

LOW-COST AIRLINES AIRPORT SELECTION AND IMPACT OF THEIR OPERATIONS

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Abstract – *Factors that will influence the LCCs' and their passengers' choice of airport differ from those of full service carriers. From an airport operator's viewpoint, a full appreciation of these issues is crucial if it wants to attract such traffic to its facilities. However, before such a decision is made, a thorough understanding of the potential impacts of LCC operations on airports is clearly needed.*

Key words – Low-cost Airports, Low-Cost Airlines, Carrier operations.

INTRODUCTION

The liberalization of the air transport in last two decades has caused a rapid development of various different airlines operational models. One very distinct being the low cost model which concentrates on costs minimization. Particularities of this model also meant that the airports had to adapt in order to accommodate such carriers in a way that both parties concerned are satisfied. Particularities of this relationship will be discussed in the following chapters.

SELECTION CRITERIA

The starting point in such analysis is to consider the factors that affect the LCC's choice of airport. There is agreement that of fundamental importance is the need for the airport to fit in with the requirements of the LCC operating model. This involves providing facilities that will allow the LCCs to reduce costs and exploit density economies through high utilisation of aircraft. This will be reflected in LCCs seeking quick turnaround times between arrivals and departures at airports (normally no more than 25 - 30 min which will enable them to achieve extra rotations a day), convenient slot times and lack of congestion on the ground and in the sky (which will result in less time spent queuing to take-off or in a stack waiting to land) [1].

Another crucial and well documented requirement that will enable LCCs to adhere to their low cost model is to serve airports that have low aeronautical charges and other user costs or at least those that appear favourable and flexible to negotiating airport charges deals [2]. Airport costs can represent

a considerable proportion of the LCCs' total costs, by nature of the fact that these airlines have reduced or eliminated a number of traditional airline costs and because they tend to operate mostly short-haul services which involves them making regular visits to airports.

Operational efficiency for the LCCs can also be encouraged by ensuring that there is sufficient demand to enable there to be regular frequencies to be offered with high load factors that will guarantee close to full aircraft. Traditional airline practice suggests that in order for this to be achieved, the airport must have a catchment or surrounding area that has strong current and potential demand. However LCCs have been very successful in expanding catchment areas and bringing in passengers from a much wider region - in particular leisure passengers who place a very low value on their own time. Figure 1 shows typical values of travel time for business and personal purposes. He gave the example of Charleroi airport in Belgium, which is situated in a region that traditionally had attracted very little air travel but was located near to other more populous and affluent areas. A survey of Ryanair passengers showed that only 18 per cent came from southern Belgium which is the natural catchment area of Charleroi. The actual Brussels area accounted for a further 25 per cent of passengers with the rest coming from northern Belgium, the Netherlands, Luxembourg, France and Germany. Many of these passengers would have used other airports, such as Brussels, Luxembourg or Amsterdam, if an LCC service had not existed. Similarly in a survey of passengers in the Hanover area of Germany those using LCCs, compared to other types of airlines, came from further afield which the authors suggested showed that the development of the LCC sector had led to more heterogeneous catchment areas that overlap much more with respect to their spatial structure than they did in the past [3].

The degree of airport competition has also been identified as playing an important role when LCCs are making airport choices. Clearly if the airport is in strong competition with other airports, the LCCs may be able to negotiate with more than one airport and be in a position of playing one off against another [5]. Furthermore the increased commercial environment within which airports operate had encouraged them to compete more aggressively with each other and to vie for business from the LCCs.

Category	Surface Modes (except High-Speed Rail)	Air and High-Speed Rail Travel
Local Travel		
Personal	50% (35% - 60%)	--
Business	100% (80% - 120%)	--
Intercity Travel		
Personal	70% (60% - 90%)	70% (60% - 90%)
Business	100% (80% - 120%)	100% (80% - 120%)

Figure 1 - Typical Values of Travel Time (per person-hour as a percentage of total earnings) [Source: TRANSIT COOPERATIVE RESEARCH PROGRAM, [4]]

The degree of airline competition will also have an effect, depending on the nature of the rival airlines. This is because the presence of other airlines at the same airport will influence market share and the ability of any airline to be in a dominant position, which in turn may have a key impact on the airport-airline relationship and the relative bargaining power of the two parties. In addition, the degree of airline competition from neighbouring airports is likely to have an influence. This may cause catchment areas to contract. Example being East Midlands airport which had the whole of the central England and Yorkshire market for low cost travel to Barcelona to itself in 2002. However a number of LCC services from nearby airports were subsequently launched which caused the catchment area to shrink, leading to easyJet withdrawing from the route in 2004. Alternatively if services at neighbouring airports are added by the same LCC as they expand their network, there is also the likelihood that the catchment areas will overlap. For example, this was the case with Ryanair's network of Eindhoven, Weeze and Maastricht where air services to common destinations caused cannibalisation within the airline [6].

