

## VERKEHRSGEOGRAPHIE *TRANSPORT GEOGRAPHY*

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### HIGH-SPEED RAIL STATIONS AND AIRPORTS: SYMBOLIC INFRASTRUCTURES OF MOBILITY AS “PLACES OF GLOBALISATION”

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#### *Summary*

*In the current era of mobility, airports and high-speed train stations have turned into necessary infrastructures of any world city. Beyond connecting places physically and energising economically the cities in which they are located, they play a prominent role in the consolidation and maintenance of world cities, as they are also symbolic facilities, linked to dominant leisure-consumption practices. This more immaterial perspective is*

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*emphasised, especially in the face of the greater presence of non-aeronautical uses in these places, which has caused a change of conception in their architectural design, in the leisure-consumption activities that are developed in them and in the attempts to project territorial identities in a world context where homogenisation patterns printed by globalisation are generalised. Therefore, in the face of those anthropological conceptions that define them as “non places”, they can be referred to as “places of Globalisation”, that are defined, or are at least heavily influenced, by the contemporary emphasis on leisure, consumption and global mobility.*

*Keywords: Airports, high-speed rail stations, HSR-stations, avant-garde architecture, leisure-consumer practices, territorial identities, globalisation.*

### *Zusammenfassung*

#### BAHNHÖFE FÜR HOCHGESCHWINDIGKEITSSZÜGE UND FLUGHÄFEN: SYMBOLISCHE INFRASTRUKTUREN DER MOBILITÄT ALS „ORTE DER GLOBALISIERUNG“

*Flughäfen und Bahnhöfe an Hochgeschwindigkeitsstrecken („High-Speed Rail“-Stationen) sind im gegenwärtigen Zeitalter der Mobilität zu unverzichtbaren Infrastrukturen von Weltstädten geworden. Neben der Erreichbarkeit von Orten und der wirtschaftlichen Belebung der Städte, in denen sie sich befinden, spielen Flughäfen und HSR-Stationen eine herausragende Rolle bei der Konsolidierung und Aufrechterhaltung des Status als Weltstädte, da sie ebenso symbolische Einrichtungen sind, die eng mit vorherrschenden Praktiken des Freizeitkonsums verknüpft sind. Angesichts zunehmender Nutzungen jenseits des eigentlichen Transportbetriebs wird im vorliegenden Beitrag diese eher immaterielle Perspektive hervorgehoben, die zu einer Veränderung der architektonischen Gestaltung dieser Orte, ihrer Freizeit- und Konsumangebote sowie der Übertragung territorialer Identitäten in einen Weltkontext, in dem die durch die Globalisierung geprägten Homogenisierungsmuster verallgemeinert werden, geführt hat. Im Gegensatz zu anthropologischen Konzepten, die sie als „Nicht-Orte“ definieren, wird in diesem Beitrag vorgeschlagen, sie als „Orte der Globalisierung“ zu bezeichnen, die durch die zeitgenössische Bedeutung von Freizeit, Konsum und globaler Mobilität geprägt oder zumindest stark beeinflusst werden.*

*Schlagwörter: Flughäfen, Bahnhöfe für Hochgeschwindigkeitszüge, HSR-Stationen, Avantgarde-Architektur, Praktiken des Freizeitkonsums, territoriale Identitäten, Globalisierung.*

## **1 Introduction**

Although Information and Communication Technologies (ICT) have a decisive influence on globalising trends, the important contributions that modern transport systems are making in globalisation cannot be forgotten. Among them, it is worth highlighting the

high-speed rail (HSR) on a regional and sub-continental scale and, especially, the aviation sector, which is adapted to a continental and planetary range of action. Many authors have recognised their role as agents of globalisation, allowing the reformulation of spatial concepts such as mobility, accessibility, and distance (RODRIGUE 2020).

At present, it could be maintained that it is almost impossible to configure a large city without a large airport and HSR station with a geographically varied and intense connectivity (DÍEZ-PISONERO 2016), while both infrastructures need a city that provides passengers and therefore economic viability. This means that there is a strong interrelation between these two infrastructures and cities. However, this interrelation is not just about transport networks, but about places, economic development and place making, among other things, which acquire a considerable interest in the context of globalisation. This broader perspective favours the reconceptualisation of these infrastructures and calls into question their traditional conception as “non places” (AUGÉ 1995); rather, they are places in and of themselves, as well as co-producers of place, with cities.

