Málaga Costa del Sol airport and its new conceptualization of hinterland

Lázaro Florido-Benítez
Department of Economics and Business Administration, University of Málaga, Málaga, Spain

Received 21 May 2021
Revised 26 July 2021
Accepted 15 August 2021

Abstract

The concept of hinterland is changing with a globalized economy, new needs between airports, stakeholders and the tourist destination challenge new dimensions of operation in the territory. Identifying new factors and actors in the influence zone of the hinterland will allow us to stage the importance of airports in the regional economy and the positive effects derived from these. The aim of this paper is to analyse the hinterland of Málaga Costa del Sol airport and its territorial and economic dimensions. Moreover, to provide an updated and clearer definition of hinterland, assuming future implications for airport operators, management of tourist destination by destination marketing organizations and scholars and practitioners interested in this topic. The results revealed that Málaga's airport is modifying the hinterland of airport and its area of influence in economic and urban development terms.

Keywords Management, Airport corridors, Airport-hinterland, Influence zone, Airport-city

Paper type Case study

1. Introduction

The proliferation of airports linked to tourist destinations on the Mediterranean coast during the last three decades of economic and social expansion has led to a notable increase in the capacity of tourism supply and demand, showing itself as a catalyst component of an unprecedented economic expansion. Bel and Fageda (2009) consider that airports are located in three levels or roles in the economic development of cities. First, airports are large generators of jobs. Second, companies with high added value tend to be located near airports and high air connection. Third and last, in 2018 tourism activity was one of the industries with the greatest weight in Spanish gross domestic product with 14.6%, supported in large part by the traffic provided by airports. Mueller and Aravazhi (2020) claim that the geographical location of an airport as a driver of an airport's connectivity. At this point it

Credit authorship contribution statement

Author: Conceptualization, Methodology, Software, Format analysis, Original Draft, Visualization, Writing, Review and Editing, Supervision.

Declaration of conflicting interests

Authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Tourism Critiques: Practice and Theory
Vol. 2 No. 2, 2021
pp. 195-221
Emerald Publishing Limited
2633-1225
DOI 10.1108/TRC-05-2021-0010

should be noted that the contribution of airports to economic growth focuses especially on the economy of the urban area or region of reference, much more so than on the national economy. This approach is conceptually similar to Kassarda and Lindsay's (2011) reclaim that airports and their hinterlands are energizers of the local economy that surround them. Airports' management must integrate the commercial perspective because commercial income is a significant source of financing capabilities (Florido-Benítez, 2021a). Airports are the gate for tourists to enjoy and satisfy their expectations regarding their chosen destination. Airports are an internal part of the tourism service system (Florido-Benítez and del Alcázar, 2020), as passengers perceive tourism destinations and airports as a single entity. Digital promotion of the airport drives differentiation distributing passengers in a more efficient manner inside and outside the airport.

Airports have a dual function: they act both as transport nodes and as "growth poles" in the regional economy. According to Hakfoort *et al.* (2001) measured the impact of Amsterdam Schiphol Airport and its impact was considerable, grew of the airport between 1987 and 1998 led to additional employment in the Greater Amsterdam region of 42,000 jobs in 1998. Some researchers and organizations such as Graham (2008), ACI (2004) and Percoco (2010) identified four economic impacts generated by airports: direct impact, indirect impact, induced impact and indirect effects. Finally, the catalytic impact is the employment and income generated by the role of the airport as a driver of productivity growth and then as an attractor of new firms (ACI, 2004). Following Jian *et al.* (2017) provided that the city, the rich tourism resources and the relatively well-developed aviation airport system promote the development of local economy. Nevertheless, the existing evidence of the economic effects of airports is limited, due in part to difficulties inherent in measuring the effects (Sheard, 2019).

According to Baltazar *et al.* (2012) suggest that airports create value in the territory where these operate. Cities grow fastest at the points where access maximizes the flows of people, products, capital and knowledge. The ones with the highest degree of connectivity become hubs. "Businesses have concentrated at the intersections of roads and routes, where the access is greatest. They especially favoured cities where there was multimodality"(Kassarda and Lindsay, 2011). But not only cities have to be multimodality, airports have to be multimodal and multifunctional, in order to attract new business models and customers. Marketing yourself as a tourist or cargo airport is a big mistake, because you are closing a multitude of commercial and non-commercial opportunities and income.

Florido-Benítez (2017) argues that the destination depends on not only the physical accessibility offered primarily by airports, but the digital accessibility offered by destination marketing organizations (DMOs). DMOs develop tourist visits for a specific area (Prideaux and Cooper, 2002) through master marketing plans and digital tools (Florido-Benítez and del Alcázar, 2020; Florido-Benitez, 2016). Airports can play a more active role in the promotion and delivery of tourism products and services in their host cities. An airport becomes an ambassador of a destination because it exhibits the positive characteristics of a destination. In this same line, Wattanacharoensil *et al.* (2021) indicate that passengers evaluate the experience within the airport with the promotion of the destination they received in their country of origin. However, following Peneda *et al.* (2011) suggest that the evolution and future of an airport city is not an easy task. Globalization and liberalization processes have led to a strong reliance of airport operators on nonaeronautical revenues. Real estate development centred on airports arises as a strategy to maximize nonaeronautical revenues and as a response to a need for revenue diversification. As stated by Peneda *et al.* (2011), the existence of four critical factors for the development of an airport city: the connectivity of the airport and its surroundings, the economic potential of the surrounding area, a sustainable development context and a commercial attitude by the airport operator.

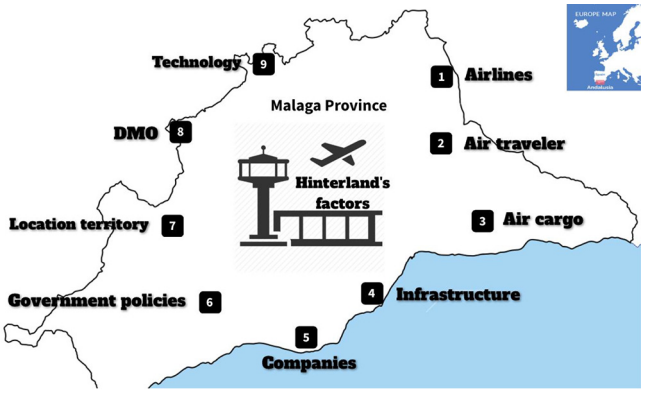
On the contrary, a number of factors affect the extent and degree of competition of hinterlands. Understanding these factors is an issue that has been widely studied in the academic literature. One of the key factors that influence the success of critical infrastructures as airports is their geographic proximity to inland markets (Florido-Benítez, 2021b, 2021c, 2021d, 2021e). This was demonstrated in several regional context such as (Guerrero, 2021; Moura *et al.*, 2017) Japan (Xu and Itoh, 2018), USA (Malchow and Kanafani, 2004), South America (Tiller and Thill, 2017) and China (Wang *et al.*, 2018). However, the impact of distance on inland flows varies considerably depending on the shape and the geographic character of countries (Guerrero, 2021). Many studies have been conducted to examine the direct effects of airports on local economic development, however, there is little solid evidence on spatial spillover effects and much less in the context of airport's system (Chen *et al.*, 2021). To fill this gap, the main challenge of this study is to analysis the interrelation between the Málaga Costa del Sol airport and Málaga's city, due to economic, tourism and technological change that the city is experienced, and the impact of hinterland's airport and its area of influence, especially the entire coastal zone of Málaga. Furthermore, to provide an updated and clearer definition of hinterland, assuming future implications for airport operators, management of tourist destination by DMOs, and scholars and practitioners interested in this topic.

The remainder of the paper is organized as follows. Section 2 outlines a literature review of the conceptualization of hinterland and its status quo in the XXI century. The Section 3 shows the methodology used in this study. The results are discussed in Section 4. The Section 5 presents conclusions, together with theoretical implications, limitations and future research for airport and urban economic development.

2. Literature review

2.1 Conceptualization of hinterland

While openly-accessible empirical data for airport catchment areas is limited (Huber *et al.*, 2021), this study shows a map of the interrelations between the Málaga Costa del Sol airport and hinterland's actors in nine scenarios: airlines, air traveller, air cargo, infrastructure development, companies inside of Málaga city, technology, government policies, location of the territory and region (managed by DMO), considering the impacts related directly and indirectly (Figure 1). These nine factors are comprised in an adapted model with



Source: Own elaboration

Figure 1.
Interrelations between Málaga Costa del Sol airport and hinterland's factors

interconnected interface domains and interoperability that reinforce the sustainability and productivity of airport business activities at airport and tourist destination within of territory in the short- and long-term: welfare of citizens, economic development, land use, infrastructures and governance. This contribution builds on the existing work of the airport' effects at destinations literature, and the aims of this paper are to investigate Málaga Costa del Sol hinterland and its territorial and economic dimensions. In the context of the present study not only a variety of relationships between airport and stakeholders are recognized, but also how they create value, allowing a better understanding of the role that airport infrastructure plays within the regional development. A study case realized by Eugenio-Martin (2016) claimed that the Málaga airport expansion had a significant impact on operational terms. First, the traffic increased by 6% due to the new terminal building, and second, the growth rate increased by 18% due to the new runway in 2015. If such a trend continues, it will be very positive for inbound tourism demand to Andalusia. Future research might focus on establishing a link between such tourism demand impact and the implications for the economy. Ideally, tourist profile reweighting should be taken into account to consider expenditure (Eugenio-Martin and Inchausti-Sintes, 2016), added value and employment implications.

This section examines the conceptualization of hinterland and its main evolution through a literature review. It explores the possibilities and challenges for interregional comparisons and suggest a tentative common framework. The literature review cover mainly authors who considered airports as one of the main factors shaping hinterland and the interrelations between the airport and hinterland's factors. Following Yuen *et al.* (2017) suggest that the hinterland of airport is likely to lead to an improvement in the aggregate welfare of the gateway and the hinterland. Indeed, as in the case of Andalusia in Spain, the impact of Málaga Costa del Sol airport may propagate across provinces, depending on the areas served by this airport concretely. Andalusia has excellent connectivity and has road communication systems that allow accessibility to any part of the Andalusian territory and that favour its external connectivity. The region has a wide network of highways and motorways, high-speed trains, six airports of which five are international and nine ports for receiving and shipping goods, among which Algeciras stands out, which is the first port in the Mediterranean for traffic total containers.

