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Tourism Spectrum

Special Issue: Low Cost Carriers and Tourism Destinations

Editorial

The year of 2017 represents for Europe the moment to commemorate 20 years of liberalization of air transport and also the consolidation of huge transformations that take place during the last two decades in both, enterprises and people’s regular life.

The “new mobility” achieved in Europe due to the development of low cost carriers is amazing and sectors like Tourism knew a great increase, new demand and above all the development of new tourism destinations around the continent.

Today it is easy to fly around Europe from point A to point B due to the dynamic of LCC, their new routes, innovative offers with flexible and creative services.

This special edition present six articles that focus mainly the LCC operation around Europe, giving the reader the opportunity to find several examples of LCC operation in some areas:

- The first article focus mainly in the LCC business model with an interesting perspective of the evolution of the academic articles in the last 20 years and above all the main operational and product features that characterize a LCC.

- The second article discuss how integrated are the low-cost strategies between LCCs and other stakeholders at airports and tourist destinations in Germany.

- The third present some evidences of competition between LCC and Full Service Carriers (FSC) in one Portuguese airport.

- The fourth article present data supported by theoretical models in order to evaluate the economic impact of LCC operation in Faro hinterland (Portugal).

- The fifth article focus on LCC and tourism regional development with emphasis on the north of Portugal and Oporto Airport.

- The last article discuss the Air Route development process, presenting a case study of a new route from Edinburgh to Oporto airport.

Cláudia Ribeiro de Almeida
Professor and Researcher
University of the Algarve, Portugal
The Dynamics of a Low Cost Carrier Business Model

Cláudia Ribeiro de Almeida & Vânia Costa

ABSTRACT

The liberalisation of air transport in Europe twenty years ago set the stage for the development of low cost carriers (LCC) business model that rapidly spread along the Europe offering new opportunities and challenges for destinations and related business enterprises, like the ones of the tourism sector.

The aim of this paper is to examine the evolution of the concepts that characterized the LCC business model in the last decades by undertaking an analysis of several academic articles and other official documents that allow find some interesting data to complement this research. The authors focus their attention mainly in the Product and Operational features of these airlines presenting in deep their main characteristics.

The findings show that LCC business model changed and readjust during this period. Through time a wide variation evolved, new realities developed, as for example the opening of several LCC operational bases across Europe, creating new realities and challenges in some airports and destinations. In the last years, the market saw the appearance and development of the hybridization of airlines business models, with distinctive strategies and products, competing against LCC and Full service carriers (FSC).

Key Words: Low cost carriers; Europe; Liberalisation process; Tourism

Introduction

Since April 1997 the European aviation market become more deregulated, offering new opportunities for airlines providing a chance for greater competition. The rise of the LCC sector has revolutionized the airline industry, with new challenges for both airports and tourism enterprises. Many airports have experienced dramatic growth rates in passengers, new routes and above all new type of demands from these airlines.

During the last twenty years, many researchers focus their attention in LCC sector, as it comprises a different business model and some characteristics that are different from the FSC or charter airlines. The main aspects focused in the researches cover the characteristics of the operating model and its impact on fares, passenger traffic and competition. There are comparisons between LCC model and FSC or the implication of LCC operations for charter airlines and leisure tourism development.

Other researchers deal with the impact of LCC model at the airport operations, regarding mainly the adaptation and the changes in the overall operation because of LCC constraints and demands.

Since 2007/2008, the researchers start a new type of investigation, with more data, different analysis, mainly econometric, and above all comparing different airlines and their relation with airports and tourism destinations.

This paper has the following structure. Section 1 presents the introduction. Section 2 explains the criteria used to select the literature, followed by the presentation of some theoretical considerations regarding the air transport liberalization in Europe and their impact in the air transport sector (Section 3). Section 4 discuss the main characteristics of a LCC definition and their business model, focusing on the main changes along the last 20 years. Section 5 discuss the LCC and tourism development. Section 6 draws conclusions and offers suggestions for future research.

Selection of Literature

One of the main aims of this article is to point out the characteristics of the operational and product features of a LCC business model. During the literature review, the authors found that during the last twenty years the LCC main features changed and are more adapted to the actual customer needs.

In order to summarize all the operational and product features...
features of the LCC business model, and to gather information concerning the deregulation process and the impact of LCC in tourism destinations, the authors selected several academic articles published in specialist aviation and transports journals (Journal of Air Transport Management, Journal of Transport Geography) or other tourism or management focused journals. To justify or present some examples the authors used data from some airlines and industry reports. This overall analysis help us to understand the evolution of LCC business model, the liberalization process, and the importance of LCC operation in several tourism destinations across Europe.

Air Transport Liberalisation

In the 90s, the air transport sector in Europe was a highly regulated industry, characterized by the absence of competition between national carriers and fares established by bilateral agreement between States. It was possible to find some specific agreements on routes and airports, types of aircraft, tariffs and frequency of flights. There were capacity restrictions on most routes, tariffs were high and the entry into the market was very difficult for companies other than flag carriers (Domanico 2007).

The air transport liberalisation in Europe was complete on 1st April 1997 and was far more gradually than in USA (Hakfoort 1999) and implemented in three stages (Graham 1997), policy ‘packages’ that were agreed in 1988, 1990 and 1993 with full deregulation coming into force in 1997 (Alderighi et al. 2012). The only exceptions have been public-service obligation (PSO) routes serving remote regions, cities and islands, awarded by competitive tender (Graham and Shaw 2008), as for example Madeira and Azores Islands (Portugal) that only knew the liberalisation process in 2008 and 2015 respectively.

Liberalisation in Europe has created an unprecedented break with the past, offering Community carrier nearly complete freedom in terms of access to markets, including domestic ones, as well as in terms of capacity and pricing (Dobruszkes 2009). The balance of power in the European air transport has shifted from the governments towards European airlines (Burghouwt et al. 2003).

The potential gains from liberalising the European aviation sector were high by reducing the number or restrictive agreements on tariffs and capacity in a sector that is characterised by heavy financial support from national governments to home carriers and, according to some, a limited interest in the desires of consumers (Graham 1997).

Deregulation, or liberalization as it has been termed in Europe, involves the effective removal of many of the regulations affecting civil aviation. This has emerged, through relevant government decisions in many areas of the world, from a background of a tightly controlled industry (Pender and Baum 2000).

Liberalisation has brought about numerous advantages to European travellers, both in terms of higher quality offered by airlines and drastic price reductions (Piga and Filippi 2002). A new type of carrier has gained ground (Francis et al. 2006), the LCC, combining a range of innovations in terms of distribution, marketing, product and operational features. The LCC experienced fast growth after 1999, and did not suffer as much from the crisis in the air transport industry after September 11, 2001, because the low fare levels were still attracting many passengers, and because the LCC were not yet operating in politically sensitive regions (Franke 2004).

The first scheduled low-cost flight in Europe was the one from Ryanair, on the Dublin–London route in 1986. The success of this route was so high that by August 1987 the passenger numbers were 92% greater than in August 1985. By the late 1990s there were almost 4.5 million passengers on the route compared under 1 million in a market that was static for even years before deregulation (Barrett 2004b).

LCC Definition and Business Model Characteristics

A low-cost carrier or low-cost airline also known as a no-frills, discount or budget carrier (Baker 2014) or value based airlines or carriers (ICAO 2009), is an airline that offers generally low fares in exchange for eliminating many traditional on board passenger services (Baker 2014). LCC are scheduled carriers with significantly lower costs than mainstream airlines and so offer much lower average fares, with cost savings in distribution, service and aircraft utilisation (Pender and Baum 2000).

In 2017, around 32 LCC are in operation in Europe, although around 50 ceased their operation in the last years (ICAO 2014).

In Europe, LCC have tried to adopt the US LCC model (Southwest model), although, there are difficulties associated with trying to implement it in Europe because of less flexible labour markets and high air traffic control, landing and ground handling fees (Guild 1995 cited by Francis et al. 2003).

In Europe, the LCC phenomenon appear firstly in UK and Ireland led by Ryanair and Easyjet (Francis et al. 2006). The growth of LCC market share between these two countries is due to the economic regulatory framework and to the liberal bilateral agreement and Governments that encourage airline competition (Francis et al. 2006).

One of the basic characteristics of the LCC business model is the use of secondary airports (Doganis 2006). This
positioning incentive several countries to develop facilities or even whole airports dedicated to these particular airlines (Dziedzic and Warnock-Smith 2016) as for example the Warsaw Modlin Airport in Poland. Several LCC have recently moved to primary airports or expressed an interest in doing so (Dziedzic and Warnock-Smith 2016). One example is Easyjet in Gatwick airport with a dedicated terminal to their flights, as well as the recent announcement of Ryanair to move to Frankfurt-Main.

LCC provide greater choice to consumers by allowing people who would not be able to travel previously to fly, therefore creating niche markets, as well as increasing air traffic through the lower fares offered and the introduction of new routes (ELFAA 2004).

LCC business model have distinctive product and operational features summarized in table 1 and table 2.

<table>
<thead>
<tr>
<th>Product features</th>
<th>Main characteristics</th>
<th>Considerations</th>
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<tr>
<td>Distribution</td>
<td>No intermediaries</td>
<td>LCC have reduced retailing costs by abolishing expensive downtown sales offices, travel agents, computer reservation systems and the traditional book of airline tickets (Barrett 2004a). Internet allows consumers to compare prices and by the use of friendly web design, the purchase of air tickets became simple (Dumazel and Humphreys 1999), generating travel documents downloaded on the passenger computer (Barrett 2004b). LCC present an aggressive direct sales approach (Francis et al. 2006), with the support of internet that allows huge savings in terms of distribution costs and establish detailed market information with respect to their customers (Francis et al. 2006), selling with much more transparency (Domanico 2007).</td>
</tr>
<tr>
<td>Partnerships with other chain value actors (accommodation, insurance, car rental, others)</td>
<td>LCC offer direct or indirect services such as car rentals or hotel reservation (Dobruszkes 2006), travel insurance and co-branded credit cards (de Wit and Zuidberg 2012). They rent advertising possibilities on board or on Internet sites (Dobruszkes 2006).</td>
<td></td>
</tr>
<tr>
<td>Fares</td>
<td>Pricing structures</td>
<td>LCC present a dynamic price policy (Vidovic et al. 2013) with simplified pricing structures based on demand-regulated single fares or flexible return tickets (Pender and Baum 2000). The earlier customer book, the cheaper their fare will be. LCC review all flight bookings daily to predict their popularity (Rae 2001).</td>
</tr>
<tr>
<td></td>
<td>Simplified yield management</td>
<td>LCC have a simplified yield management that do not apply any explicit market segmentation, except for a dynamic pricing schedule based on the departure date. The inventory control of LCC is simpler to manage than that of FSCs. (Alderighi et al. 2012). LCC apply segmentation through time of booking and choice of flight, allowing passengers to pay lower prices if they book early, or choose the flights for which there is less demand. The product is not differentiated, no additional services included in the price, no drinks or food, no frequent flyers programme or convenient airports, no VIP lounges or in-flight services. LCC do not apply Sunday rule (Alderighi et al. 2012).</td>
</tr>
<tr>
<td></td>
<td>All segments targeted</td>
<td>LCC target several segments, including national or international students and young globetrotters (Shaw and Thomas, 2006), business travellers (Mason 2000/Huse and Evangelho 2007/ Graham and Shaw 2008), leisure tourists and second-home owners (Almeida 2011), although their needs and expectations may differ (Martinez-Garcia and Royo-Vela 2010).</td>
</tr>
<tr>
<td></td>
<td>No show policy</td>
<td>The LCC policy contrasts with traditional airline policy by transferring the cost of “no show” passengers to the passenger</td>
</tr>
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who do not show (Barrett 2004b).

### In-flight service items

No-frills on board (selling food on board) LCC have reduced service costs by abolishing inflight service, business class, free newspapers, seat allocation, interlining, frequent flyer clubs and business lounges (Barrett 2004a). Passenger can purchase on-board alcoholic drinks, snacks and light beverages (Alamdari and Fagan 2005).

### Ancillary sales and revenues

As LCC business models evolved, ancillary sales like charges for luggage, on-board sales of food and gifts and even “Scratch Cards”, have become more important (Graham and Shaw 2008). Charging for optional services generates additional revenues and cost reductions. Baggage fees, for example, reduce the amount of hold baggage, and selling on-board snacks and drinks reduces the disposal problem. The ever-growing numbers of amenities that passengers can add to their basic travel product are known as ‘à la carte fees’ and include on-board catering sales, baggage checking, assigned seats, early boarding options, carry-on luggage, movies and internet access, pillows and blankets (de Wit and Zuidberg 2012).

### Others

#### Governments incentives

LCC benefit from various incentives provided by governments (Barbot 2006/Dennis 2004/Graham and Vowles 2006/Hunter 2006). With excess capacity and unemployment, secondary airports and their surrounding regions’ authorities are perfect partners for LCC and lower aeronautical charges may be of interest to both (Barbot 2006). The agreements normally involve a reduction in landing charges, a fixed amount of euros per passenger and financial support for the opening an operational base, new routes development and for advertisement and other forms of promotion of the airline’s flights (Barbot 2006).

#### Airport marketing support

LCC have increased the brand awareness of regions. Specifically, regions with limited international recognition have been included in LCC networks, enhancing cities’ promotional effort. Indeed, LCC improve the leveraging of marketing by including names and pictures of cities in the back of seats in their aircrafts (Farmaki and Papatheodorou 2015). Regional airports boost their profile through joint marketing arrangements with LCC (ELFAA 2004). The increased competition between airports led to the investment in service quality and by more active marketing campaigns and route development strategies (Lieshout et al. 2016).

### Table 2 – LCC – Main Characteristics in Terms of Operational Features

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<th>Operational features</th>
<th>Main characteristics</th>
<th>Considerations</th>
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<tr>
<td>Airport characteristics</td>
<td>Airport capacity</td>
<td>LCC demand can increase by having convenient slot times, along with spare airport capacity, enabling the servicing of both the business and leisure markets. This also improves operational efficiency by increasing the utilisation of aircraft (Calder 2003). Avoiding congested airports permits LCC to achieve aircraft productivity often more than 50% greater than that of the legacy carriers (Warnock-Smith and Potter 2005). LCC use older, less expensive facilities, and use their space more intensely. Even when</td>
</tr>
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</table>
they pay comparable rents per square foot, they pay far less per passenger served (de Neufville 2006).

Development of surrounding areas

Local economies have seen upturns because of increased employment, more visitors spend locally and air services are an attraction to mobile businesses that value frequency and cost-effective air travel when deciding on locations (Percoco 2007). On the aggregate demand side, accessible airports can exert multiplier effect on a territory through secondary and tertiary multiplier effects (Graham 2003). LCC have in some cases supported local economic development, often by increasing a region’s tourism, reducing seasonal fluctuations in traffic flows, making “off-season” travel to a region more attractive (Donzelli 2010).

Catchment area

The new airports used by LCC have their own catchment areas providing more convenient air access to passengers who previously spent much time on surface transport journeys to a small number of hub airports (Barrett 2004b). The growing number of regional airports in use by LCC create overlapping catchment areas, which are widen, not only due to investments in road and rail infrastructure, but also because LCC offer low fares that attract passengers from a wide geographical area (Lian and Ronnevik 2011/Pantazis and Liefner 2006). This trend is more important the cheaper the flight fares are (Pantazis and Liefner 2006).

Airport typology

LCC offer the potential of commercial viability to some smaller airports because they frequently seek locations away from major, congested hubs (Francis et al. 2003) or busy airports even if the costs were reduced (Barrett 2004a). LCC avoid airports with congested airspace, runways and taxiways (de Neufville 2006). Prefer airports with shorting times for baggage, shorter walking times and less confusion (Barrett 2004a) and stress (Barrett 2004b), mainly secondary airports with cheaper landing charges (Hunter 2006). In these airports, the time between touchdown and exiting the airport is likely to be significantly less (Barrett 2004b).

Landside accessibilities

Ground facilities are important because many of the newly served airports are more remote from major cities than the hub airports. These facilities include bus services, which connect to flights, car hire parks convenient to the terminal, and discounted rates for car parking (Barrett 2004a).

Ground handling

LCC decline to use airport facilities (air bridges or business lounges) (Barrett 2004b), even when are offered for free or at a discount price. They prefer steps, which are cheaper to use (Barrett 2004a). LCC are efficient users of apron and gate space with short turnaround times and typically do not demand high levels of service within the terminal. Many insist on parking stands directly adjacent to the terminal, being averse to remote stands or congested airports that may threaten their high aircraft utilisation and swift turnaround times (Francis et al 2004). For LCC flights, there is also a low rate of missing bags per passenger (Barrett 2004b).

Outsourced maintenance services

LCC have an aggressive negotiation in maintenance contracts agreements and outsourcing (Campisi et al. 2010). Outsourcing brings flexibility in choosing between suppliers of services, as aircraft maintenance, handling at airports, catering, and inflight...
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<td>magazines, also for choosing to renew, or not, contracts as they expire (Barrett 2004b).</td>
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<tr>
<td><strong>Terminal buildings</strong></td>
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<tr>
<td>Most of the secondary airports had significant spare runway capacity. The change from being almost empty to taking scheduled flights with 737–800 aircraft with 189 seats in the high-density configuration might require some changes to terminal buildings and extra airport staff. There might also be a need for longer airport opening hours (Barrett 2004b). Some traditional large or medium-sized airports tried to adapt their infrastructure through LCC dedicated terminals, differentiated airport fees (de Neufville 2006).</td>
</tr>
<tr>
<td><strong>Check-in procedures</strong></td>
</tr>
<tr>
<td>In LCC the check-in process is quicker because point-to-point journey is less complex than an interline one (Barrett 2004b). LCC require fewer check-in desks per passenger because of check-in time reduction of point-to-point product (Barrett 2004b).</td>
</tr>
<tr>
<td><strong>Boarding procedures</strong></td>
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<tr>
<td>In LCC boarding is quicker as seat choice is greater for earlier passengers at the departure gate (Barrett 2004a).</td>
</tr>
<tr>
<td><strong>Operational base</strong></td>
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<tr>
<td>LCC choose some of the airports of the network to be their bases, determining the economic and traffic growth of some regional airports (Campisi et al. 2010). A base is an airport where the airline have a number of aircraft and crew overnight and from which operates routes (Zuidberg and de Wit 2016). LCC execute additional flights, to and from the base, during the morning and afternoon intervals, resulting in 6–8 aircraft movements per stationed aircraft (Zuidberg and de Wit 2016). If an airport becomes a base for a dominant LCC, the pressure on the airport aeronautical revenues increases, the airport seek compensation in non-aeronautical revenues from the increasing passenger volumes (Francis et al. 2003). Increasing traffic growth can have impact in incoming tourism in the region, as for example Oporto Airport in the North of Portugal, operational base of Ryanair since 2009 (Carballo-Cruz and Costa 2014). In December 2016, Ryanair had 84 operational bases across Europe (Ryanair 2017). As of June 30, 2016, the airline offered over 2,000 short-haul flights per day serving over 200 airports largely across Europe, with a fleet of more than 350 Boeing 737-800 aircraft (Ryanair 2017).</td>
</tr>
<tr>
<td><strong>Airport facilities</strong></td>
</tr>
<tr>
<td><strong>Rapid turnaround times</strong></td>
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<tr>
<td>Quick turnaround times of 25 min are a core part of LCC product. Compared to an airline with one-hour turnaround time on a one-hour stage length, an airline with a 25 min turnaround time will be able to fly an extra two rotations per day thus achieving better fleet utilisation and staff productivity (Barrett 2004a), higher seat density and lower seat mile costs (Barrett 2004b). The LCC minimize unproductive time on the ground and in the air. They avoid traffic in the air that delays landings or keeps aircraft on “ground holds” at distant airports. They also avoid airside delays that keep the aircraft on the ground waiting to land or take off, queuing up for an open gate, or taxiing long distances (de Neufville 2006).</td>
</tr>
<tr>
<td><strong>Aditional non-aeronautical revenues</strong></td>
</tr>
<tr>
<td>Airports have begun to seize opportunities to raise more income from non-aeronautical revenue such as rents, concessions, car parking, consultancy and property development (Francis et al. 2004), shops, restaurants and ground transport sales (Barrett 2004b). The need for good catering and shopping facilities arises</td>
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because LCC do not provide inflight free services, as catering or newspapers (Barrett 2004a).

