

ANALYSIS OF THE COMPETITIVE ENVIRONMENT OF THE AIRPORT COMPANY

ANÁLISIS DEL ENTORNO COMPETITIVO DE LA EMPRESA AEROPORTUARIA

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ABSTRACT

For about three decades, airports have been shifting from a situation of natural monopoly to an increasingly competitive environment. Airport competition has been driven by several factors, including aviation market liberalization, which boosted continuous demand growth; the entry of new air operators; airport privatization; the construction of new airports; the growth of e-commerce; and the rise of alternative modes of transport, such as high-speed or very high-speed rail. This review article analyzes how these factors have shaped the characteristics and evolution of airport competition during the period under study. The analysis also examines airports responses to the COVID-19 pandemic and its impact on airport competition. Among the main findings, it is notable that airport business models are adapting to airlines growing bargaining power, the regulatory context (depending on the country or region), and passengers' greater access to online tools for planning, selecting, and purchasing air travel.

Keywords: airport competition, airport industry, airport business, airport company, airport management.

Clasificación JEL: L21, L93, M10, M30

RESUMEN

Durante aproximadamente tres décadas, los aeropuertos han pasado de una situación de monopolio natural a un entorno cada vez más competitivo. La competencia aeroportuaria se ha visto impulsada por diversos factores, entre ellos la liberalización del mercado de la aviación, que estimuló un crecimiento continuo de la demanda; la entrada de nuevas aerolíneas; la privatización de aeropuertos; la construcción de nuevos aeropuertos; el auge del comercio electrónico; y el surgimiento de modos de transporte alternativos, como el ferrocarril de alta / muy alta velocidad. Este artículo de revisión analiza cómo estos factores han configurado las características y la evolución de la competencia aeroportuaria durante el período estudiado. El análisis también examina las respuestas de los aeropuertos a la pandemia de COVID-19 y su impacto en la competencia aeroportuaria. Entre los principales hallazgos, cabe destacar que los

modelos de negocio de los aeropuertos se están adaptando al creciente poder de negociación de las aerolíneas, al marco regulatorio (que varía según el país o la región) y al mayor acceso de los pasajeros a herramientas en línea para planificar, seleccionar y comprar billetes de avión.

Palabras clave: competencia aeroportuaria, industria aeroportuaria, negocio aeroportuario, empresa aeroportuaria, gestión aeroportuaria.

JEL Classification: L21, L93, M10, M30

1. INTRODUCTION

Airports have traditionally operated as local monopolies. However, this is changing across regions at varying speeds. Liberalization of the commercial aviation sector—beginning in the United States in 1978 (Williams, 2017) and continuing in Europe in the late 1980s and 1990s (Zablotska and Zaitsev, 2025)—together with “open skies” policies adopted in various parts of the world (O’Connell, 2025; Alves and Fortes, 2015; Tan, 2015), has intensified competition. In parallel, the wave of airport privatizations in many countries (Graham, 2023; Kidokoro and Zhang, 2023; Graham, 2020) has gradually eroded airports’ monopoly position. The notion that airports are monopoly providers of support infrastructure for air transport services is changing because the commercial reality of the aviation industry has evolved over the last three decades (Samunderu, 2024; Chiambaretto and Combe, 2025).

Furthermore, intense competition among airlines has affected airports, which now must compete to retain and attract their direct customers -both passenger and cargo airlines- who have more options than in the past when deciding where to operate (Choi, 2021). The same applies to passengers, who now face many more alternatives when planning their trips, thanks to the wealth of information available online and the growth of e-commerce (Panda, 2025; Chen *et al.*, 2023). As a result, airports have had to adopt a more market-oriented approach in an increasingly competitive and dynamic environment.

Airports now must compete to retain and attract the traffic they need. This development raises questions about the extent to which economic regulation of airports remains necessary (Phang, 2016; Valdes *et al.*, 2024). In most cases, airports -like firms in other industries- should be subject to general competition law. Ultimately, the appropriateness of sector-specific regulation should be assessed case by case, depending on the evolution of competitive pressures in each context (Forsyth *et al.*, 2023).

