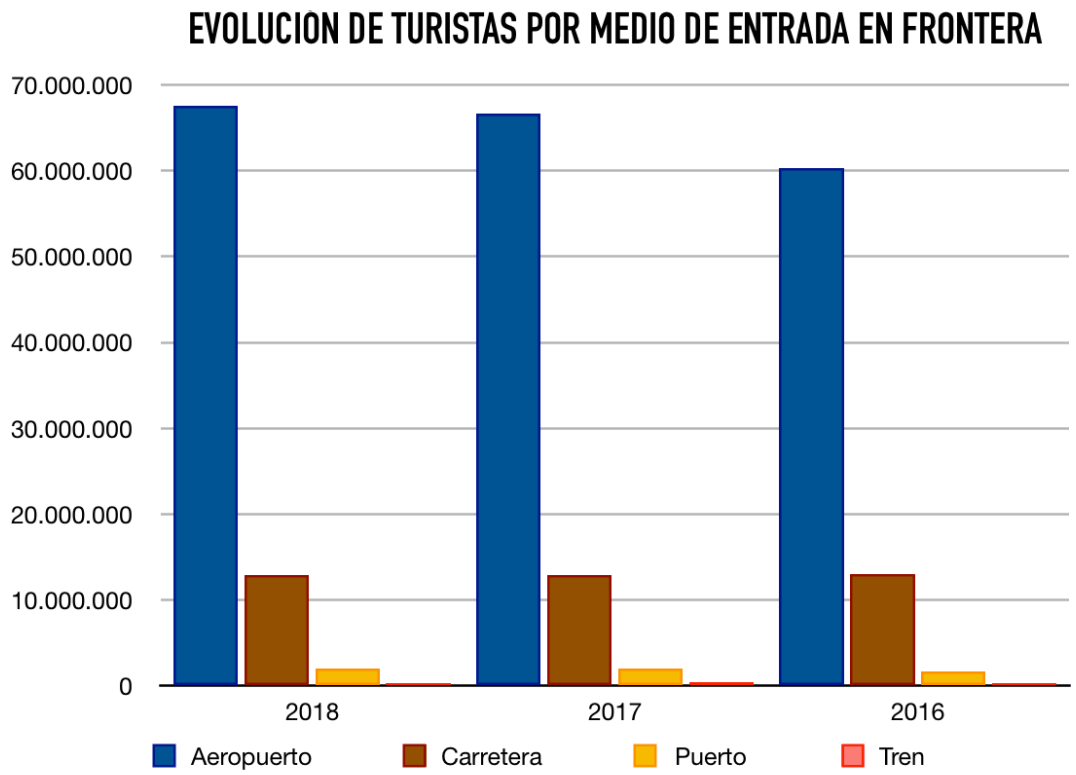
Appendix nº 8. EVOLUTION OF FUEL'S COST

Source: own elaboration based on U.S. Energy Information Administration data.