Hinterland is a German word originally used in colonial law that constituted part of international public law in the 19th and early 20th Centuries to denote such areas over which the conquering country had already been exercising power, where its own laws had not yet been enforced. Pursuant to the contemporary interpretation of international public law, only where a state was, in effect, able to exercise its power (via public offices, the military, etc.) could we speak of colonial territories. In contrast, areas which are although not under state control but in the sphere of the conquerors' influence were officially considered to be hinterland (Timár and Kovács, 2020). Several synonyms of the word "hinterland" in this broader sense exist in technical literature, e.g. catchment area, exurb, urban rural fringe and peri-urban zone. Generally referred to as foreland or heartland, these strategically, economically, or militarily vital complementary areas are central regions, ports, metropolises, cities, or small towns (Timár and Kovács, 2020; Arvis *et al.*, 2019). Timár and Kovács (2020) "claim that the concept of hinterland has been quite diffuse in the scientific literature. The word hinterland seems to be preferred to 'suburban area' in English language papers published in countries, where the national schools of thoughts in geography are traditionally linked to their German counterparts. The issue of the trickiness of the hinterland concept is mainly raised by researchers conducting international empirical studies". Furthermore, very often, the hinterland is at best the site rather than the subject of

research. Following Johnson (1969) claims that the concept of hinterland must be analysed from a local catchment point. Research focusing on the functional approach confine themselves to the heartland/city hinterland dichotomy, which may easily divert attention from power relations within hinterlands and paper over social cultural differences and inequalities. Following Cidell (2019) suggest that Transit Life contributes to the growing literature on mobility and transportation by considering the commute as a type of journey that significantly shapes our lives.

2.2 Staging conceptualization of hinterland in the XXI century

An airport's catchment area is the area surrounding the airport from which it attracts its passengers. The size of the catchment area as well as the airport's market share within the catchment area depends on the driving factors behind passenger airport choice, such as accessibility and service level offered by the airport in terms of fares and frequencies *vis-à-vis* surrounding airports (Lieshout, 2012). With the development of more and more regional airports, passengers have a wider choice of airports than ever before. This means that airport catchment areas increasingly overlap. As a result, airports need to share the potential market in their catchment area with an increasing number of other airports. Catchment areas evolve with the development of airports (Lieshout *et al.*, 2016). Moreover, the transformation of the metropolitan area depends on the airports thanks to its international connection (Peneda *et al.*, 2011).

A growing body of literature investigates how air transport affects local economic development. Almost all existing studies use air travel, or something similar, to explain regional outcomes such as population and employment (Tveter, 2017). For instance, in 2008 the University of Memphis researchers sought to measure the airport¨s impact on the city. They discovered that was indirectly responsible for nearly half of the local economy, worth $28.6 billion and for 220,154 jobs, one out of every three in the region. The airport is it the largest private employer in Memphis (Kassarda and Lindsay, 2011). Conversely, following Yuen *et al.* (2017) found that the cargo and passenger volumes at the gateway airport decrease when they introduced the hinterland airport. Additionally, the social welfare at the gateway airport, its respective airport profit and the airlines' profits and passengers' benefits will all decrease, while the social welfare at the hinterland airport and the shippers' benefits will increase. Overall, the social welfare of the economy will increase by 0.61%, when the hinterland airport is introduced. Following Coca-Stefaniak *et al.* (2010) indicated that to the development of city's localization be vital for the sustainable development of communities often facilitated by positive relationships with town center managers and close personal relationships with customers that produce competitive advantage in the long term.

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 from a tourism destination perspective (Alves *et al.*, 2013). In a seminal paper Alves (2014) concluded that an airport's hinterland is related to the products and services and the growth of the local economy provided by airports. In other words, airport hinterland is a geographical zone comprehending potential users, passengers and national and international companies. In this research, we show our own several hinterland typologies according to literature review of some authors. Figure 2 shows the geographical scope of each concept and the relations among five concepts:

(1) Heart-hinterland: this involves to airport area itself, and its perimeter delimitation prevails security-safety and urban development according to the operation of the

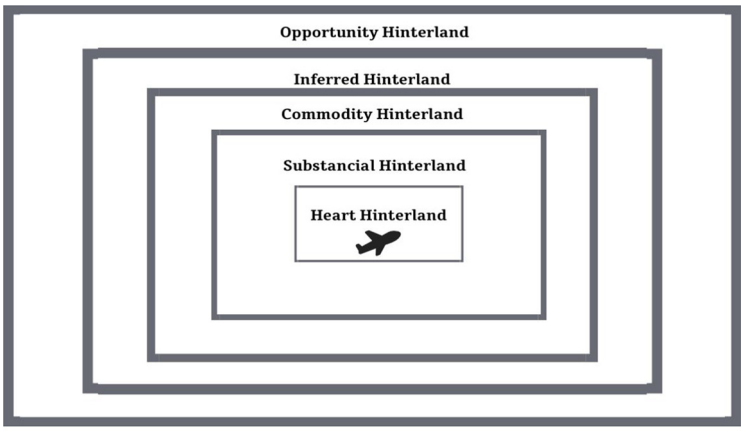


Figure 2.
Hinterland typologies depending on geographical scope

Source: Own elaboration

airport. For our research in medical terms, the airport works like a heart, planes, passengers, products and services beats daily within its hinterland. Its contractions in terms of export and import improve the quality of life of citizens and the local economy of the city, that is, the airport is the main economic muscle that pumps wealth (export and import) to businesses and cities.

(2) Substantial hinterland: is the area where airport and city assume a commanding role on day-to-day activities, thus is, "economic potential of the hinterland". Both provide feedback and generate synergies in order to improve the operations of the companies that operate inside and outside the airport. Peneda *et al.* (2011) "claims that economic potential hinterland activities are: strong local and regional economy to provide a solid base for traffic; specialized suppliers and large local markets; adequate economic profile of the region, to fuel the aviation node and potentiate non-aeronautical activities and available supply of highly skilled labor". Hinterlands with large, well-educated labor forces are more suited to evolve into centres of business service supply (Appold and Kasarda, 2010).

(3) Commodity hinterland: area focused in particular types of commodities shipment. Intermodality is essential in the flow of goods and services. Not only is it the largest private employer in a metropolitan area of more than a million people, it sits at the center of an ecosystem of warehouses, trucking firms, factories and office parks to expand and channel products and services at provincial, regional, national and international levels. As demonstrated by Gingerich and Maoh (2019) the location of logistics companies and warehouses is highly dependent on the proximity of airports, highway infrastructure and rail. Warehouses located near the airport are expected to benefit from goods transported by air. An example of this benefit can be seen in the average employment for warehouses within the 7 km buffer of Pearson Airport compared to other Toronto based warehouses, both in Canada. Hesse (2020) suggests that logistics systems are the conveyor belts of the global system of trade, commerce and production. Based on the association between places and flows, logistics is a vital component of the making of territories in a networked.

(4) Inferred hinterland: airport predominance over a particular area that satisfies demand for the area it serves. In this case, its area of influence becomes a great distance, because urban planning management in terms of tourism and business development revolve around the airport. For instance, Marbella is known worldwide because Málaga airport is 51 kms away, it is accessible by car in 34 min from Málaga airport. The entire coastline from Marbella to Nerja, is installed almost all hospitality and tourism activities. Following van Wijk (2008) indicated that in a global economy, airports are economic centres of cities. Despite internationally comparative economic trends and the challenge of urban planning this brings along, the institutional conditions for the actors involved remain rather local.

(5) Opportunity hinterland: airport, airlines and location have some particularities, such as intermodal, routes or airlines that fly to national and international destinations, which the nearest airports do not have; an airport located in a beach destination and at the same time close to inland destinations or vice versa; the airport is multifunctional; the airport has two or more runways and it is in an industrial and tourist area that favours the establishment of companies, commercial and cargo airlines; an airport located in a destination where flight prices are affordable, etc. According to Percoco (2010) showed that airports improve the productive fabric and productivity in the service sector. The capacity of an airport to stimulate local economy is influenced by airlines and connectivity with other places (Brueckner, 2003). Similarly, Rodrigue (2020) reminded us that transportations the spatial linking of a derived demand as it takes place because of other economic activities for which it is linking its spatial components as flows of people, goods and information. A market economy could no function without the capacity of transportation to link supply and demand.

In this research project, we provide a new conceptualization of hinterland, following the review of the literature and its authors. A more up-to-date conceptualization according to territorial and competitive circumstances, strategic plans of DMOs, airports, airlines and interest groups. Therefore, hinterland is the geographical zone of influence of the airport in the territory in economic, logistical, commercial, import-export, urban, technological and security-safety terms. This concentric zone of influence is gradual, depending on the needs and offer of products and services of the airport, government organizations and companies. All of them receive feedback from the operation and role that each one has in the market. Figure 3 shows our own definition of Málaga Costa del Sol airport hinterland, the reader can observe all elements of definition: hinterland Málaga airport, influence zone of airport in economic, logistical, commercial, import-export, urban, technological and security-safety terms, industrial and business zone. We must highlight the socio-economic link between Málaga airport, Andalusia Technology Park and the industrial business zone. These last two business areas have grown exponentially in economic and urban terms, as we will see in the next figures of this study. Let us take the growth of the export companies and regulars exporter in the province of Málaga as an example. From 2010 to 2019, the total export companies grew by 160% and regular exporters by 177.5% in the province of Málaga (Figure 4). This increase was mainly due to the proximity of the airport to transport its products and services. Following The International Air Transport Association (IATA) (2020) suggested that although only 1% of the total volume of the world trade is transported via air, the orientation towards high value products results in a share of almost 35% of international trade value.