During the COVID-19 pandemic, governments in many countries severely restricted domestic and international passenger air travel, especially in 2020, leading to a drastic drop in global passenger traffic (ACI, 2025; ICAO, 2025). In response, airports sought to improve cost management, increase revenues, secure additional financing, and develop commercial strategies aimed at building post-pandemic competitive advantages (Chen and Chen, 2025; Choi, 2021; Sinta *et al.*, 2025). This study examines how airports responded to the pandemic and how those responses influenced airport competition, particularly in the immediate post-pandemic period.

In summary, drawing on an extensive literature review, this research delineates the competitive environment in which airports operate and how they have responded to pressures generated by airlines, passengers, and the COVID-19 crisis. Accordingly, the study analyzes relevant scenarios and industry stakeholders to characterize the scope of airport competition in its broadest context. The analysis is limited to a general framework;

it does not provide detailed case studies at the firm (airport/airline) or geographic (city/country/region) level.

2. METHODOLOGY

For this review, we used a methodology typically employed in this type of research called 'systematic mapping', which is the process of identifying, categorizing, and analyzing existing literature relevant to a specific research topic (Salama *et al.*, 2017; Barn *et al.*, 2017; James *et al.*, 2016). The objective of this review is to provide an overview of the related scientific field, in this case airport competition and its evolution over time. This systematic mapping is developed in three basic blocks (Taipalus, 2023; Haakonsen *et al.*, 2023): (a) definition for the search, where the research question, the scope of the review, the inclusion and exclusion criteria, and finally the search chain are defined; (b) execution of the search, and (c) presentation and analysis of the results.

In terms of defining the search, it begins with the research question: What are the factors that have influenced the evolution of airport competition over the last three or four decades? Regarding the scope of the review, research was conducted in the following digital catalogs: ScienceDirect, IEEE Xplore, Taylor & Francis, Springer, Wiley, SAGE, and JSTOR. Descriptors (keywords) associated with the core of the research were used for the search. The search period is 1990-2025. This extensive period is due to the focus and approach of the research, which seeks to understand the evolution of airport competition over time.

The following inclusion/exclusion criteria were applied to filter the studies: (a) all scientific publications related to the field of study were included; (b) studies published in English were included; (c) regulations, and technical reports from international air transport / civil aviation organizations were included; (d) case studies were included, provided they provided a related conceptual framework with concrete, measurable, and comparable results; (e) technical studies with a solid scientific basis were included; (j) 'gray literature' was included provided it had a solid, rigorous, and formal theoretical basis; (e) articles without a research design and without a well-defined research question were excluded; (f) tertiary reviews were excluded. Finally, three review filters were applied to the search: (a) first review filter: document title and abstract; second filter: (b) keywords; (c) third filter: full text of the document.

3. RESULTS

3.1 Factors that are generating changes in the aviation market

The change in the environment in which airports operate has several causes. To begin with, the public and regulatory policies that led to the liberalization of the airline market resulted, on the one hand, in the privatization of most of the so-called 'flag carriers'

or FSCs (Full-Service Carriers) and on the other hand, opened the door to new operators, including low-cost carriers (LCCs) and charter airlines (Belobaba *et al.*, 2015; Wittmer *et al.*, 2021; Wensveen, 2023). On the other hand, increasingly broad open skies policies allowed airlines to operate more freely in regions / countries, generating new routes (Christidis, 2016; Abeyratne, 2016; Dresner and Zou, 2024); all of which was enhanced by the emergence of large airline alliances and / or code-sharing agreements between airlines (Douglas and Tan, 2017; O'Connell, 2025).

On the other hand, the privatization of airports injected private capital into them to undertake the expansion and modernization of their infrastructure (Graham and Morrell, 2016; Rauch *et al.*, 2025; Díaz Olariaga, 2017), expanding their capacity to offer their primary customers, the airlines, alternatives for operating a greater number of routes, especially long-haul and very long-haul routes. At the same time, the change in the governance model from public to private led the sector, including airports still managed by the public sector, to reformulate their management strategies, now with a strong focus on business and profitability (Graham 2023; Prather, 2015). Simultaneously, the entry into the market of new airports, several of them large or very large, competing to be important distribution and connection centers (hubs) had an influence (Dobruszkes *et al.*, 2017; Lapcin, 2021).