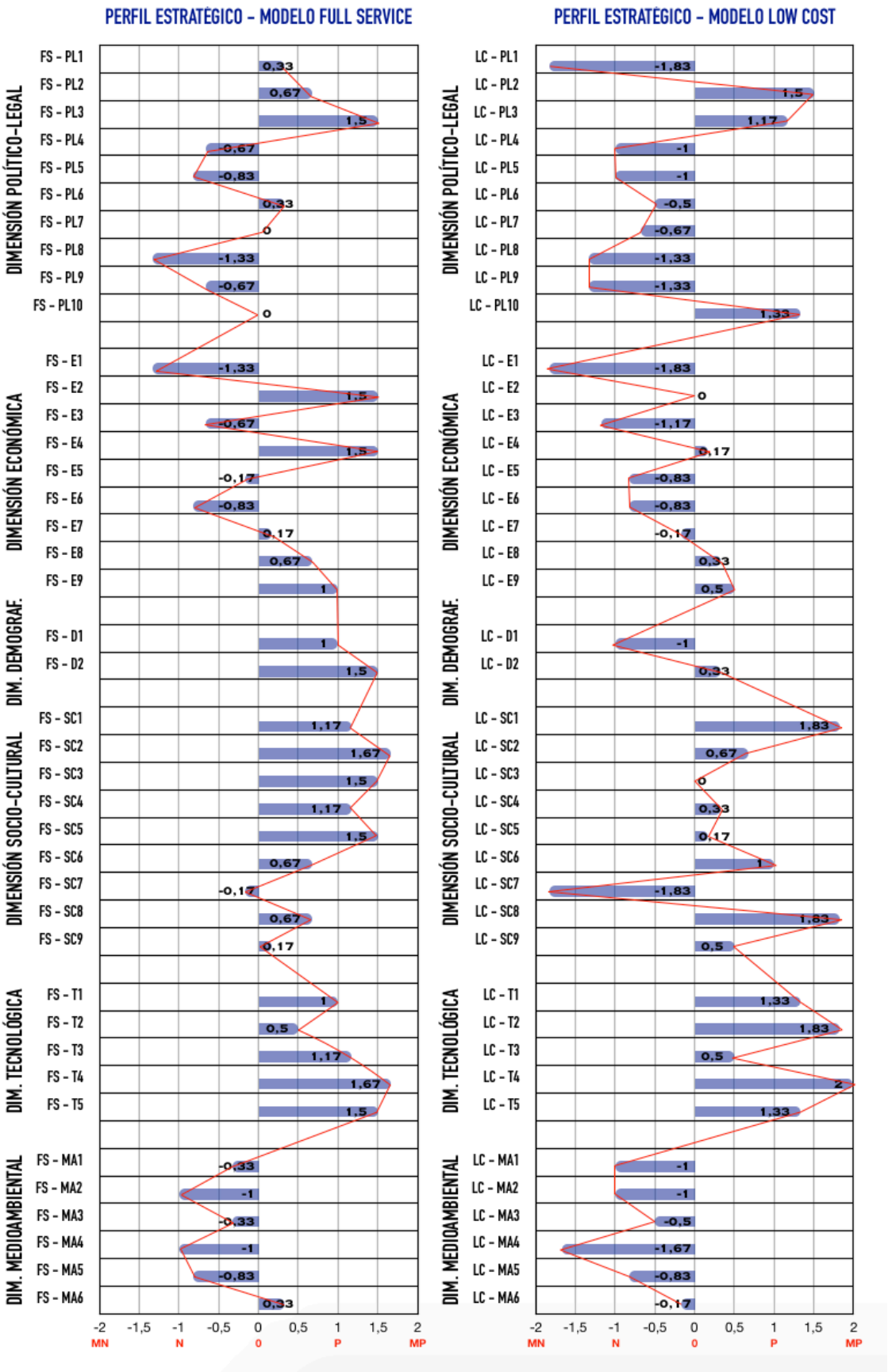


Appendix nº 9. TOURIST MOVEMENTS IN SPAIN

Source: own elaboration based on Ministry of Development data



Appendix nº 10. EXPERT PANEL. RESULTS. PESTEL.



