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Performance and value creation at United Kingdom's airports using fsQCA☆

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ABSTRACT

International airports struggle to succeed in a highly competitive market with entrants bringing different business models, creating new hubs, and competing with traditional leading airports. In addition, privatization has key role in infrastructure funds and sovereign participates in its shareholding structure. This research focuses on the United Kingdom, where privatization of airports has a longer tradition, and analyzes in two phases the key factors that have an influence on their value creation in airports. First, the study analyzes the influence of the key factors governance, airlines, revenue structure, passengers, and strategy. In the second stage, using complementary data and fuzzy-set QCA, this study analyzes the effect of the key factors on economic success of the airport. This study concludes that diversification does not play a dominant role in large airports. However, airport type and performance, both economic and operational, are relevant. Future research should consider the effect of regulation, competition, and geopolitical factors.

1. Introduction

Air transport is the main mean of transport for people nowadays. Airports have change and adapt in a highly competitive and changing environment. Literature considers airports as traditionally public entities whose only purpose is to serve the airlines, and to act as infrastructure providers (Gillen, 2009). The literature does not consider airports as entities that can stimulate the demand for their services. Aircraft, freight, and passengers are especially important (Kasarda, 2006).

Another important aspect in the sector is establishment of large groups of airports, and privatization. Privatization is, precisely, one of the factors that cause airports to focus on revenue, increase their stock value, and generate dividends (Malina et al., 2012). Even completely public airports have interest in increasing demand (Malina et al., 2012) to get more revenues.

The privatization of the airports widely occurs since the 1980s, although in developing countries privatization is more recent. The origins of airport privatization are similar to privatization in other sectors: improving airport's efficiency and funding new projects (Gillen, 2009). In addition, privatization is one of the aspects that further evolves with time and has different ways of implementation (Graham, 2008). That is, privatization has a cycle which goes from 100% public to 100% private, back to 100% public. Privatization also goes through different types of legal forms: share flotation, trade sale, concession, project finance, and management contract.

Several studies discuss the relationship between the property, or the airports' management, and airports' performance. The results of these studies show that a direct relationship exists between privatization and possible economic success (Oum et al., 2008). However, very little theoretical or empirical evidence exists that can confirm whether private airports are more efficient than public airports. Other economic sectors show similar results (Cheung, 2010).

According to Gillen (2009), and Graham (2008), privatizing airport offers many benefits. One benefit is that privatization reduces public investment and grants easy access to different markets. In addition, privatization reduces control and interference from governments and allows for diversification. The results are an improvement in efficiency and greater competition. Furthermore, incentives to the managers and employees can help in further promoting greater efficiency. The result of these measures is a lower cost and rapid growth of the sector in the last two decades as well as better customer service, and higher quality in the service, which allows for better customers' airport experience and an increase in the number of passengers.

However, the structure of the aviation market is changing and the air traffic demand increases continually. In this context, airport owners are aware of the need to motivate airlines and passengers use their airports (Malina et al., 2012).

The emergence of low-cost carriers also forces to revise airports' business models. Airports need to adjust to this new market structure to adapt to the traffic growth and the user's needs. This change is a step toward partial or total airport privatization (ACI EUROPE, 2010), with the aim of obtaining better management, diversification of airport

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revenues, and greater benefits (Graham, 2008). Airports should be profitable, but they also should meet industry and society's needs to be sustainable.

This study analyzes whether the type of airport, performance, and diversification has any effect on the success of airports. Privatization is just another step toward a new business model that has income diversification as main goal. For this reason, this study focuses on privatization on the United Kingdom, a country with a longer tradition of airport privatization.

The hypotheses of the study are:

H1. Diversification is not a guarantee for an airport's success.

H2. Airport type is a main issue in the results of the airport.

The next section provides a literature review. Section 3 offers an overview of the data and methods that this research uses. Section 4 and 5 present the results and the discussion about the findings.

2. Literature review

The evolution of the sector leads to greater competitiveness. The following aspects condition this airport competitiveness (Hvidt et al., 2012): airlines use, passengers' choices, and the active response from other airports. These aspects can affect air traffic, and potential economic benefits. Airlines can change routes and affect the opening and closing of bases and hubs. Passengers have more options because of the existence of different airports with overlapping areas of influence. In addition, passengers have nowadays access to more airlines and airport information and have greater price sensitivity.