Meanwhile, the internet and the rapid development of e-commerce and applications on smart devices (e.g., smartphones and tablets) have given passengers not only more information but also greater decision-making power when planning their trips (Panda, 2025; Chen *et al.*, 2023; Sulistiyawan, 2025). In some countries and regions, high-speed rail has emerged as an alternative mode of transport, adding to the options available to users when planning and booking their journeys (Su *et al.*, 2025; Fang *et al.*, 2025).

Finally, the progressive decline in airfares resulting from fierce commercial competition has driven sustained growth in global air transport demand for at least three decades (ACI, 2025; ICAO, 2025), a trend interrupted and slowed during the pandemic period (2020–2021).

The cumulative effect of these factors has changed the competitive environment in which airports operate and led to a significant reduction in their market power (Karanki and Yu, 2025).

3.2 Market power of airports

Market power can arise from several sources depending on the industry. In some industries, it may result from exclusive rights over proprietary technologies. In others, such as airports, geographic location may confer a certain degree of market power (Karanki and Yu, 2025). A company is said to have significant market power when it can profitably

raise and maintain prices above the level that would prevail in a competitive market. The assessment of market power is therefore, ultimately, an assessment of consumer sensitivity to changes in price or quality (Cooper and John, 2011).

Market power is not an absolute concept; rather, it is a matter of degree and needs to be assessed within the relevant markets in which the airport competes. An airport may have very little or no market power in a particular market segment, while in another segment it has significant market power (Bilotkach and Bush, 2020). Accordingly, the assessment of an airport's market power must consider all competitive pressures across all segments of the markets in which it operates (Brilha and Nobre, 2020).

Finally, competitive constraints for an airport may include, for example, limited infrastructure capacity (runways, terminals, aprons, etc.). However, capacity constraints alone do not, by themselves, constitute a loss or decline in an airport's market power, although they can lead to such outcomes in the medium to long term by encouraging entry, either via the construction of new airports or the expansion of existing ones (Chourasia *et al.*, 2020; Xiao *et al.*, 2025).

3.3 Characteristics of airports in a competitive environment

Although an airport may enjoy market power, whether based on geographical criteria (or location) or on a particular market segment, this power can easily be threatened by the following factors (Adler *et al.*, 2022; Bilotkach and Bush, 2020; Florido-Benítez, 2024; Graham, 2023, Halpern, 2018; Karanki, 2025):

- a) Real competition: other airports (already in existence), other players competing to attract passengers (other modes of transport), airlines (freedom to choose where to operate their routes), and passengers (more options to plan their trips).
- b) Potential competition: the threat of new airports entering the market and alternative modes of transport becoming available.
- c) Buyer power: primary airport customers (airlines) with strong bargaining power and the ability to switch to other airports.

On another note, certain characteristics of airports can have an impact on competition. Airports are (Socorro *et al.*, 2018, Thelle and Sonne, 2018; Halpern and Graham, 2021; Khanna, and Swami, 2025): (a) companies with high fixed costs; (b) companies with dual business; and (c) geographically fixed. Each of these characteristics is discussed below.

3.3.1 Companies with high fixed costs

Airports have high fixed costs. They are capital-intensive businesses that require substantial capital investment to finance new infrastructure and the ongoing technological

modernization of facilities, systems, and equipment. Many operating expenses are fixed or vary only slightly with the scale of operations. Estimates of marginal costs for additional aircraft movements indicate that marginal costs are around 10% of total costs, implying that up to 90% of costs are largely invariant to scale (Abor *et al.*, 2025).

Given this cost structure—high fixed costs and low marginal costs for adding an extra passenger or aircraft movement—airports aim to maximize returns on their fixed asset base by continuously attracting new airlines and, with them, more passengers and traffic volume (Vogel, 2019).

3.3.2 *Companies with dual business*

Historically, airports concentrated on providing services tailored to airlines, their primary source of income, known as aeronautical revenue. Over the past three decades, however, airports have increasingly treated passengers and other airport users as key customers—especially as consumers of retail and related services—creating an alternative stream known as non-aeronautical or commercial revenue (Fasone *et al.*, 2016; Díaz Olariaga, 2015; Akoodie and Cloet, 2020). In many large international airports, non-aeronautical revenue has grown to nearly match aeronautical revenue in percentage terms (Shiyas *et al.*, 2024). As a result, airports are becoming more dependent on commercial income to help finance major infrastructure investments (Fuerst and Gross, 2018; Li *et al.*, 2024).