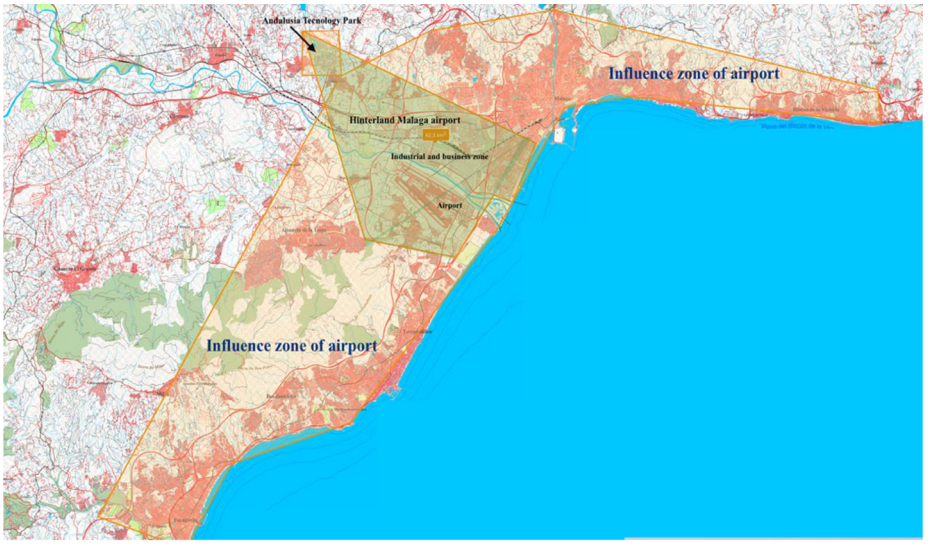


Figure 3.
Hinterland Málaga Costa del Sol airport and its influence zone in the territory

Source: Own elaboration based on data from Junta de Andalucía (2020)

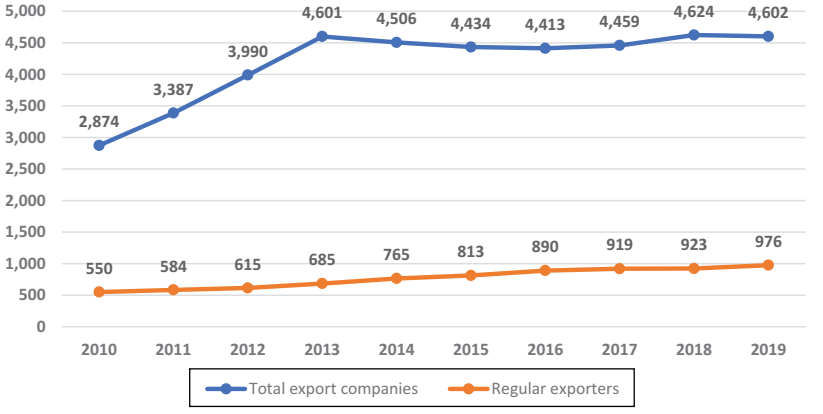


Figure 4.
Export companies and regular exporters of province of Málaga (2010–19)

Source: Own elaboration based on data from ICEX (2019)

This study finds that hinterland areas are represented in a spatial form (Fröhlich and Niemeier, 2011; Graham, 2008, 2020; Lieshout, 2012; Marcucci and Gatta, 2011; Suau-Sanchez *et al.*, 2014; Rosa *et al.*, 2017). This is 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). In our study,

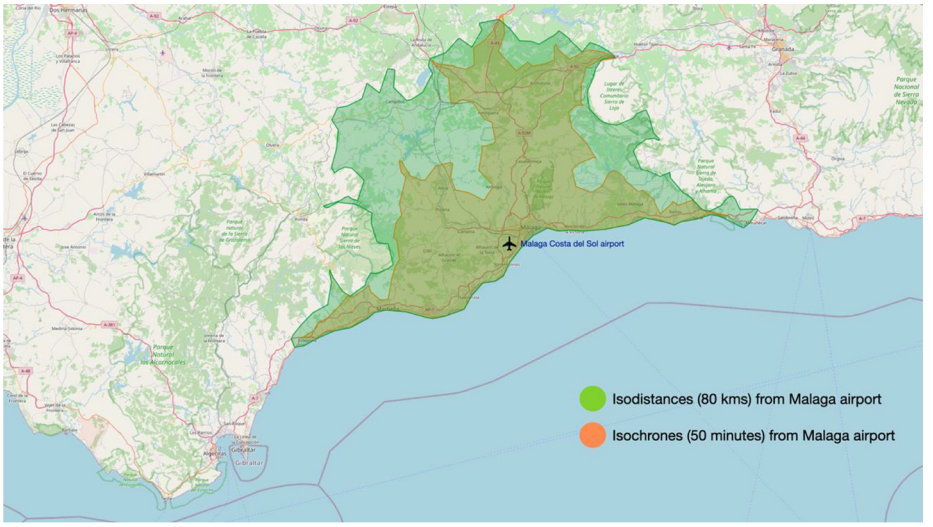
hinterland areas are represented in a spatial form and with Visor IDEAndalucia and Iso4app software. It was calculated depending on isochrones, depending on the predictable average speeds on the highways-motorways in the area of influence of the Málaga airport, the access times to airport from the different towns in that area. For a fixed radius travel distance, this study considers a hinterland area of 80 kms or 50 minutes driving time from the airport by motor vehicle (Figure 5).

Airports have a very large zone of influence that covers provincial or regional units depending on their location. In this study, the zone of influence is the area where potential users are located and all economic activity that benefits from the location of the airport in the territory. In addition, in this study we will distinguish two zones:

(1) Capital zone: from the city center to the airport terminal, between 0 and 40 minutes of travel time.

(2) Complementary zone: any area adjacent to the city center and comprising 40 and 60 minutes of travel.

The zone of influence is different in each airport and the territory that it is located. The zone of influence of the Málaga Costa del Sol airport is wider than the area of influence of the Son Sant Joan International airport in Palma de Mallorca, is circumscribed to the entire island, which depends almost exclusively on the airport for tourist flows, the main agent economic of the island. Madrid airport has an even more extensive influence since it is a national and European "hub" for certain destinations, especially in the Latin American area. According to MITMA (2003) the zone of influence are those areas from which the airport is accessible in 45 minutes, since the longer the access time there is an immediate link with the nearby airports. It is calculated depending on the isochronous lines, which are those that link points from which the airport is accessed at the same time, corresponding to 10, 15, 20, 25, 30, 35, 40 and 45 minutes, depending on the predictable average speeds on the roads in the area of influence of the airport, the access times to it from the different towns in that area.



Source: Own elaboration based on data from Iso4app software (2021)

Figure 5.
Isochrones and Isodistances from Málaga Costa del Sol airport

Some authors delimit the immediate zone of influence to a radius of 5 km around the general airport system that would remain in the center of the area. Such delimitation is based on the results obtained in previous field work and in the analysis of the territorial variables of the area.

3. Research methodology

The aims of the research method adopted here is to review the impact of airport's hinterland on Málaga city. A review of the relevant literature on airport's hinterland, and spatial spillover effects is undertaken to understand the link between them. Florido-Benítez and del Alcázar (2020) and Florido-Benítez (2021c) claimed that ¾ of tourists arrived in Spain through airports in 2019. The literature relation to airport's hinterland, and spatial spillover effects is not very extensive, and this paper is focused on these authors (Hakfoort *et al.*, 2001; Percoco, 2010; Alves, 2014; Jian *et al.*, 2017; Sheard, 2019; Kassarda, 2020; Breidenbach, 2020; Florido-Benítez, 2021c, 2021d; Benedetti *et al.*, 2012; Doganis, 2019; Perboli *et al.*, 2015; Yuen *et al.*, 2017; Chen *et al.*, 2021, amongst many others). The systematic review process can be defined as a thorough review of the existing evidence on a clearly formulated question that applies explicit and systematic procedures to identify, choose and critically appraise relevant research, along with the extraction and analysis of data from the studies that are incorporated in the review (De Menezes and Kelliher, 2011; Christofi *et al.*, 2017). Following Agyeiwaah (2019) stated that the literature provides evidence of aviation industry that has re-emerged to make local economy and tourism more important on destination. Especially, between airport's hinterland and tourist destination.

This study was enriched notably as regards its theoretical and practices from scientific journals that have addressed the impact of airports in tourist destinations like: Journal of Air Transport Management, Research in Transportation Economics, Transport Policy, Regional Studies, Journal of Transport Geography, Urban Studies, Transportation Research Part E, among many others. Data was collected from journals using University of Málaga databases and verified with reference to the Social Sciences Citation Index (SSCI) of Clarivate Analytics' Web of Science (WoS, 2021) and Google Scholar searches. Following Yang and Zheng (2019) suggests that WoS has strict standards for the selection, evaluation, development and management of journals. Many researchers and academics tend to select perhaps the most well-known bibliographic database from SSCI of WoS, which list academic journals for identifying potential sources for reviewing (Paul and Rialp, 2020). Airports and airlines at tourist destinations operate with other means of transportation. According to Voltes-Dorta *et al.* (2017) claim that the destination airport needs to include other stakeholders, such as harbours and rail operators from the main passenger markets.

Finally, this research also shows all maps material by using the Spatial Data Infrastructure of Andalusia "Visor IDEAndalucía" software (2021), this software collects the data building different maps that including geographic data and attributes, metadata, search methods, visualization and valuation of the data. The hinterland of Málaga's airport and its influence zone in the territory are showed in the next figures of the results section. Specifying an appropriate spatial matrix is a key step of applying spatial to capture spillover effects of airports. "The performance of the hinterland segment is crucial on the cost competitiveness of an end-to-end transport chain" (Guerrero and Montes, 2021). However, Chen *et al.* (2021) indicate that there are no universal rules for the selection of a spatial matrix by any known economic theory. Scholvin *et al.* (2019) staged the gateway cities map with the aid of five features: transport and logistics, industrial processing, corporate control, service provision and knowledge generation. Moreover, isochrones and isodistances map from Málaga Costa del Sol airport were calculated (Iso4app software, 2021)

depending on the predictable average speeds on the highways-motorways in the influence zone of Málaga's airport.

4. Results of research at hinterland of Málaga airport

4.1 The hinterland of Málaga costa del sol airport today

With the uncertainty brought by Covid-19 on the aviation industry, the organizations need to reassess the different scenarios that can occur and ensure that sustainable and safe airport operations can be maintained. Airports will face unpleasant issues caused by the pandemic such as fewer passengers, costly health regulations and airlines and tenants that do not pay their bills on time. Commercial policies for airlines need to be attractive in order to safeguard existing businesses and to ensure higher aeronautical revenues (Serrano and Kazda, 2020). As stated by Ruotsalainen (2020) in Airport Investor Resource article, the non-aeronautical component is essential in the income statement. Airport non-aero revenues can usually contribute 40–60% of overall revenues, but the margins of these sales can be very high and can contribute almost 70–80% of the earnings before Interest, Taxes, Depreciation and Amortization.

Therefore, is necessary the integration in the tourism value chain of three main stakeholders: airports, DMOs and airlines. The interoperations between regional authorities and airports are evidenced at Seville airport, increasing the operations from 5 to 10 million passengers in Europe since relating the city of Seville as a tourism destination brand image for the 2030 airport strategy (Florido-Benítez, 2020, 2021c). The airport image is linked, rather than being independent of the city. Indeed, airports such as Liverpool (Figueiredo and Castro, 2019) and Málaga airports changed their original names to reflect the link to their respective city since airports are ambassadors of tourist destinations. In fact, the change of the airport name from Málaga airport to Málaga Costa del Sol was a reality in 2011 after finishing the third terminal, which was opened on the 15th of March 2010 (Florido-Benítez, 2021c). This change was done for regional tourist interests and to disseminate and promote the Málaga Costa del Sol airport brand in the international tourism market (Florido-Benítez and del Alcázar, 2020). "Costa del Sol" reflects briefly (at the airport name) what visitors will experiment in the city. Therefore "Costa del Sol" becomes a brand image for the airport and city from June 2011 (Florido-Benítez, 2021c, 2021e).