Código Full-Service	Código Low-Cost	Factor
DIMENSIÓN POLÍTICO-LEGAL		
FS - PL1	**LC - PL1**	Exigentes convenios colectivos/legislación laboral
FS - PL2	**LC - PL2**	Políticas públicas de subvención de rutas
FS - PL3	**LC - PL3**	Internacionalización del sector (Single European Sky)
FS - PL4	**LC - PL4**	Proceso de separación de Reino Unido de la UE (Brexit)
FS - PL5	**LC - PL5**	Limitaciones a las libertades del aire (Ej.: aprobación de rutas entre Estados fuera del tratado Schengen)
FS - PL6	**LC - PL6**	Reminiscencia pública de algunas aerolíneas
FS - PL7	**LC - PL7**	Profusa regulación legal del sector (Ej.: tecnología, mantenimiento, uso del aire,…)
FS - PL8	**LC - PL8**	Alta fiscalización del sector (Ej.: tarifas de AENA)
FS - PL9	**LC - PL9**	Modelo de asignación de slots (factores: antigüedad, monopolio)
FS - PL10	**LC - PL10**	Aumento del número de aeropuertos, especialmente en pequeñas/medianas ciudades
DIMENSIÓN ECONÓMICA		
FS - E1	**LC - E1**	Volatilidad en los precios del combustible
FS - E2	**LC - E2**	Integración en grandes grupos y alianzas
FS - E3	**LC - E3**	Elevados costes de mantenimiento y reparación
FS - E4	**LC - E4**	Desarrollos de modelos en red (modelos hub)
FS - E5	**LC - E5**	Costes de personal (en tierra y tripulación)
FS - E6	**LC - E6**	Progresiva reducción del número de operaciones
FS - E7	**LC - E7**	Estacionalidad del sector (crece en verano y se contrae en invierno)
FS - E8	**LC - E8**	Predecibilidad del mercado en función de variables macroeconómicas
FS - E9	**LC - E9**	Poder adquisitivo de la sociedad
DIMENSIÓN DEMOGRÁFICA		
FS - D1	**LC - D1**	Envejecimiento de la población (encaminado a sus preferencias en el sector aeronáutico)
FS - D2	**LC - D2**	Concentración de la población en grandes ciudades
DIMENSIÓN SOCIO-CULTURAL		
FS - SC1	**LC - SC1**	Globalización de la sociedad
FS - SC2	**LC - SC2**	Fidelización de clientes
FS - SC3	**LC - SC3**	Percepción de prestigio y seguridad en función de la aerolínea y el coste del billete
FS - SC4	**LC - SC4**	Diferente percepción social en función del tipo de viaje (nacional vs. internacional)
FS - SC5	**LC - SC5**	Aumento de los viajes de negocios por el desarrollo de multinacionales
FS - SC6	**LC - SC6**	Alta importancia cultural del ocio y el turismo
FS - SC7	**LC - SC7**	Alarma social ante cualquier incidente aeronáutico
FS - SC8	**LC - SC8**	Normalización del avión como medio de transporte habitual/Percepción como accesible
FS - SC9	**LC - SC9**	Crecimiento de las operadoras de paquetes turísticos
DIMENSIÓN TECNOLÓGICA		
FS - T1	**LC - T1**	Simplificación de los procedimientos y del manejo de las aeronaves
FS - T2	**LC - T2**	Reducción del número de modelos de aeronaves
FS - T3	**LC - T3**	Reducción de la tripulación en viajes transoceánicos
FS - T4	**LC - T4**	Avances tecnológicos que reducen el consumo de combustible
FS - T5	**LC - T5**	Implantación de electronic flight bag
DIMENSIÓN MEDIOAMBIENTAL		
FS - MA1	**LC - MA1**	Posible desarrollo de normativa medioambiental en materia aeronáutica
FS - MA2	**LC - MA2**	Control de ruidos en los entornos aeroportuarios
FS - MA3	**LC - MA3**	Mayor preocupación de las autoridades europeas en materia medioambiental (Ej. EASA)
FS - MA4	**LC - MA4**	Riesgo de imposición de impuestos por emisiones de CO_2
FS - MA5	**LC - MA5**	Acuerdos de París en materia de contaminación para la aviación
FS - MA6	**LC - MA6**	Desarrollo de Green operating procedures/procedimientos con componente medioambiental

LISTADO DE ASISTENTES A LAS SESIONES DEL PANEL	
D. Santiago Luqué Mombiedro	Estudiante Piloto
D. José Luis Pérez Íñigo Martens	Piloto ATPL
D. Ramiro García-Villafáfila	Economista y Piloto de Iberia
D. Íñigo Martín Apoita	Piloto cadetes Iberia
D. Pablo Alcaraz Martínez	Ingeniero Aeronáutico
D. Iñigo Rincón Villa	Piloto de Vueling
D. Javier García Expósito	Piloto de Vueling

Access to Google Forms:
https://docs.google.com/forms/d/e/1FAIpQLScKCb30CWNuICWwMndN9lOpBdONZcNUJSW16FNxSBgkx3tB7A/viewform

Appendix nº 11. FINANCIAL AND ACCOUNTING ANALYSIS. RATIOS.

Source: own elaboration based on SABI and Financial Statements

Air Europa Líneas Aéreas, S.A.