This shift has strengthened the interdependence between airports and their indirect or secondary customers—passengers—who now rival airlines, their direct or primary customers, in importance (Graham, 2023). It also affects competitive strategies: positive synergies between aeronautical and non-aeronautical revenues can lead airports to lower aeronautical charges for airlines to attract more flights, increase passenger volumes, and ultimately boost retail and other commercial spending (Rotondo, 2019; Karanki, 2025).

3.3.3 *Geographically fixed companies*

Airports are geographically fixed assets, so for many passengers, especially those living closest proximity is a key determinant of airport choice (Adler *et al.*, 2022). Passengers benefit, and an airport's market power is threatened, when multiple airports' catchment areas overlap, expanding travelers' options and creating geographic overlap (Gao, 2023; Morton and Mattioli, 2023). Compounding the challenge, airports typically cannot achieve desired passenger volumes solely by serving their immediate catchment area. To reach a profitable scale, they must extend their market reach and compete to attract passengers from the catchment areas of rival airports (Sun *et al.*, 2025).

3.4 Evolution of airlines' operational base change capacity

The latent threat of switching by airlines, understood as the relocation of their operations to another airport, generates direct and far-reaching competitive pressure for airports (Graham, 2023). The loss of an airline means a loss of traffic, which affects both types of airport revenue: aeronautical and commercial (Halpern, 2018). The airport will be able to counteract this competitive pressure depending on the degree of ease or difficulty with which traffic can be replaced by other airlines (Florida-Benítez, 2024).

3.4.1 Characteristics of airport change

Through their fleet planning departments, airlines are constantly reviewing their route network and service frequencies, as well as the allocation of aircraft to their different bases (Cook and Billig, 2023). The route program is reviewed twice a year to establish the winter and summer schedules. In addition, airlines are increasingly using so-called 'dynamic capacity allocation', in which service frequency and different aircraft types are continuously reassigned throughout the season to optimize capacity utilization (Gu and Zhu, 2017; Yoon *et al.*, 2017; Li *et al.*, 2024).

Airlines with different business models and serving different market segments can adjust seating capacity at a given airport in different ways, as presented below: (Schmitt and Gollnick, 2016; Magdalena and Bouzaima, 2021; Vatankhah *et al.*, 2025):

- a) First, airlines (both FSCs and LCCs) can adjust the number of seats offered on a given route by changing the type of aircraft or the frequency of service. This type of change can be implemented very quickly and without changing the overall route schedule.
- b) Secondly, FSCs can change one of their routes by opening a new destination from their hub airport and closing another (for example, at the end of the season). Similarly, LCCs can change the capacity of a new route, for example, by adding a new destination from one of their hub airports. This type of change can also be implemented quickly and with great flexibility.
- c) Thirdly, LCCs can reallocate capacity between their bases and can open and close bases; this type of operator usually has several bases. Over time, the location of such bases may change or capacity between them may be readjusted by moving both aircraft and personnel. Obviously, this type of change or switch is more complex and involves a great deal of planning and negotiation (with the personnel affected).
- d) Finally, although FSCs may be limited to remaining at their distribution centers (hub airports), they can change the allocation of capacity between these bases

or centers. Today, the consolidation of large commercial airline alliances makes it easier to implement this type of change, giving airlines the option to decide where to establish or reestablish their operations (Douglas and Tan, 2017).

It is important to note that competitive pressure arises from those airlines that are most sensitive to changes in price and/or quality at an airport. As long as there are enough airlines capable of reducing their scale or moving / shifting their capacity in response to a price increase (airport charges) or a reduction in service quality, the airport will always be limited or restricted in taking these actions (Li *et al.*, 2024).

3.4.2 *The impact of new airports on the market*

The entry of new airports into the market (whether new constructions, major expansions of existing ones, or conversions of military bases or public and/or private aerodromes) over the last three decades, and in almost every part of the world, has increased the available options for airline commuting (Choi, 2021; Graham, 2023).