The tourism sector (included airports and airlines) is very sensitive and easily affected by global crises. The crisis that started with the emergence of COVID-19 became the focal point of travellers, even when it was still in local dimensions. It is almost the same day that travellers make a decision to cancel or delay their trips, with the spread of the news. With the announcement of the COVID-19 case as a pandemic, travellers decided to cancel the trips immediately and started to discuss travel assurance issues. The ubiquity of information on smartphones has many benefits, but significant drawbacks. (Uğur and Akbıyık, 2020). Following AENA (2020) the effects of COVID-19 and its limitations caused by it, is gradually affecting Andalusian airports, the drop passengers was 81.2% compared to the same month of the previous year, with a total of 541,487 travellers in October 2020 compared to 2,880,392 in the same month of 2019. This untenable situation is affecting passenger arrivals at airports and tourist destinations in Andalusia, mainly at Málaga and Seville airports, with a drop in passengers of −72.7% and −65.8% until October 2020, that is, (15,059,987 and 5,3667, 620 Pax) too many tourists for an Andalusian economy that depends mainly on the tourism sector. In the following Figures 6, 7, 8, 9 and 10, we stage hinterland typologies according to the geographical area at Málaga Costa del Sol airport that we previously defined in 2.2 of this research and the incidence of data in the territory before mentioned.

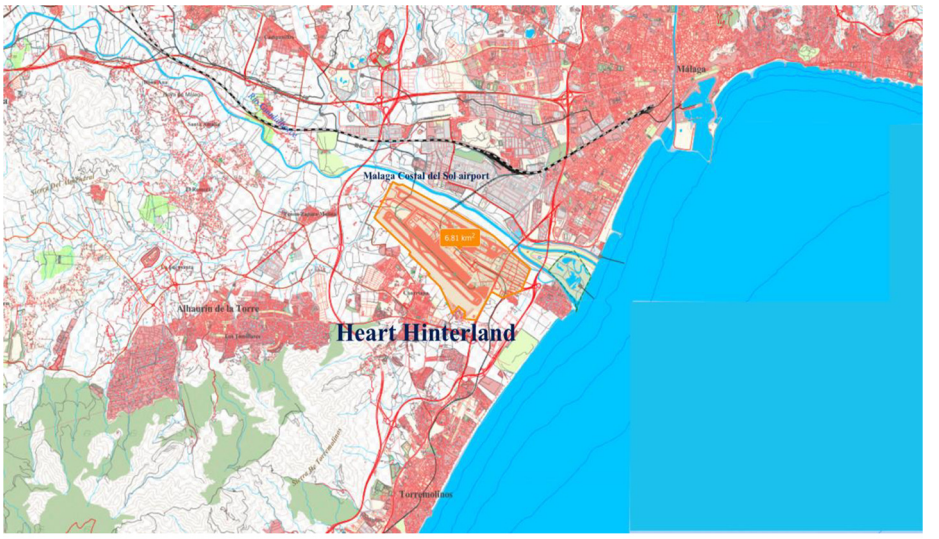


Figure 6.
Heart hinterland of Málaga Costa del Sol airport

Source: Own elaboration based on data from Junta de Andalucía (2020)

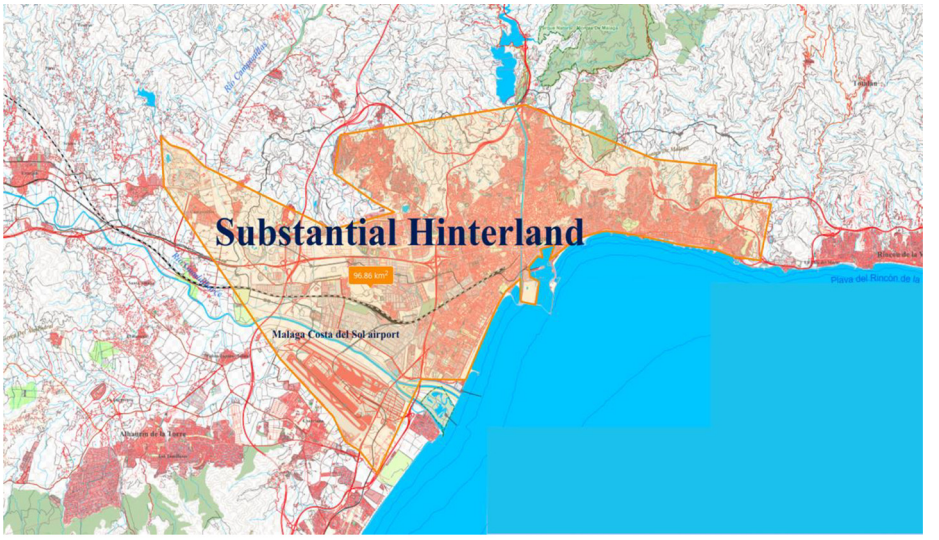


Figure 7.
Substantial hinterland of Málaga Costa del Sol airport

Source: Own elaboration based on data from Junta de Andalucía (2020)

Figure 9 presents the inferred hinterland (Orange zone), and spatial characteristics between airports –- urban development and tourism activity (Red zone), in this zone is concentrated tourism and urban development. This development of Málaga city is thanks to the airport, in economic, urban, transport and touristic terms, and more especially in the entire coastal

Source: Own elaboration based on data from Junta de Andalucía (2020)

Figure 8.
Commodity hinterland of Málaga Costa del Sol airport

Source: Own elaboration based on data from Junta de Andalucía (2020)

Figure 9.
Inferred hinterland of Málaga Costa del Sol airport

zone of Málaga. All hotels and restaurants are concentrated in Málaga's coastal zone (Red zone). The accessibility road and motorway networks and the high-velocity train between Málaga city and rest of Spain have successfully connected the domestic tourism flows and it has increased the number of Spaniards visits to Málaga city. Following The County Council of Málaga (2019) indicated that the number of national tourists arrived at Malaga was 5.7 million Spaniards in 2019, thus is, it increased by 7% compared to 2018. A study realized by Yang *et al.* (2019) suggested that air transport connectivity generally has a greater influence than rail transport on tourist flows.

Figure 10.
Opportunity hinterland of Málaga Costa del Sol airport

Source: Own elaboration based on data from Junta de Andalucía (2020)

Moreover, Yang *et al.* (2016) noted the key to success of Shanghai gateway to its hinterland is the location. Transportation facilities, including road, seaport, airport and inland waterway, all have positive correlations with Shanghai's gateway function within a certain distance and negative correlations beyond that limit. The main contribution of their research was that identified the importance of geographical conditions and transportation facilities in the gateway-hinterland relationship. Gingerich and Maoh (2019) showed the importance of airport proximity for warehouse location. Airport warehouse related trips that are associated with longer travelled distances emphasize the importance of multimodal transportation where air and road travel is involved to facilitate the movement of international goods.

4.2 Impact of the airport on Málaga territory

In the field of air transportation management, decisions on the flights that should be opened in a given airport involve studying the demand, supply and the economic and spatial relationship between the different actors (airlines, airport management, passengers and public stakeholders). Traditionally, airlines have been the main actors in this process, while airports acted only as the managers of the operations. The changes in the market due to the introduction of low cost companies, with the consequent reduction of airport fees, as well as the increase in density of regional airports in many European countries are modifying the mutual roles of airlines and airports. Evidently, the final decision on the opening of a new route is made by DMOs, the airport and the airline in the tourist destinations (O'Connell and Williams, 2005). Airports must ensure the sustainability of the new routes and satisfy the primary needs of the passengers in their catchment area. On the other hand, public stakeholders (DMOs) require airport management to measure the economic impact of

opened flights in order to grant financial support (Perboli *et al.*, 2011; Benedetti *et al.*, 2012; Perboli *et al.*, 2015).

From the 1950s to the 1990s Málaga, one of the provinces of Andalusia has undergone considerably peculiarities. The weakness of the industrial fabric and the lack of so-called "high-level or advanced" services have led to the development of those more basic and traditional service activities. Following Galeote and García (2020) indicated that the sun and the beach have been the main wealth of Málaga, but this model should change to other productive sectors. In this sense, Málaga airport has always been a key catalyst for the growth of local economy (Addie, 2014). Nowadays, Málaga city is known to many as the capital of the Costa del Sol, Málaga is more than a seaside city, this is an airport city. The Málaga Costa del Sol airport ranked first in passenger arrivals in 2019 followed by the airports of Seville, Granada-Jaen and Almeria. Unfortunately, the city is beginning to suffer the consequences of mass tourism. Low-cost companies currently have a very important weight in airport activity and, although these types of companies are helping to avoid seasonality. it is important to analyse the interaction of Málaga airport as a provider of inputs-outputs (Galeote and García, 2020; Florido-Benítez and del Alcázar, 2020; Florido-Benítez, 2021c). The degree and pattern of airport-linked economic development depend on the strategic provision of multimodal transportation infrastructure and services by reflecting diverse travel demands. The other implication is that the competitive formation of a multi-airport city-region may call for the "mixed" structure of metropolitan governance in the presence of externalities across various municipalities (Murakami and Kato, 2020).

Nevertheless, following Hakfoort *et al.* (2001) demonstrated that the demand for the airport depends on factors such as: the features of employment, the presence of special tourist attractions, airport taxes, frequency and destination of flights offered and the accessibility of the airport. In Málaga airport, airlines do not operate just from Spain, these have bases in different origin countries, such as Ryanair or EasyJet, both airlines have secured a high market of the Málaga Market. According to Eugenio-Martin (2016) notes that their frequency decisions depend on the success of an international network. Entries and exits of airlines operating different routes and dynamic pricing based on revenue management are commonplace. More interestingly, the new terminal three had a significant impact on Ryanair traffic. On average, monthly traffic increased by approximately 44,985 additional passengers. This is consistent with the new Ryanair base opening that supplied 20 new routes but also increased the use of older ones too. On the contrary, if the airport operates new routes looking for a quality tourist, it is essential that the city works on services that meet the unique needs of these clients. It is not possible that in a city such as Málaga the tourists keep complaining that the professionals of the sector do not speak English. This is one of the reasons for the lack of knowledge about airport activity (Galeote and García, 2020).