That is, the role played by airports and HSR stations in the context of globalisation is crucial not only as infrastructures of mobility that satisfy the connectivity needs between territories and materialise the spatial effects associated with both modes of transport (accessibility, shortening of distances, etc.). Both, too, contribute to the economic development of the cities and regions where they are located in terms of GDP, employment and new facilities, services, and sources of income (DIMITRIOS and MARIA 2018; WANG et al 2018).

However, according to the dynamics of a leisure-consumer society (BAUMAN 2013) and cognitive-cultural capitalism (SCOTT 2014), the typically physical mechanisms of the industrial city are replaced by others of an intangible nature, such as knowledge, innovation, and creativity, which are considered the new driving forces of territorial development in the post-industrial city. Thus, competition between the major cities in the world leads them not only to focus on the multiplicity of economic flows, but also to emphasise particular forms of cultural capital (symbols, images) that emphasise their identity and cosmopolitan value. In this way, lending more and more importance to cultural production of space is a way to attract and sustain human and financial flows (PRATT 2013; SCOTT 2000).

In relation to the image of the place, some of these infrastructures have become important citymarketing strategies that help the international projection of the city, as they are symbolic facilities, where some cultural dynamics are developed. They are also facilities that are part of the image that the city projects to the world, in a scenario of urban competitiveness, where the attraction of flows of all kinds (capital, workers, tourists and ideas, among others) is important in a neoliberal economic context, even vital for local, regional and national economies.

Precisely these functions, many of them of a symbolic nature and linked to the services offered, rather than to the logistics of the air and rail sector, are the ones that are examined in the following text. In this sense, the main idea to be demonstrated in this research is the need to include a symbolic perspective for a full understanding of these infrastructures because their representative nature, brand, and image also contribute to the promotion of the symbolic value of cities and to their positioning on the world map (KASAPI and CELA 2017). This symbolic perspective will be analysed in three points: (i) morphological

changes in the current architectures of airports and HSR stations; (ii) leisure-consumer practices developed in both infrastructures, similar to those that are carried out in shopping centres or malls; and (iii) projection of territorial identities in a world context where homogenisation patterns printed by globalisation are generalised.

## 2 High-speed rail stations and airports in globalisation

Mobility is one of the most relevant characteristics of advanced societies (URRY 2016). Internet and ICT have a decisive influence on globalising trends. Also some modern transport systems such as high-speed rail and, especially, the aviation sector both play a fundamental role in medium and long distances, recognising their role as agents and vectors of globalisation (RODRIGUE 2020).

The history of the railway shows its prominence during the 19<sup>th</sup> and early 20<sup>th</sup> centuries, contemporaneous with the industrial revolution. However, subsequent improvements in other modes of transport, such as automobiles and airplanes, pushed back its market share in passenger transport. It was in the last decades of the 20<sup>th</sup> century and, especially, in the beginning of the 21<sup>st</sup> century when the renaissance of the railway took place thanks to high-speed rail (VICKERMAN 2018). This has led to a very important change in the conception of the traditional railway and has opened new expectations regarding the services it can provide, by increasing the commercial speed of transfer and the length of the journeys made without intermediate stops.

These trains, with speeds equal to or greater than 200 km/h have allowed not only the revitalisation of this declining mode of transport, but above all, its consolidation in the movement of people on regional and subcontinental scales (distances between 200 to 600 km and between 2–4 hours) (RODRIGUE 2020). The densest networks are concentrated in two geographical areas worldwide: Western Europe and Eastern Asia, where Japan (1964) and France (1981) were the pioneers in the respective areas. Subsequently, high speed was extended in Europe, with the first lines in Germany (1991) and Spain (1992) coming into operation. Later, it expanded into Asia, with the first projects in South Korea (2004), China (2007) and Taiwan (2007). Currently, more than 900 billion annual passenger-kms and 12,000 km of new lines built around the world attest to this phenomenon, with important developments in other world regions such as North America, the Middle East and Oceania (GUIGON 2020).