3.4.3 *Evolution of airline strength*

The existence of buyer power among airlines can strengthen competitive pressures on an airport. Buyer power, or according to Porter (1980) the bargaining power of customers, generally exists when one or more buyers have a strong bargaining position, which can limit the market power of the supplier (in this case, the airport). Buyer power tends to be favorable to competition. Let us consider an example where there is sufficient buyer power at a large airport, which means that one or more airlines will be able to counteract any attempt by the airport to raise prices (Bet, 2021).

On the other hand, small and medium-sized airports are heavily dependent on one airline (which handles the bulk of their traffic). Under these circumstances, the airline's buyer power is very strong. The threat of airline switching is high, and if it were to occur, the negative impact (on revenue) for the airport would be very high (Karanki and Yu, 2025).

3.5 The role of passengers in airport competition

Passengers' ability to switch to alternative airports or other modes of transport exposes airports to competition, and this will vary from airport to airport, but the more and better options passengers have, the more intense the competitive pressure on airports will be. Currently, even if passengers already have an airport in their immediate vicinity, they can switch to another airport in the region or even to another mode of transport (e.g., high-speed or very high-speed rail, where possible) (Su *et al.*, 2025; Xiao *et al.*, 2025; Morton and Mattioli, 2023; Gao, 2023).

On the other hand, the development of the Internet, e-commerce, and the speed of communications (currently 5G) offer passengers not only more information but also the ability to make decisions, and the ease and speed to design and purchase their trip or tour. The coverage of information provided by the Internet allows passengers to evaluate more options, such as which airports to start and end their trip (Panda, 2025; Sulistiyawan, 2025).

3.6 Airport behavior in the competitive environment

3.6.1 Airport marketing and route development strategy

Route development strategies comprise all activities now encompassed by what is known as 'airport marketing', carried out by airports with the aim of securing new routes, for example, route development conferences, incentive programs, commercial negotiations with airlines, etc. These types of strategies began to be implemented almost three decades ago, when airports created and/or strengthened (with financial resources) their marketing departments (Graham, 2023; Halpern and Graham, 2021; Florido-Benítez, 2024; Khanna and Swami, 2025).

For an airport, securing routes is key to its growth. Therefore, to attract new traffic, airports offer airlines various incentive schemes or programs to encourage them to establish one or more routes at that airport. Typical incentives include some of the following concepts (Feng *et al.*, 2022; Spasojevic and Lohmann, 2022):

- a) Start-up discount on airport fees (landing and/or approach fees).
- b) Reimbursement of expenses for launching new routes.
- c) Revenue guarantees, i.e., guarantee from the airport that the airline will achieve a certain level of revenue, otherwise the airport will pay the shortfall (or an agreed amount).
- d) Marketing support, e.g., advertising / promotion carried out by the airport on behalf of the airline.

Another formula used by airports is to sign customized long-term contracts with airlines. In other words, in addition to the aforementioned discounts, the airport commits to a certain level of service quality, for example, minimum response times, marketing activities on behalf of the airline, investments in certain facilities or infrastructure, etc., all in exchange for a prolonged duration of operation of the routes agreed upon or committed to by the airline (Florido-Benítez, 2024).

3.6.2 Competition in price and services

Airports have also responded to increased competition by adjusting prices and services (Dos Santos *et al.*, 2025). An important aspect of service is ground connectivity

with the city or region served by the airport. Airports are increasingly working with local authorities to promote public transport networks, such as BRT systems, buses, subways, rapid trains, commuter trains, and even long-distance trains, to reach the airport itself, where the airport usually finances the construction of the station within its facility (Bao *et al.*, 2016; Sun *et al.*, 2020).

3.6.3 *Entry of new airports to the market*

The airport sector has also responded strategically to changing market conditions. Driven by increased demand for air travel, many airports around the world have been investing huge sums of capital in expansion and modernization for at least two decades. On the other hand, competition has also stimulated the entry of new airports into the market (Doerr *et al.*, 2020; Graham, 2023; Gibbons and Wu, 2020).

3.7 **Impact of regulation on airport competition**

Competition among airports has been growing for three decades, yet airport regulation has been slow to respond to this emerging and increasingly dynamic reality. The most complex aspect of airport regulation concerns the aeronautical fees that airports charge airlines. Airports have long argued that such revenues are key to recovering large investments in infrastructure (runways, taxiways, aprons, terminals, facilities, etc.) (Huai *et al.*, 2025), which is why a charging policy has been implemented since the 1970s (ICAO, 1974). But by the mid-to-late 1980s, with the beginning of airport commercialization, the original philosophy on airport charges had evolved.