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<tr>
<th>Fleet</th>
<th>Single aircraft type</th>
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<td>The LCC base their fleet in “one size fits all” aircrafts in contrast with the variety of aircraft in the traditional airlines, with consequent higher flying and maintenance costs (Barrett 2004a). The purchase of the same airplane model allows bulk purchase discounts from manufacturers (Budd et al. 2014), greater contractual purchasing power, cost saving in the training of employees and savings in maintenance (Domanico 2007). A standardized fleet allows a better flexibility of the crews’ assignment (pilots and cabin crew), generating savings in training, qualification and stock of spare parts (Franke 2004/Campisi et al. 2010) and lower fuel costs (Vidovic et al. 2013). LCC use cost-efficient aircrafts (typically B737-800s, more recently A319) (Franke 2004/de Wit and Zuidberg 2012), increasing the number of seats on the aircraft, and an optimisation of the number of seats according to the necessary crew (Dobruszkes 2006). Ryanair is a good example of an airline with lower aircraft capital costs achieved by negotiating with Boeing (Barrett 2004b).</td>
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| Single class cabin | LCC normally operate a single economy class service on all flights (Alamdari and Fagan 2005), albeit in the last years several airlines like Ryanair start offer an upgrade of their fares with three different options, the “Discount”, the “Leisure Plus” and the “Business Plus”. These additional fares offer extra services like check-in 30 days before departing or check-in at the airport, seat allocation, priority boarding, fast track and flexible tickets, which could be very attractive for business passengers. Besides these new offers it only exists one only class that eliminates a constraint potentially affecting the aeroplane occupancy rate, allowing a uniform layout of seating and a similar treatment for all passengers, facilitating the unallocated seating system, and avoiding the need for business lounges in airports (Dobruszkes 2006). |

| High density seating | LCC operate with density seating (Williams 2001/Vidovic et al. 2013). |

| Small pitch | LCC aircrafts offer more seats than the traditional airlines. The seats have a small pitch (Francis et al. 2006). |

<table>
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<tr>
<th>Route structure</th>
<th>Point to point routes</th>
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<tr>
<td></td>
<td>The point-to-point operation eliminates the complexity of the traditional hub-and-spoke model that causes disruption customer dissatisfaction and extra cost (Rae 2001), providing a product that is not delayed by interlining passengers (Barrett 2004a) and without supplying other coincidences or connections in correspondence with flights of the same company or alliance (Domanico 2007). In some cases the networks remain significantly concentrated because of their focus on base airports (Burghouwt et al. 2003/Burghouwt 2007) A large proportion of LCC flights are between secondary airports, and even military bases, generally some distance away from the main cities (Francis et al. 2003), with longer surface journey times to city centres (Barrett 2004a). Some LCC use secondary airports but also serve a number of main airports at one end of a route (Francis et al. 2003), as for example Easyjet at Gatwick Airport. LCC create new point-to-point routes, many not served by FSC, attracting some price-conscious passengers from high fare FSC (Hunter 2006).</td>
</tr>
<tr>
<td>Distance of the routes</td>
<td>For many years, LCC focus their route networks on short-haul flights, today they increasingly expand their services to medium-haul markets because of the new agreements between Europe and the third countries. Ryanair and Easyjet started their flights from airports in Western Europe to Morocco after the new agreement on air transport between Europe and Morocco became effective (Vidovic et al. 2013). Although LCC in Europe focus their routes in short haul and some medium haul flights, there are some authors that defend and present some interesting data related to long haul LCC flights (Francis et al. 2007). These authors explore the extent to which elements of the so-called low-cost model might be transferable to long-haul operations (Francis et al. 2007).</td>
</tr>
<tr>
<td>Density of frequencies</td>
<td>LCC operate high-density routes with high utilisation rates (Burghouwt et al. 2003) that offer a high average number of daily block hours by each aircraft per day (Alamdari and Fagan 2005/Dobruszkes 2006). These airlines achieve high aircraft utilization through the combination of an operating to and from uncongested airports and point-to-point routes (Williams and Mason 2004 cited by Alamdari and Fagan 2005).</td>
</tr>
<tr>
<td>Route structure</td>
<td>LCC routes structure present three different categories, (1) Domestic routes in several European countries with a huge impact in the overall generated traffic. (2) The off-shore location of the UK-based LCC that offer, besides the flights between UK and Ireland, cross-water routes to the continental Europe to a wide variety of destinations, as for example, Mediterranean sun and sea destinations or winter ski destinations. (3) West-East routes that grow significantly with EU expansions (Graham and Shaw 2008).</td>
</tr>
<tr>
<td>Competition with other transportation modes</td>
<td>The high population density and the short distances in Europe, make realistic the competition by other modes of transport, such as rail and road transportation (Domanico 2007). On the Dublin–London route prior to deregulation the alternative to air travel by Aer Lingus and British Airways was a 9-h boat and train journey (Barrett 2004b).</td>
</tr>
<tr>
<td>No freight on board</td>
<td>No freight on board (Graham and Vowles 2006)</td>
</tr>
<tr>
<td>Human Resources</td>
<td>Pressure on work force</td>
</tr>
</tbody>
</table>
Informal organization  LCC are more informal, less highly structured and more flexible organisations, with strong family atmosphere among employees and between employees and managers (Hunter 2006). LCC have lighter and smaller governance structures, with fewer senior executives, board members and board committees, making way for faster and more agile and flexible decision-making processes, and LCC offer higher incentives to managers, based mainly in senior executive shareholdings, which reduces potential agency costs and encourages better performances (Alves and Barbot 2007).

The LCC business model evolved in the last years. Some of the changes result from the increasing trend of mergers and acquisitions of airlines, creation of different models of alliances and the mixing of different business models (Klophaus et al. 2012/Stimac et al. 2012/Vidovic et al. 2013).

Until recently, it was clear which business model provides what level of service, today it is difficult to differentiate which airline belongs to which category, and that has become especially complicated with the emergence of hybrid carriers that have further expanded their offer in the aviation market (Stimac et al 2012/Vidovic et al. 2013).

One of the best examples of a hybrid airline is Air Berlin, the second largest carrier in Germany, operating a business model that is a combination of the typical elements of the LCC, FSC and charter. Mixing of business strategies is present in the majority of airlines, categorized as LCC in the past. Today they should be in most cases classified as hybrid airlines (Vidovic et al. 2013).

**LCC and Tourism Development**

LCC contribute to the diversification and reduce the seasonality of tourism products, which in turn can improve the competitiveness of destinations, enhance the attractiveness of regions (European Union Committee of the Regions 2004), reducing seasonality in passenger demand (Donzelli 2010) and the reposition and diversification of mature coastal destinations main products (Farmaki and Papatheodorou 2015).

Dobruszkes (2013) states LCC remain a driver for tourism development in destinations attempting to increase their competitiveness and develop new routes. Countries like Portugal and Spain saw an increase in tourist arrivals following LCC flight operations, as well as an extension of the tourist season with many tourists arriving for short city breaks during the year (Farmaki and Papatheodorou 2015).

The designing of the majority of routes performed by LCC (some of them operated firstly by charter airlines) pretends to carry travellers from Northern Europe to the Mediterranean (Dobruszkes 2006) and South of Europe areas (as for example Portugal).

Competition stimulated the emergence of new markets by creating demand in segments underserved by traditional carriers (Forsyth 2006/Franke 2004) as well as by charter carriers that only fly on a seasonal basis to some tourism destinations, being one of the pieces of a package tour offered by tour operators.

According to the European Low Fares Airline Association (ELFAA) the two main LCC in Europe are Ryanair and EasyJet. Between July 2014 and June 2015, they have carried 94.3 and 67.1 million passengers respectively (ELFAA 2016). For both airlines, the average load factor was higher than 90% between July 2014 and June 2015 (ELFAA 2015). The growth of these two airlines has been impressive with Ryanair registering more than 100 million passengers in 2016, finishing the year as one of the leaders of European Traffic in Europe (Ryanair 2017).

In exploiting, the derived demand for air transport, by selling mobility at low cost, the LCC are promoting behavioural changes in leisure and business travel patterns (Graham and Shaw 2008). The introduction of LCC flights was one of the responsible for the transformation of some Mediterranean cities or countries (Bianchi 2005), like Malta, where LCC starts their operation in 2006 encouraging more tourists to dedicate visits to Valletta and The Grand Harbour area (Graham and Dennis 2010).

LCC intensified price competition, stimulating demand for short-haul air travel, leading to a phenomenal growth of short breaks or weekend holidays across Europe. The tourism boom originates new infrastructures and the high prices of real estate (Lei and Papatheodorou 2010). One of the consequences of the development of new routes and frequencies of LCC along the year is the attraction of second-home owners to tourism destinations, as for example Algarve (South of Portugal) (Almeida 2011). This is mainly due because second homeowners value point-to-point travel, low fares and above all the number of frequencies along the week between their origin countries and their second home region.

LCC have been able to cope with route density problems by generating new demand, as well as by attracting passengers from other transport modes and from FSC through the offering of lower fares (de Wit and Zuidberg 2012).
The dynamic of LCC affected the degree of competition in the market resulting in a decline of the FSC ticket prices and in some cases the offer of some innovations that compete directly with LCC in some routes. Travellers nowadays tend to prefer multiple and short holidays as opposed to traditional long stays, while also the loss of the glamour associated with flying – and hence the supply of lower service levels – is accepted by many travellers (Martínez-Garcia and Raya 2008/Martin et al. 2008).

LCC have indisputably contributed to changing how people travel, the geography of air services and competition between airlines and between cities or regions (Dobruszkes 2013). LCC revolutionized the medium-haul market providing air travel at lower prices (Vidovic et al. 2013).

**Conclusions**

The emergence of LCC is one of the events that has revolutionised the aviation industry. Firstly operated in USA was adopted in Europe in late 90s creating a huge development of new routes within a more dynamic network spread all over the continent.

The business model of LCC changed during the last 20 years according to passenger needs and market trends. In this article, the authors tried to summarize the most important features of LCC business model in order to gather in the same document all the characteristics of these airlines in terms of product and operational features.

In Europe, the main LCC are Ryanair and Easyjet. In 2016 Ryanair was the first airline carrying more than 100 million passengers in just a financial year (Ryanair 2017). The operation of this airline is impressive and is a very interesting case study that should be looked in deep by scientific researchers as it offers distinctive fields of analysis.

Other area for future research is the one related with hybrid business models, a new trend that need to be followed, as it is going to dictate the future of the air transport market and the appearance of new strategies and innovations.

**References**


<table>
<thead>
<tr>
<th></th>
<th>Author(s)</th>
<th>Title</th>
<th>Journal</th>
<th>Volume</th>
<th>Issue</th>
<th>Pages</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.</td>
<td>Domanico, F.</td>
<td>The European airline industry: law and economics of low cost carriers</td>
<td>European Journal of Law and Economics</td>
<td>23(3)</td>
<td></td>
<td>199-221</td>
<td>2007</td>
</tr>
<tr>
<td>27.</td>
<td>ELFAA</td>
<td>Liberalisation of European air transport: The benefits of low fares airlines to consumers, airports, regions and the environment</td>
<td>European Low Fares Airline Association</td>
<td></td>
<td></td>
<td></td>
<td>2004</td>
</tr>
<tr>
<td>28.</td>
<td>ELFAA</td>
<td>Member's Statistics June 2014</td>
<td>European Low Fare Airline Association</td>
<td></td>
<td></td>
<td></td>
<td>2015</td>
</tr>
<tr>
<td>29.</td>
<td>ELFAA</td>
<td>Member's Statistics June 2015</td>
<td>European Low Fare Airline Association</td>
<td></td>
<td></td>
<td></td>
<td>2016</td>
</tr>
<tr>
<td>34.</td>
<td>Francis, G., Humphreys, I. and Ison, S.</td>
<td>Airports’ perspectives on the growth of low-cost airlines and the remodelling of the airport–airline relationship</td>
<td>Tourism Management</td>
<td>25(4)</td>
<td></td>
<td>507–514</td>
<td>2004</td>
</tr>
<tr>
<td>36.</td>
<td>Franke, M.</td>
<td>Competition between network carriers and low-cost carriers retreat battle or breakthrough to a new level of efficiency?</td>
<td>Journal of Air Transport Management</td>
<td>10</td>
<td></td>
<td>15–21</td>
<td>2004</td>
</tr>
<tr>
<td>38.</td>
<td>Graham, A. and Dennis, N.</td>
<td>The impact of low cost airline operations to Malta</td>
<td>Journal of Air Transport Management</td>
<td>16(3)</td>
<td></td>
<td>127–136</td>
<td>2010</td>
</tr>
</tbody>
</table>


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The Dynamics of a Low Cost Carrier Business Model


65. Williams, G. (2001), Will Europe’s charter carriers be replaced by no frills scheduled airlines?, *Journal of Air Transport Management*, 7(5), 277–286;

66. Zuidberg, J. and de Wit, J. (2016), What makes the difference between a low-cost carrier airport and a low-cost carrier base?, *Research in Transportation Business and Management*, 21, 11-18;
The Low-Cost Experience in Europe: A Study on Selected LCC Hubs in Germany

Rafael Castro & Carla Fraga

ABSTRACT

Since the conclusion of air travel liberalization in Europe in 1997, tourism destinations have had to deal with new challenges in regards to the relationship with the air transportation industry. Low-Cost Carriers (LCCs) have an important role to tourism development in several countries as they attract considerable tourist flows interested on the low fares. This paper aims to investigate the low fare experience on the relationship between the airside (LCCs) and the landside (accommodations) in European tourism destinations. The selection of the tourism destinations (n=10) analyzed by this study occurred according to the concentration of LCCs identified through the International Civil Aviation Organization (ICAO) list: Germany (n=5 LCCs in Berlin, Dusseldorf, Frankfurt, Cologne and Hannover). The study is exploratory and it was conducted a literature review about the low fare experience and a secondary data collection (accommodation fares in the period of one year and the number of LCC flights/week). It is expected that the results contribute to fill part of the gap on this theme and assist in the decision-making process in order to build tourism low-cost experiences in the investigated destinations.

Key Words: Low-cost carriers; Tourism Destinations; Accommodations.

Introduction

It is well known that air transport needs rules and regulation so airlines can operate commercial routes around the world. First flights were registered in the beginning of the XX century, nevertheless the commercial aviation as it is known today started on the 1950's, after the World War II. On the other hand, the deregulation process of air transportation started in the United States in 1978 and the liberalization in Europe (initiated in 1987 and concluded in 1997) were fundamental for commercial air transport to develop and leverage tourism in many parts of the world (Palhares, 2002/Almeida and Costa, 2012).

The emergence of Low-Cost Carriers on the air transportation market as a new business model was even more important for the development of new routes and for the tourism in many destinations, including countries in Europe. Therefore, it is notably the imperative role of the LCCs for the tourism development in the world, only few research was dedicated to the several stakeholders existent in the relationship between the LCCs, airports and tourism destinations, especially on the accommodation sector.

According to the list provided by the International Civil Aviation Organization (ICAO, 2014), there are 35 LCCs operating from and to tourism destinations in Europe. This particular study is exploratory and focuses in Germany, which according to the German National Tourist Board (2015) reported a market share of 6% in total overnight stays by foreign visitors in the European Union in 2014. The figures show that the total overnight stays by foreign visitors in Germany was 74.5 million while in Spain, for example, this number was 259.5 million. On the other hand, while there are only 2 LCCs based in Spain (Volotea and Vueling), Germany counts with 5 LCCs (Air Berlin, Eurowings, Condor Flugdienst, Germanwings and TUIfly) based in different cities of the country (ICAO, 2014). Thus, it seems that there is a lack of integration between the LCCs and other stakeholders, such as the accommodation market in Germany that could provide a real low-cost experience to tourists.

The aim of this study is answering the following question: “How integrated are the low-cost strategies between LCCs and other stakeholders at airports and tourist destinations in Germany?”.

This paper is structured as follows: the next section (section 2) presents the literature review, based on authors who have
researched the subject of LCCs in recent years. Next, the methodology (section 3) and the results and discussions (section 4) are presented. Finally, the final remarks (section 5) and the references are presented.

2. Literature Review

The low-cost/low-fare airline business model was created after the deregulation of air transport initiated in the late 1970s in the United States and in the late 1980s in Europe. American experts at the time identified that in the states where there was greater competition, companies had better results. Thus, one of the main goals of the deregulation process was to increase the competition among airlines. According to Pantazis and Liefner (2006), the low-cost and no frills strategies have been well established in the United States since the early 1970s. Southwest Airline, which is credited with creating the LCC concept (Whyte and Lohmann, 2015), started flying in 1971 as a regional airline in the state of Texas. In Europe, this is a more recent phenomenon that followed the liberalization and privatization of the aviation market during the 1990s.

An LCC is an airline that operates in a concept that, according to Whyte and Lohmann (2015) includes some of these strategies:

(i) Simple fleet management arrangement;
(ii) Use of basic facilities at airports and/or use secondary airports;
(iii) Increase flying hours per day and achieve fast turnarounds;
(iv) Contract out services, especially at airports;
(v) Apply greater flexibility to their work force, paying lower wages;
(vi) Charge a basic price for a seat only and charge for all the other services used by the passengers, such as checking-in at a counter, checking bags, food and beverages;
(vii) Rely on direct bookings through the internet, eliminating travel agency commissions.

LCCs seem to promote an immediate price differential that ends up increasing customer loyalty, which could be availed by the accommodation sector and tourist destinations served by them. O’Connel and Williams (2005) pointed out that 65% of LCC passengers do not even check other airlines’ fares at the time of booking and that this is different for passengers seeking full service airlines (FSA), since these offer competitive differentials which are not necessarily related to the price itself.

From Chi, Liu and Tu (2016) it is possible to understand how the client’s empathy with the LCCs can favor a positive mouth-to-mouth in the increase of the purchase intention. Thus, considering the vertical integration between LCCs and the accommodations (Palhares, 2002) may help in the joint promotion of airports and tourism destinations that promote the low-cost experience.

It is also important to reflect on the airports’ catchment area. The larger this is, the more it will be necessary to plan the relationship between accommodation facilities and LCCs to provide a low-cost experience. It is clear in the literature that passengers will not refuse travelling longer distances to use LCC services (Brandt, 2003). It was also proved that LCC passengers travel longer distances to reach an airport than LSA passengers (Greifenstein and Weib, 2003, apud Pantazis and Leifner, 2006). Whyte and Prideaux (2008) developed an interesting study where the different costs of a typical travel – accommodation costs, discretionary costs and transport costs – were analyzed in a comparison between FSAs, LCCs and self-drive tourists. The authors argue that the sense of periphery diminishes as the transportation cost falls, making distant destinations more attractive. The study of Pantazis and Liefner (2006) offers important clues about this phenomenon in Hanover, Germany. They have confirmed that due to the market entry of Hapag-Lloyd Express (known as TUIfly since 2007), an LCC, the catchment area of Hanover Airport was expanded. The data clearly showed that these passengers come from more distant regions.

Table 1 presents some of the studies and observations concerning the lowest price involving LCCs and tourism.

<table>
<thead>
<tr>
<th>Authors (by year of publication)</th>
<th>Geographical Area</th>
<th>Remarks involving LCCs and Tourism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dobruszkes (2009)</td>
<td>Europe</td>
<td>New west-east routes reflect new forms of mobility: post-migration flows from the east by those who have gone work in Western Europe, new tourist practices and new businesses.</td>
</tr>
<tr>
<td>Barrett (2004)</td>
<td>Europe</td>
<td>Explore the relationship between airport and LCCs and how that will need to change in the future.</td>
</tr>
<tr>
<td>Chiu, Liu, Tu (2016)</td>
<td>Asia</td>
<td>Customers’ empathy towards the airline is directly related to the purchase decision and the low fare is an important tool to increase empathy.</td>
</tr>
</tbody>
</table>
Pantazis and Liefner (2006) Europe

LCCs can help airports to enlarge the catchment areas and strengthen their competitive position in national aviation markets.

O’Connell and Williams (2005) Europe and Asia

The research evidenced that there is variation of the perception between LCCs and FSAs passengers, but there is no difference in terms of perception if their geographical origin (Asia or Europe) is considered.

Whyte and Prideaux (2008) Oceania

The emergence of LCCs in Australia promoted an exchange of modes of transport (notably from road to air).