In this study, we must point out that the territory, national and foreign investment, government policies, research and development I + D, climate, accessibility, tourism promotion, Hotels, among others, are factors outside the boundaries of Málaga airport, contributing to the performance of this and Málaga local economy. This finding is also in line with Chaouk *et al.* (2020) suggest that airport efficiency is influenced by the combination of five national macro-environmental factors, namely the air transport output, institutions, macro-economic environment, human development and safety and security. As stated by Ralphs *et al.* (2020) the size of an airport does not solely influence the economic growth of a region but having a stable increase in passenger numbers and frequency of individuals has a greater influence. In the following Figures 11,12 and 13 show the evolution of Málaga Costa del Sol airport and urban development that revolve around the airport. The red zone is

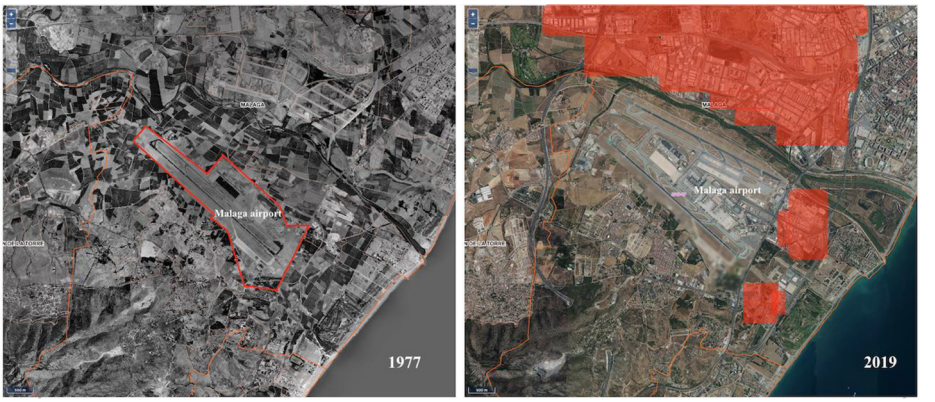


Figure 11.
Urban industrial business zone development around the Málaga airport (1977 and 2019)

Source: Own elaboration based on data from Junta de Andalucía (2020)
* Approximate scale 1:5.000 and resolution of 0.5 meters

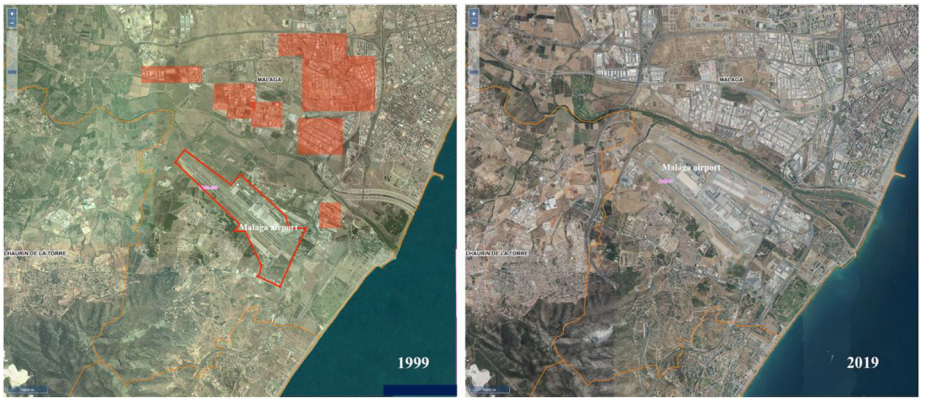
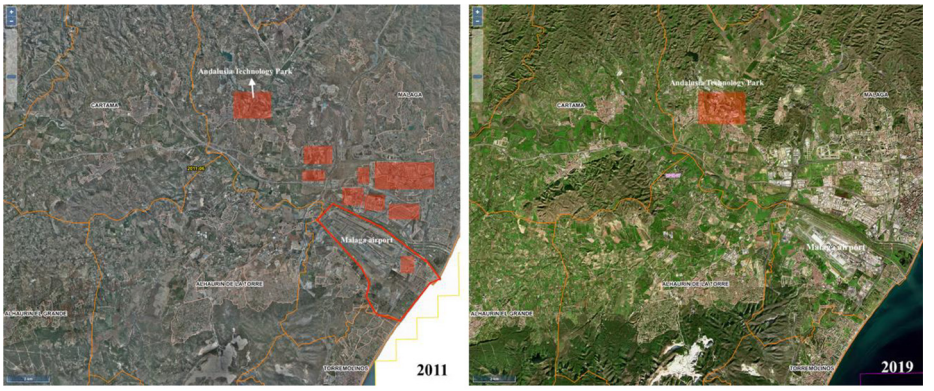


Figure 12.
Urban industrial business zone development around the Málaga airport (1999 and 2019)

Source: Own elaboration based on data from Junta de Andalucía (2020)
*Approximate scale 1:10.000

the industrial business zone near of airport. Málaga city is one of the fastest growing cities in Spain and one with a distinctive urban form (Barke, 1992). Malaga's urban economy has changed quite considerably in the last 20 years. The city itself has shown relative improvement in economic strength, business environment and the use of new technologies. In this same line, Escolano and Pisonero (2011) showed that Málaga's airport plays a key role in the touristic destination, and it is fundamental part of the contemporary urbanization process on the Mediterranean coast of Andalusia.

Researchers Schaafsma (2005) and Van der Blonk *et al.* (2006) were the initiators of the concept of airport corridor. It stands for a planned and integrated real estate development between the city and the airport. Furthermore, this interaction is marked by linear urban development between airports and the major cities they serve. We can mention the airport corridors are the city-oriented airport corridor of Copenhagen, Denmark; the highway-



Source: Own elaboration based on data from Junta de Andalucía (2020)
*Orthophoto at 1,000 scale with resolution of 0.10 meters/pixel

Figure 13.
Urban industrial business zone development around the Málaga airport (2011 and 2019)

oriented airport corridor of Denver, CO, or the transit-oriented airport corridor of Zurich, Switzerland (Schaafsma *et al.*, 2008). According to these authors, the most clearly defined corridors have appeared in city regions where either specific governance structures for the corridor have been put in place (e.g. Zurich and Paris) or a massive investment in infrastructure, subsidies and marketing of the corridor is guaranteed by public authorities (Kuala Lumpur; Singapore; Dubai, in the UAE; and Hong Kong). The functions that locate in airport corridors are mainly connected to five markets (Figure 14).

In this regard, "economies maturing into the tertiary sector and high-tech industries, which are important generators of passengers and cargo air traffic flows. This shows a roadmap, and which economic sectors are the most attractive for the future development of cities" (Peneda *et al.*, 2011). Access to international markets affects cities and its hinterland in about the same way, although point estimates suggest that cities are usually less affected by access to international markets than are their hinterlands (Baum-Snow *et al.*, 2020). Proponents of regional airports emphasize the importance of positive spillovers on employment and economic growth throughout the region (Breidenbach, 2020).

To finish this section, we will talk about the concept of the airport city, it first appeared in the United States in the 1970s. At that time, it tended to refer simply to the industrial and business parks located right next to an airfield . Today different actors have different perspectives regarding this concept. Urban planners and architects acknowledge it as a new urban form, emerging as the spatial manifestation of the interaction among airport-centred commerce, real estate development and multimodal transportation. To be qualified as an airport city, this urban form must show the qualitative features of a city, such as density, access quality, environment and services (Güller and Güller, 2003). Economists define the airport city as the clustering of economic functions at and around the airport (ACRP Report 27, 2010). In this line, Wang and Hong (2011) claim that the focus of international airport development has shifted from a transportation hub towards a multi-functional aero metropolis. An airport city serves not only as index of a country's performance in development, but also plays the role as impetus of national industries and a gateway to economic globalization.

Indeed, three sets of the regression models presented in an article by Murakami and Kato (2020) shaded light on the significance of spatial strategy at the national, local government

Figure 14.
Airport corridors are connected to five markets

Source: Own elaboration

and airport-linked within the Tokyo metropolitan region. The empirical results included three main findings:

(1) urban regeneration districts;

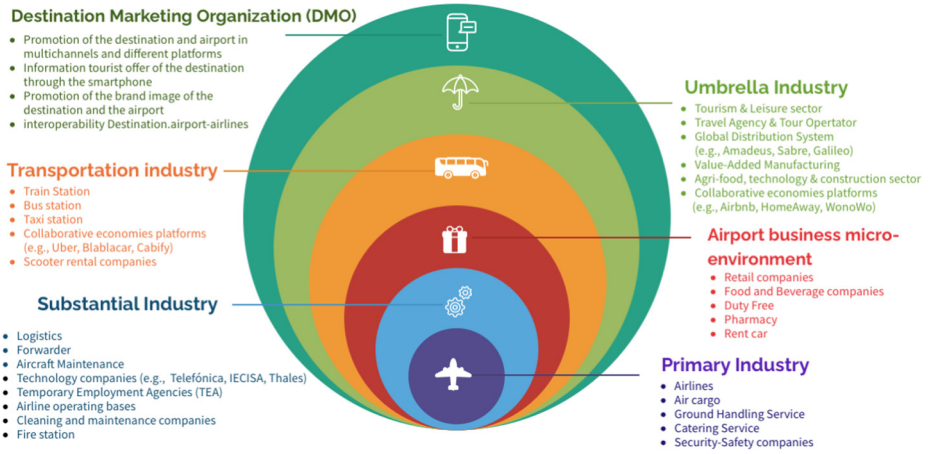
(2) the power of airport proximity; and

(3) inner-city airport accessibility is related to labor productivity for intercity business and leisure activities.

This study recommends a need for improved policy implementation and strategies to advance local communities' livelihoods (Ramaano, 2021). We cannot forget that Málaga airport is located less than 4 kilometres from the beach line, this particular condition the urban and socio-economic development of the city. The Figure 15 shows the spatial zoning of Málaga Costa del Sol airport city industry. Following Kassarda (2020) claims that airports are powerful business magnets and metropolitan region economic accelerators. As airports undergo digital transformation, i.e. a paradigmatic shift in the way digital technologies are adopted and used, there is a need for actionable insights to ensure that airport digital maturity is achieved (Halpern *et al.*, 2021). On the contrary, in a study realized by Florido-Benítez (2020e) examined whether the record of tourist arrivals to Spain through airports was good for the strategic plans of DMOs that stress quality, innovation as well as excellence to increase competitiveness. His results showed that this correlation between (number of tourist arrivals and quality) is not always feasible and acceptable in some tourist destinations.