Ratio		2013	2014	2015	2016	2017
Rentabilidad	Rent. Económica (%)	11,41	4,76	0,48	0,13	1,51
	Rent. Financ. (%)	102,59	50,84	5,97	1,41	12,35
Operaciones	Pdo. cobro (d)	35	31	31	29	29
	Pdo. Pago (d)	26	25	29	28	26
Estructura	Ratio solvencia	1,15	1,07	1,06	0,89	0,94
	Ratio liquidez	1,13	1,04	1,03	0,85	0,90
	Ratio Auton. Financ. M/L P	0,58	0,47	0,32	0,61	0,82
	Endeudamiento (%)	88,88	90,64	91,92	90,80	87,76
Fondo de maniobra (m€)		50.246	43.898	22.510	22.975	38.436

Iberia Líneas Aéreas de España, S.A.

Ratio		2013	2014	2015	2016	2017
Rentabilidad	Rent. Económica (%)	-10,66	1,82	11,68	5,66	3,95
	Rent. Financ. (%)	-62,89	16,26	66,27	23,68	15,90
Operaciones	Pdo. cobro (d)	55	62	61	72	68
	Pdo. Pago (d)	10	6	9	9	9
Estructura	Ratio solvencia	0,70	0,88	0,89	1,14	1,04
	Ratio liquidez	0,58	0,75	0,74	1,00	0,91
	Ratio Auton. Financ. M/L P	0,44	0,25	0,42	0,62	0,68
	Endeudamiento (%)	83,05	88,82	82,37	76,11	75,14
Fondo de maniobra (m€)		782	869	953	1.028	1.029

Vueling Airlines, S.A.

Ratio		2013	2014	2015	2016	2017
Rentabilidad	Rent. Económica (%)	14,07	10,62	8,47	4,02	10,48
	Rent. Financ. (%)	42,52	44,44	65,05	19,70	62,35
Operaciones	Pdo. cobro (d)	27	27	26	30	34
	Pdo. Pago (d)	26	26	35	19	17
Estructura	Ratio solvencia	1,79	1,31	1,13	1,59	1,52
	Ratio liquidez	1,79	1,31	1,13	1,55	1,50
	Ratio Auton. Financ. M/L P	1,21	1,00	0,41	0,53	0,41
	Endeudamiento (%)	66,92	76,11	86,98	79,59	83,19
Fondo de maniobra (m€)		1.799	3.555	-42.949	88.741	110.803

Easyjet

Ratio		2013	2014	2015	2016	2017
Rentabilidad	Rent. Económica (%)	11,27	12,96	14,25	9,05	7,17
	Rent. Financ. (%)	19,73	20,72	24,37	15,75	11,60
Operaciones	Pdo. cobro (d)	18,64	15,88	15,81	16,53	17,36
	Pdo. Pago (d)	124,73	108,54	49,60	49,57	54,11
Estructura	Ratio solvencia	1,84	1,94	1,87	1,97	1,88
	Ratio liquidez	1,05	0,72	0,72	0,92	1,04
	Ratio Auton. Financ. M/L P	0,84	0,94	0,87	0,97	0,88
	Endeudamiento (%)	54,28	51,52	62,83	50,74	53,07
Fondo de maniobra (m€)		77,15	-546,78	-546,78	-133,06	71,56

Ryanair

Ratio		2013	2014	2015	2016	2017
Rentabilidad	Rent. Económica (%)	7,27	6,71	8,06	15,35	12,26
	Rent. Financ. (%)	19,89	18,0	24,35	47,87	33,24
Operaciones	Pdo. cobro (d)	4,14	4,15	3,83	3,64	2,94
	Pdo. Pago (d)	10,19	10,72	12,51	12,70	15,93
Estructura	Ratio solvencia	1,97	1,51	1,72	1,43	1,56
	Ratio liquidez	1,93	1,46	1,67	1,39	1,49
	Ratio Auton. Financ. M/L P	0,87	1,01	0,84	0,85	0,97
	Endeudamiento (%)	63,41	62,71	66,88	67,94	63,11
Fondo de maniobra (m€)		1.851,9	1.169,8	2.396	1.452	1.694,3