Graham (2013) Not applicable

It is a challenge to combine the needs of LCCs (and their passengers) and all the changes in airport management, notably those that have been focusing on non-aeronautical revenues.

Source: Own elaboration

It seems that demand characteristics should also be studied when dealing with LCCs and their relations with destinations. O’Connel and Williams (2005) stated, for example, that there is a greater tendency for young passengers to use LCCs. It is therefore relevant in the low-cost experience to consider the various socio-demographic and motivational profiles for low-cost tourism to be established in a destination.

Tourists’ length of stay in destinations has become a great challenge for tourism planners and managers. From the study by Whyte and Prideaux (2008), it can be observed that saving time by moving from ground transportation to air transportation can help in a longer stay at the destination. This may imply in a greater expense on the land side, which proves the need of partnerships between both air and landsides for the promotion of low-cost tourism.

From Graham’s (2013) study, it is clear that a commercial airport management is an important link for commercial synergies between the airside and the landside, since if the aim of a given airport is to increase non-aeronautical revenues, expenditures with accommodation, food and beverage, entertainment and other costs should be part of a strategic planning beyond the LCCs.

Based on the literature review, it was evident that the low-cost tourism experience triggered by the LCCs should be analyzed in concomitance with the catchment area involving airports, destinations and other tourist services. In this sense, the next section focuses on the relationship between the LCCs and the accommodation sector in Germany.

Data and Method

This study is descriptive and exploratory, in which it is not intended to reach conclusions or exhaust the discussions about the analyzed phenomenon. The analysis criteria of this study were based on the literature considerations in terms of the lowest cost involving LCCs and the tourist experience in Germany:

1. **Tourist Destinations:** were identified according to the airports’ locations.
2. **Low-Cost Carriers:** were identified from the International Civil Aviation Organization (ICAO) list. Only the ones in operation were considered for this study.
3. **Hub Airport:** it is known that most of the LCCs operate point-to-point routes, instead of a hub-and-spoke distribution system. Thus, the airports with the largest number of flights were identified from the LCC websites.
4. **Total Flights Per Week:** The number of flights (arrivals and departures) of the LCCs at the identified airports were collected by the website FlightStats in the week of October 1 to 7, 2016.
5. **Accommodation Average Daily Rate (ADR):** these numbers were collected by a Colliers, Fairmas and Revinate (2016) report entitled “Data and Expert Opinions about the German Hotel Market”.
6. **Overnight Stays by Foreign Visitors:** data collected by the German National Tourism Board.

Results and Discussion

This section presents the results and discussions regarding the data collected on the German LCCs and the hospitality industry in the destinations of their main airports.

Figure 1 shows the map of Germany with the demarcation of the airports analyzed in this study: Berlin Tegel Airport, Hannover Airport, Cologne Bonn Airport, Frankfurt am Main Airport and Dusseldorf Airport. In terms of geographical distribution two airports are located in northern Germany (Berlin Tegel and Hannover) distant

<table>
<thead>
<tr>
<th>Pantazis and Liefner (2006)</th>
<th>Europe</th>
<th>LCCs can help airports to enlarge the catchment areas and strengthen their competitive position in national aviation markets.</th>
</tr>
</thead>
<tbody>
<tr>
<td>O’Connell and Williams (2005)</td>
<td>Europe and Asia</td>
<td>The research evidenced that there is variation of the perception between LCCs and FSAs passengers, but there is no difference in terms of perception if their geographical origin (Asia or Europe) is considered.</td>
</tr>
<tr>
<td>Whyte and Prideaux (2008)</td>
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</tr>
<tr>
<td>Graham (2013)</td>
<td>Not applicable</td>
<td>It is a challenge to combine the needs of LCCs (and their passengers) and all the changes in airport management, notably those that have been focusing on non-aeronautical revenues.</td>
</tr>
</tbody>
</table>
about 285km from each other. Frankfurt is in the west of Germany and the nearest airport among these would be Cologne Bonn Airport, which is about 170km away. The latter, by the way, is very close to Düsseldorf Airport – only 66 km separates them. It is important to note that in the case of these two last airports, the catchment area of one can overcome the area of the other, generating greater competition between the LCCs, the airports and the tourist destinations themselves. Integrated strategies aimed at providing low-cost tourism experiences can be seen as differentials in this competition.

Table 2 shows which are the LCCs, their main airports, the tourist destinations and the number of flights per week of each LCC at these airports (arrivals + departures).

![Figure 1: Selected Airports in Germany.](image)

**Source:** Own elaboration

<table>
<thead>
<tr>
<th>Germany Tourist destinations(N=5)</th>
<th>LCCs</th>
<th>Main Airport</th>
<th>Total flights/week October 1 to 7, 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berlin</td>
<td>Airberlin</td>
<td>Berlin Tegel Airport</td>
<td>1778</td>
</tr>
<tr>
<td>Cologne</td>
<td>Germanwings</td>
<td>Cologne Bonn Airport</td>
<td>924</td>
</tr>
<tr>
<td>Dusseldorf</td>
<td>Eurowings</td>
<td>Dusseldorf Airport</td>
<td>784</td>
</tr>
<tr>
<td>Frankfurt</td>
<td>Condor</td>
<td>Frankfurt am Main Airport</td>
<td>238</td>
</tr>
<tr>
<td>Hannover</td>
<td>TUI fly</td>
<td>Hannover Airport</td>
<td>126</td>
</tr>
</tbody>
</table>

**Source:** Prepared by the authors based on ICAO (2014) and FlightStats (2016).

Airberlin, is the second largest airline in Germany and has carried more than 30.2 million passengers in 2015. It offers flights to 147 destinations worldwide each year, including inner-german flights, medium-range and long haul flights (Airberlin, 2016). Its main airport is Berlin Tegel Airport with 1778 flights per week arriving or departing this terminal.
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Germanwings used to operate independently until early 2016, when it was merged with its sister airline Eurowings. Since then, the Germanwings brand has not been used anymore, although the actual airline continues to operate under the Eurowings brand using Germanwings flight numbers on routes that used to be numbered under the latter one. As ICAO’s LCC list dates from 2014 this merge had not yet happened at that time and it separates Germanwings from Eurowings. Formally, it seems that the two airlines still exist, since when accessing the Eurowings website and searching for a flight from Cologne Bonn Airport, all flights have the following message: flight operated by Germanwings. Thus, it looks like that the flights centralized in Cologne would be operated by the former Germanwings and those centralized in Dusseldorf would be operated by Eurowings. It is noteworthy that the new Eurowings is a subsidiary of the Lufthansa Group as Germanwings used to be (Eurowings, 2016).

Condor is part of the Thomas Cook Group since 2013 but it has been flying since 1956. Nowadays, more than seven million passengers fly with Condor to about 75 destinations in Europe, Asia, Africa and America every year. Its main base is Frankfurt am Main Airport with 238 take offs and landings per week (Condor, 2016).

TUI fly is the last one of the LCCs analyzed in this study. This airline is a wholly-owned subsidiary of the TUI Group, one of the world’s leading tourism group headquartered in Hanover, Germany. TUI fly flies to some of the most classic holiday regions around the Mediterranean, the Canary and Cape Verde Islands, Madeira and Egypt for TUI and other tour operators on both charter and scheduled flights (TUI fly, 2016).

It is natural that the city of Berlin assumes a centrality of the number of flights per week (N=1778, see Table 2) being the country’s capital and the main tourist destination of Germany. In the accommodation sector, it is noted that 12,495,526 overnight stays by foreign visitors represent almost the double in relation to the second city in this ranking, Munich, as shown in Table 3.

<table>
<thead>
<tr>
<th>Tourist Destination (N=5)</th>
<th>LCCs</th>
<th>Overnight Stays by Foreign Visitors (2014)</th>
<th>Average Occupancy (2016)</th>
<th>Average Daily Rate (ADR - 2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berlin</td>
<td>Air Berlin</td>
<td>12,495,526</td>
<td>76,4%</td>
<td>€89,90</td>
</tr>
<tr>
<td>Hannover</td>
<td>TUIFly</td>
<td>455,763</td>
<td>61,9%</td>
<td>€91,90</td>
</tr>
<tr>
<td>Cologne</td>
<td>Germanwings</td>
<td>1,951,899</td>
<td>68%</td>
<td>€99,60</td>
</tr>
<tr>
<td>Frankfurt</td>
<td>Condor Flugdienst</td>
<td>3,633,879</td>
<td>68,3%</td>
<td>€109,30</td>
</tr>
<tr>
<td>Dusseldorf</td>
<td>Eurowings</td>
<td>1,850,938</td>
<td>69%</td>
<td>€110,90</td>
</tr>
</tbody>
</table>


Coincidentally, Berlin, which has the highest number of overnight stays by foreign visitors is also the one with the lowest average daily rate (€89.90) and the highest number of LCC flights per week (1778 - see table 2), indicating that synergies on the airside and on the landside, can further enhance low-cost tourism experiences. On the other hand, Dusseldorf has the highest average daily rate (€110.90) among the analyzed destinations and the second lowest rate of overnight stays by foreign visitors. Thus, strategies that may allow LCC passenger arrivals to be translated into higher occupancy of the hotel chains will invariably be related to pricing.

When the data of the city of Hannover is analyzed, it is noticed that the city receives the lowest number of LCC flights per week (126 - see table 2), as well as it represents the lowest rate of overnight stays by foreign visitors (455,763) and the lowest occupancy rate among the 5 destinations (61.9%). Thus, planning and managing this tourist destination in an integrated way between the air transport services (LCCs) and the hospitality sector could positively influence the tourist performance of the destination.

One of the issues addressed in the study of Whyte and Prideaux (2008) is the length of stay for tourists using LCCs. The authors state that the exchange from the ground transportation to the air transportation allows tourists to have more time in the destination and, consequently, spend more money. Observing the data related to overnight stays by foreign visitors and the occupation rates of the analyzed cities, it is noticed that the increase in the number of flights of the LCCs and the development of strategies integrated with the hospitality industry could help in the increase of these rates.

5. Final Remarks

The aim of this research was to understand how integrated are the low-cost strategies between LCCs and other stakeholders at airports and tourist destinations in Germany.
In the literature review, it was evident that the distance, the length of stay, both motivational and sociodemographic profiles of the passengers influence the choice of LCCs and that the low-cost tourist experience is little analyzed from the point of view of the relation between the airside (LCCs) and the landside (notably, the hospitality sector).

The data collected on total flights/week, hotels average daily rate and overnight stays by foreign visitors in German cities serving as LCC hubs provided an interesting picture for planners, managers and decision makers in the tourism market to reflect on trends, opportunities and challenges for Germany to position itself with competitive differentials in the low-cost tourism market.

Future studies could deepen in other tourism services on the landside, such as the food sector, city tours and others. Specifically, on the accommodation sector, a study that could spatially filter the supply of hotel units near the airports compared to the central tourist areas, which are not always coincident, is suggested. On the other hand, statistical studies and mathematical models can contribute to the understanding of proportionality and potentialities in Germany compared to other European destinations.

References


Endnotes
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Low Cost Carriers and Full Service Carriers: Evidences (or not?) of Competition in Lisbon and Oporto Cities

Jorge Abrantes

ABSTRACT

Following the process of liberalization of air transport in the United States of America and Europe, the evolution of new business models in air transport, especially by the assertion of low cost carriers over the years, has deeply changed the relation of forces in the commercial aviation paradigm. The proliferation of low cost carriers with operational bases in Europe is now an inescapable reality, creating greater pressure for incumbent airlines, increasing the density of point-to-point flights operated between destinations.

However, low cost carriers seem to compete more with legacy airlines than among themselves, as overlap flights between them appear to be still scarce.

The present research aims to understand if this competition exists, not only between full service carriers and low cost carriers, but also between low cost carriers and what impacts they can bring to the tourist market, especially when new routes are announced and new destinations are promoted. The analysis will focus at the cities of Lisbon and Oporto (Portugal).

The results show that, in these cities, there is a growing competition between full service carriers and low cost carriers, but the competition between low cost carriers is still very weak, especially between the two main European low cost carriers, such as Ryanair and EasyJet. This evidence is more visible in Lisbon, since in Oporto low cost carriers dominate the market since a long time.

Key Words: airline competition, full service carriers, Lisbon, low cost carriers, Oporto, route overlapping

Introduction

The process of liberalization of air transport, firstly in United States of America and, later in Europe, led to profound changes in the reality of commercial aviation in both continents. If, in 1970, the weight of international passenger traffic carried in charter airlines represented 30.5% of the market (Helgstrand1976), figures for 2015 show that charter traffic dropped to 5% (ICAO 2016), due to in a large extent the presence and growth of low cost airlines.

In fact, travel in low cost carriers has become the main mode of travel in Europe (Dobruszkes 2013), whose development, has led to the creation of new demand in new market segments, which were not served conveniently by the installed airlines (Forsyth et al. 2006).

Valls (2008) considers the change in consumers’ perception of the price variable, to become the fundamental reason for decision-making in the purchase and no longer a mere attribute of the product that helped to boost price sensitivity by customers.

Nevertheless, there is a growing “hybridization” of the market with low cost carriers approaching full service carriers’ model as these ones had done in the past, when introduced new services in their business model that were promoted, at that time, by low cost airlines.

The present research aims to evaluate the degree of competitiveness in the Lisbon and Oporto cities between the various airline business models mainly full service carriers and low cost carriers as well as between low cost carriers, to verify if the development of new routes is focused in non-covered markets or in direct competition between the various business models.

Theoretical Context

Most of the research on low cost carriers, in the context of competition between business models appeared only in
recent years, as the number of routes and operational bases settled by them increased in the market.

In addition, low cost carriers, which started offering simplified price structures (no-frills prices), based on a basic and cheap service and a reduction of costs in the value chain, led to the generalization of the low cost concept (Valls 2013). Similarly, Markides and Sosa (2013) argue that the competitive advantage gained by many of these recent entrants allow added value through innovation, while changes in models affect and reduce the advantages of pioneer’s airlines installed.

Although the mode of operation for air passenger transportation is similar in traditional, low cost and regional service companies (many of them serving as feeders of traditional airlines), based on the regularity and plurality of frequencies, the differences in the business model of the so-called “full-service carriers” and the “lowcost carriers” are significant.

In fact, many of the authors tend to characterize the differences between the two models or, alternatively, the characterization of one of them over the other (Cento2009/ DLR2008/Doganis 2010/Fageda et al. 2015/O’Connell and Williams 2005).

But, as mentioned by Dobruszkes (2013), as well as by Fageda et al. (2015), the lowcost carriers business is not a single monolithic model in the same way that Schlumberger and Weisskopf (2014:61), while emphasizing the cost advantages, recognize that “there is no one LCC Model, nor is there a single driving element responsible for its competitive advantage.”

Almeida and Costa (2012) summarized the main factors that characterize the model of low cost carriers, in terms of product, service, operations, strategy and distribution. On the same way, Rodrigues et al. (2013) have also developed this business model in its various dimensions from core business, strategy, technical and operational requirements, organizational structure, market, network organization, product/service, market segment, price strategies and distribution channels.

There are however major changes in air transport. Low cost carriers adopted business strategies used until recently by traditional airlines, e.g. entering into business models of long haul flights (low haul low cost), adopting flights sales through travel agents via the use of Global Distribution Systems (GDS), promoting business traffic, flying into major airports and adopting more flexible customer service, amongst other changes of greater impact.

The result of this strategy has led to the emergence of hybrid carriers that combine the savings of low cost carriers with the service, flexibility and operating network of a traditional airline (Bitzan and Peoples 2016/Daft and Alberts 2012/ Sabre 2011/Stimac et al. 2012). Vidovic et al. (2013) consider that this business model is nowadays the most representative in the airline market.

Because of this evolution in the air transport business models, there are six types of airlines in Europe with hybrid airlines and long haul low cost carriers assuming an increasingly and more relevant role (Canelas and Ramos 2016).

The increase of these hybrid airlines, a connection between traditional airlines and low cost carriers, has dictated differentiated market competitiveness levels.

Low cost carriers continue to maintain pressure on traditional companies, avoiding compete each other and keeping competition between them quite limited (Dunn 2015). According to Dunn (2015), from Ryanair’s 12,000 weekly flights, only 1,300 took place on the same routes with other low cost carriers.

An analysis done in the week of 6th April 2005 shows that Ryanair and EasyJet overlapped on 31 airports, representing only 4% of total seats for both airlines (CAPA 2015).

Another research from Dunn and Clark (2016), shows that almost 139,000 flights of the five main low cost carriers in Europe (EasyJet, Norwegian, Ryanair, Vueling and Wizz Air)scheduled to operate in April in Europe. Around 21,2% of them were in competition with each other.According to the authors, most of the competition was between two of the low cost rivals, with 15 routes overlapping between three operators, nine of them at Barcelona (Dunn and Clark 2016).

In terms of routes, from the 2,750 routes operated by these airlines 15,9% where in competition, with the highest to be accounted by Vueling (34,6%) and the lowest by Wizz Air (6%). Nevertheless, if we look at the two biggest low cost carriers in Europe – Ryanair and EasyJet – with 1,188 routes (Ryanair) and 631 routes (EasyJet), the overlap routes between these two airlines are only 49, representing 2,7% of all routes operated by both airlines.

Michael O’Leary, C.E.O. of Ryanair, points out that there is plenty of opportunities to expand without overlapping. Accordingly with O’Leary “There is more than sufficient room for everybody to grow in Europe over the next number of years, except for the legacy carriers”, (Dunn and Clark 2016:27); the author emphasizes, clearly that the competition is in the full service carriers side and less in the low cost carriers one.Dobruszkes et al. (2017)had the same conclusions regarding Southwest in USA and Ryanair in Europe, that there is an increase in direct competition between low cost carriers and traditional airlines.

Ryanair initially focus on secondary airports (for flights from/to Frankfurt-Hahn, Brussels-Charleroi, London-Stansted, Milan-Bergamo (Orio al Serio), Paris-Beauvais and Paris-Vatry or Munich-Memmingen) to avoid conflict with the interests of the established traditional airlines and to obtain additional financial advantages in the use of these
airports. Besides that, there is a paradigm shift with the new focus on major airports, as in the case of Brussels-Zaventen (along with Brussels-Charleroi), Milan-Malpensa (keeping operations to Milan/Bergamo-Orio al Serio) and more recently in Frankfurt-Main (at the same time that maintain Frankfurt-Hahn), as from June 2017. This shift means that Ryanair operates now from four of Europe’s 10 largest airports and underlines the expansion of the low cost carriers into primary airports (Dunn 2016).

Same statement was expressed by Oliver Sleath, European airlines analyst at Barclays (mentioned in Dunn 2014), considering that there is an increasing overlap of routes but the main target of the low-cost carriers is still the legacy carriers.

Preliminary figures released by the International Civil Aviation Organization (ICAO 2017) show that the total number of passengers carried on scheduled services increased 6% over the last year, reaching 3.7 billion passengers in 2016, mainly due to low airfares and fall on oil prices. ICAO considers that “The increasing presence of low-cost carriers notably in emerging economies have contributed to the overall growth of passenger traffic” (ICAO 2017).

Accordingly with ICAO (2017), low cost carriers accounted for approximately 28% of the world total scheduled passengers in 2016 (passengers carried by low cost carriers crossed, for the first time, the milestone of one billion passengers in 2016). In Europe, low cost carriers represented 32% of total passengers carried by this business model, followed by Asia/Pacific and North America with 31% and 25%, respectively.

In Portugal, the first low cost operations appear in 1995, in Faro airport, with flights from Air Berlin and later by Ryanair (INAC 2012).

In Lisbon, low cost operations started in 1998 with Virgin Express (INAC 2012) as well as with Go Fly (British Airways subsidiary) with flights starting on 23rd July 1998.

In Oporto, first low cost flights only appear in 2004 with Air Berlin route to Palma de Mallorca, carrying, in that year, a little over 13 thousand passengers (Caballero et al. 2006). Accordingly with Barbot (2008), the greater impact in Oporto airport development was only recorded with the arrival of Ryanair in 2015, as between 1999 and 2003, Oporto airport registered a 5.61% decrease in the number of passengers transported (Caballero et al. 2006).

There is however a significant difference in the entry process of low cost carriers at Oporto and Lisbon cities. While in Oporto most of the routes are new and operated by low cost carriers, in Lisbon most of the routes are operated by traditional airlines, mainly by TAP Portugal due to its hub at this airport (Abrantes 2014).