5. Discussion and conclusion

In a globalized economy managed by interactive media and new technological supports, the interaction and role of agents in the air and tourism sector change rapidly. The ubiquity of information and services in the operation of both sectors is generating new business opportunities and repositioning of activities such as air cargo at this time of the COVID-19 pandemic. This speed of information and processes generated by new technologies has an



Source: Own elaboration

Figure 15.
Spatial zoning of Málaga Costa del Sol airport city industry

exponential impact on the territories that have airports, given that tourism, warehouses, logistics and business activities pivot around the airport. This new and ubiquitous digital scenario demands an adapted model with interconnected interface domains and interoperability that reinforce the sustainability and productivity of commercial airport activities at the airport and tourist destination within the territory in the short and long term: well-being of citizens, economic development, land use, infrastructures and Governance. An example is the interrelations between the Málaga Costa del Sol airport and hinterland's factors: airlines, air traveller, air cargo, infrastructure development, companies inside of Málaga city, technology, government policies, location of the territory and DMOs, considering the impacts related directly and indirectly. As stated by Florido-Benítez (2021d) Málaga Costa del Sol airport promotes an increase of the establishment of companies in the city and how this plays an important role in the tourist, air cargo and logistics development and Málaga local economy. This is a great opportunity for companies and DMOs help add value to local products, bet on tourist quality and design customized products with high added value, as long as the pandemic lasts and everyone is vaccinated (Florido-Benítez, 2021c).

Málaga Costa del Sol airport is the engine of the local Málaga economy and especially in the urban area of the city. Nevertheless, the location of an airport in the territory benefits the entire city gradually. Therefore, in this research five types of hinterland have been defined: heart hinterland; substantial hinterland; commodity hinterland; inferred hinterland and opportunity hinterland. This study considers that the main economic effects of the airport on the territory reside in the substantial hinterland. It is obvious that the economic and urban impact is located in this area economic and business development occurs in this area, thanks to the proximity of the airport. The most important transport, hotel, entertainment and leisure infrastructures have been built in the coastal zone of Málaga. 'The location of Andalusia as the gateway of European continent, makes this tourist destination in a strategic point at a tourist and aerial level. The incidence of the pandemic in the tourism and air sector of Andalusia are being devastating, this destination has a great dependence on these two sectors. For this reason, this is a great opportunity for companies and DMOs help

add value to local products, bet on tourist quality and design customized products with high added value' (Florido-Benítez, 2021c).

Hinterland conceptualization has a broader and more inclusive vision of new actors, according to the literature review and the results shown, hinterland is the geographical zone of influence of the airport in the territory in economic, logistical, commercial, import-export, urban, technological and security–safety terms. This concentric zone of influence is gradual, depending on the needs and offer of products and services of the airport, government organizations and companies. All of them receive feedback from the operation and role that each one has in the market. The zone of influence and distance of hinterland typologies are different in each airport and the territory that it is located. The zone of influence of the Málaga Costa del Sol airport is wider than the area of influence of the Son Sant Joan International airport in Palma de Mallorca, is circumscribed to the entire island, which depends almost exclusively on the airport for tourist flows, the main agent economic of the island. Paris-Charles de Gaulle airport has an even more extensive influence since it is an international and European "hub" for certain destinations, especially in the EE.UU, Asia and Pacific, Middle East area.

The results of this research are important for several reasons. First, most of the authors of the literature review defend the effects of airports physically on the territory. Conversely, this study defends the effects and accessibility of airports physically and digitally, because the accessibility of customers begins with the booking of plane tickets and the purchase of products and services in the Online Travel Agencies OTAs, the economic effects of these activities create employment and income generated by the role of the airport as a driver of productivity growth and then as an attractor of new firms in the territory. Second, airports have to align with the multimodality and multifunctionality of cities, in order to attract new business models and customers. Marketing yourself as a tourist or cargo airport is a big mistake, because you are closing a multitude of commercial and non-commercial opportunities and income. Third and last, airports can play a more active role in the promotion and delivery of tourism products and services in their host cities. An airport becomes an ambassador of a destination since it exhibits the positive characteristics of a destination. Indeed, airports are one of the main beneficiaries of master marketing plan strategies developed by DMOs, because the main actions of the DMOs are based on increasing the number of tourists, supporting the opening of new international and national routes and promoting tourist destinations in countries where the population has a great purchasing power.

Finally, we would like to point out that Málaga Costa del Sol airport is a multifunctional airport, in with the aim of diversifying new business models. For instance, encouraging new start-ups to operate inside and outside the airport, intensify the export of agri-food and technological products from Málaga, cooperate in the distribution chain of logistics and commercial companies, such as Amazon, DHL, Fujitsu, Mayoral, among others. Furthermore, it is interesting to plan airport corridors to channel health products and necessities more efficiently, depending on the territory or the type of hinterland that we have designed in this investigation. In these times, the design of airport corridors to ensure the arrival of vaccines, medicines or sanitary material in the territory or the specific hinterland typology more urgently required to ensure the medicines distribution would save lives and medical resources.

5.1 Theoretical implications

The current study has significant theoretical implications for the hinterland of airport topic in several ways. First, the paper contributes to having a more global and understandable vision of airport in a tourism context. In addition, this study expands the literature on

hinterland of airport and favours new models in future research on this topic. Second, the importance of airports has also been asserted by studies that have indicated a link between airports and the growth of regional economies (Florida *et al.*, 2015; Fattah *et al.*, 2009), which is understandable, as ease of access is an important factor for both promoting tourism and establishing collaboration between businesses situated in geographically remote locations while also facilitating the swift transport of goods, thus accelerating trade (Koroniotis *et al.*, 2020). Third and last, this study found relative importance among the factors that are affecting airports, destinations and stakeholders through influence zone of airport (e.g. accessibility and connectivity, intermodal transport, logistics and air cargo, management, amongst many others). This paper has contributed to expanding knowledge about how hinterland of airport and influence zone influence in the tourism and urban development. "Airports have an impact on regional economic growth and the economy directly impacts regional air transport" (Baker *et al.*, 2015).

5.2 Limitations and future research

The current study is not free from limitations. These limitations provide a guide for future studies in hinterland topic. First, this research project only focused on Málaga airport (Andalusia/Spain) a tourist destination where the main economic activity is tourism. The impact of this particular airport may not have the same effects in other regions and airports that have diversified their productive activity and do not depend solely on tourism. Second, government agencies and airport managers are reluctant to give information on current statistics. Third and last, this paper analyses Málaga airport and its hinterland, but the airlines that operate in this destination did not show interest in participating in this study. Following Aguirre *et al.* (2019) suggest that airport activity has been linked with economic development in urban areas, and with their improved facilities (by construction or expansion), given the importance of connecting territories and the positive externalities for society.

Future research should be focused on analysing the effects of hinterland's airport on tourism, airports and urban development in different regions where the main economic activity is tourism, to evaluate the impact of hinterland's airport in tourist destinations. Our results point to a series of possible paths for future research, which could shed further light on how airports interact with local economies. Furthermore, it would be interesting to analyse the negative effects of airports depending on the territory where these operate "beach destinations or cultural and natural destinations".

References

ACI (2004), *Social and Economic Impact of Airports*, ACI-Europe and York Aviation.

ACRP Report 27 (2010), *Enhancing Airport Land Use Compatibility*, Transportation Research Board of the National Academies, Washington, DC.

Addie, J.P.D. (2014), "Flying high (in the competitive sky): conceptualizing the role of airports in global city-regions through 'aero-regionalism'", *Geoforum*, Vol. 55, pp. 87-99, doi: 10.1016/j.geoforum.2014.05.006.

AENA (2020), "Air traffic statistics 'September 2020'", available at: www.aena.es/csee/Satellite?pagename=Estadisticas/Home (accessed 2 July 2021).

Aguirre, J., Mateu, P. and Pantoja, C. (2019), "Granting airport concessions for regional development: evidence from Peru", *Transport Policy*, Vol. 74, pp. 138-152.

Agyeiwaah, E. (2019), "Over-tourism and sustainable consumption of resources through sharing: the role of government", *International Journal of Tourism Cities*, Vol. 6 No. 1, pp. 99-116.

Alves, P. (2014), *Determination and Evaluation of an Airport Catchment Area: A Portuguese Case Study*, Universidade da Beira Interior.

Alves, P., Baltazar, M.E., Silva, J., Garra, J. and Vaz, M. (2013), "The impact of hinterland over the global efficiency of airports", *19th Portuguese Association for Regional Development (APDR) Congress*, pp. 1-17.

Appold, S. and Kasarda, J. (2010), *Strategically Managing Airport Cities*, in Global Airport Cities (J., Kasarda, ed.), Insight Media, London.

Arvis, J.F., Vesin, V., Carruthers, R., Ducruet, C. and de Langen, P. (2019), "Maritime networks, port efficiency, and Hinterland connectivity in the Mediterranean", The World Bank, Washington, DC", available at: https://openknowledge.worldbank.org/bitstream/handle/10986/30585/9781464812743.pdf?sequence=2&isAllowed=y (accessed 1 July 2021).

Baker, D., Merkert, R. and Kamruzzaman, M. (2015), "Regional aviation and economic growth: cointegration and causality analysis in Australia", *Journal of Transport Geography*, Vol. 43, pp. 140-150, doi: 10.1016/j.jtrangeo.2015.02.001.

Baltazar, M.E., Silva, J., Vaz, M., Allee, V. and Marques, T. (2012), "Interrelationships among airports and the Hinterland players. a value network analysis approach", *52nd Congress of the European Regional Science Association: 'Regions in Motion Breaking the Path'*, Bratislava, Slovakia, pp. 21-25.

Barke, M. (1992), "Málaga", *Cities*, Vol. 9 No. 1, pp. 2-17, doi: 10.1016/0264-2751(92)90002-M.

Baum-Snow, N., Henderson, J., Turner, M., Zhang, Q. and Brandt, L. (2020), "Does investment in national highways help or hurt hinterland city growth?", *Journal of Urban Economics*, Vol. 115, p. 103124, doi: 10.1016/j.jue.2018.05.001.

Bel, G. and Fageda, X. (2009), "Preventing competition because of solidarity: rhetoric and reality of airport investments in Spain", *Applied Economics*, Vol. 41 No. 22, pp. 2853-2865, doi: 10.1080/00036840701522846.

Benedetti, G., Gobbato, L., Perboli, G. and Perfetti, F. (2012), "The Cagliari airport impact on tourism: a logit-based analysis", *Procedia - Social and Behavioral Sciences*, Vol. 54, pp. 1010-1018, doi: 10.1016/j.sbspro.2012.09.816.

Breidenbach, P. (2020), "Ready for take-off? The economic effects of regional airport expansions in Germany", *Regional Studies*, Vol. 54 No. 8, pp. 1084-1097.