Air transport, although it also appeared in the 19<sup>th</sup> century, derives its generalisation from the military improvement induced in this sector during World War II which, together with the innovations in speed, safety and capacity promoted in later years, led to the growth of its market share at the expense of other modes of transport, such as rail and maritime. In addition, the liberalisation of the sector, which began in the 1980s, although not generalised, has allowed, among other processes, the multiplication of air connections and frequencies throughout the globe. Likewise, the lowering of rates and, consequently, its popularisation have made this transport in many countries lose its elitist and minority character, to become more accessible to increasingly diversified population strata, which identify progress with mobility (CÓRDOBA et al. 2007; BAUMAN 2013). At present, it is

consolidated as the main mode of transporting people over medium and long distances (greater than 600 km) and on trips lasting more than four hours, adapting to continental and planetary radii of action (GRAHAM 1995).

Consequently, the prominent role of both modes of transport in medium and long distances is observed and, therefore, their role as agents of globalisation, by allowing the reformulation of spatial concepts such as mobility, accessibility, and distance (CLEWLOW et al 2012). Although none have abolished the latter, the time of travel has drastically reduced to create a perception and appearance of a shrinking world that is understood in terms of “space-temporal convergence” (JANELLE 1969), “space-temporal compression” (HARVEY 1989), and the “plasticity of space” (FORER 1978). According to these ideas, distances are reduced, and space is contracted, which constantly changes the relative location of places.<sup>1)</sup> However, it should be noted that these effects do not all achieve the same dimension, this is, the generalisation of both transport systems has caused a new differential spatiality, which favours spaces and people who are intensely communicated, to the detriment of those who are not. Therefore, the proximity or distance to an airport and/or HSR station will influence the conditions of insertion or isolation of territories in globalisation (BAUMAN 2013).

It should be clarified that, despite the fact that both modes of transport have visibly facilitated the compression of the world, it has recently been highlighted that, as vectors of globalisation, they have also contributed to the spread of diseases, viruses and pandemics, such as that of the Covid-19. This has caused a deep setback in the global economy, in general, and in the aviation and railway industry, in particular. The confinement and closure of borders decreed almost simultaneously by governments around the world to contain the Covid-19 outbreak led to an unprecedented drop in activity, with a gradual restart of operations and where, as of today, the starting figures have not yet been reached (WYMAN 2020; Hosteltur 2021).

At present, both infrastructures constitute complex and dynamic transport stations, as a consequence of the importance that air and rail transport have for our lifestyle. An airport or HSR station is an essential factor of competitiveness, a tool at the service of local and regional economic development. An infrastructure of these characteristics is considered to provide the regions where they are located with prestige, reputation, centrality, functionality and internationalisation (DIEZ-PISONERO 2016; JIAQI et al. 2018).

Having an international airport or railway hub<sup>2)</sup> has become an enabler of management functions based on knowledge that favours the positioning of the city in the world hierarchy (TAYLOR and DERUDDER 2016). In this sense, in addition to being a landmark on the urban

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<sup>1)</sup> It is not the object of this article to enter into the existing competition between both means of transport. Although there are many studies that analyse the differences between the two in terms of speed, travel duration, frequency, comfort, safety and price, among others. In this research they are considered complementary as vectors of globalisation.

<sup>2)</sup> Despite the lack of consensus on what hubs constitute, these places tend to be centres of continuous research. A hub is an integrated transport interchange that concentrates and centralises a large part of the traffic to carry out a sending and/or receiving function of different origins/destinations (spokes) to redistribute, channel and redirect them to and from other contribution and dispersion centres with the aim of optimising resources, time and money.

landscape, they have established themselves as a powerful magnet for attracting flows of capital, knowledge, ideas and innovation (DERUDDER et al. 2013; DIAO et al. 2017).