Figures reported up to October 2016 show that low cost carriers represent, in Portugal, 43.6% of the traffic carried in all airports. If, in Lisbon, it represents 28.2% of passengers carried, in Oporto the low cost carriers dominate the airport accounting 64.3% of the traffic carried (Antunes and Fiúza 2016).

Although the importance of low cost carriers seems evident in terms of what they represent in the commercial aviation business model, some research developed mainly related the so-called hybrid models while full service carriers and low cost carriers approach and mixed their business in the market.

A new wave of low cost carriers, created by traditional companies, are being launched in the market in the last years, as it occurred in the late 1990s and early 2000s, including a new focus on long haul low cost carriers. The synergies between them will certainly bring greater segmentation of the market, with medium-haul routes concentrated on low cost airlines and the long-haul routes operated by traditional airlines.

However, the shift from short haul to long haul low cost anticipates changes in operational and strategic paradigms in the market. The creation of new long haul low cost airlines and the expansion of some short haul low cost to long haul will create additional difficulties for traditional airlines, especially those with greater economic and financial weaknesses.

Methodology

The investigation focus on the competition between low cost carriers and full service carriers in the cities of Lisbon and Oporto. The main objective is to evaluate the different business models of the airlines that use these airports to operate, as well as, to understand the degree of competitiveness between business models at these airports (traditional/low cost) and between them (low cost).

As a starting point for the investigation, a list of all flights operated at these airports during the week between 29th July and 4th August 2016 was collected, as well as, between 26th November and 2nd December, to have an operational perspective during high season (summer) and low season (winter). Despite the greater scientific robustness in the treatment of information given by both seasons, this investigation will also permit to understand the impacts of seasonality in these airports. The authors collect the data directly from the website of the ANA, Aeroportos de Portugal on the days defined above (ANA 2016a/ANA 2016b).

The data concerns only routes in Europe, including the Balearic and Canary Islands, as well as to Madeira and Azores Islands (Ponta Delgada and Terceira), following the revoke of public service obligations relating to air scheduled services for these destinations, as published in

Table 1 presented below, shows the results obtained by type of airline (legacy/low cost), with significant differences between both cities. If in Oporto the operation is based on the low cost carriers that operate most of the routes without direct competition between them, in Lisbon, during summer, most of the routes (35 routes) are operated in competition, either between business models (29 routes) or within the same business model (6 routes).

<table>
<thead>
<tr>
<th>Competition between carriers</th>
<th>Lisbon</th>
<th>Porto</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routes with no direct competition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Service Carrier</td>
<td>24</td>
<td>2</td>
</tr>
<tr>
<td>Low Cost Carrier</td>
<td>19</td>
<td>44</td>
</tr>
<tr>
<td>Routes with direct competition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between 2 Full Service Carrier</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Between 2 Low Cost Carrier</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Between 1 Full Service Carrier / 1 Low Cost Carrier</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Between 2 Full Service Carrier / 1 Low Cost Carrier</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Between 3 Full Service Carrier / 1 Low Cost Carrier</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Between 2 Full Service Carrier / 2 Low Cost Carrier</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Between 1 Full Service Carrier / 2 Low Cost Carrier</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Between 2 Full Service Carrier / 3 Low Cost Carrier</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>78</td>
<td>61</td>
</tr>
</tbody>
</table>

Table 1. Routes Operated by Business Model, Airport and Season

Traditional airlines offer most of the routes operated in Lisbon, without direct competition, in particular by TAP Portugal, due to the hub installed in this airport.

A more detailed analysis of the information, which can be found in Annex A (Lisbon) and in Annex B (Oporto), shows that:

- Lisbon/Amsterdam/Lisbon is the route with the biggest number of weekly flights due to the launch of TAP Portugal air shuttle from March 27th 2016.

Independently of the business model and number of operators on the route, TAP Portugal operates 47 European routes in Lisbon during summer, followed by EasyJet (20 Routes) and Ryanair (16 routes). In Oporto, during the same period, low cost carriers dominate the operations, in particular Ryanair (40 routes) and EasyJet (13 routes). TAP Portugal operates only nine routes, being the third most important airline in the airport.

In this regard, as these are the three most important airlines in Lisbon and Oporto, the analysis of competition at these airports will be concentrate on these airlines. In the case of low cost carriers, the analysis extends to other companies, in order to be able to verify the degree of competition and overlap of routes between them.

**Results**

The information expressed in Table 2, taking into account the routes operated both in summer and winter shows the competition between low cost carriers in the city of Lisbon.

Table 2. Routes operated by low cost carriers in Lisbon Airport
Both EasyJet and Ryanair operate most of the routes without any competition from other low cost carriers. Even so, even though the number is small, there is an overall increase in competition with other low-cost players, rather than among them directly.

Despite the number of flights operated by each of them (EasyJet with 149 weekly flights in the summer and Ryanair with 127), there is only competition between them on a single route - Ponta Delgada, a Portuguese domestic destination, also operated by TAP and Azores Airlines. In winter, competition occurs in two routes, Ponta Delgada and Berlin-Schoenefeld. During the winter period, EasyJet offer 111 weekly flights, with Ryanair increasing its presence on four additional flights - 131 weekly flights.

In Oporto airport (Table 3), most of the routes of these two airlines operated without competition from other low cost carriers. In fact, it is possible to verify that there is more competition between the other low cost carriers than between Ryanair and EasyJet.

During summer, there was no overlap route between these two airlines, despite the number of weekly flights operated by them (208 Ryanair flights per week and 103 EasyJet flights, representing 76.6% of all flights operated weekly by low cost carriers).

Table 3. Routes operated by low cost carriers in Oporto Airport

<table>
<thead>
<tr>
<th></th>
<th>Ryanair</th>
<th>EasyJet</th>
<th>Transavia</th>
<th>Vueling</th>
<th>Wizz Air</th>
<th>Eurowings</th>
<th>Monarch</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EasyJet</td>
<td>15</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ryanair</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transavia</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vueling</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wizz Air</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>1</td>
<td></td>
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<tr>
<td>Eurowings</td>
<td>3</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Monarch</td>
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<td></td>
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<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter</td>
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<td></td>
</tr>
<tr>
<td>EasyJet</td>
<td>14</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ryanair</td>
<td>2</td>
<td>16</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transavia</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vueling</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Wizz Air</td>
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<td></td>
<td></td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>Eurowings</td>
<td>3</td>
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<td></td>
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<td>Monarch</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
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</tr>
</tbody>
</table>

Table 3. Routes operated by low cost carriers in Oporto Airport
In winter, even representing 81% of the total weekly flights operated to Oporto (166 Ryanair weekly flights and 73 EasyJet flights), there is only one overlap route - Luxembourg - operated also by TAP Portugal and Luxair. In these cases, the competition between the main low cost carriers operating to Lisbon and Oporto are below 2% (the highest value is 1.8% accounted by EasyJet in the winter period), confirming that it seems to exist a “non-aggression pact” between these airlines, avoiding to compete directly one against the other. Gerald Khoo states that “the logical answer for both EasyJet and Ryanair is why would you spend time and money competing against your strongest competitor when you’ve got a whole tail of weaker competitors who can both beat up on”, giving as examples, TAP Portugal, LOT, Air Berlin, Brussels Airlines or Alitalia (Dunn 2015:29). This situation is very clear when we analyze the level of competition with both Portuguese airlines – TAP Portugal and Azores Airlines - in particular with TAP Portugal. Looking at the results expressed in Table 4, 8.7% of EasyJet’s routes in Lisbon are in direct competition with TAP Portugal, which increases to 12.6% in winter. In the case of Ryanair, the competition in this airport is lower, representing 4.7% during summer and 4.6% in winter.

Gerald Khoo states that “the logical answer for both EasyJet and Ryanair is why would you spend time and money competing against your strongest competitor when you’ve got a whole tail of weaker competitors who can both beat up on”, giving as examples, TAP Portugal, LOT, Air Berlin, Brussels Airlines or Alitalia (Dunn 2015:29).

Table 4. Overlap Flights Between EasyJet and Ryanair, and Full Service Carriers

<table>
<thead>
<tr>
<th>Competition With Full Service carriers</th>
<th>Lisbon</th>
<th>Porto</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EasyJet</td>
<td>Ryanair</td>
</tr>
<tr>
<td></td>
<td>Summer</td>
<td>Winter</td>
</tr>
<tr>
<td>TAP Portugal</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>Azores Airlines</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Aigle Azur</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Air Europa</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Air France</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>British Airways</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Brussels Airlines</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Iberia</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>KLM</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Luxair</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Swiss</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

The competition in Oporto is less noticeable as TAP Portugal has progressively abandoned this market (including the Lisbon/Oporto/Lisbon air shuttle, only operating nine routes at Oporto airport). However, this situation means that 44.4% of the routes operated by TAP Portugal at this airport are in direct competition with EasyJet. In the case of Ryanair, 33.3% of the routes during winter are in direct competition (against 22.2% in summer period).

Abrantes (2014) concluded that the penetration of low cost carriers in Oporto occurs mainly because of the exit of full service carriers already installed in the market as well as by the enlargement of options to new destinations not served previously, as happens preferentially by Ryanair.

If we add the economic-financial indicators (net profit/loss) of low cost carriers in comparison with those ones of TAP Portugal (Table 5), we can conclude that, as stated by Gerald Khoo, these low cost airlines continue to pursue competitive pressure on weaker competitors.

Table 5. Net Profit/Loss (2010-2015)

<table>
<thead>
<tr>
<th>Net Profit/Loss ()</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAP Portugal</td>
<td>-52,9</td>
<td>-72,2</td>
<td>-25,5</td>
<td>-5,9</td>
<td>-85,1</td>
<td>-156</td>
</tr>
<tr>
<td>Ryanair</td>
<td>305,3</td>
<td>374,6</td>
<td>560,4</td>
<td>569,3</td>
<td>522,8</td>
<td>866,7</td>
</tr>
<tr>
<td>EasyJet</td>
<td>141,8</td>
<td>263,7</td>
<td>298,9</td>
<td>466,5</td>
<td>527,5</td>
<td>642,4</td>
</tr>
</tbody>
</table>

Note: Original values of EasyJet in English Pounds (Exchange rate - 1 Jan.17 - 1,17221)
While TAP Portugal has been posting negative results year after year, its main competitors are registering strong and expressive profits year after year, in line with the momentum of strong growth in world air activity. In 2015, the airlines recorded the best net result in aviation history, in the order of 35.6 billion USD, representing a margin of 4.9% of total passenger revenues (IATA 2016). TAP Portugal, on the other hand, recorded one of the worst performances ever, only surpassed in the year 2008 when recorded a net loss of 285 million euros.

The competition is likely to continue in the future, with the increase in the number of new routes already announced by the main low cost carriers. Although EasyJet has not announced yet any new route in 2017 at these airports, Ryanair will operate six new routes from Lisbon (Bologna, Wroclaw, Glasgow, Luxemburg, Naples and Toulouse) and four from Oporto (Birmingham, Edinburgh, Krakow and Nuremberg). In Lisbon, three of the routes will be in direct competition with TAP Portugal (Bologna, Toulouse and Luxemburg.routes operated by Luxair and EasyJet). Again, while three of the new routes will compete directly with TAP Portugal, the overlap with EasyJet will only happen in the Luxembourge route.

Thus, despite the growth of traffic in both full service carriers and low cost carriers, it is possible to see that the main low cost carriers have been increasing their presence in the main Portuguese airports. This situation has led to reductions in market share in the main Portuguese airline - TAP Portugal - and whereas in Oporto airport, Ryanair assumed the leadership in the number of passengers transported for a long time.

The Portuguese Civil Aviation Authority (ANAC) quarterly information shows that, in the third quarter of 2010 (INAC 2010a), TAP Portugal led Oportomarket with 31% of market share (compared to 29% of Ryanair). Nevertheless, in the following quarter this situation reversed with the leadership of Ryanair (maintained since then) in this airport with 36% of market share(against 32% of TAP Portugal) (INAC 2010b). However, if in the third quarter of 2016 (ANAC 2016c) Ryanair shows the same market share as at the end of 2010, TAP Portugal's position drops to 13% of market share (EasyJet occupies the second position with 17% of market share).

In Lisbon, despite its leadership due to its hub at the airport, TAP Portugal has reduced its position over the years, from a maximum of 61% of market share, reached in the first quarter of 2013 (INAC 2013), to 48% over all quarters of 2016 (ANAC 2016a/ANAC 2016b/ANAC 2016c). Despite the smaller number of destinations covered and the number of weekly flights operated, Ryanair is the second airline at Lisbon airport (since the 3rd quarter of 2015), with a market share of 9% in the 3rd quarter of 2016 (1 percentage point more than EasyJet).

The information gathered shows that both Lisbon and Oporto are today cities with a strong presence of flights from low cost carriers, with all the main European players flying for both cities and/or with operational bases in the main national airports, as happens with EasyJet and Ryanair. Despite the growth of low cost carriers, these have been much more active in launching routes in direct competition with full service carriers, especially with TAP Portugal. This situation, due to the economic and financial weaknesses of TAP Portugal, will create greater constraints on this company, which has been concentrating its operation at Lisbon airport and leaving markets with a greater tourist nature or with greater difficulties of integration in its network of exploration, as happened with the routes of Oporto.

Conclusions

Regardless of the business model, the air transport market has evolved to a highly competitive market.

The development of low cost carriers over the years and the successive creation of new operational bases have enabled them to be present in the markets where they operate.

However, the growth of these airlines and their bases do not seem closely match the level of competitiveness expected in the markets and routes they operate. Far from that, much of the existing competition is, above all, with full service carriers avoiding an overlap of routes between low cost carriers.

The present investigation has made possible to show that, also in the airports of Lisbon and Oporto(both in Portugal) where Ryanair and EasyJet have operational bases, the existing competition occurs firstly with the main Portuguese full service carrier and, to a much lesser extent, between these two airlines, whose route overlap is almost non-existent.

Despite this conclusion, the present investigation has some limitations. The analysis is limited to two weeks of observations in winter (one) and summer (one) periods. This situation could sustain some bias in the investigation due to non-quantifiable situations that could occur during those two weeks. It would be equally important to know the reality in airports with a more tourism vocation, as is the case of Faro (Portugal), where the low cost carriers dominate.

Even so, the results achieved, which will be a starting point for other realities under study, leave no doubt regarding the competitiveness of the market and the different business models, as well as their importance in a market that is in constant evolution.
References


6. ANAC (2016a), Boletim estatístico trimestral, 29, Autoridade Nacional de Aviação Civil, Portugal.

7. ANAC (2016b), Boletim estatístico trimestral, 30, Autoridade Nacional de Aviação Civil, Portugal.

8. ANAC (2016c), Boletim estatístico trimestral, 31, Autoridade Nacional de Aviação Civil, Portugal.


17. DLR (2008), Analysis of the European air transport market – Airline Business Models, Air Transport and Airport Research, DLR, Germany.


Low Cost Carriers and Full Service Carriers: Evidences (or not?) of Competition in Lisbon and Oporto Cities

31. INAC (2010a), Boletim estatístico trimestral, 7, Instituto Nacional de Aviação Civil, Portugal.
32. INAC (2010b), Boletim estatístico trimestral, 8, Instituto Nacional de Aviação Civil, Portugal.
33. INAC (2012), Impacto das Transportadoras de Baixo Custo no Transporte Aéreo Nacional, Instituto Nacional de Aviação Civil, Portugal.
34. INAC (2013), Boletim estatístico trimestral, 17, Instituto Nacional de Aviação Civil, Portugal.
42. Valls, J-F. (2013), Beyond the low cost business: rethinking the business model, Palgrave Macmillan, Great Britain.
Low-Cost Carriers Socio-Economic Impact in Tourism Development: 
The Case of Faro’s Airport Hinterland.

Tiago Rosa, Maria E. Baltazar & Jorge Silva

ABSTRACT

Due to airline market deregulation in Europe LCC’s (Low-Cost Carriers) depicts a fast growth in the last decade and it’s expected that this growth continues in the next years. Also, this European airline market change has affected the way many airports operate and it’s likely that this change impacts not only airports performance and efficiency, but also its hinterland. Tourism development is one of the main beneficiaries of this new paradigm.

Airport hinterland definition is very broad. Traditionally hinterland is measured by several kilometres’ radius centered on the airport or a certain travel time from one point to the airport. However, this definition may be considered too simplistic because there are other indicators that can determine such influence area. Therefore, current literature prefers to do it in combination with certain pre-defined criteria: airport impact or effectiveness assessment, or a tourism destination perspective.

This paper presents a study on airport hinterland socio-economic activity, with emphasis on tourism development due to LCC operations. The study analyses socio-economic indicators from 2006 to 2012, a period which represents the full operation entry and evolution of LCC’s in the Portuguese south airport of Faro.

Results are aligned with the expectations created by literature review as well by the empirical preliminary analysis from the case study, showing a possible correlation between LCC movements and some hinterland indicators with direct impact on the tourism sector.

Key Words: Airport Efficiency; Airport Hinterland; Low-Cost Carriers; Multi-Criteria Decision Analysis; Socio-Economic Impacts; Tourism Development.

Introduction

In the last decades, aviation has shown a continuous growth in aircraft movements but more important in transported passengers. There have been some temporarily interruptions due to extreme events like terrorism, economic crisis and war; however the overall growth has been positive and exponential (Liebert 2011). EUROCONTROL (2014) analysed IFR (Instrument Flight Rules) movements evolution from 2001 to 2013 and forecasted its growth for 2014-2021. This evolution is characterized by an exponential growth in IFR movements with two time periods showing a strong decline (2008-2009 and 2011-2012).

One of the major causes of the rapid growth in air traffic was air transport deregulation in the seventies in the United States of America. This led to market progressive deregulation which opened the door to new revolutionary business model aiming to minimize airline operational costs. Because of lower operational costs airlines adopting this type of business models began decreasing their ticket prices, reaching customers’ market which previously couldn’t afford legacy carriers high rates. Due to such operation characteristics these airlines are labelled LCC’s (Low-Cost Carriers) (Rosa et al. 2015).

European Union liberalization packages began by removing regulation over fares and route entry in the mid-eighties causing LCC’s revolution in Europe (ACI 2011), led by Ireland and United Kingdom with Ryanair and EasyJet, respectively.

Consequently, this revolutionary business models are expected to impact not only on airport financial and operational activities but also on airports hinterland, creating the need to assess these impacts and the related correlation.
Airports Hinterland

Today airports, previously only seen as infrastructures for air transport, are also drivers for regional and national development, allowing these destinations to become more appealing for investors (Almeida 2011). Vaz et al. (2013) refer that tourism development is one of the main beneficiaries of this new paradigm. Realizing tourism development potential some strategic partnerships and financing funds were created between regional tourism bodies and the private sector (Figueiredo 2010).

Airport hinterland definition is very broad. Traditionally hinterland is measured by several kilometres’ radius centred on the airport or a certain travel time from one point to the airport. However, this definition can be considered too simplistic because there are other indicators that can determine such influence area. Therefore, current literature prefers to do it in combination with certain pre-defined criteria: the airport effectiveness, impact assessment, or from a tourism destination perspective (Alves et al. 2013).

An airport’s hinterland is related how airport services geographical reach to the surrounding population and economy that they serve. In other words, airport hinterland is a geographical zone comprehending potential users and passengers (Alves 2014).

Alves (2014) describes several hinterland typologies:

(i) Immediate hinterland: refers to airport area itself;
(ii) Primary hinterland: area where airport and city assume a commanding role on day-to-day activities;
(iii) Commodity hinterland: area based in particular types of commodities shipment;
(iv) Inferred hinterland: airport predominance over a particular area that satisfies demand for the area it serves.

Traditionally hinterland areas are represented in a spatial form (Fröhlich and Niemeier 2011; Graham 2008; Lieshout 2012; Marcucci and Gatta 2011; Suau-Sanchez et al. 2014). This is done by drawing concentric circles of travel distance around airport or based on an arbitrary assumption of a maximum travel time from any given point to the airport (Alves 2014). For a fixed radius travel distance Kasarda (2001) defines it as 25 kilometres from airport. Other studies using the same approach with a different, and broad interpretation, define it as 50 kilometres from airport; in 2012, European Commission considered a typical hinterland area as a 100 kilometres radius or one-hour driving time from the airport (Thelle et al. 2012).