Whilst the literature is in general agreement about the factors that influence LCC airport choice, it is more difficult to glean exactly which of these factors are the most important for the airlines. Barrett listed Ryanair's seven key preferences as being low airport charges; quick 25 min minimum turnaround time; single-storey airport terminals; quick check-in; good catering and shopping at airport; good facilities for ground transport and no executive/ business class lounges - but does not order these. The only real indication of the relative rankings of these choice factors is provided by a survey of eight European LCCs [7]. They found that demand/catchment area was the most

important factor, followed by convenient slot times and quick turnaround facilities. The fourth highest ranking factor was low aeronautical charges. Other factors were positive forecasts for business and tourism, cost conscious airport management, high airport competition, good surface access and spare airport capacity. However they did find that there were different requirements depending on the airline characteristics which suggested that a one-size fits all strategy for dealing with LCCs was not appropriate. Hence they argued that airport managers need to tailor their service offering to individual airlines rather than the treating the sector uniformly.

In order to achieve fast turnarounds and access to uncongested facilities and lower charges, it is often documented that LCCs have sought to operate from 'secondary' airports. Whilst the exact definition of these airports varies, generally they are considered to be substitute or reliever airports that complement the main or primary airports of major town or cities. Secondary airports and multi-airport systems were previously confined to metropolitan areas with over 10 million departing passengers a year but now were a feature of a number of smaller regions as well. Secondary airports were to a large extent underutilized and had insignificant traffic levels before the arrival of LCC services. In addition LCCs have opened up other under-utilised regional airports that are not realistically substitutes for the main airports but instead have perhaps an underserved catchment area or some leisure travel potential that can be stimulated by low fares. This has resulted in so-called 'somewhere to nowhere' routes which will use such airports at one end, or 'nowhere-to-nowhere' routes which serve such airports at both ends.

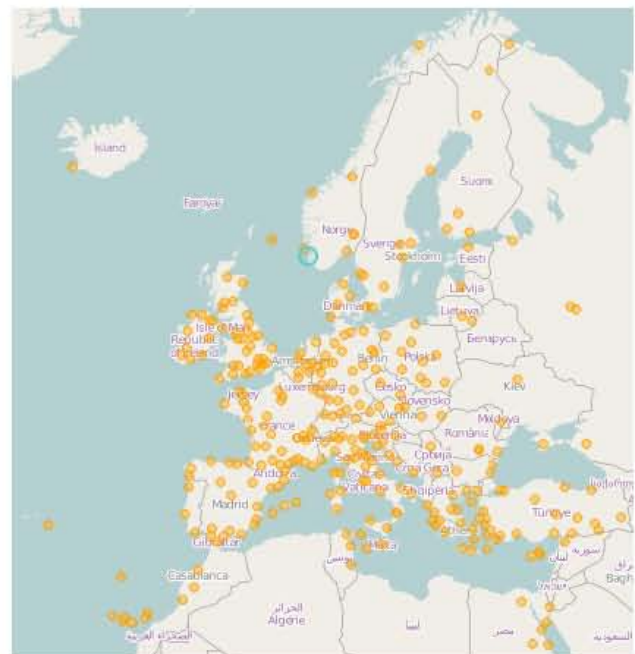


Figure 2 – Map of European low cost airports (2013)

However whilst much of the existing literature focuses on these secondary and underutilised airports, there is a clear acknowledgement of a more complicated situation in reality. For example in a study of European LCC operations five different

types of airports used by LCCs were identified [8]. These were medium or large traditional airports; secondary urban airports of large cities; regional airports serving a large city fairly close; remotely located regional airports that airlines use either as access to tourist areas or points of departure for tours; and traditional airports of beach tourism. Meanwhile in the US a study of the impacts of LCCs on the top 200 airports between 1990 and 2008 found that the greatest LCC presence and market shares were at the largest US airports, again contrary to the common perception that LCCs avoid primary airports and direct competition with the FSCs [9].

Clearly the choice of airport used will partly depend on the network strategy of the LCCs. The original Southwest model favoured a linear point-to-point network as opposed to the more concentrated hub and spoke systems of the FSCs. Indeed in an early study Reynolds-Feighan considered the networks of the US LCCs by comparing operations with FSCs between 1969 and 1999 and found that LCCs had a lower level of concentration on average than the FSCs. However variations in strategy were identified with two main types of LCCs. Firstly there were 'Southwest-type' point to point operation with relatively low levels of concentration and very low or no connection rates among passengers at the airports served. The other main group of carriers, typified by American Trans Air, had very high concentration levels and some connecting traffic [10].