From an empirical point of view, there are various pieces of research that have studied both infrastructures and their territorial influence from a quantitative and economic perspective. Many indicators, including passengers, traffic type, and cargo volume, have been used to rank airports and quantify their importance within a world airport hierarchy, which in many cases has been used as an indicator to determine an urban hierarchy (FERNANDES et al. 2019; DÍEZ-PISONERO 2020). Similarly, it has happened with HSR transport, whose relevance has been quantified in terms of passengers or kilometers built (VICKERMAN 2018; CAO et al. 2019). These studies help to describe the ways in which airports and train stations favour local, regional, national and even international economies, with cities participating in the world economy through air and rail connections (BREIDENBACH 2020; DENG et al. 2020). As a result, much of the existing literature on world cities and globalisation focuses on the capabilities of these infrastructures to attract passengers and/or other types of mobility.

Other works focus on the economic influence of both infrastructures with respect to the territorial areas where they are located, making special reference to their contribution to GDP and their capacity to generate employment (YU et al. 2019; ZHANG and GRAHAM 2020). There are even studies that focus on the economic and territorial dynamics that emerge in the surroundings of these infrastructures because these are particularly relevant urban indicators of development in the 21st century (YANG et al. 2018; WENNER and THIERSTEIN 2021), especially with the emergence of new facilities, services, and sources of income (commercial, industrial, and recreational uses, especially). In this context, the tertiary sector has found an ideal location in HSR stations, but especially in airports, which act as a powerful magnet for attracting companies specialised in information technology and communications and other high-tech industries, especially interested in shortening production cycles and speeding up delivery times (just in time) (CONVENTZ and THIERSTEIN 2014).<sup>3)</sup>

These infrastructures, therefore, offer possibilities for improving their surrounding neighbourhoods, either through the remodelling or new construction of HSR stations and airports. Regarding the first ones, *Euralille* in Lille; the future development of *King's Cross Central*, between St Pancras and today's King's Cross in London; *Bercy* and *Chalon* in the vicinity of TGV Gare of Lyon; and the business area of the *Lange Kievitstraat* in Antwerp Central should be highlighted. Concerning the second ones, residential and business developments in airport cities such as Amsterdam, Dubai, Dallas or Incheon are very remarkable.<sup>4)</sup> Thus, the proximity to a large airport or train station becomes a very important element in the economies of scale that occur.

<sup>3)</sup> Although it is not the object of this study, it is worth at least mentioning the negative externalities derived from aeronautical and railway activity that are present in these spaces, such as noise, atmospheric pollution or traffic congestion associated with the movement of passengers and goods.

<sup>4)</sup> From an academic point of view, new concepts have appeared in attempting to synthesise the growing physical dimension acquired by airport infrastructures and the multiplication of activities that they generate: *Aerotropolis* (KASARDA 2001), Airport city (GULLER and GULLER 2003), Airport corridor (SCHAAFSMA 2003) or Aviopolis (FULLER and HARLEY 2005), among others.

The ideas presented so far interpret the magnitude and physical and functional characteristics that many airports and train stations have acquired in relation to world mobility processes. These infrastructures are conceived as true poles of development, with internal communication routes, commercial and leisure spaces, constituting an outpost of globalisation, a “window to the world”. However, the analyses focus much less on the symbolic connotations they acquire and which, we suspect, are key to a complete understanding of these infrastructures. We consider that their representativeness, image and brand also contribute to promoting the symbolic value of cities and, consequently, to their positioning on the world map; additionally, this idea becomes more relevant when considering the urban space as a whole, where the airport and the train station appear inserted within the recent leisure-consumption dynamics.

### 3 Symbolic perspective of high-speed rail stations and airports

Airports and train stations are not only places that materialise connectivity and that are associated with the socio-territorial dynamisation of the areas where they are located, but also play an essential role in the constitution, consolidation and maintenance of the world cities (TAYLOR and DERUDDER, 2016; YU et al. 2019), as they are symbolic installations, linked to the recent dynamics of a leisure-consumer society (BAUMAN 2013) and cognitive-cultural capitalism (SCOTT 2014). According to these theories, the typically physical mechanisms of the industrial city are replaced by others of an intangible nature, such as knowledge, innovation, and creativity, which are considered the new driving forces of territorial development in the post-industrial city. Thus, competition between cities leads them not only to focus on the economic flows but also on their cultural capital through symbols and images to emphasise their identity and cultural value (SCOTT 2000; PRATT 2013).