Hinterland analysis can provide useful information regarding an airport’s passenger base, its potential and strengths, but it’s very important to note the differences between hinterland and geographic market (market share) too as underlined by Alves (2014).

Airports Benchmarking

Introduction

Air transport industry liberalization led to air traffic growth and consequently increased airports congestion. To face this problem airports need to expand their capacity and to improve runways and terminal systems efficiency which created a need for airports to start self-benchmarking and to compare themselves with other airports (Liebert 2011).

ACI (Airports Council International) defines benchmarking as an economic standard to measure business performance by comparing productivity and efficiency, to evaluate specific processes, policies and strategies, and to determine the overall business performance. By assessing airport’s strategic planning implementation, by measuring the performance of discrete airport functions, and by identifying and adopting the best practices, airports can increase its efficiency, quality service and customer satisfaction. In other words airport benchmarking connects day-to-day operations and management strategies with airports short and long-term actions plans and initiatives (ACI 2006).

There are two main benchmarking categories (Lopes 2008):

(i) Partial – Assesses and compares individual processes, functions and services; 
(ii) Holistic – Creates a systematic approach to define and assess a critical group of processes, functions and services, which indicates organization relative performance as a whole.

According to ACI (2006) within partial and holistic categories, there are two predominant benchmarking types:

(i) Internal benchmarking, also known as self-benchmarking - within the organization, which compares processes, functions and services internal performance over a time series;
(ii) External benchmarking, which compares the organization performance with peers or other organizations in the same activity sector at a precise point in time or through a time series.

Airport Benchmarking Methodologies

There are a large variety of benchmark methods which allows to choose the appropriate methodology to achieve the established objectives. Since airports are a multi processes system a quantitative methodologies group have been developed to assess airports productivity and efficiency performance (Liebert 2011). Really throughout the years a variety of methodologies appeared precisely to assess productivity and efficiency. Braz (2011) and von Hirschhausen and Cullmann (2005) organized these methodologies by approach type as shown in Figure 1.
One-dimensional approach, particularly partial measures, consist in dividing one output by one input, making that approach the simplest to assess productivity. However, its results must be analysed with caution because they fail to capture effects between different inputs. For this reason, to access airports performance is recommended the use of multi-dimensional approaches.

After a careful analysis of several available multi-dimensional methods MCDA (Multi-Criteria Decision Analysis) was chosen as the most suitable for this study.

MCDA is a tool intended to help decision makers precisely to make a choice when facing multiple and conflicting criteria situations. Indeed a MCDA problem consists in considering different choices or courses of action (Belton and Stewart 2002). MCDA methods have been developed to improve decision quality involving multiple criteria by making choices more explicit, rational and efficient (Marttunen 2010).

This methodology meets the objective to analyse airport performance considering a wide range of key performance areas and indicators that among them have different relevance. The weakness of this method lies on the fact that key performance areas and indicators relevance assessment is based on expert’s experience and their own judgment, so results can be affected by subjective factors (Jardim 2012).

Methodology
After a careful analysis of all available MCDA tools (Braz 2011) concluded that MACBETH (Measuring Attractiveness by a Categorical Based Evaluation Technique) complied with the needed requirements for such a research work. Also (Bana e Costa et al. 2005) underline that this multi-criteria decision analysis approach only requires qualitative judgments about value differences to help a decision maker, or a decision-advising group, to quantify relative attractiveness among several options.

Measuring Attractiveness by a Categorical Based Evaluation Technique (MACBETH)
MACBETH is a decision making method that allows options evaluation in a multiple criteria scenario. MACBETH main difference among other MCDA methods is that it only needs qualitative judgements about attractiveness difference between two elements at a time in order to generate each criteria’s weights and numerical scores (Baltazar et al. 2014).
When evaluator judgements are set their consistency is verified and corrections may be needed to avoid inconsistencies if they arise. Then MACBETH develops a quantitative evaluation from evaluator’s qualitative judgements. For this quantitative evaluation model a value scale is calculated for each criteria and its weights. Value scores are subsequently aggregated additively taking all the criteria into consideration to calculate the overall value scores thus reflecting their attractiveness (Gómez et al. 2007).

First, and to make the final result more robust, it’s necessary to obtain a large data collection about the study object so a decision group can have a global view about the decisions to be taken. Next step is to create a decision tree with nodes, that is, a decision model. Nodes correspond to indicators that are going to be considered; each decision maker defines each indicator attractiveness in the tree. MACBETH have seven attractiveness difference qualitative categories: no difference, very weak, weak, moderate, strong, very strong, and extreme (Bana E Costa et al. 2012).

This model, using MACBETH methodology, values aviation managers and expert’s judgements, thus allowing to integrate their expertise and opinion in the model evaluation process, that is, in the final scores obtained.

### Performance and Efficiency Support Analysis for Airport Global Benchmarking (PESA – AGB)

PESA-AGB (Performance and Efficiency Support Analysis for Airport Global Benchmarking) model was built to assess airports performance and efficiency in each KPA (Key Performance Area) and in each KPI (Key Performance Indicator). This model is based on the MACBETH mathematical foundations and it consists in a six steps organized arrangement: Structuring (Step 1); Survey (Step 2); Meeting (Step 3); Evaluation (Step 4); Classification (Step 5); and Outputs (Step 6).

Step 1 consists in collecting airport data for each KPI. With this data a performance descriptor with four levels (L1, L2, L3 and L4) is built for each KPI as explained in Table 1.

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L4 Good</td>
<td>Best value in the collected data.</td>
</tr>
<tr>
<td>L3</td>
<td>1/3 of the difference between the best and the worst value in the collected data.</td>
</tr>
<tr>
<td>L4</td>
<td>2/3 of the difference between the best and the worst value in the collected data.</td>
</tr>
<tr>
<td>L1 Neutral</td>
<td>Worst value in the collected data.</td>
</tr>
</tbody>
</table>

**Source:** Own elaboration.

Step 2 and Step 3 represent collected expert’s judgments through survey and/or meetings. Using expert’s answers statistical average, a *status quo* scale is created.

Step 4 is a judgement matrix creation for each KPA and KPI. With all the judgments matrix created each KPA and KPI weight ponderation is determined.

Step 5 uses the performance descriptions and weight ponderation to obtain each KPA and KPI score for each option.

Step 6 produces a large variety of outputs which allows to monitor performance over time. These outputs consist in performance profiles, sensibility analysis, options and difference profiles, and value by KPI, KPA, airports (internal benchmarking) and airport groups (external benchmarking).

### Key Performance Areas (KPA’s) and Key Performance Indicators (KPI’s)

There are many different circumstances related with airport operations (aviation activities, commercial activities, location constraints, etc.) and it’s important to find different key performance areas and indicators in order to be the most accurate for the analysis (Jardim 2012). Moreover (ACI 2012) elaborated a guide to measure airport performance which allowed a decision tree construction with six KPA’s: Core, Safety and Security, Service Quality, Productivity/Cost Efficiency, Financial/Commercial, and Environmental. Each KPA is associated with several KPI’s -a total of forty-two items as referred by(Baltazar and Silva 2016):

(i) Core - Used to characterize and categorize airports such as the number of passengers and operations. Although airports may have little control over these core indicators, especially in the short term, those are important indicators about overall airport activity, and important drivers and components of other indicators (ACI 2012). This KPA is described by five KPI’s;

(ii) Safety and Security – These are critical airport functions which sometimes overlap. Safety indicators are used to track airfield safety issues as well as safety issues involving other airport portions, including roadways and general employee safety. Security indicators may be used to track security violations, thefts and crimes, and responsiveness (ACI 2012). This KPA is described by six KPI’s;

(iii) Service Quality – Focused both on how passengers
perceive service level provided by the airport, and on service delivery objective measures (ACI 2012). This KPA is described by eight KPI’s;

(iv) Productivity/Cost Efficiency - Airports often combine productivity and cost effectiveness in a single KPA. As used by ICAO productivity refers to output to input relationship while cost effectiveness refers to the financial input or cost required to produce a non-financial output (ACI 2012). This KPA is described by nine KPI’s;

(v) Financial/Commercial – Covers a wide range of measures that analyses airport’s financial performance including airport charges, airport financial strength and sustainability, and individual commercial functions performance (ACI 2012). This KPA is described by eight KPI’s;

(vi) Environmental - Many airports have developed or are developing environmental performance indicators. These indicators are used to track an airport’s progress in minimizing its operations environmental impacts (ACI 2012). This KPA is described by six KPI’s.

In this study, to search for hinterland tourism evolution it was taken into account some socio-economic indicators presented in literature and available in INE (National Statistics Institute) which resulted in the following set (Alves 2014):

(i) Hotel Establishments - Hotels, aparthotel, guesthouses, motels, tourist villages, by square kilometre;

(ii) Accommodation Capacity - Beds available for sale in Hotel Establishments;

(iii) Bed Occupation Rate - Ratio between beds occupied and beds offered in Hotel Establishments.

These three indicators constitute our hinterland tourism KPA which are evaluated applying the same methodology and PESA-AGB model steps.

Experts Survey and Meetings

As mentioned above to obtain KPA’s and KPI’s judgment matrix an online survey was sent to more than five hundred experts in the studied areas. The survey was applied in 2015 (Núcleo de Investigação em Transportes (NIT) 2015) and obtained a total of 81 answers. Note that PESA model doesn’t rely on the number of answers but on the quality of the answers and its relevance to each particular case under study.

Thus, the survey consisted in the following six steps:

(i) Welcome message;

(ii) Experts personal information: name, email and professional expertise;

(iii) To rank KPA’s by relevance order, from 1 (least relevant) to 6 (most relevant). Different KPA’s could be assigned with the same rank;

(iv) To choose KPA field of expertise;

(v) To rank KPI’s of the KPA selected in (iv) by relevance order, from 1 (least relevant) to 6 (most relevant). Different KPI’s could be assigned with the same rank;

(vi) To fill all KPI’s judgement matrix. For each judgement matrix six questions were asked, so that: A refers to KPI best option, D refers to KPI worst option, B and C were intermediate values equally distributed between A and D. To answer these questions six semantic attractiveness difference categories were proposed: “very weak”, “weak”, “moderate”, “strong”, “very strong” or “extreme”, so that:

a) Question 1. AD - A is more attractive than D. The difference is…?

b) Question 2. AC - A is more attractive than C. The difference is…?

c) Question 3. BD - B is more attractive than D. The difference is…?

d) Question 4. AB - A is more attractive than B. The difference is…?

e) Question 5. BC - B is more attractive than C. The difference is…?

f) Question 6. CD - C is more attractive than D. The difference is…?

With experts’ answers statistical averaging it’s possible to build three outputs that reflect the KPA and associated KPI’s expert’s opinions.

These survey results are introduced in PESA – AGB model as inputs of step 4.

Also, meetings are a process accepted by this model to get experts opinions in assessing airports performance. These meetings consist in a key players gathering, who wish to analyse and solve an important issue related to their organization. This process is assisted by an impartial facilitator - who is a specialist in decision analysis and works as a process consultant, using a model of relevant data and judgements created on the spot to assist the group to think more clearly about the related issue (Baltazar and Silva 2016).

In this study the survey didn’t refer part of the model, more particularly hinterland tourism KPA achievement level, subsequently weight assignment for each indicator was obtained throughout a negotiation meeting with a group of seven experts. All of them were professionals involved in tourism areas. Authors played the facilitator role, allowing experts different opinions, assessing trade-offs, and agreeing on final weights and attractiveness differences.

Case Study

This case study is an example to understand how airports performance and their impacts can be studied with a
complete PESA – AGB model and its hinterland relation. Although, this case study only presents Faro’s airport KPA Core final score, the model will also provide all KPA’s and KPI’s scores, as well an overall Faro’s airport performance score.

From all Portuguese airports, Faro airport (in the South) was chosen for this study due to LCC’s largest market share recorded with 13 LCC’s representing 83% of all aircraft movements (Costa and Almeida 2015).

Before applying PESA – AGB model, LLC’s movements and passengers number evolution in Faro airport is analysed (Figure 2). Collected data corresponds to a seven years period, from 2006 to 2012 (ANA - Aeroportos De Portugal 2006, 2016, Instituto Nacional de Aviação Civil 2008, 2012), due to the lack of more recent years data availability from Portuguese airports. These two parameters analysis are important since both passengers and movements are key performance indicators in Core KPA, and the objective is to understand the correlation magnitude/importance between this Core and Hinterland Tourism KPA.

An interesting observation is that LCC’s movement evolution is the most significant factor influencing passenger numbers and aircraft movements data in Core KPA. It’s possible to observe that passengers or movements (orange line) seems to be defining Faro’s airport overall passengers and movements numbers (blue line). Non LCC’s movements (grey line) exhibits a slow, but constant, reduction, except for 2011-2012 period. Faro’s airport overall movement has been increasing from 2006, with the 2008-2009 and 2011-2012 time periods exception, also identified by (EUROCONTROL 2014).

### Table 2. Faro’s Airport Core and Hinterland Tourism Indicators Weights.

<table>
<thead>
<tr>
<th>Faro’s Airport Core Key Performance Indicators</th>
<th>Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passengers Number</td>
<td>25.71%</td>
</tr>
<tr>
<td>Origin and Destination Passengers</td>
<td>20.00%</td>
</tr>
<tr>
<td>Aircraft Movements</td>
<td>22.86%</td>
</tr>
<tr>
<td>Freight and Mail Loaded / Unloaded</td>
<td>17.14%</td>
</tr>
<tr>
<td>Destinations (Nonstop)</td>
<td>14.29%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Faro’s Hinterland Tourism Key Performance Indicators</th>
<th>Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel Establishments</td>
<td>30.00%</td>
</tr>
<tr>
<td>Accommodation Capacity</td>
<td>30.00%</td>
</tr>
<tr>
<td>Bed Occupation Rate</td>
<td>40.00%</td>
</tr>
</tbody>
</table>

**Source:** Own elaboration based on INE 2013
After analysing Faro’s airport movements evolution, PESA-AGB model, explained in section 4.2, was applied to determine each KPA and KPI score, focused on Core KPA score. PESA-AGB methodology also was applied to determine Hinterland Tourism KPA and its KPI’s scores.

During the experts meeting, as explained in section 4.4, weights were attributed to Hotel Establishments, Accommodation Capacity and Bed Occupation Rate which reflect its relevance in Hinterland Tourism KPA. Core’s key performance indicators weights were determined by expert’s judgement obtained through the survey, also described in section 4.4. The obtained weights are presented in Table 2.

Expert’s judgements on each KPI relevance shows that, in Core KPA, the most relevant KPI’s are passengers number and aircraft movements, totaling almost 50% of the KPA weight. Furthermore, Bed Occupation Rate KPI was considered Hinterland’s Tourism KPA most relevant indicator, representing 40% of its total weight.

Table 3 shows Faro’s airport Core KPA and KPI’s values and scores. Hinterland Tourism indicators data was collected from (INE 2013) and are presented in Table 4 along with respective scores.

### Table 3. Faro’s Airport Core KPA and KPI’s Respective Values and Scores.

<table>
<thead>
<tr>
<th>Faro’s Airport Core Key Performance Indicators</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passengers Number</td>
<td>5.089.617</td>
<td>5.470.472</td>
<td>5.447.199</td>
<td>5.061.801</td>
<td>5.342.439</td>
<td>5.615.580</td>
<td>5.672.377</td>
</tr>
<tr>
<td>Score</td>
<td>33,32</td>
<td>61,79</td>
<td>60,05</td>
<td>31,24</td>
<td>52,22</td>
<td>72,64</td>
<td>76,89</td>
</tr>
<tr>
<td>Score</td>
<td>33,96</td>
<td>61,35</td>
<td>59,35</td>
<td>32,52</td>
<td>52,35</td>
<td>73,65</td>
<td>77,16</td>
</tr>
<tr>
<td>Aircraft Movements</td>
<td>37,431</td>
<td>40,253</td>
<td>39,788</td>
<td>37,328</td>
<td>39,627</td>
<td>40,596</td>
<td>39,441</td>
</tr>
<tr>
<td>Score</td>
<td>58,16</td>
<td>87,83</td>
<td>82,94</td>
<td>57,08</td>
<td>81,25</td>
<td>91,44</td>
<td>79,30</td>
</tr>
<tr>
<td>Freight and Mail Loaded/Unloaded</td>
<td>966</td>
<td>953</td>
<td>543</td>
<td>635</td>
<td>289</td>
<td>223</td>
<td>180</td>
</tr>
<tr>
<td>Score</td>
<td>40,91</td>
<td>40,22</td>
<td>19,10</td>
<td>23,84</td>
<td>6,00</td>
<td>2,60</td>
<td>0,38</td>
</tr>
<tr>
<td>Destinations (Nonstop)</td>
<td>52</td>
<td>61</td>
<td>62</td>
<td>55</td>
<td>68</td>
<td>66</td>
<td>66</td>
</tr>
<tr>
<td>Score</td>
<td>32,97</td>
<td>65,38</td>
<td>70,33</td>
<td>42,86</td>
<td>100,00</td>
<td>90,11</td>
<td>90,11</td>
</tr>
<tr>
<td>Core Scores</td>
<td>40,38</td>
<td>64,47</td>
<td>59,59</td>
<td>37,79</td>
<td>57,78</td>
<td>67,63</td>
<td>66,27</td>
</tr>
</tbody>
</table>

Table 4. Faro’s Hinterland Tourism KPA and KPI’s Respective Values and Scores.

<table>
<thead>
<tr>
<th>Faro’s Hinterland Tourism Key Performance Indicators</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel Establishments</td>
<td>0.0596</td>
<td>0.0580</td>
<td>0.0582</td>
<td>0.0552</td>
<td>0.0575</td>
<td>0.0581</td>
<td>0.0598</td>
</tr>
<tr>
<td>Hotel Establishments Score</td>
<td>95.61</td>
<td>60.56</td>
<td>66.38</td>
<td>0.00</td>
<td>51.66</td>
<td>63.59</td>
<td>100.00</td>
</tr>
<tr>
<td>Accommodation Capacity</td>
<td>67742</td>
<td>66848</td>
<td>68605</td>
<td>66662</td>
<td>68805</td>
<td>71233</td>
<td>74133</td>
</tr>
<tr>
<td>Accommodation Capacity Score</td>
<td>14.45</td>
<td>2.49</td>
<td>26.00</td>
<td>0.00</td>
<td>28.68</td>
<td>61.18</td>
<td>100.00</td>
</tr>
<tr>
<td>Bed Occupation Rate</td>
<td>1.86</td>
<td>1.96</td>
<td>1.86</td>
<td>1.77</td>
<td>1.78</td>
<td>1.82</td>
<td>1.80</td>
</tr>
<tr>
<td>Bed Occupation Rate Score</td>
<td>45.22</td>
<td>100.00</td>
<td>49.18</td>
<td>0.00</td>
<td>4.95</td>
<td>28.65</td>
<td>17.35</td>
</tr>
<tr>
<td>Hinterland Tourism Score</td>
<td>51.11</td>
<td>58.91</td>
<td>47.38</td>
<td>0.00</td>
<td>26.08</td>
<td>48.89</td>
<td>66.94</td>
</tr>
</tbody>
</table>

Source: Own elaboration based on INE 2013

All key performance indicators from Faro’s Hinterland Tourism KPA seem to evidence the same evolution pattern as LCC’s passengers and movements, showing a decrease in 2008-2009 time period.

Figure 3 Depicts Table 3 and Table 4 Collected Data.

Figure 3. Faro’s Airport Core KPA Vs Faro’s Hinterland Tourism KPA Scores.


Figure 3 identifies a possible correlation between LCC’s operation, airport Core performance and Hinterland Tourism areas, since both KPA’s show are markable performance decrease in the same time period as LCC’s passengers and movements, that is, 2008-2009.

Next step is a possible correlation identification and related magnitude evaluation between Faro’s airport Core area and its Hinterland. A linear regression method was applied, using SPPS Statistical software, to determine correlation coefficients, namely Pearson Correlation Coefficient, Kendall Rank Correlation Coefficient and Spearman’s Rank Correlation Coefficient.