Brueckner, J. (2003), "Airline traffic and economic development", *Urban Studies*, Vol. 40 No. 8, pp. 1455-1469, doi: 10.1080%2F0042098032000094388.

Chaouk, M., Pagliari, R. and Moxon, R. (2020), "The impact of national macro-environment exogenous variables on airport efficiency", *Journal of Air Transport Management*, Vol. 82, p. 101740, doi: 10.1016/j.jairtraman.2019.101740.

Chen, X., Xuan, C. and Qiu, R. (2021), "Understanding spatial spillover effects of airports on economic development: new evidence from China's hub airports", *Transportation Research Part A: Policy and Practice*, Vol. 143, pp. 48-60, doi: 10.1016/j.tra.2020.11.013.

Christofi, M., Leonidou, E. and Vrontis, D. (2017), "Marketing research on mergers and acquisitions: a systematic review and future directions", *International Marketing Review*, Vol. 34 No. 5, pp. 629-651.

Cidell, J. (2019), "Transit life: how commuting is transforming our cities", *The Aag Review of Books*, Vol. 7 No. 2, pp. 108-110, doi: 10.1080/2325548X.2019.1579568.

Coca-Stefaniak, J.A., Parker, C. and Rees, P. (2010), "Localisation as a marketing strategy for small retailers", *International Journal of Retail and Distribution Management*, Vol. 38 No. 9, pp. 677-697.

De Menezes, L.M. and Kelliher, C. (2011), "Flexible working and performance: a systematic review of the evidence for a business case", *International Journal of Management Reviews*, Vol. 13 No. 4, pp. 452-474.

Doganis, R. (2019), *Flying off Course. Airline Economics and Marketing*, Routledge.

Escolano, S.L.M. and Pisonero, D.R. (2011), "The impact of airport infrastructure in Spanish urban expansion during the last decades: the Málaga airport expansion as a case study", *XXII Congreso de Geógrafos Españoles, Universidad de Alicante, 2011*, pp. 667-678, available at: http://hdl.handle.net/10045/48419

Eugenio-Martin, J.L. (2016), "Estimating the tourism demand impact of public infrastructure investment: the case of Málaga airport expansion", *Tourism Economics*, Vol. 22 No. 2, pp. 254-268, doi: 10.5367%2Fte.2016.0547.

Eugenio-Martin, J.L. and Inchausti-Sintes, F. (2016), "Low-cost travel and tourism expenditures", *Annals of Tourism Research*, Vol. 57, pp. 140-159, doi: 10.1016/j.annals.2015.11.019.

Fattah, A., Lock, H., Buller, W., Kirby, S. and Gajda, D. (2009), "*Smart Airports: Transforming Passenger Experience to Thrive in The New Economy*", Cisco Internet Business Solutions Group, San Jose, CA, pp. 1-16.

Figueiredo, T. and Castro, R. (2019), "Passenger's perceptions of airport branding strategies: the case of tom jobim international airport–RIOgaleao, Brazil", *Journal of Air Transport Management*, Vol. 74 No. 7, pp. 13-19, doi: 10.1016/j.jairtraman.2018.09.010.

Florido-Benitez, L. (2016), *The Implementation of Mobile Marketing as a Multidisciplinary Tool in the Tourism and Airport Sector*, Editorial Académica Española, Germany.

Florida, R., Mellander, C. and Holgersson, T. (2015), "Up in the air: the role of airports for regional economic development", *The Annals of Regional Science*, Vol. 54 No. 1, pp. 197-214, doi:10.1007/s00168-014-0651-z

Florido-Benítez, L. (2017), "Analysis of the strengths and weaknesses of mobile marketing as a promotional tool for tourist destinations", *CULTUR: Revista de Cultura e Turismo*, Vol. 11 No. 2, pp. 6-28.

Florido-Benítez, L. (2020), "Seville airport: a success of good relationship management and interoperability in the improvement of air connectivity", *Journal of Turismo Estudos e Prácticas*, Vol. 5 No. 2, pp. 1-30.

Florido-Benítez, L. (2021a), "New marketing strategy: mobile applications as a marketing tool in airports", *Chapter of Book: Handbook of Research on Applied AI for International Business and Marketing Applications*, IGI GLOBAL Publisher of Timely Knowledge, pp. 14-29, doi: 10.4018/978-1-7998-5077-9.ch002.

Florido-Benítez, L. (2021b), "Identifying cybersecurity risks in Spanish airports", *Cyber Security*, Vol. 4 No. 3, pp. 267-291.

Florido-Benítez, L. (2021c), "The effects of COVID-19 on Andalusian tourism and aviation sector", *Tourism Review*, Vol. 76 No. 4, pp. 829-857, doi: 10.1108/TR-12-2020-0574.

Florido-Benítez, L. (2021d), "Malaga's airport promotes the establishment of companies in its hinterland and improves the local economy", *International Journal of Tourism Cities*.

Florido-Benítez, L. (2021e), "The supremacy of airports generates a high dependence on the tourist destination Spain", *Journal of Turismo Estudos e Prácticas*, Vol. 5 No. 2, pp. 1-30.

Florido-Benítez, L. and del Alcázar, B. (2020), "Airports as ambassadors of the marketing strategies of Spanish tourist destination", *Gran Tour*, Vol. 21, pp. 47-78.

FröHlich, K. and Niemeier, H.M. (2011), "The importance of spatial economics for assessing airport competition", *Journal of Air Transport Management*, Vol. 17 No. 1, pp. 44-48, doi: 10.1016/j.jairtraman.2010.10.010.

Galeote, L. and J. and García, M. (2020), "Qualitative impact analysis of international tourists and residents' perceptions of Málaga-costa del sol airport", *Sustainability*, Vol. 12 No. 11, p. 4725, doi: 10.3390/su12114725.

Gingerich, K. and Maoh, H. (2019), "The role of airport proximity on warehouse location and associated truck T trips: evidence from Toronto, Ontario", *Journal of Transport Geography*, Vol. 74, pp. 97-109, doi: 10.1016/j.jtrangeo.2018.11.010.

Graham, A. (2008), *Managing Airports – An International Perspective*, Elsevier, Third Edition.

Graham, A. (2020), "Airport privatization: a successful journey?", *Journal of Air Transport Management*, Vol. 89, p. 101930, doi: 10.1016/j.jairtraman.2020.101930.

Guerrero, D. (2021), "A global analysis of hinterlands from a European perspective", *Book: Global Logistics Network Modelling and Policy: Quantification and Analysis for International Freight*, pp. 31-46.

Guerrero, D. and Montes, P.C. (2021), *Hinterland, in: The International Encyclopedia of Geography: People, the Earth, Environment, and Technology*, Wiley, p. 7.

Güller, M. and Güller, M. (2003), *From Airport to Airport City*, Editorial Gustavo Gili, Barcelona, Spain.

Hakfoort, J., Poot, T. and Rietveld, P. (2001), "The regional economic impact of an airport: the case of Amsterdam Schiphol airport", *Regional Studies*, Vol. 35 No. 7, pp. 595-604, doi: 10.1080/00343400120075867.

Halpern, N., Budd, T., Suau-Sanchez, P., Bråthen, S. and Mwesiumo, D. (2021), "Conceptualising airport digital maturity and dimensions of technological and organisational transformation", *Journal of Airport Management*, Vol. 15 No. 2, pp. 182-203.

Hesse, M. (2020), "Logistics: situating flows in a spatial context", *Geography Compass*, Vol. 14 No. 7, pp. 1-15, doi: 10.1111/gec3.12492.

Huber, C., Watts, A., Grills, A., Yong, J.H.E., Morrison, S., Bowden, S., Tuite, A., Nelson, B., Cetron, M. and Khan, K. (2021), "Modelling airport catchment areas to anticipate the spread of infectious diseases across land and air travel", *Spatial and Spatio-Temporal Epidemiology*, Vol. 36, p. 100380.

International Air Transport Association (2020), "IATA website", available at: www.iata.org/contentassets/4d3961c878894c8a8725278607d8ad52/air-cargo-brochure.pdf. (accessed 2 July 2021).

ICEX (2019), "Reports on the analysis of Spanish foreign trade", available at: www.icex.es/icex/es/navegacion-principal/todos-nuestros-servicios/informacion-de-mercados/estadisticas/sus-estadisticas-a-medida/estadisticas-espanolas-estacom/index.html (accessed 25 March 2021).

Iso4app software (2021), "iso4app api", available at: www.iso4app.net (accessed 25 June 2021).

Jian, H., Pan, H., Xiong, G. and Lin, X. (2017), "The impacts of civil airport layout to Yunnan local tourism industry", *Transportation Research Procedia*, Vol. 25, pp. 77-91.

Johnson, J.H. (1969), *Urban Geography*, Pergamon Editorial.

Junta de Andalucía (2020), "Spatial Data Infrastructure (Visor IDEAndalucía)", available at: www.juntadeandalucia.es/institutodeestadisticaycartografia/temas/index-srv-en.htm (accessed 25 July 2021).

Kasarda, J.D. (2001), "Logistics and the rise of aerotropolis", *Real Estate Issues*, Vol. 4, pp. 43-48.

Kassarda, J. (2020), "Aerotropolis business magnets", *Airport World*, Vol. 1, pp. 36-38.

Kassarda, J. and Lindsay, G. (2011), *Aerotropolis. The Way We'll Live Next*, Penguin Group, London.

Koroniotis, N., Moustafa, N., Schiliro, F., Gauravaram, P. and Janicke, H. (2020), "A holistic review of cybersecurity and reliability perspectives in smart airports", *IEEE Access*, Vol. 8, pp. 209802-209834, doi: 10.1109/ACCESS.2020.3036728.

Lieshout, R. (2012), "Measuring the size of an airport's catchment area", *Journal of Transport Geography*, Vol. 25, pp. 27-34, doi: 10.1016/j.jtrangeo.2012.07.004.

Lieshout, R., Malighetti, P. and Burghouwt, G. (2016), "The competitive landscape of air transport in Europe", *Journal of Transport Geography*, Vol. 50, pp. 68-82, doi: 10.1016/j.jtrangeo.2015.06.001.

Malchow, M.B. and Kanafani, A. (2004), "A disaggregate analysis of port selection. Transport", *Transportation Research Part E: Logistics and Transportation Review*, Vol. 40 No. 4, pp. 317-337, doi: 10.1016/j.tre.2003.05.001.

Marcucci, E. and Gatta, V. (2011), "Regional airport choice: consumer behaviour and policy implications", *Journal of Transport Geography*, Vol. 19 No. 1, pp. 70-84, doi: 10.1016/j.jtrangeo.2009.10.001.