#### 3.1 Avant-garde architecture and morphological changes in HSR stations and airports

Hosting sporting events and cultural festivals, and constructing distinguished heritage structures, among other methods, has been used since the 1970s to emphasise the identity and cosmopolitan value of cities. These approaches, clearly neoliberal, attempt to promote territorial competitiveness by emphasising the identity, distinction, modernity, and avant-garde quality of the site in comparison to other areas (SKLAIR 2017).<sup>5)</sup> Consequently, auteur architecture, known as *starchitecture*, has become one of the main mechanisms used in cities to compete globally (PONZINI and NASTASI 2016) through skyscrapers, museums, hotels and auditoriums. In this list, airports and train stations

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<sup>5)</sup> This neoliberal ideology has been adopted by some approaches of contemporary urbanism in order to guarantee, at all costs, economic growth and the competitiveness of cities. However, a critical current has been developed and will be presented deeply in the discussion section.

develop a key role, since their floors are walked upon by millions of users every year, either in transit, or at their final destination. Thus, a visitor or tourist may not see certain buildings or monuments in a town or its surroundings, but anyone who accesses by air or rail will make use of these infrastructures as they are considered as the entry or exit doors of cities.<sup>6)</sup>

Architects, many of them with prestigious careers, strive in these two infrastructures to achieve true works of art with the implicit aim of reinforcing the image of the city and the country in which they are located. The functional and transit areas, without aesthetic qualities in the past, are now replaced by prestigious “laboratories” of avant-garde architecture, where unique materials, ultramodern forms of complex architectural solutions and eclectic inspirations have become the main elements for artistic qualities to exceed the functional (ALAILY-MATTAR et al. 2020). This observation is of particular interest in relation to a so-called “capitalism of fiction” (VERDÚ 2003) and a so-called “aesthetic capitalism” (LIPOVETSKY and SERROY 2015). Thus, rehabilitation, renovation, expansion, or new construction of these infrastructures, carried out by renowned architects, becomes a fundamental branding tool since they are interpreted as city marketing initiatives that help to promote cities in the world urban hierarchy (SKLAIR 2017).

Figure 1 shows a distribution of some of the most representative infrastructures on a world scale carried out by this type of architects. As can be seen, most of these avant-garde architectural projects are developed in the world’s most developed regions (Europe, North America, and Asia), which in turn coincide with the regions with the highest volume of air and rail traffic on a world scale, despite the setback caused by the Covid-19 pandemic (IUC 2020; IATA 2021). Along with them, the projection of the Middle East stands out, as a consequence of its role as a hinge between the West and the East.

Likewise, the map shows that these renowned architectural actions, in addition to predominating in these large world regions, are not limited to the so-called global cities with a great international projection (London, Paris, New York or Tokyo, among others), but also in those other secondary cities (or globalising ones, in terms of MARCUSE 2018) that, although smaller in scope, try to position themselves on the global map from a more immaterial and image-related perspective (for example, Liège, Florence or Tallinn).

The shape, appearance, and design of these infrastructures, in addition to being the first impression that any visitor has of the city, are carefully prepared to project an attractive, modern, innovative, competitive, ultimately global image of the city, region, and even the country where they are located. Precisely, this avant-garde design that contributes to strengthening the image of the city that hosts it is recognised by locals, visitors and tourists who place these works among the most iconic, touristic and “instagrammed” buildings in their respective cities (Table 1). In this same table, it can also be seen how some of these infrastructures are recognised by some of the most prestigious world architecture awards.

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<sup>6)</sup> As mentioned in the previous section, this statement must be nuanced, since both transport systems are subject to moments of temporary setback, linked to economic or health crises, such as the present one in which we are witnessing as result of the Covid-19 pandemic.