Table 5 and Table 6 present the statistic results based on Table 3 and Table 4 variables.
Table 5. Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Sample size (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faro’s Airport Core (KPA)</td>
<td>56.27</td>
<td>12.27</td>
<td>7</td>
</tr>
<tr>
<td>Hotel Establishments (KPI)</td>
<td>62.54</td>
<td>33.03</td>
<td>7</td>
</tr>
<tr>
<td>Hinterland Tourism (KPA)</td>
<td>42.76</td>
<td>22.66</td>
<td>7</td>
</tr>
<tr>
<td>Bed Occupation Rate (KPI)</td>
<td>35.05</td>
<td>34.18</td>
<td>7</td>
</tr>
<tr>
<td>Accommodation Capacity (KPI)</td>
<td>33.26</td>
<td>35.86</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Own elaboration

Hinterland Tourism and Faro’s airport Core KPA’s correlation is the most important parameter to analyse in this study, and from Table 6 we obtain values as 0.654, 0.524, and 0.607 determined by Pearson Correlation Coefficient, Kendall Rank Correlation Coefficient and Spearman’s Rank Correlation Coefficient, respectively.

Table 6. Correlation Coefficients.

<table>
<thead>
<tr>
<th></th>
<th>Hinterland Tourism (KPA)</th>
<th>Hotel Establishments (KPI)</th>
<th>Bed Occupation Rate (KPI)</th>
<th>Accommodation Capacity (KPI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation Coefficient</td>
<td>0.654</td>
<td>0.410</td>
<td>0.306</td>
<td>0.612</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.111</td>
<td>0.361</td>
<td>0.504</td>
<td>0.144</td>
</tr>
<tr>
<td>Sums of Squares and Cross</td>
<td>1091,542</td>
<td>996,869</td>
<td>770,469</td>
<td>1614,774</td>
</tr>
<tr>
<td>Products Covariance</td>
<td>181,924</td>
<td>166,145</td>
<td>128,412</td>
<td>269,129</td>
</tr>
<tr>
<td>Kendall Rank Correlation Coefficient</td>
<td>0.524</td>
<td>0.333</td>
<td>0.333</td>
<td>0.524</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.099</td>
<td>0.293</td>
<td>0.293</td>
<td>0.099</td>
</tr>
<tr>
<td>Spearman’s Rank Correlation Coefficient</td>
<td>0.607</td>
<td>0.429</td>
<td>0.357</td>
<td>0.714</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.148</td>
<td>0.337</td>
<td>0.432</td>
<td>0.071</td>
</tr>
</tbody>
</table>

Source: Own elaboration

Table 7. Correlation Coefficients Classification.

<table>
<thead>
<tr>
<th>Correlation Coefficient</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[0.9;1]</td>
<td>Very strong positive correlation.</td>
</tr>
<tr>
<td>[0.7;0.9]</td>
<td>Strong positive correlation.</td>
</tr>
<tr>
<td>[0.5;0.7]</td>
<td>Moderate positive correlation.</td>
</tr>
<tr>
<td>[0.3;0.5]</td>
<td>Low positive correlation.</td>
</tr>
<tr>
<td>[0;0.3]</td>
<td>Negligible correlation.</td>
</tr>
</tbody>
</table>

Source: Adapted from (Taylor 1990).
Regarding both Table 6 - correlation coefficients between Faro’s airport Core and Hinterland Tourism KPI’s and Table 7 - correlation coefficients classification, it’s possible to observe that Hotel Establishments and Bed Occupation Rate indicators exhibit a low positive correlation (coefficients between 0.3 and 0.5). Nevertheless, Accommodation Capacity indicator exhibits a moderate positive correlation (coefficient between 0.5 and 0.7) with Faro’s airport Core based on Pearson and Kendall Rank Correlation Coefficients; but based on Spearman’s Rank Correlation Coefficient, accommodation capacity exhibits a strong positive correlation with Faro’s airport Core, that is, 0.714.

Conclusion and Future Work

PESA – AGB model, as well as Hinterland Tourism KPA model, show similar performance evolution as of LCC’s movements, having the same 2008 to 2009 drop.

The case study evidences a possible correlation between an airport’s Hinterland Tourism evolution and its Core KPA changes. Moreover, it evidences a moderate correlation between these two factors. However, the sample size is very small to support the observed correlations.

It’s possible to conclude that Accommodation Capacity KPI exhibits a more similar correlation with airport’s Core KPA than the others. This means that although expert’s judgments classified Accommodation Capacity as 30% of the Hinterland Tourism KPA weight, nevertheless it’s the one that expresses better correlation.

The three Hinterland Tourism indicators identified and analysed show a similar trend throughout the studied timespan, but it’s interesting to observe that Accommodation Capacity variation seems to have one-year delay from Bed Occupation Rate variation; which may lead to the conclusion that beds occupation, decrease or increase, can influence the Accommodation Capacity, decrease or increase number, in the next year.

This study was used to test how some traditional statistical methods may be used to determine correlation between airport specific variables and the related hinterland. Nevertheless, the use of a MCDA methodology to analyse correlations between LCC movements, airport’s performance and its hinterland still require a deeper bibliographic revision and research work.

It’s important to note that the lack of available data limited the study time period too, which resulted in small samples size.

To determine LCC’s operation impact on hinterland (and vice versa) it’s suggested to add more research work as follows:

(a) to investigate KPA and KPI where LCC’s have a greater impact on airport performance;
(b) to extend this evaluation to a wider hinterland socio-economic indicators number, including indicators outside the tourism area;
(c) to evaluate a new hinterland model, with new inputs from (b), using PESA-AGB model methodology, and so determining airport’s performance and hinterland KPI’s correlation;
(d) to extend this study to other airports as the referred PESA models allow an easy replicability.

References


**Endnotes**

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2. **Pearson Correlation Coefficient** - Measure of linear dependence (correlation) between two variables. It is determined dividing the covariance of two variables by the product of their standard deviations (Rodgers and Nicewander 1988).

3. **Kendall Rank Correlation Coefficient** - Non-parametric hypothesis test for statistical dependence based on the tau coefficient. It is a measure of rank correlation: the similarity of the orderings of the data when ranked by each of the quantities (Abdi 2007)

4. **Spearman’s Rank Correlation Coefficient** - Non-parametric measure of rank correlation. Spearman correlation between two variables is equal to the Pearson correlation between the rank values of those two variables. However, Pearson’s correlation assesses linear relationships, while Spearman’s correlation assesses monotonic relationships (linear or not) (Gautheir 2001).

5. Our sample size is n=7. However, “[T]echnically one can calculate a correlation coefficient from n=2. There is no problem having a small sample size. The only difficult thing is to see or recognize possibly relevant deviations from these assumptions with small samples. But this does not invalidate the test, because the test remains valid under these assumptions” (Wilhelm 2016).
Air Transport and Tourism Destinations: The Case of Oporto Airport and Portugal’s Northern Region.

Vânia Costa, Oscarina Conceição & Cláudia Ribeiro de Almeida

ABSTRACT

This study aims to analyse the relationship between airports and the evolution of international tourism in a peripheral region. The development of the tourism sector is extremely important in some regional economies because of its impact onto the economic activity and employment. Thanks to the liberalization of European airspace and to the emergence in the market of low-cost carriers (low cost carriers - LCC), certain destinations, such as cities with different tourism offers, have experienced a strong growth in tourism flows.

In the present study, we developed an analysis of several studies that focus their attention in investigating the interconnection of air transport and tourism, mainly the contribution of air transport for the internationalization of tourism. This article focuses a case study of the only international airport in northern Portugal – Oporto Airport. Over the past few years, this airport experienced a large increase in traffic, which led to the development of international tourism in the airport’s catchment area – Greater Oporto and northern Portugal. The growth in Oporto Airport’s traffic emerges as an element of attractiveness in the destination system in the northern region of Portugal and as a dynamic factor in regional development.

Key Words | Airport, Air transport, International Tourism Development, Regional Development, Oporto Airport.

Introduction

International tourism experiences have grown over the past few years. According to Mihajlovie and Krčelj - Colovic (2014) globalization, as a process of economic, social, cultural and political activity, crosses national boundaries and thus affect tourism. Resulting from globalization, the world has become a “global village”, and these changes affect people locally and globally. Nowadays, the global importance of tourism reaches a global level. We can translate its socio-economic impact by revenue from exports, job creation and infrastructure development. The arrival of international tourists grew from 528 million in 1995 to 1,138 million in 2014 (UNWTO, 2015), with an expected growing by 2015 of around 3% to 4% and, therefore, contribute to the global economic recovery. In a regional analysis, in 2014 Europe consolidated its position as the most visited region in the world, with 588 million tourists, which translates as a 4% growth in comparison to the previous year and reflected an increase of 22 million arrivals, representing a 52% share of the World’s tourist market that year.

Over the last decades, air transport ‘usage rate increased on a global scale. The process of liberalization of the sector and the arising of low-cost carriers, as well as changing the whole positioning of the carriers offer, were determining factors for the growth of several airports, mainly the regional ones. These changes have favored the growth of unconventional tourist destinations. Nowadays almost all countries in Europe receive tourists, which leads to the growth and continuous diversification of the tourism sector. Low-cost carriers prefer secondary airports, since they benefit from lower traffic jam and usage rates, which enhance various tourism types.

Air transport has become essential for long-distance travel, as well as for trips to island destinations, with economic dependency on tourism. Therefore, this way of transportation has spurred the phenomenal growth in leisure travel and the growth of new long-distance destinations, allowing the growth of commerce and exports that generated a series of changes throughout the customer services directly and indirectly related to tourism.

In this context, this study’s primary objective is to
Tourism Spectrum

Contribute to the relationship between air transport and the internationalization of tourism. In addition, and since this subject has not been studied in Portugal, we explore the relationship between air transportation and the internationalization of tourism in the Portuguese context. In particular, case study explores how the Oporto airport has an operational influence for tourism on its surrounding areas, mainly the Portugal’s northern region. With a renew infrastructure Oporto’s airport (Francisco Sá Carneiro Airport - OPO) new in recent years an impressive growing in their air traffic.

Tourism and Air Transport

The transports sector comes as a tourism substructure and, therefore, these two sectors are closely intertwined since one as an impact on the others growth and both are essential for the economic and social running of societies. Aviation is a transport mode with a growing importance to tourism markets (Graham, Papatheodorou and Forsyth, 2008). According to Duval (2013) tourism and air transport have a strong reciprocal and symbiotic relationship. The international industry of commercial air transportation has a strong relevance to the structure and intensity of global tourist flows, since the carriers operate between origins and destinations and sometimes through other destinations, not only to take advantage of business opportunities, but also because those governments are parties to agreements or treaties that allow such commercial operations. Moreover, the type of commercial transaction depends on market forces.

For Graham et. al. (2008) aviation is an increasingly important method of transportation for tourism markets; the air is thus a key component of tourism and provides a vital link between the areas with touristic relevance and the destinations. Therefore, transport considered as one of the main factors for the growing numbers of domestic and international tourism. According to Page (2009), since the first examples of tourism, dating from the Roman and medieval period, the evolution of transport was necessary, in particular its mechanization and use of technology, so that travelling and tourism could occur. According to the author “transport has been a key element in achieving the greater global interconnectedness of different areas and regions as transport connects different places and destinations: put simply, transport connects the origin and destination “ (Page, 2009: 5).

Air transport is the main mean of transportation worldwide. According to UNWTO data (2015), the air transport is the most used by international tourists. In 2014, more than half of all tourists traveled to some destination by air (54%), while the rest traveled on surface transport (46%) - whether by road (39%), rail (2%) or water (5%). The trend, over time, has been for air transport to grow at a slightly faster rate than surface transport, so its usage share is gradually increasing. The intense growth of tourist movements, along with the over-regulation of air transport, the fractioning of the markets and the reduced levels of competition triggered in 1987, the process of European airspace liberalization, which lasted for 10 years. Over the past 15 years, air travel has changed dramatically in Europe. Since the completion of the liberalization process, in 1997, the growth of low cost carriers, commonly known as low cost, completely transformed the supply and significantly boosted demand. In particular, the increased competition in prices stimulated demand for medium distance trips, to take advantage of small vacation or weekends in cities with touristic attractions. The emergence of these companies, along with the appearance of aggregators related to some of the key players in the tourism market (flights, hotels and other tourist services), granted a greater variety of choices for tourists, while reducing the power of travel agencies and tour operators in general. These changes have favored the growth of less conventional tourist destinations and cities. The increase of visitors in these destinations results from a combination of attractive tourist offer, the availability of services in quantity, quality and variety and good relationship between carriers, the local airport and regional and local authorities.

In Europe, the development of these companies allowed the existence of unexpected benefits, with an impact on regional airports, through a significant increase in traffic and on local and regional economies surrounding airports infrastructure. In particular, the number of regular air links between European countries increased around 75%, flights increased around 88% and the number of seats offered almost doubled (Richman and Lyle, 2005). According to the authors, the actual decrease in rates of an economy was about 5% and ticket prices decreased an average of 15%. This increase in services allowed, in addition to the improvement of Europe’s air transport network, the development of entrepreneurial investment and the opening of new markets that support the strong growth of the routes and the development of new connections.

Given the interrelationship between air transport and tourism under an economic perspective, according to Page (2009), the broader significance of direct tourist spending on transport and the indirect benefits in employment and other spin-offs is quite evident. Air transport stimulates tourism and provides an important contribution to global economy (ATAG, 2014). Tourism is particularly important in many developing countries, emerging as a major part of economic development strategies.

Oporto Airport and the Internationalization of Tourism

Case Study: Oporto Airport

Oporto airport is the international airport serving the northern region of Portugal. Located in the city of Oporto,
a relatively flat area extending 72 meters to the extreme south and 43 meters to the north. It is located, along its boundaries, between the municipalities of Matosinhos in the south, Vila do Conde to the west and to the north and east, Maia. The hinterland of Oporto airport covers the central region of Portugal and the region of Galicia in Spain. For the latter, the low level of supply of Galician airports and proximity to the border located 95 km from the airport help improve the attractiveness of Oporto Airport.

Traffic volume doubled from 2003 to 2014 from 2.7 million to 6.9 million passengers, increasing this airport’s share of national traffic (figure 1). In 2013, this airport recorded a total traffic of over six million passengers, of which about 3.6 million passengers travelled on LCC (ANA, 2012a). In 2013, the four LCC operating in this airport performed 21,944 movements – which corresponds to 37% of the airport’s total movement – and transported approximately 57% of regular passenger traffic.

The main aim of this study is to understand to what extent the increase in traffic from Oporto airport has contributed to the affirmation of its region of influence, to the increase of international tourists visiting the region and, consequently, if that contributed to the tourist affirmation of this destination.

Based on the theoretical guidelines, we propose the following research hypotheses:

**Hypothesis 1 (H1):** The increase in air traffic in Oporto airport has increased the number of international tourists who visit the northern region of Portugal;

**Hypothesis 2 (H2):** Low-cost carriers contributed to the number of international tourists visiting the city of Oporto and the northern region of Portugal;

To answer these questions, we resorted to a statistical data survey referring to the airport’s air traffic in study, between 2003 and 2013 as well as statistical data, referring to the tourism sector in the region in study.

### The Importance and Internalization of Tourism

The northern region has good communication and internationalization infrastructures and relies on a qualified network of science and technology equipment. One can say that northern Portugal lives with open doors to the world and eyes facing the future, emerging as a gateway for tourists. Portugal has an excellent geographical location, arising in the convergence of three continents (Europe, Africa and America) and has always been a central spot in the most important international routes. The Euro region Galicia - North of Portugal is located in a privileged place to do business with Europe, America and Africa, because communities who speak Spanish and Portuguese have a historical relationship primarily with the countries of Latin America and Africa.

With regard to tourism, in 2013 the north region had a total of 860 accommodation establishments, of which 286 fell into the hotel industry (33%), 252 in local accommodation (29%) and 322 in rural tourism and rental accommodation (37%). Tourism indicators show that the northern region concentrates 13.7% of the accommodation capacity and 11.7% of the number of nights of the Portuguese total (figure 2).

Analyzing the evolution of tourism offer in the northern region we found that, between 2009 and 2013, its accommodation capacity grew by approximately 7%, pointing up the growth in the regions of Tamega, Entre Douro and Vouga and Oporto (table 1). The main typology of tourism accommodation in the area are tourism in rural areas and guesthouses, hotels and local accommodation.
The coastline of the northern region concentrates 66.5% of the supply of tourist facilities and the Great Oporto, being nearest to the airport, represents 40% of total supply in the region (figure 3). Relatively to demand, the region of Greater Oporto represents almost 70% of tourism demand (figure 4). Non-resident overnight stays in the northern region account for approximately 51% of total overnight stays.
The impact that Oporto airport has on international tourism can be determined by analysing international traffic data for the airport. Regarding the volume of traffic on Oporto’s airport, as mentioned earlier, between 2003 and 2014, the number of transported passengers has doubled, from 2.7 million to 6.9 million passengers. Analyzing the origin of the traffic, domestic traffic decreased approximately 75% (national average ~ 70%), while international traffic increased 42%, reflecting a growth above the national average (~ 29%) (figures 5 and 6).

**Figure 4. Overnight Stays by NUTS III, Portugal’s Northern Region**

*Source: Turismo de Portugal (2015)*

The impact that Oporto airport has on international tourism can be determined by analysing international traffic data for the airport. Regarding the volume of traffic on Oporto’s airport, as mentioned earlier, between 2003 and 2014, the number of transported passengers has doubled, from 2.7 million to 6.9 million passengers. Analyzing the origin of the traffic, domestic traffic decreased approximately 75% (national average ~ 70%), while international traffic increased 42%, reflecting a growth above the national average (~ 29%) (figures 5 and 6).

**Figure 5. Airport National Traffic by NUTSII 2003 and 2013**

*Source: Adapted from traffic reports from ANA (2004 and 2014).*

**Figure 6. Airport International Traffic by NUTSII 2003 and 2013**

*Source: Adapted from traffic reports from ANA (2004 and 2014).*
In 2013, Oporto Airport registered some 2,720,981 international passengers (around 49% of the total amount of passengers). This same year was very important in terms of tourism for the northern region of Portugal with an increase of 34% of the total foreign overnight stays in the north and 312% in Great Oporto. Oporto airport register in that year an increase of 116% in traffic, and an increase of 144% in passengers disembarking. The great record relates to the passengers disembarking on low-cost carriers (LCC) that increased around 922%. All this development led to the increasing of the tourism offer in this area of Portugal (table 2).

Table 2. Accommodation Capacity in Hotel Establishments by NUTS III Geographic Localization

<table>
<thead>
<tr>
<th>Year</th>
<th>Accommodation's capacity North</th>
<th>Accommodation's capacity Greater Oporto</th>
<th>Overnights norther</th>
<th>Foreign overnights norther Greater Oporto</th>
<th>Oporto landed passengers</th>
<th>International passengers landed Oporto airport LCC</th>
<th>International passengers landed Oporto airport LCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>32,184</td>
<td>14,387</td>
<td>3,330,650</td>
<td>1,986,634</td>
<td>605,235</td>
<td>2,945,693</td>
<td>n.d.</td>
</tr>
<tr>
<td>2005</td>
<td>34,631</td>
<td>15,492</td>
<td>3,438,518</td>
<td>1,279,481</td>
<td>610,951</td>
<td>3,109,607</td>
<td>1,114,104</td>
</tr>
<tr>
<td>2006</td>
<td>35,504</td>
<td>16,161</td>
<td>3,844,374</td>
<td>1,551,958</td>
<td>765,329</td>
<td>3,404,548</td>
<td>1,254,619</td>
</tr>
<tr>
<td>2007</td>
<td>36,421</td>
<td>16,620</td>
<td>4,228,965</td>
<td>1,758,091</td>
<td>899,686</td>
<td>3,988,388</td>
<td>1,559,007</td>
</tr>
<tr>
<td>2008</td>
<td>38,817</td>
<td>17,455</td>
<td>4,250,764</td>
<td>1,833,104</td>
<td>937,434</td>
<td>4,535,813</td>
<td>1,868,595</td>
</tr>
<tr>
<td>2009</td>
<td>38,827</td>
<td>18,257</td>
<td>4,269,967</td>
<td>1,739,725</td>
<td>868,531</td>
<td>4,509,350</td>
<td>1,863,675</td>
</tr>
<tr>
<td>2010</td>
<td>38,386</td>
<td>18,769</td>
<td>4,437,756</td>
<td>1,926,704</td>
<td>1,048,624</td>
<td>5,282,080</td>
<td>2,184,972</td>
</tr>
<tr>
<td>2011</td>
<td>40,156</td>
<td>19,202</td>
<td>4,547,011</td>
<td>2,084,079</td>
<td>1,187,583</td>
<td>6,004,589</td>
<td>2,540,010</td>
</tr>
<tr>
<td>2012</td>
<td>41,831</td>
<td>20,400</td>
<td>4,541,919</td>
<td>2,168,614</td>
<td>2,119,908</td>
<td>6,051,048</td>
<td>2,568,400</td>
</tr>
<tr>
<td>04/13</td>
<td>29%</td>
<td>43%</td>
<td>46%</td>
<td>24%</td>
<td>312%</td>
<td>116%</td>
<td>144%</td>
</tr>
</tbody>
</table>


Foreign tourist overnights grew from 37% in 2005 to 51% in 2013 (figure 7). The same is true for air traffic, since the volume of landed international passengers grew 144% between 2005 and 2013 and their representation, in the total traffic from Oporto airport, from 36% to 42%. We can thus conclude that, over the past few years, the Oporto airport and tourism in the North is more international (figure 8).