The original LCC model favoured no transfers as this meant that LCCs could avoid the passenger and baggage costs of transfer operations, and potentially such point-to-point services could facilitate faster turnarounds. However, particularly in the USA, there had been a departure from the original point-to-point networks to the development of hub-and-spoke systems with connections and through fares. Meanwhile carriers such as Ryanair still never used its networks as feeders for connecting flights (although passengers could 'selfconnect' if they wanted to). Nevertheless LCC point-to-point networks can be significantly concentrated because of their focus on using base airports for many of their services. For example in 2010 Ryanair and easyJet had around 30 and 20 bases respectively located throughout Europe.

Hence it appears evident that the airport strategies of LCCs vary by world region and are strongly influenced by the nature of the specific LCCs providing services within such regions. However, in the future LCCs could link these areas with long-haul services although experience so far has been limited, with mixed views in the literature as to whether such services would be a success. Some of the arguments take account of airport features. For instance, airports may not have long enough runways or adequate terminal facilities to handle intercontinental flights. Moreover aircraft turnarounds would be longer due to more time needed for off-loading luggage and a larger number of passengers, and for aircraft servicing, refuelling and cleaning - even though quick turnarounds would be less beneficial for longhaul services anyway when proportionally more time is spend in the air and less on the ground. Airport and handling charges would offer a much smaller potential for reduced costs because their share of total

airlines' costs would be smaller, and although secondary airports' landing fees may be lower, handling would be more expensive because the fixed costs would have to be spread over fewer flights. Overall estimate is that whilst for short-haul services, airport and handling costs could typically be 32 per cent lower than for FSCs, for long-haul operations this would reduce to 7.5 per cent [11].

TRAFFIC AND FINANCIAL PERFORMANCE

The academic literature is not short of examples of how LCCs have dramatically increased passenger numbers, frequencies and services at a number of airports. As discussed, particularly at secondary airports this may be because LCCs with their low fares have been able to expand catchment areas and grow traffic in a manner that FSCs cannot. For example, passenger numbers had increased at the LCC dominated airports of London Stansted from 2.9 million in 1995 to 19.8 million in 2004 (+574%), at Liverpool from 0.4 million to 3.0 million (+701%) and at Prestwick from 0.2 million to 2 million (+828%), in comparison with the remaining UK airports that grew by just 59 per cent. Other notable examples showed how passengers increased from 20,000 at both Charleroi Brussels and Frankfurt Hahn in 1997 to 1.27 million and 1.5 respectively at the two airports by 2002. However the considerable volatility and fragility of the LCC sector has also been responsible for many striking reductions in traffic. For instance 28 per cent of European LCC services that had started between 1997 and 2002 had been withdrawn compared to an average of 2 per cent with FSCs.

There is more limited discussion related to whether LCC growth at airports can be translated into an actual benefit of increased profits. There is no doubt that airports, particularly secondary airports, are motivated to negotiate lower airport charges and provide other financial incentives to attract the LCCs, and particularly if previously the airports have very little or no traffic, the airlines may have strong bargaining. LCCs can threaten to leave stranded airport assets by flying elsewhere and switching to substitute airports and there is plenty of evidence of their footloose nature when they have left airports as the result of disagreements over fees

The deals that the airport operator will offer to encourage LCC services can differ substantially in nature. There may be just a discount on all airport charges or alternatively a more risk-sharing all-inclusive passenger charge that will replace the weight related landing charge and separate passenger charge. This latter option tends to be favoured by LCCs as it is passenger numbers that drive their revenues. The discounts may also be related to the volume of passengers. In other cases where regulation or government control prohibits the differentiation of landing and passengers charges, discounts on handling charges may be given instead. Moreover there may well be other incentives or marketing support which may help cover the costs of marketing the new services and other start-up costs.

It is apparent that low airport fees and other incentives are often seen as a way of attracting LCCs to an airport to fill up spare capacity, with the focus being placed on the marginal

revenues and costs rather than full cost, revenue and capacity considerations and the long-term sustainability of such a start-up strategy. Many airport operators seek to compensate for the reduction in aeronautical revenues by off-setting these with higher non-aeronautical revenues from the increased number of LCC passengers and their spending [15]. LCC passengers are not necessarily budget spenders on commercial facilities - the social-economic profile of LCC passengers may not be that different from FSCs. LCC passengers may in particular have a strong demand for F&B facilities (given the limited offer on board) and indeed in a case study of Soekarno-Hatta Jakarta airport the F&B services were found to be the most popular outlets for LCC passengers. The increased number of meeters and greeters, because of a higher proportion of leisure passengers generally on LCC services, may also use these facilities. Moreover car parking and car hire revenues may increase because of the use of more remote secondary airports. Since LCC passengers are encouraged to check-in early because of the first come, first served boarding procedures this may give them more dwell time to shop. Furthermore a longer operational day that some LCCs have can potentially increase the use of commercial facilities [15].