Leading architect	Airport	Awarded with most important architectural awards in the world ( <i>architecture studios</i> )	Among the most visited attractions of the host city ( <i>Tripadvisor</i> )	The most instagrammed airports and railway stations in the world ( <i>Instagram</i> )	The most beautiful terminals and railway stations in the world ( <i>The Guardian and Timeout</i> )
Cesal Pelli	Tokyo Haneda (East Terminal)				
Eero Saarinen	NY JFK (Terminal TWA)				
	Washington Dulles Int. Airport				
Fazlur Khan	King Abdulaziz Int. Airport, Jeddah	Aga Khan			
Nicholas Grimshaw	Waterloo Int. Railway Station	Prizker and Mies van der Rohe			
	Pulkovo Int. (New Term.), St. Petersburg				
Norman Foster	Hong Kong Check Lap Top				
	Beijing Capital Int. Airport (T3)				
Paul Andréu	Dubai Int. Airport (T3)				
Rafael Moneo	Atocha HSR (renovation), Madrid				
Renzo Piano	Osaka Kansai Int. Airport	Prizker			
	London Heathrow (T5)				
Richard Rogers	AS Madrid Barajas Airport (T5)	Stirling-RIBA			
	London Stansted (remodeling)	Mies van de Rohe			
Santiago Calatrava	Denver Int. (South Terminal)				
	HSR Station Liège-Gillemins				
Studio Fuksas	Shenzhen Bao'an Int. Airport				
	Western Sydney Int. Airport				
Zaha Hadid	HSR Napoli Afragola				
	Beijing Daxing Int. Airport	Prix Versailles			

Source: Own elaboration

Table 1: Most iconic, visited, instagrammed and architectural awarded air terminals and high-speed railway stations

In airports, it can be observed how the old “concrete boxes” with rectilinear shapes and 90 degree angles give way to curved shapes, geometric imbalances and the use of exotic materials (FREESTONE and WIESEL 2016). Thus may be highlighted the undulating roofs that exceed horizontality in Beijing-Capital (work by Foster), Shanghai-Pudong (Rogers), Osaka-Kansai (Piano), Beijing-Daxing (starfish-shaped by Hadid) or Tocumen-Panama (alien spaceship-shaped by Foster); and the glass walls that allow total entry of light in London-Heathrow (Rogers), Hong Kong-ChekLapKok (Foster) or Dubai International (Andréu). In addition, the use of allegorical criteria can be mentioned in London-Stansted (trees made of steel structures), New York-JFK (bird with open wings) and Bilbao-Sondika (bird taking flight); also, unique materials such as bamboo on the roof of the Terminal 4 at AS Madrid-Barajas (Rogers) or fiberglass Teflon at Denver International (Bradburn) are used.

This avant-garde architecture also takes on a special role in train stations (WENNER 2020). During the 19th century and first half of the 20th, many train stations became iconic and impressive landmarks of the urban landscape, for example: King’s Cross Station (London, 1852), Gare du Nord (Paris, 1864), Grand Central Terminal (New York, 1871), Amsterdam Centraal Station (Amsterdam, 1884) or Union Station (Washington, 1907), among others. At present, however, a second great age is being carried out, whose revival is prompted by the advent of high-speed trains. In most cases, these are symbolic buildings whose traditional architecture is replaced by the new station of the 21st century. It is worth highlighting the wavy roofs of the Liège-Guillemins (Santiago Calatrava), Hong Kong West Kowloon Station (Bromberg) or Aix-en-Provence (AREP); the majestic glass vaults of Berlin Hauptbahnhof (von Gerkan), Tianjin HSR Station (Skidmore, Owings & Merrill) or Lille-Europe HSR Station (Rem Koolhaas); the futuristic forms of Napoli Afragola (Zaha Hadid), Ülemiste Terminal in Tallinn (Zaha Hadid) and Tokyo Station (Kingo); or the use of allegorical criteria at the Haramain HSR Stations (steel structure trees by Norman Foster) and Lyon-Saint Exupéry (bird taking flight by Santiago Calatrava).

In other cases, it has been decided to keep the nineteenth-century architectural structures with their majestic glass roofs and adapt them to the arrival of high-speed rail. Thus, the emblematic architecture of the late 19th and early 20th centuries prevails over the avant-garde architecture of the 21st century. This happens at Atocha station (Madrid; the arrival of the HSR occurred in 1992), Amsterdam Centraal Station (Amsterdam; 2004), St. Pancras station (London; 2003), Antwerpen-Centraal Station (Antwerp; 2007) and Union Station (projected for 2023), among others. Both modalities (nineteenth-century architecture and avant-garde architecture) allow railway stations to become representative icons that not only favour the integration and development of the surrounding neighbourhoods, but also the positioning of the city in those more intangible issues that have to do with urban branding.<sup>7)</sup>

<sup>7)</sup> Although the article stops at aute architecture in the airports and HSR stations, this is also observed in other transport infrastructures used by thousands of people, such as the World Trade Center Transportation Hub (New York, designed by Santiago Calatrava), funicular Hungerburg (Innsbruck, by Zaha Hadid), Jeddah Metro (Jeddah, by Norman Foster), Melbourne Metro (Melbourne, by Richard Rogers), or the Transbay Transit Center (San Francisco, by Cesar Pelli), among others.