Figure 7. Overnights Portugal’s Northern Region

Source: Adapted from Turismo de Portugal (2015) and INE (2015).
When we analyze the correlation coefficient between the variables of tourist demand in the northern region and the air traffic from Oporto airport, we conclude that there is a strong correlation between these variables (table 3). There is a greater correlation between the foreign overnight stays and international passengers landed in low-cost carriers with a correlation of 0.966.

**Table 3. Correlation Coefficient Between the Northern Tourism Statistics and Oporto Airport air Traffic**

<table>
<thead>
<tr>
<th></th>
<th>Oporto Airport passengers</th>
<th>International passengers landed Oporto airport</th>
<th>International passengers landed Oporto airport LCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overnights northern</td>
<td>0.939</td>
<td>0.938</td>
<td>0.929</td>
</tr>
<tr>
<td>Foreign overnights north</td>
<td>0.955</td>
<td>0.955</td>
<td>0.966</td>
</tr>
<tr>
<td>Foreign overnights northern Greater Oporto</td>
<td>0.840</td>
<td>0.822</td>
<td>0.807</td>
</tr>
</tbody>
</table>

**Source:** Author.

The main markets of Oporto airport are Spain (12.6%), Portugal (13.8%), Germany (11.2%), the UK (7.6%), Switzerland, Italy (4.3%), Belgium (3.7%) and Luxembourg. In 2013, the fifteen destinations with larger demand accounted for 61.5% of total. Similarly, the main tourism outbound markets for the region under study are Spain, France, Brazil, Germany and the UK (Table 4). In 2013, these markets issuers concentrate a total of 32% of all overnight stays in the North of Portugal (1.749 thousands of overnight stays), specifically 649.3 thousands of overnight stays from Spain, 425.3 thousands from France, 290.2 thousands from Brazil, 222.0 thousands from Germany and 162.2 thousands from United Kingdom. According to Turismo de Portugal (2015), between 2010 and 2013, the fastest growing outbound market was Brazil, with a growth of 135%, followed by France (+113%), Germany (+40.4%) and Spain (+5.5%). Regarding the UK it was recorded a decrease of overnight stays by 8.8%. Between 2013 and 2014, the tourist demand grew around 11%, wherein the international market contributed with a growth over 13.4% and the domestic market with a growth of 8.5%.

**Table 4. The main tourism outbound markets and the main markets of Oporto airport**

<table>
<thead>
<tr>
<th>Outbound market</th>
<th>Thousands of overnight stays</th>
<th>Proportion total overnight stays</th>
<th>Passengers</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td>649.3</td>
<td>12.02%</td>
<td>878.6</td>
<td>12.6%</td>
</tr>
<tr>
<td>France</td>
<td>425.3</td>
<td>7.88%</td>
<td>1.685.0</td>
<td>26.4%</td>
</tr>
<tr>
<td>Brasil</td>
<td>290.2</td>
<td>5.37%</td>
<td>n.d.</td>
<td>n.d.</td>
</tr>
<tr>
<td>Germany</td>
<td>222.0</td>
<td>4.11%</td>
<td>713.4</td>
<td>11.2%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>162.2</td>
<td>3.00%</td>
<td>487.0</td>
<td>7.6%</td>
</tr>
</tbody>
</table>
Recently the tourism sector in Portugal highlight worldwide since, in 2013, it received more than three times the awards compared to the previous year. Over the past years, the city of Oporto won some awards, reflecting the growing tourist destination in reputation and amount of tourists. There is a relationship between the awards allocation dates to Oporto and to the airport, reflecting a positive correlation between them. The city of Oporto and the North region are consolidating as a multiproduct tourism destination, which will in the future boost the airport’s demand. Between 2007 and 2013, overnight stays in Oporto increased by 27% and the hotel supply increased 15.5%. In this case, the international airport, more particularly, Oporto’s airport plays an important role in northern Portugal, because it facilitates the mass arrival of tourists from Latin America and Africa. Northern region’s climate is a binding source that meets the interests of the population of these continents, living mild winters and hot, dry summers.

Findings and Discussion

The attractiveness of any tourist destination depends on its natural resources, local culture and manmade infrastructure (Bieger and Wittmer, 2006). Within the latter, transport infrastructures, especially regional airports, are very important, as they are a gateway for tourism (Robertson 1995).

These results are similar to the ones obtained in other investigations. As mentioned earlier, several studies have found a positive relationship between the growth in air traffic of the airport infrastructure and the growth of tourism in the region of influence. Thus, the airports are fundamental elements in the tourism internationalization strategy. Particularly, using a case study about the northern region of Portugal, this study aimed to examine how airports influence the development of international tourism in a peripheral region. The results show that airports act as operational spheres of influence, and along with tour agents in the area they serve, form the point of regional structure for international tourism. The airport infrastructures emerge as a competitive advantage in the region.

Analyzing the formulated hypotheses, we conclude that we can validate the first one (H1): The Increase in air traffic in Oporto airport has increased the number of international tourists who visit the northern region of Portugal. As a regional airport infrastructure, Oporto airport aims to attract international tourism and business traffic. Over the past few years, its air traffic grew exponentially, doubling the volume of passengers between 2003 and 2014. In 2014, over 6.9 million passengers circulated at the airport of which approximately 49% were foreign passengers that arrived at the region. International traffic increased by 144%. In that same period, international tourism demand grew in northern Portugal. Between 2004 and 2013, the number of nights spent by foreign tourists increased by 24%.

When we analyzed the correlation coefficient between the variables, international passengers landed at the Oporto airport and international tourist overnights in northern Portugal, we find strong correlations, very close to 1.

Regarding the second hypothesis formulated (H2): Low-cost carriers contributed to the number of international tourists visiting the city of Oporto and the northern region of Portugal we conclude that is also valid. The increasing offer of LCC create new opportunities in the tourism sector for Oporto city and for the North region of Portugal as a whole. The passenger traffic landed on low-cost carriers accounted for 64.8% of all passengers disembarked. Similarly, to hypothesis 1, when analyzing the correlation coefficient between the variables, international passengers landed in LCCs and overnight stays by international tourists in northern Portugal, we found strong correlations, very close to 1. In this case, the relationship is stronger when we cross the ratio of foreign overnight stays in the city of Oporto and international passengers landed on low-cost carriers; concretely the correlation coefficient is about 0.97.

The evaluation and quantification of Oporto airport contribution in terms of passenger arrivals and direct, indirect and global income shows that exist a significant impact on the development of international tourism and the economy in the northern region of Portugal. In 2012, the over 3 million international tourists landed at Oporto airport, generated almost €1.9 billion in tourism revenue. Oporto airport, considered one of the best European airports, has gained prominence in the Airport Service Quality awards. Similarly, the northern region and the city of Oporto receive important tourism awards. When we cross the dates between the regional tourism and the airport awards, we can observe a coincidence, reflecting a strong influence between the quality of infrastructure and the classification and touristic promotion in the region.

This research, though relevant to a better understanding of the impacts of airport infrastructure in regional tourism has, however, some limitations. Mainly because it uses secondary data and does not allow a proper connection between international passengers landed and the regions international tourists. This being said, a better knowledge of passenger and tourist profile, and the study of their tourist behavior in the region would help validate with greater relevance the contribution of Oporto airport to tourism in the region. Given the importance of this research, specifically in defining regional tourism strategy, it would be relevant that this analysis, besides being periodical, could be of public knowledge in order to bring to discussion some of the main issues related to cities, regions and tourism development as well as the importance of transports, mainly air transport, for this same improvement.
References

Air Route Development Process
The connection between Oporto and Edinburgh

Rui Alberto Rocha

ABSTRACT

The last two decades were marked by a growth in aviation market namely in the developed countries. Europe has also witnessed an increase in the number of available seats and consequently in the number of passengers. The development of tourism has contributed to strengthening the connection between countries such as Portugal and the United Kingdom (UK). More recently, visit friends and relatives (VFR) traffic has also worked as an engine for the expansion of air routes between these two countries.

A trend is noticeable focusing on the connections between the city of Oporto and the United Kingdom. In other words, the routes from Oporto to the UK were only to English airports in 2016. The scenario has been changed as Ryanair is to open up in March 2017 a new route between Oporto and Edinburgh. This piece of work aims to verify if there is enough demand for this new route. Some techniques suggested by the literature have been used. Thus, a market research has been carried out in order to understand the potential demand for each kind of passengers: VFR, tourists and business. Modelling has been also used.

From the findings of this article is not clear that the proposed route could be successful in short term. On one hand, a sample of the Portuguese community living in Scotland has shown interest in this route. On the other hand, the found statistics and figures have shown poor numbers in regards to the factors that could attract the three passenger group.

Key Words: Route development; Aviation; Edinburgh; Oporto

Introduction

The expansion of new routes continues and Anna.Aero (2016a) states that 320 new routes were launched for the 2016 Summer Season. Around 50% of these developed by European low cost carriers. Ryanair was the leader with 41 new routes, followed by EasyJet with 21. According to their websites, both Ryanair and EasyJet have operational bases in Oporto (OPO) and Edinburgh (EDI). In addition to the presence of low cost carriers (LCC) both airports are served by legacy carriers such as British Airways, SAS, TAP Portugal and Air France. With reference to national authorities and consultants such as British Civil Aviation Authority (CAA), ANA (Portuguese authority for airports) and Anna.Aero the traffic in both airports has increased during the five-year period between 2010 and 2015. That growth was 29% for the Scottish airport and 53% for Oporto.

In addition to the figures mentioned above, factors such as the growth of Portuguese migratory movements into the UK and the tourist attractions provided by both cities must be taken into account. Thus, it seems to make sense to think on connecting both cities.

The following chapters include the description of key points in route development as well as an explanation of how different kinds of airlines decide where they fly to. These methodologies will be applied to this particular city pairing. A similar market research to that of the airlines has also been carried out. This task is supported by figures and statistics as well as by a questionnaire distributed among the Portuguese community living in Scotland. This has been conducted through a 1200 member Facebook group named Tugas na Escócia (Portuguese people in Scotland). This questionnaire helped us to determine how they travel to Portugal and whether a new route between OPO and EDI is suitable for them.

Some legacy airlines also use models in order to forecast the demand for an air route. Usually, for new routes a gravity model is used as well as a proper calibration and benchmarking. Thus, the same was carried out in order to support the answers provided by the market research.

The Route Development

Deregulation was the driver for route development as it is today. Before deregulation, routes, prices and frequencies
were defined by governments. These new rules led to the quick development of new routes. Swan (2002) points out that airlines have created new markets instead of trying to compete with each other. However, some of the new markets were so small that the average number of airlines per market tended to decrease after deregulation.

Dobruszkes (2014) confirms Swan’s assumption about the small size of the new markets. In fact, in Europe 1,993 new routes were created between 1991 and 2012. However, these new routes only represent 23% of the current services. This means that new markets are only possible through low-density routes operated under low frequencies by small aircrafts.

According to Dobruszkes (2014) LCC have played an important role in the development of routes in Europe. They have penetrated new markets. Currently, only 8% of new routes are shared among LCC and legacy carriers. Their expansion was so remarkable that in 2010 they owned as much as 35% of the market share. They are also responsible for 70% increase of the number of intra-European flights. On the other hand, LCC routes present a high index of volatility as 42% of the routes that were once operated have been cut.

The author adds that LCC have two kinds of approaches. One is exploring niches and the other is head-to-head competition with other airlines. The former is typical of Ryanair’s approach and the latter is usually followed by EasyJet.

To conclude, assuming the small size of the market share in new routes as well as the low-frequencies it is possible to assume that the main routes in Europe are already served. The remaining space is only for niche routes but it should not be neglected.

The process of developing a route requires several steps. Airports and airlines work together on creating new routes. For example, the final decision belongs to the airline however, tasks such as defining the airport’s catchment area lie with the airport.

Graham (2014) has defined the main steps for route development as follows.

1. Define catchment area.
2. Undertake Market Assessment and Leakage Analysis.
3. Produce growth forecasts for potential routes.

This author has defined additional steps from the airport’s point of view such as “presenting the business case to the airline”. However, for the purpose of this study the previous points are sufficient, as our goal is only to verify the demand for a route (already defined) between two airports.

Therefore, the first step is defining the catchment area of the airport. The catchment area involves the population and all the economy that is served by the airport. In other words, it is the area where inbound passengers are travelling to and where outbound passengers are travelling.

The second step is the market research. According to Goedeking (2010), the term market may refer to the airport catchment area as the origin and destination of the traffic. In other words, a region can be a source market or a destination market. The term market, on the other hand, could mean the relationship between two regions or cities. Researching demand for each type of market requires different data and methodologies. Market researchers must understand the local characteristics and the city pair dimension of the term market.

In terms of market research, Doganis (2010) states that airlines use a wide variety of techniques to evaluate the market. It is important to know the passengers and understand their needs. The techniques include attitudinal and behavioural surveys, such as tourism studies, surveys to travel agents and hotels as well analyses of trade flows, in order to understand the business features. Thus, the market research is the estimation of the demand taking into account the local markets. Local markets depend on factors related to economy, business, tourism activity, demographic features as well as past immigration patterns (Graham, 2014).

Forecasting is another tool employed in route development. Forecasting tools usually take into account traffic data and mathematic models that are used in order to predict the growth of a route. Models such as time-series or regression are commonly employed. However, such models require previous traffic data, therefore they are useless for new routes as there is no historic traffic data.

For new routes, a possible approach is using the gravity model. This model is based on the gravity law. In other words, the model suggests that air traffic between two points is proportional to the product of their populations and inversely proportional to the distance between them (Doganis, 2010).

Therefore, in order to calculate traffic through the gravity model the following formula must be used.

\[ T = K \frac{P_1 P_2}{D} \]

According to Doganis (2010), T is traffic, K the constant, P1 and P2 are the population of both cities/regions and D the distance between them. However, as previously stated, population size should not be the only factor to be taken into account. Other factors should be considered. Therefore, it was thought that airport traffic is a good measure of a region’s income level and of its potential for generating demand. Thus, the formula has been changed into the following:

\[ T = K \frac{A_1 A_2}{D} \]
It is possible to verify that population P from the previous formula was replaced by airport traffic A.

Remarkably, LCC do not have any model despite of the creation of many routes each year. They carry out some limited market research but essentially rely on the impact of low fares and they are now generating demand and new travel patterns. In other words, they create their own market (Doganis, 2010).

Case Study – New Route Oporto/Edinburgh

As mentioned above, in 2016 all the flights from Oporto to the UK were to English airports. London (Stansted, Gatwick and Luton), Bristol, Manchester and Liverpool (Figure 1).

Figure 1 presents two maps of Great Britain which includes the airports that receive flights from Oporto as well as Edinburgh’s airport. The maps also represent the areas covered by road 50 and 100 miles away from selected airports.

Through these maps it is possible to verify that only a small area of England is beyond the 100 mile distance from an airport. North and South Wales are also served through Liverpool and Bristol respectively. Overlapping of catchment areas is also especially noticeable in the London and Liverpool/Manchester area. The risk of leakage phenomena is possible namely in Liverpool/Manchester where traffic demand is not as strong as it is in London.

On the other hand, it is easily noticeable that the North of the country is not served by these kinds of flights. Large cities such as Newcastle, Glasgow and Edinburgh are very far from any airport. However, some have connections to mainland Portugal (Faro and Lisbon). Therefore, this leads to the question of whether a new route to Scotland would be justified. Thus, the following discuss whether there is enough demand for a route from Oporto to Edinburgh.

Edinburgh is the chosen city among the three mentioned above. This city is an administrative capital. A city with this characteristic contributes for creating business (Doganis, 2010). In addition, Edinburgh has a bigger touristic potential than its neighbours as well as a strategic location between them. On the other hand, Edinburgh is not as populated as Glasgow.

Figure 1 – Road Network Serving the Airports with Direct Flights from/to Oporto

Source: Own elaboration

The Airports and their Catchment Areas

In 2015 Oporto airport passed the 8 million passenger mark with 76 destinations being served. According to its master plan, in 2006 the airport’s traffic was 3.4 million passengers and in 2015 this number grew to 8,088,907 (INE, 2016). This translates into a remarkable growth in ten years.

With regards to its catchment area, the airport is able to cover 5.46 million people located in an area 120 minutes away from the airport (ANA, 2007). There are some particularities in this catchment area. Firstly, a portion is in Spain and overlaps with Vigo’s airport. Secondly, there are some regions in Portugal which although are not within the 120 minute area, they are served by Oporto. That signifies that the catchment area may be larger.
The airport’s master plan mentions that there are 1.38 million people living 30 minutes from the airport, 2.9 million living one hour away and 3.82 living 90 minutes away. This data must be handled with some care as the master plan was compiled in 2007. The same document mentions that there are more than 3,400 companies that export to the EU.

For this study, the region of northern Portugal was considered instead of the catchment area. OPO is the only airport that serves this region. The other two regions (Galicia and central Portugal) have more airports which complicate the proper analysis of the statistics.

Edinburgh airport reached the 11.5 million passengers mark in 2015. This represents a growth of 9.4% when compared against 2014. Currently it is possible to fly from Edinburgh to 173 destinations. Edinburgh has approximately 100 more routes than Oporto but its annual traffic is not as high. We may assume that some routes in EDI are operating under low frequencies. The PSO flights to the Scottish islands can explain this phenomenon.

Edinburgh’s catchment area suffers with the proximity to Glasgow, Aberdeen and even Newcastle. However, the Scottish population is mainly located in the central belt and the access to both Glasgow and Edinburgh airports is very good. Therefore, for this study the whole of Scotland was taken into account.

**The Market Research by kind of Passenger**

The business section is the weakest market segmentation between Portugal and the UK. Indeed, in 2015 there were 189,000 people travelling between the two countries for business purposes. We have to assume that numbers between both catchment areas are lower. The origin destination distribution was very similar.

There are other indicators which may be taken into account. Firstly, the presence of Scottish companies in the north of Portugal and vice-versa and secondly, the amount of exportations between these two regions. It was not possible to obtain data for the first indicator as there are no official documents which make reference to the amount of British companies in Portugal. The Portuguese embassy however was able to provide a list with some Portuguese companies in the UK, but only one of these companies was operating in Scotland with headquarters in Lisbon.

In regards to exports, the amount of exports from Scotland to Portugal as follows (Figure 2).

![Figure 2 – Exports from Scotland to Portugal](source: The Scottish Government (2016)).

The evolution of these exports was not very stable and the most important issue here is the low volume of exportations. In fact, in 2014 exports from Scotland to Portugal only amounted to £120 million. This value is less than 0.5% of all Scottish exports.

In the case of Portugal, there is no direct statistics on exports from the Portuguese regions by destination. However, according to the Portuguese Institute for Statistics (INE), the volume of exports from the north of Portugal ranges from 36% to 38% depending on the year. Thus, as there are figures on total Portuguese exports to the UK it is possible to estimate the percentage of exports from the north of Portugal (Figure 3).
Tourism is a very important segment in the Portugal – UK market. As mentioned above, in 2015 more than 2 million British people visited Portugal for leisure purposes. According to the Office for National Statistics (ONS) 177,000 departed to Portugal from a Scottish airport (for all purposes).