Airports began to develop a pricing policy that, at a minimum, had to meet the following objectives (Forsyth *et al.*, 2023): (a) generate sufficient revenue to cover all costs and, if possible, generate profits; and (b) provide guidance for future investments. This gave rise to the concept of 'cost-based airport charges', where the first principle for determining the cost basis for imposing airport charges should be the total cost of providing all airport services, including adequate amounts for capital costs and depreciation of assets, as well as maintenance, operating, management, and administration costs (Pels, 2023).

This new concept of airport charges led to the development, over the following two decades (1990 and 2000), of a refined pricing policy strategy by all airports, whether public or private (Sarin and Jinger, 2025). However, the situation is very different today, as many airports have been privatized (in various ways) and those operated by the public sector are managed with a strongly commercial and profit-oriented approach. This new airport governance situation could therefore lead to an abuse of market power by airports (over the level of aeronautical and other related charges) (Weber and Wilson, 2025). On the other hand, however, strict regulatory control over prices could inhibit (much-needed)

investment by airport operators (Kidokoro and Zhang, 2023). Therefore, in a situation of increasing competition in the airport sector (which inhibits or reduces the market power of airports), regulation must be measured and implemented where it is necessary, analyzing each case individually. In other words, regulation should take greater account of, or measure, whether competition has a real disciplinary effect and does not hinder the evolution of competition and the aviation market itself (Forsyth *et al.*, 2023).

3.8 Airport reaction to the COVID-19 pandemic

3.8.1 Context

The COVID-19 pandemic caused significant reductions in the volume of air traffic, both domestic and international, worldwide (ACI, 2025; ICAO, 2025). In this situation, airports sought to manage costs, increase revenues, and access additional financing (Colak *et al.*, 2023). In addition, case studies of airports show that they invested in customer relations with the expectation that these would become a source of competitive advantage for the post-pandemic period (Dube, 2023). Although the airport sector did not face competition during the most critical year of the pandemic, particularly in the second and third quarters of 2020, competition between airports resurfaced in late 2020 and early 2021, driven in particular by competition for airline services, i.e., in attracting (new) routes and frequencies from air operators (both existing and new) (Janic, 2022; Kazda *et al.*, 2022). The following describes the mechanisms used by airports to manage costs, increase revenues as much as possible, and access additional financing to continue their operations.

3.8.2 Cost management

Operational adjustments. Airports implemented various operational adjustments, both temporary and permanent, to reduce their costs (Kazda *et al.*, 2022; Ersoy, 2021). This was achieved mainly by reducing investment programs and temporarily closing facilities. Temporarily scaling back maintenance programs to achieve greater efficiency was also a common measure in the industry. Laying off non-essential staff was another common denominator in the industry (Liou *et al.*, 2024).

Government aid plans. In addition to reducing their cost bases through their own measures, most airports took advantage of government support programs widely offered by most countries in response to the pandemic (Varsamos, 2021). The most adopted were short-term paid work programs, in which employees worked fewer hours but with government contributions to cover the costs of those employees (Scheelhaase *et al.*, 2022).

3.8.3 Demand management

Reductions in airport cost bases were often complemented by incentives to stimulate demand recovery to ensure that passenger numbers, and consequently airport revenues, recovered as quickly as possible (Arora *et al.*, 2021). Many airports offered specific incentives to airlines during the pandemic, with the most common incentives including reductions or even exemptions from aeronautical charges. These incentives helped airlines increase their flight offerings and, consequently, the number of passengers using the airport (Li and Wang, 2023; Choi, 2021).

3.9 Impact of the pandemic on airport competition

A common trend in many airports around the world was that passengers traveling for leisure/tourism in the immediate post-pandemic period accounted for a higher percentage than in the pre-pandemic period, implying a reduction in the percentage of passengers traveling for business (Li *et al.*, 2021). Leisure/tourism passengers tend to be more price sensitive than business passengers (Department for Transport, 2022). This price sensitivity increased pressure from airlines on airports to lower airport fees, thereby increasing the bargaining power of airlines (Arora *et al.*, 2021).