However evidence to support this view of LCCs contributing favourably to non-aeronautical revenues is patchy and inconsistent. The revenue per passenger in shops for a case study airport under consideration was €8 for LCCs compared with an average of all passengers of €5.5, whilst Gillen and Lall (2004) observed that non-airline revenue per passenger increased from \$9.70 to \$10.55 at Albany airport when Southwest started services [13] [14]. Likewise the share of non-aeronautical revenues at Luton airport rose from 45 per cent in 1995 to 59 per cent in 2001. By contrast, in relation to a Spanish regional airport, LCC passengers exhibited behaviour and needs that were very similar to those using FSCs but actually spent 7 per cent less. More dramatically, in their study of UK airports, the non-aeronautical spending of LCC passengers was on average £2.87 compared with £5.59 for FSC passengers [15].

In order to take advantage of any spending benefit that may exist with LCC passengers, there must, of course, be adequate commercial facilities in place. This can sometimes be difficult for small airports as retailers are reluctant to provide facilities to serve low volumes of traffic. Moreover if these have to be added to the terminal, this may involve some additional expenditure which potentially could push up the costs for the LCCs and thereby challenge the assumption of very low marginal costs being associated with new LCC services. In practice such understanding has not always been evident.

In linking together issues related to airport financial performance and LCC operations it was found that UK and Irish airports served by LCCs tended to have lower unit revenues, particularly as regards airport charges, and also lower unit costs but there was no obvious relationship between airport profitability and low cost operations [12]. In a study from year 2006 the financial performance of UK regional airports in relation to all airline models was carried out and it was found that both the FSCs and charter carriers had as significant, if not higher, contribution to both aeronautical and nonaeronautical

revenues as the LCCs [16]. Whilst the findings from these two UK studies are interesting, generalised conclusions cannot be drawn as the literature lacks discussion of similar research in other countries.

LONG-TERM RELATIONSHIPS

There is a considerable agreement that the emergence of the LCC sector, along with parallel developments that have changed the nature of the airport industry, have had a major impact on the airport - airline relationship. As discussed, much of the management focus seems to have been on the short-term, with airports using their more fully developed business skills to attract carriers to grow passenger numbers and fill underutilised capacity, or to prevent the footloose LCCs from moving on to another airport. In the long-term, however, there needs to be a more fundamental assessment as to the sustainability of the relationship between the LCC and the airport. Often this will involve consideration of investment requirements. When the existing infrastructure at an airport is underutilised it can make sense to reduce aeronautical charges to attract marginal traffic from the LCCs. However, if this strategy is successful, at some point the airport will have to build new facilities but it is likely that the level of charges will not be sufficient to support such investment. Raising charges and getting the LCC to commit to the airport in the long-term may have the effect of encouraging these LCC to go elsewhere, particularly if there is no consensus about the level of investment needed.

One of the ways of overcoming these long-term issues and creating a more stable environment is by negotiating long-term deals (which can vary from 5 to 25 years) where discounted charges are offered in return for long-term commercial contracts. There will be a number of other obligations on the airport operator, such as the quality of service to be supplied regarding minimum turnaround times and the requirement to undertake marketing on behalf of the airline. If the contract covers a long period there might be commitments to undertake staged investment. In return the airline will typically be obliged to guarantee to base a certain number of aircraft initially at the airport and to provide a roll-out programme for adding additional aircraft. Sometimes the airline will also have to guarantee a minimum number of passengers [17].

Unbundling of airport services is important in the LCC-airport relationship, just as LCCs and FSCs have unbundled services to compete with each other, the same will be become true for airport competition. Their research suggested that there might be specialisation of airports catering for either LCCs or FSCs, and in addition airports moving to more sophisticated contracts with carriers. Both these developments to a certain degree have subsequently occurred. They also reiterated the view that managing the trade-off between aeronautical and non-aeronautical revenues is crucial when negotiating with LCCs and suggested that this depended on the level of integration between airports and airlines. A possible future strategy for airports handling FSCs and LCCs with different demands would be for the airport to provide the common area and services, with the carrier types then co-

investing in the infrastructure needed for their specific airline model.

The airport-airline relationship will, of course, depend on the type of airport, particularly in terms of size and governance model. Small airports are rarely subject to formal economic regulation which may give them more flexibility when dealing with their LCC customers. The relationship may also be more complex if there is group management of different airports as implications for the whole group or airport system have to be considered.

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