In this context, many factors such as performance, airport type, and diversification. (Graham, 2008) can affect the cost and revenue structure of an airport and, consequently, its benefits.

Airport performance deals with the volume and nature of air traffic. This research uses Airport Throughput Unit (ATU), which Jacobs Consultancy uses in their benchmarking study (Graham, 2008; Merkert, 2010).

Airport type deals with the type of airlines and users to which the airport aims its services. Ivaldi et al. (2011) define this type of business model as a two-sided market. That is, different types of airports provide different services. BCG (2004) proposes the following classification:

- International hubs. They have a great share in the transfer of air traffic, a large area of influence, and the number of passengers exceeds the 40 million. International airlines use international hubs as its main point for international destinations (main hub).
- International O&Ds (origin and destination) airports. They have lower transfer of air traffic than international hubs do. However, international O&Ds also have a large zone of influence and the number of passengers exceeds 20 million. International O&Ds are hubs for long-distance airlines or a secondary hub of main airlines.
- Secondary hubs and O&Ds airports. They have minor participation in the transfer of air traffic. Their number of passengers is around 10 million, and the area of influence is considerable but overlapping with other airports. Secondary hubs and O&Ds are a main hub for secondary or regional airline of a main airline.
- Regionals. They do not have transfer of air traffic and the number of passengers is around 10 million. The zone of influence is small and regional airlines and LCC (low-cost carriers) are the main users.

The market is increasingly competitive and airports respond and focus on a wider variety of commercial activities and, consequently, on diversification for revenue that does not come from the airline business. Market orientation and airport marketing is an increasingly important aspect of airports' management (Graham, 2008). For this reason, many previous studies discuss the diversification of airport revenues.

Regarding diversification, larger airports are normally in a better position to provide a greater range of commercial facilities for passengers and other consumers, and, therefore, tend to have a greater reliance on non-aeronautical revenues. The ICAO survey reports that, on average, airports with more than 25 million passengers generate 58% of their revenue from non-aeronautical sources, which contrasts with the sample average of 36% (Graham, 2008).

Therefore, current business models should consider the potential effect of non-aeronautical aspects and other commercial activities (Kasarda, 2006). Advertising and park lots are the most common processes of diversification. Many airports get a large part of their income from these sources and, in some cases, that income is still greater than that which comes from aviation (Kasarda, 2006). For example, Atlanta, Dallas-Fort Worth (DFW), Hong Kong, and Schiphol airports have two thirds of their income come from non-aeronautical activities (Ashfordet al., 2011). In this context, airports are becoming one of the main centers of economy, culture, and business (Ashford et al., 2011).

Finally, private entities often evaluate the participation in airports from a financial point of view. They often use different types of ratios that relate to business potential, level of benefits, liquidity ratios, or levels of capital investment. In an international context, the EBIT margin expresses the earnings as a percentage of revenue (Graham, 2008). This indicator helps to compare entities, see the level of growth of the company, and to assess whether the company is profitable. The EBIT margin can also assess the value creation of the companies. For this reason, this study uses EBIT margin as a tool for comparing airports.

Within the context of the existing literature, this research can be useful for both researchers and professionals dealing activities related to investment in airports and value creation in such entities. No previous research dealing with the effect of the variables above exists. The limitation of this research lies in focusing on the UK and not considering other countries.

3. Data and method

This study uses data of most relevant UK airports in 2012 (BCG, 2004; UK Civil Aviation Authority, 2012). This study considers the following variables:

- Airport performance. The study considers the ATU (Airport Throughput Unit) parameter by using the formula:

$$\text{ATU} = \text{Passengers} + 10 * \text{Freight(in tonnes)} + 100 * \text{ATM}.$$

  Jacobs Consultancy uses this formula in its benchmarking study (Graham, 2008; Merkert, 2010).
- Airport type. This study considers the different types of airports following the BCG's classification (2004):
  - Number 1 identifies international hubs.
  - Number 2 identifies International O&Ds.
  - Number 3 identifies secondary hubs and O&Ds.
  - Number 4 identifies regional airports.
- Diversification. This study aims to analyze the airports' tendency to diversify revenues. This study presents this diversification by using the % of non-aeronautical revenues

Table 1 shows the variables that this study obtains from each airport.

This study uses a fuzzy-set qualitative comparative analysis (fsQCA) that identifies conditions or combinations of conditions that are necessary to obtain a certain result (outcome). This study also analyzes the EBITDA margin, which is a percentage of the income of the company