On the other hand, in the immediate post-pandemic period, LCCs accounted for a larger share of total traffic than in the pre-pandemic period. LCCs tend to have greater flexibility to change/adapt their route and frequency offerings than FSCs, and they do so regularly (Shigetani, 2021). This increases competition among airports for LCC air services on both new and existing routes. In the post-pandemic period, short-haul traffic accounted for a higher percentage of flights than long-haul and very long-haul flights compared to the pre-pandemic period (Rifai *et al.*, 2023; Zhang *et al.*, 2021). Given that LCCs focus on short-haul traffic, this could explain these statistics. Short-haul flight customers were more price sensitive, so airports faced greater competition on these short-haul routes, while long-haul and ultra-long-haul traffic remained low in the immediate post-pandemic period (Gao *et al.*, 2024).

Another important trend identified in the post-pandemic period is that airlines are operating with shorter planning horizons than before the pandemic. This gave them greater flexibility in terms of the airport or airports where they operate, and therefore the threat of moving to other airports increased their bargaining power with respect to these airports (Taneja, 2021; Avelar, 2025).

3.10 Airport competition in the near future

According to some studies, the trends that will shape the air transport industry in the coming years estimate that it is very likely that competition between airports will remain or even increase in intensity (Karanki and Bilotkach, 2024; Brown, 2023; Forsyth *et al.*, 2023). A number of factors affecting airport and airline business models are likely to

directly increase competition, including airline consolidation (which would increase airlines' bargaining power), increased point-to-point (i.e., non-stop) flights, reduced business travel, and increased automation and digitalization of the airport system (increasing the proportion of fixed costs in an airport's cost base and thus further increasing marginal passenger profitability) (Lau *et al.*, 2025; Sengur, 2025).

4. CONCLUSIONS

Airports compete with each other in several areas, namely: (a) overall passenger volume (all types of traffic); (b) specific types of traffic; (c) routes and destinations; (d) specific services; (e) air cargo traffic; (f) becoming a hub airport, or strengthening this characteristic if it already is one; and (g) other modes of transport (mainly high-speed rail). On the other hand, competition takes place on three important variables: (a) prices; (b) quality and level of service; and (c) available capacity.

Over the last three decades, airport competition has intensified as users, airlines, and passengers have increased their capacity and choice. This means that airports must be able to offer passengers the same or a superior product (portfolio of destinations and frequencies) depending on the market segment in question. As a result, any nearby airport, or airport in the area of influence (or overlap), becomes a potential substitute for passengers, a phenomenon that has increased with the entry of new airports into the market. On the other hand, airports can compete to be substitutes for others for airlines (potential for changing operational bases or moving part of operations). Finally, airports also compete with other modes of transport, particularly high-speed rail, although only in the short- and/or medium-distance market segment (always continental).

On another note, the most critical issue regarding competition concerns the intensity with which airports compete for their core business, movement management (aircraft takeoffs and landings) and passengers. If competition is strong and well developed, economic regulation of airports is unnecessary and probably counterproductive. If competition is non-existent or very underdeveloped, airports will have significant market power, and if they are privately owned or operated by private companies (and therefore profit-oriented) or publicly owned with no pressure to reduce costs, they will make use of their market power (for example, in the concept of aeronautical charges). It is then that regulation becomes necessary to limit the airport's market power.

Looking ahead, an analysis of the factors that will shape the aviation industry in the coming years suggests that many of the established trends observed in the pre-pandemic period are likely to continue (particularly the continued importance of LCC airlines and leisure/tourism travel), thus reinforcing the significant and increasing levels of airport competition observed. Another key factor expected to go forward is environmental concerns. This could limit passenger demand growth and increase costs, leaving fewer airlines and passengers operating, thereby increasing airport competition.

Finally, the experience gathered by airports during the COVID-19 pandemic and the immediate post-pandemic period shows, both for the present and the immediate future, that various actors and circumstances in the aviation/air transport market are combining to further increase competition between airports for air services. In this new competitive environment, it is worth highlighting the growing importance of LCCs, in proportional terms with respect to FSCs, for short- and medium-haul passenger transport and leisure/tourism passengers, airlines planning with shorter time horizons than before the pandemic, and the restructuring of airline route and destination networks, which are much more dynamic than in the pre-pandemic period.

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