The north of Portugal is unable to attract any many tourists from the UK as other regions in Portugal. Algarve, in the south of the country receive more than 895,000 British tourists in 2013 whereas the northern region only received approximately 57,000. The following graph depicts the evolution of the number of British visitors to the north of Portugal (Figure 4).

![Figure 4 – Number of British Tourists Visiting the North of Portugal](source)

Source: INE (2016)

The flow of goods from the area around Oporto airport is considerable (in the Portuguese atmosphere) and it has been growing. In fact, the UK is the fifth biggest buyer of products made in Portugal. However, there are two important issues. Firstly, the numbers in the previous figure are just an estimate. Secondly, it is impossible to desegregate the numbers per British region. Therefore, these statistics must be handled with care.

The low number of people travelling on business and the low level of trade between the two countries makes the business segment negligible.
It is notable that every year there are more people from the UK visiting this region. Despite the absence of data for the two subsequent years, it is easy to guess that this number has continued to increase due to factors such as the increase in the value of the sterling pound and the growth of visits between 2013 and 2015 mentioned by ONS.

The discrepancy between the Portuguese and British numbers must be highlighted. Portugal claims that in 2013 nearly 1.4 million British tourists visited the country. ONS however states that the number was nearly 1.8 million.

On the reverse way, 392,000 people departed from Portugal to the UK for leisure activities, of which 9,000 landed in a Scottish airport for all purposes (ONS data). According to VisitBritain, in 2015 there were more than 18,000 Portuguese tourists in Scotland. However, the data provided by this authority is an estimation based on a short sample (less than 30) and it should not be considered.

The numbers for tourism between both countries and good, even the ones between the UK and the north of Portugal. However, the amount of tourists from Scotland to Portugal and vice-versa are not as good. On the other hand, both regions have a considerable touristic potential. Scotland has six world heritage sites by UNESCO and it is famous for its lakes, castles and whisky. On its turn, the north of Portugal has four world heritage sites and Oporto was considered the 3rd top destination in the world by TripAdvisor in 2015.

A new route could stimulate the traffic between OPO and EDI for tourism purposes.

The VFR potential passengers are those who live abroad. For this study, British people living in the north of Portugal and Portuguese people living in Scotland will be considered.

In figure 5, we present the evolution of British people living in the north of Portugal, according to the Portuguese authority for border control (SEF).

![Figure 5 – British People Living in Portugal](image)

**Source:** SEF (2016)

From the above graph is possible to reach two main conclusions. Firstly, the amount of people is very low. During the last six years the number of British people was always less than 840 individuals. Secondly, the volume of people tends to decrease. This indicator could hardly support the opening of a new air route.

According to the Scottish census carried out in 2011 there were 2,343 Portuguese people living in Scotland of which 385 were also British citizens (Figure 6). In addition, between 2012 and 2015, 2,795 more Portuguese citizens applied for a National Insurance Number (NINo) in Scotland. Therefore, the Portuguese population in Scotland was 5,138 in 2015 following the evolution described in the next figure. The numbers may not be fully accurate. Some people may have left the region/country in the meantime and other people may have applied for the NINo in another British city and travelled to Scotland for some reason.
Another source of information in the indirect traffic between Oporto and Scotland. The next figure (Figure 7) provides information on the number of people who have travelled from Oporto to Scotland (one-way) having a connection in another airport. This information was kindly provided by the marketing management staff of Oporto airport.

Thus, the traffic data portrays the following trend:

**Figure 7 – Indirect Traffic from OPO to Scottish Airports**

*Source:* OPO airport

The general trend leads towards growth. Namely Edinburgh and Glasgow. Aberdeen decreased in 2015 and Inverness is negligible. Numbers for Edinburgh and Glasgow were much better in 2015 that in the previous years, even if Decembers was not included. This trend may be a good indicator, nonetheless, the number of carried passengers is very low. However, one must remember that LCC traffic was not considered and there are not many options for connections with legacy carriers from OPO to Scotland. This is even more evident in years when there was no direct route from OPO to LHR (an important hub with connections to all Scottish airports mentioned above).
Questionnaire Results
This section presents and analyses the questionnaire results. The results of course correspond to the respondent’s attitudes. From now on this sample is also called “Portuguese living in Scotland” or “Portuguese community”. The sample size is 196 which varies in each question as respondents could jump questions.

Community members were asked to state where they lived in Scotland. Therefore, respondents were asked to provide the first two letters of their postcode. This question was very important as it provided information on how far participants lived from the Edinburgh airport. The information is provided in the Figure 8.

Figure 8 – Distribution of Portuguese Population Living in Scotland

Source: Own elaboration

The main conclusion from the map is that the main percentage of people live in the Edinburgh area. Actually, the attractiveness of the capital is noticeable in this statistic. Regarding the rest of Scotland, Aberdeen was able to attract 24 respondents. The oil industry contributes for this scenario. Glasgow and Dundee are next in numbers. Surprisingly, as the biggest city in Scotland, only 21 respondents settled in Glasgow.

The results from the next question partially confirm the results of the previous question. This question was about the airport used by the population to return to Portugal (Figure 9).
Figure 9 – Airports used by Portuguese People to Visit Friends and Relatives

Source: Own elaboration

Similar to the previous figures, the airport analysis is quite important. It is Edinburgh. This airport services nearly 70% of the respondents. There are three possible explanations for this situation. Firstly, as per the previous map, the majority of Portuguese citizens live close to this airport. Secondly, Edinburgh is the only airport in Scotland with direct flights to a Portuguese city other than Faro. Flights to Lisbon and Funchal departs from this airport. Thirdly, EDI is the busiest airport in Scotland. Indeed, this airport has nearly 11 million passengers in 2015 and Glasgow had about 8 million.

This data allows us to conclude that several people from other Scottish regions chose EDI instead of their closest airport.

In the following question, respondents were asked to state how long it took them to reach their airport. The results are presented in the figure 10.

Figure 10 – Time Taken to Reach the Airport

Source: Own elaboration with the questionnaire results
This graph is strongly related to the two previous maps. On the one hand, 70 people took less than 30 minutes to reach an airport. Nearly 70% of Portuguese citizens live within an area with a major airport. On the other hand, more than 50 respondents take between 30 to 120 minutes to reach the airport. If we recall the results from question 5, one may see that some people use a different airport other than the one closest to their area of residence (71% use EDI and only 37% take 30 minutes or less). It is thus possible to conclude two trends: the choice of the closest airport and choosing an airport that is further away from the area of residence. A third hypothesis must be taken into account. It means that people living in the Edinburgh area and the cities of Glasgow and Aberdeen use their closest airports while the rest of the people use the EDI airport as the majority take more than 30 minutes.

The subsequent question was related to the choice of airport in Portugal. The figure 11 provides the summary of results from the respondents.

There is no doubt that Lisbon is the most chosen airport. In fact, more than half have picked this airport. The direct flight to this airport from Edinburgh in 2016 was the main reason. In addition, Lisbon has more routes than any other Portuguese airport and consequently can offer more connections. This conclusion is supported by some statements found below. Firstly, Lisbon’s area is the origin of only 37% of the respondents and more than 50% of them said that a direct flight is the most important choice factor in an air journey.

Despite the absence of direct connections from Scotland, 52 participants flew to Oporto.

If this data is cross-referenced with the data on area of residence in Portugal (data provided ahead) one may conclude that nobody living in the Lisbon area chose OPO. However, nearly 35% of people living closer to Oporto airport stated that usually pick Lisbon.

**Figure 11 - Airports in Portugal used by the Respondents.**

*Source: Own elaboration*
The following question was related to the frequency of travelling to Portugal. The results from the respondents appear in figure 12.

This data may be cross referenced with other information such as gender, age and place of residence in Portugal. The next figure displays the frequency of travelling by gender (Figure 13).

![Figure 12 - Frequency of Travelling to Portugal for VFR](source)

Source: Own elaboration with the questionnaire results

It is evident that the Portuguese community do not travel that often to Portugal. Actually, more than 65% spend more than six months without going home. Only 20% travel every three months.

![Figure 13 - Frequency of Travelling by Gender](source)

Source: Own elaboration with the questionnaire results

The literature is clear on this point. For VFR purposes there is a balance between male and female and in certain cases there are more women than men. The Portuguese population in Scotland is made up of more women than men. However, men travel more often to Portugal than women. For instance, no men spend more than one year without going to Portugal whereas 6% of women do so (Figure 14).
Upon analysing these graphs, it is possible to come to certain conclusions. Firstly, there is no pattern for those who are less than 35 years old. In other words, this group travel under almost all frequencies. Secondly, the older the participants, the less they travel. There may be two possible reasons. One may be the absence of friends and family in Portugal (example: parents are no longer alive). Another may be related to family, in other words, families with infants and/or small children travel less.

The next cross-reference is between frequency of travelling and closest airport in Portugal (Figure 15).

Looking at the previous figure it is possible to conclude that there is more of a spread for people from Oporto and Lisbon, in other words, the frequency with which they travel is diverse. It is remarkable that most of the people from Oporto area travel only once a year. At same time, 71% of respondents stated (as seen below) that they would increase their travel frequency if a direct connection from Scotland to Oporto was created.

Subsequently, respondents were invited to provide information about the region where they lived in Portugal. Portugal has 18 districts in addition to two archipelagos.
One hundred and eighty-three respondents agreed to answer this question. The next map displays these. However, for the purpose of analysis the map was divided into three areas corresponding to the closest airport (Figure 16).

![Figure 16 - Origin of Portuguese People Living in Scotland](image)

Source: Own elaboration with the questionnaire results

The above map clearly demonstrates that more than half of the sample live within the top square (Oporto area). In other words, 50.8% live closer to Oporto airport than any other. Almost 40% of the total sample live in the three darkest areas within the top square. The Lisbon area holds as much as nearly 37% of the population. Nevertheless, EasyJet flies to Lisbon instead of OPO. In 2015 they carried more than 47,000 passengers on this route (CAA, 2015a). Among other factors, this traffic may be explained by the fact that 35% of OPO area’s population use the Lisbon airport. Taking these numbers into account, a new question arises: do these 35% choose Lisbon due to the absence of a direct flight to/from OPO?

Faro and Madeira have a small proportion which is served by direct flights from Scotland, namely Faro.

One hundred and eighty-seven people answered the question which was: Are you interested in a direct flight to Porto? The answer was clear: 72% were interested. As previously stated, the proportion of people living closer to OPO is nearly 51% which signifies that there are people from other regions who are interested in flying to Oporto. Indeed, 43% of people from an area other than Oporto are interested in a direct flight.

The people who answered “No” to question 12 were excluded from the three subsequent questions. The objective of these questions was to understand the type of efforts people were willing to endure in order to catch a direct flight to OPO as well as consequences.

Thus, respondents were questioned if participants were willing to choose another airport in Scotland if there was a direct flight to Oporto (Figure 17).
The above figure demonstrates that more than half of the interested people in flying to OPO would not mind choosing a different airport. This percentage of people is actually considerable. It must be highlighted that the majority of people who are not willing to change, do not have OPO as a reference airport in Portugal.

The next question was related to the price for a one-way direct flight to OPO (Figure 18).

The VFR passengers are very price sensitive as the flight is usually the main cost of a journey. One may conclude that £200 for a one-way flight is the limit for the Portuguese community. Indeed, 29% do not mind paying up to £200 and 35% are unwilling to pay more than £100. It is also quite interesting to note that a considerable percentage is not keen to pay too much. These prices match the average prices applied by LCC from the UK to Portuguese airports such as Oporto and Lisbon.

People from the area of the Oporto airport are more disposed to pay more for their flight. This group has also shown more disposition to swap to another airport for a direct flight.

Participants were also invited to state whether a direct flight to OPO would increase their frequency of travelling to Portugal. The answers are summarized in the Figure 19.
Last question was not exclusive for people interested in a flight to OPO. This question was about the most important factor in choosing a flight (Figure 20).

Some conclusions can be made from figure above. Firstly, a direct flight is the most important factor in choosing a flight. Secondly, the fare matches information obtained from the figure regarding the willingness to pay where nearly 30% stated that the fare was the most important factor. In fact, when cross referencing this data, it is possible to conclude that those who are willing to pay more, regard the fare as the least important factor.

Unlike the business passengers, VFRs are not time-sensitive and therefore the flight availability for a specific day was the least picked answer.

A curious fact is that 61% of the respondents who stated they were not willing to change/travel to another airport in order to catch a direct flight to OPO also stated that a direct flight was the most important factor. Perhaps this statement is not so strange if we take into consideration that a large portion of these people did not have their origin in the Oporto area.
To conclude this analysis some quick facts about this survey are recalled:

- The Portuguese community is highly concentrated in the Edinburgh region. The concentration is much higher here than in any of the other cities in Scotland namely Glasgow, Dundee or Aberdeen.
- The most used airport in Scotland by this population is Edinburgh.
- Almost 90% of this community do not take more than two hours to reach the airport of departure. Approximately 60% takes less than one hour.
- Oporto and Lisbon are the favourite airports in Portugal. Lisbon is the most widely chosen airport. Even people from Oporto area use LIS.
- The sample members do not travel very often to Portugal. Most travel once every six months.
- The distribution of population in Portugal is more balanced than in Scotland, there is however, a trend towards Oporto and its region.
- 72% of this community are interested in a direct flight to Oporto. Within this group, 44% of respondents are unwilling to change their airport in Scotland.
- Participants are not willing to pay more than £200 for a one-way flight to OPO.
- 71% of those who are interested in a flight to OPO stated that this eventual flight would increase their frequency in flying home. People who travel more frequently are those who are most interested in increasing their frequency.
- Direct flights and fares are the most important factors in choosing a flight.

**Modeling**

This sub-chapter aims to predict the traffic for the OPO – EDI route. As there is no historic traffic data available, the gravity model should be employed as the most recommended tool. Calculations are carried out as stated previously and they have provided a total number of 58,908 passengers per year.

If we compare this number with the traffic generated by the routes from Oporto and Lisbon to some British airports we have the following (Table 1)

<table>
<thead>
<tr>
<th>Route</th>
<th>Traffic (4/2015 to 3/2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oporto - Bristol</td>
<td>38,526</td>
</tr>
<tr>
<td>Oporto - Manchester</td>
<td>36,988</td>
</tr>
<tr>
<td>Oporto - Liverpool</td>
<td>24,415</td>
</tr>
<tr>
<td>Lisbon - Edinburgh</td>
<td>46,693</td>
</tr>
<tr>
<td>Oporto – Edinburgh (prediction)</td>
<td>58,908</td>
</tr>
</tbody>
</table>

**Source:** CAA (2015 and 2016)

The data is presented from April to March as the routes from OPO to Bristol and Manchester started in April 2015. Comparing the data predicted by the model and the real traffic generated in the routes above one may conclude that the data is unrealistic. One does not expect Edinburgh to generate more traffic than the rest of cities mentioned in the previous table. Indeed, the routes from Oporto to British cities, other than London, present traffic ranging between 35,000 – 40,000. There is no reason to believe that Edinburgh would more traffic than other English cities. Comparing with Lisbon, one would not expect Oporto to generate more 12,000 passengers than Lisbon, even if it is the origin of most Portuguese people living in Scotland.

Therefore, this model cannot be used as a tool to measure the feasibility of the route to/from Oporto to Edinburgh. According to Doganis (2010) other variables such as fares or quality of service can also be used in order to improve the accuracy of the model. For example, Lufthansa has created its own model using more variables and more complex formulas. As modelling would be just a guidance it has been decided not to explore deeper this tool.

**Conclusion**

Considering the analysed data, the traffic from OPO is mostly composed by VFR. The same conclusion could not be made for London as this city has the ability to attract tourists and business passengers.

The segment for the OPO - EDI route would be VFR. The numbers for tourism and business are not favourable to opening the route. They are even more unfavourable if we consider that the indicators for these segments are not disaggregated for the analysis north of Portugal – Scotland. On the other hand, there are more than 5,000 Portuguese people living in Scotland which leads to conclude that this segment is the strongest one.

The Portuguese community is highly keen on using this route. Actually, 72% of respondents stated they wanted a route between Scotland and Oporto as long as the fare is
not high than the average. Even people who have a place of origin closer to another airport in Portugal has shown interest on this route.

In regards to modelling it is possible to say that this tool was not useful as the forecasted traffic seems to be unrealistic. Indeed, according to the model we could expect almost 60,000 passengers. This number is higher than the amount of carried passengers in the routes from Oporto to Bristol and Manchester.

With regards to the main question proposed for this article there are only two possible answers: yes or not. In order to answer the question properly two scenarios matching both answers were drawn. The first scenario states that a new route between Oporto and Edinburgh should be created. Despite the low number of Portuguese people living in Scotland the LIS – EDI route was able to carry 47,000 passengers during the previous year. As mentioned above, the Lisbon route must not be considered to predict traffic numbers. However, it may be used as a reference for some conclusions. Firstly, 35% of people from the OPO area said they used the Lisbon route. It is believed they would switch to an eventual Oporto route if it existed. Furthermore, according to the questionnaire results, 72% of the population is interested in flying directly to OPO and 71% said they would increase their frequency of travelling home if the route was created. The people from the north of Portugal are also willing to pay more for a ticket to Oporto and are also prepared to change their airport in Scotland.

A new route could also stimulate traffic. Tourism could play an important role in this matter as both Scotland and the north of Portugal have good touristic potential. A good example of the power of stimulation is the Lisbon – Manchester market. There was a growth of 77% between 2013 and 2014 after Ryanair opened the route between these cities. During this time period there were no remarkable events which could increase traffic.

It is a well-known fact that Ryanair will start operating this route in March 2017. This airline is taking advantage of having a base in both OPO and EDI. EasyJet was also in the same situation. This route matches one of the main features of the new routes. It is a low frequency route. Indeed, only two flights a week (Saturday and Tuesday) will be operated. On the other hand, this Irish airline has also announced a route starting in March 2017 from Edinburgh to Vigo operating on Saturdays and Wednesdays. On other words, a part of OPO’s catchment area will have four weekly frequencies to Edinburgh.

The second scenario depicts not creating the route. Despite the Portuguese community in Scotland having shown interest in this route, the population size is still low. The considerable traffic to/from Lisbon has been mentioned, however Lisbon is a capital and therefore has the capacity to generate other kinds of traffic. In addition, as seen above, Oporto tends to follow the presence of Portuguese people living abroad.

Considering both scenarios it is possible to conclude that despite the interest of the Portuguese community in this route, the numbers are not strong enough. Furthermore, the actual European political atmosphere is also not favourable.

Nevertheless, that does not prevented Ryanair to announce the route.

References

1. ANA (2007), Plano Diretor Aeroporto Francisco Sá Carneiro, Oporto.
2. ANA (2010), Traffic report December 2010, Oporto. ANA.
7. CAA (2013), International Air Passenger Traffic To and From Reporting Airports for 2013, London. Civil Aviation Authority


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Information About the Special Issue

Adventure tourism is a niche market that has been gaining importance over the last couple of years within new tourist practises. More and more people are looking for adventure and excitement, and with that experiences and stories to tell, while on holiday. Nature, Culture and physical activities are three important pillars of adventure tourism. It brings together travel, sport and outdoor recreation. Activities have components of risk, uncertainty, danger, novelty, challenge, excitement, escapism, stimulation, absorption, and contrasting emotions.

Thereby the tourist is provided with relatively high levels of sensory stimulation. This adds up to the special experiences of adventure travel that attract more and more people between 20 and 50 years of age, who are willing to spend money on their trips. Especially developing countries can profit from this form of tourism as adventure travellers do not need special infrastructure. They bring money to poorer areas and push sustainable development.

Adventure tourism is closely linked with sustainable tourism, as well as slow tourism. Especially soft adventure activities are important aspects of slow tourist experiences. With the rising demand for adventure travel comes an interest in academic portrayal of the topic. Over the last years more and more research has been done in the field of adventure and this special issue seeks to broaden the reach of this interesting and purposeful research.

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- The papers along with the abstracts should be submitted by email. These submissions should be sent as attachments in MS Word Format to tourismspectrum@gmail.com and Manuel.Sand@fhamb.de with a copy to sndp.walia551@gmail.com
- The reviews of the papers will be due by 2nd of June,2017.
- Notification and review due to authors by 9th of June
- Revised papers due from authors 30th of June 2017
- Second reviews due 31st of July 2017
- Final version due 25th of August
- Publication September 2017

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