MITMA (2003), "Surrounding analysis", available at: www.fomento.gob.es/NR/rdonlyres/816BF0CB-531E-4F4D-AD10-30ED86D455DD/54378/Analisisentorno.pdf (accessed 20 July 2021).

Moura, T.G.Z., Garcia-Alonso, L. and Salas-Olmedo, M.H. (2017), "Delimiting the scope of the hinterland of ports: proposal and case study", *Journal of Transport Geography*, Vol. 65, pp. 35-43, doi: 10.1016/j.jtrangeo.2017.09.012.

Mueller, F. and Aravazhi, A. (2020), "A new generalized travel cost-based connectivity metric applied to Scandinavian airports", *Transportation Research Part D: Transport and Environment*, Vol. 81, p. 102280, doi: 10.1016/j.trd.2020.102280.

Murakami, J. and Kato, H. (2020), "The intra-metropolitan distribution of airport accessibility, employment density, and labor productivity: spatial strategy for economic development in Tokyo", *Applied Geography*, Vol. 125, p. 102309, doi: 10.1016/j.apgeog.2020.102309.

O'Connell, J.F. and Williams, G. (2005), "Passengers' perceptions of low-cost airlines and full-service carriers: a case study involving Ryanair, AerLingus, AirAsia and Malaysia airlines", *Journal of Air Transport Management*, Vol. 11 No. 4, pp. 259-272, doi: 10.1016/j.jairtraman.2005.01.007.

Paul, J. and Rialp, A. (2020), "The art of writing literature review: what do we know and what do we need to know?", *International Business Review*, Vol. 29 No. 4, pp. 1-7.

Peneda, M.J.A., Reis, V.D. and Macário, M.D.R.M.R. (2011), "Critical factors for development of airport cities", *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2214 No. 1, pp. 1-9, doi: 10.3141/2214-01.

Perboli, G., Ghirardi, M., Gobbato, L. and Perfetti, F. (2015), "Flights and their economic impact on the airport catchment area: an application to the Italian tourist market", *Journal of Optimization Theory and Applications*, Vol. 164 No. 3, pp. 1109-1133, doi: 10.1007/s10957-014-0613-8.

Perboli, G., Musso, S. and Perfetti, F. (2011), *Analysis of the Economic Impact of Airport Services in Sardinia: The Cagliari Airport Case Study*, Routes Europe.

Percoco, M. (2010), "Airport activity and local development: evidence from Italy", *Urban Studies*, Vol. 47 No. 11, pp. 2477-2443, doi: 10.1177%2F0042098009357966.

Prideaux, B. and Cooper, C. (2002), "Marketing and destination growth: a symbiotic relationship or simple coincidence?", *Journal of Vacation Marketing*, Vol. 9 No. 1, pp. 35-51, doi: 10.1177%2F135676670200900103.

Ralphs, E., Shahab, S. and Ahmadpoor, N. (2020), "Access to small airports and the impact on regional growth in the UK", *Current Urban Studies*, Vol. 08 No. 1, pp. 24-56, doi: 10.4236/cus.2020.81002.

Ramaano, A.I. (2021), "Tourism policy and environmental impacts in Musina municipality: lessons from a case study of failure", *Tourism Critiques: Practice and Theory*, pp. 91-114, doi: 10.1108/TRC-12-2020-0021.

Rodrigue, J.-P. (2020), *The Geography of Transport Systems*, Routledge, New York, NY.

Rosa, T., Baltazar, M.E. and Silva, J. (2017), "Low-cost carriers socio-economic impact in tourism development: the case of Faro's airport hinterland", *Tourism Spectrum*, Vol. 3 No. 1, pp. 29-40. available at: http://hdl.handle.net/10400.6/9445

Ruotsalainen, K. (2020), "COVID-HQ: beyond the mayhem, the path from lockdown to the new normal", available at: https://airportir.com/ir-pulse/covid-hq-beyond-the-mayhem-the-path-from-lockdown-to-the-new-normal/ (accessed 20 July 2021).

Schaafsma, M. (2005), "Airport and city", *Presented at the Colloquiumon the Interaction Between Airport and City*, University of Utrecht, Netherlands, p. 17.

Schaafsma, M., Amkreutz, J. and GüLler, M. (2008), *Airport and City: Airport Corridors – Drivers of Economic Development*, Schiphol Real Estate, Amsterdam.

Scholvin, S., Breul, M. and Diez, R.J. (2019), "Revisiting gateway cities: connecting hubs in global networks to their hinterlands", *Urban Geography*, Vol. 40 No. 9, pp. 1291-1309, doi: 10.1080/02723638.2019.1585137.

Serrano, F. and Kazda, A. (2020), "The future of airports post covid-19", *Journal of Air Transport Management*, Vol. 89, pp. 1-10, doi: 10.1016/j.jairtraman.2020.101900.

Sheard, N. (2019), "Airport size and urban growth", *Economica*, Vol. 86 No. 342, pp. 300-335.

Suau-Sanchez, P., Burghouwt, G. and Pallares-Barbera, M. (2014), "An appraisal of the CORINE land cover database in airport catchment area analysis using a GIS approach", *Journal of Air Transport Management*, Vol. 34 No. 1, pp. 12-16, doi: 10.1016/j.jairtraman.2013.07.004.

The County Council of Málaga (2019), "National market report 2019", available at: www.costadelsolmalaga.org/5773/com1_md1_pg-6/ (accessed 25 July 2021).

Thelle, M., Pedersen, T. and Harhoff, F. (2012), *Airport Competition in Europe*, Copenhagen Economics.

Tiller, K.C. and Thill, J.C. (2017), "Spatial patterns of landside trade impedance in containerized South American exports", *Journal of Transport Geography*, Vol. 58, pp. 272-285, doi: 10.1016/j.jtrangeo.2017.01.001.

Timár, J. and Kovács, Z. (2020), "Hinterland development", *International Encyclopedia of Human Geography (2° Edi.)*, Vol. 7, pp. 5-13.

Tveter, E. (2017), "The effect of airports on regional development: evidence from the construction of regional airports in Norway", *Research in Transportation Economics*, Vol. 63, pp. 50-58, doi: 10.1016/j.retrec.2017.07.001.

Uğur, N.G. and Akbıyık, A. (2020), "Impacts of COVID-19 on global tourism industry: a cross-regional comparison", *Tourism Management Perspectives*, Vol. 36, p. 100744, doi: 10.1016/j.tmp.2020.100744.

Van der Blonk, C., Houtsma, W.H., Jenniskens, M., Terwecoren, J. and Verbeet, M. (2006), *Airports Reviewed*, University of Utrecht, Netherlands.

van Wijk, M. (2008), "Development of airport regions: varieties of institutions in Schiphol and franfurt", *Aerlines Magazine, e-Zine Edition*, Vol. 40, pp. 1-5.

Visor IDEAndalucía Software (2021), "Visor IDEAndalucía", available at: www.ideandalucia.es/portal/ (accessed 25 July 2021).

Voltes-Dorta, A., Rodríguez-Déniz, H. and Suau-Sanchez, P. (2017), "Passenger recovery after an airport closure at tourist destinations: a case study of Palma de Mallorca airport", *Tourism Management*, Vol. 59, pp. 449-466.

Wang, L., Goodchild, A. and Wang, Y. (2018), "The effect of distance on cargo flows: a case study of Chinese imports and their hinterland destinations", *Maritime Economics and Logistics*, Vol. 20 No. 3, pp. 1-20, doi: 10.1057/s41278-017-0079-3.

Wang, K.J. and Hong, W.C. (2011), "Competitive advantage analysis and strategy formulation of airport city development – the case of Taiwan", *Transport Policy*, Vol. 18 No. 1, pp. 276-288, doi: 10.1016/j.tranpol.2010.08.011.

Wattanacharoensil, W., Fakfare, P. and Graham, A. (2021), "Airportscape and its effect on airport sense of place and destination image perception", *Tourism Review*, doi: 10.1108/TR-01-2021-0036.

WoS (2021), "Selection of data and authors", available at: www.webofknowledge.com (accessed 29 March 2021).

Xu, H. and Itoh, H. (2018), "Density economies and transport geography: evidence from the container shipping industry", *Journal of Urban Economics*, Vol. 105, pp. 121-132, doi: 10.1016/j.jue.2017.09.002.

Yang, S. and Zheng, M. (2019), "Performance of citations and altmetrics in the social sciences and humanities", *82nd Annual Meeting of the Association for Information Science and Technology*, Melbourne (Australia), Vol. 56 No. 1, pp. 326-335.

Yang, Y., Li, D. and Li, X.R. (2019), "Public transport connectivity and intercity tourist flows", *Journal of Travel Research*, Vol. 58 No. 1, pp. 25-41, doi: 10.1177/0047287517741997.

Yang, J., Luo, M. and Abing, J. (2016), "Analyzing the spatial–temporal evolution of a gateway'Shinterland: a case study of Shanghai, China", *Transportation Research Part E: Logistics and Transportation Review*, Vol. 95, pp. 355-367, doi: 10.1016/j.tre.2016.03.015.

Yuen, A., Zhang, A., Hui, Y.V., Leung, L.C. and Fung, M. (2017), "Is developing air cargo airports in the hinterland the way of the future?", *Journal of Air Transport Management*, Vol. 61, pp. 15-25, doi: 10.1016/j.jairtraman.2016.09.009.

Further reading

Kasarda, J.D. and Green, J.D. (2005), "Air cargo as an economic development engine: a note on opportunities and constraints", *Journal of Air Transport Management*, Vol. 11 No. 6, pp. 459-462, doi: 10.1016/j.jairtraman.2005.06.002.

Kasarda, J. and Lindsay, G. (2011), *Aerotropolis. The Way We'll Live Next*, Penguin Group, London.

Kasarda, J. (2020), "Aerotropolis business magnets", *Airport World*, Vol. 1, pp. 36-38.

About the author

Lázaro Florido-Benítez holds PhD in Tourism and Marketing from University of Malaga (Spain), and a master's degree in Management of Airports–Aeronautics from European Business School (Spain). He is lecturer and researcher in economics and business administration department. His main research interests include airport branding, air transport connectivity, cybersecurity. In the area of tourism, he has investigated promotion of the tourist destination, how airports and destinations are promoted through digital marketing, mobile marketing, the impact of mobile marketing in the airports, the impact of airports and airlines on the tourist destination, among others. He has published in many peer-reviewed journals such as tourism, airports and marketing. Lázaro Florido-Benítez can be contacted at: lfb@uma.es