### 3.2 Leisure and consumer practices in HSR stations and airports, similar to any mall

The factor of representation and image is also developed in ancillary activities of the airport and HSR stations. Due to the development of activities related to consumption, trade becomes a pretext and purpose for the leisure time of passengers (SCHUETZ 2015; CHEN et al. 2020). As a result of the waiting times that are endured in these infrastructures, it is not surprising that airports have engaged in this lucrative shopping business, ostensibly increasing their profits since the users are observed more as buyers than travellers (CREED et al. 2021). Table 2 shows an approximation of these data referring to 2018 and 2019, just before the outbreak of the Covid-19 pandemic, with the idea of not distorting this profitability trend which was deeply affected by the subsequent closure of many airports due to the measures, restrictive and of containment, that had to be imposed by most governments in the world to stop the spread of the virus.

Paradoxically, airports, conceived to facilitate mobility, become one more shopping and tourist destination, operating as privileged shopping centres (*air-malls*) in the city (CASTILLO et al. 2018). Their designs are prepared for leisure and consumption, trying to retain people within them as long as possible; they are, to a certain extent, “spaces of immobility” (ADEY 2007).

Airport	Retail Sales in USD (2018)	Retail Sales in USD (2019)	Rate variation (%)	International departures in millions (2019)
Seoul Incheon	2.36 bn	2.43 bn	+5,7	36.8
Singapore Changi	2.01 bn	2.06 bn	+2,5	38.1
Dubai International	2.03 bn	2.03 bn	+0,7	44.8
Shanghai Pudong	1.11 bn	1.23 bn	+11,1	19.1
Beijing Capital	1.01 bn	1.07 bn	+5,9	13.9
London Heathrow	0.94 bn	0.95 bn	+0,8	41.7
Paris Charles de Gaulle	0.81 bn	0.86 bn	+5,7	35.6
Hong Kong International	–	0.76 bn	–	40.5
Tokyo Narita	–	0.60 bn	–	19.0
Istanbul Ataturk	–	0.56 bn	–	24.9

Source: Adapted from TRBusiness (2020)

Table 2: Variation rate of retail sales in world airport hubs (2018–2019)

Also, the train stations are now becoming retail destinations in their own right as the station provides travellers and visitors alike many commercial services, both as a complement to the trip and even outside of it (BARON 2019). Although there may be some dispar-

ities across the globe, the railway retail sector does offer considerable potential, and will continue to, for many years to come. Several factors explain this: the highly central and prestigious locations of many train stations and the large traffic flows through them (to a large extent, pendulous) guarantee a high potential audience. Also, some of them have extended their opening hours (with new regulations that allow them); all of this contributes to the number of non-travelling visitors rising to 20 percent of the total users of the station (SEMPRUN 2020).<sup>8)</sup> As can be deduced, the growth forecasts are very high, and many stations are willing to increase their commercial surface (Table 3). As in airports, many world restaurants, leisure and retail brands are located here. However, in railway stations it is not so common to observe luxury brands, but rather mid-tier names. This is due to the fact that the profile of traveller in train stations is broader than the profile that can be found in airports, since some of the passengers on the plane have a high or very high purchasing power (business, premium or similar classes), and therefore, the consumption of luxury brands is part of their social identity (WU and CHEN 2019).

Train station	Existing area (in square metres)	Future estimated area (in square metres)	Variation rate (%)	Year of delivery
Paris-Montparnasse	8,000	19,000	+137.5	2020
Paris-Austerlitz	2,000	18,000	+800.0	2021
Paris-Nord	4,300	30,000	+597.7	2024
Marseille Saint-Charles	6,100	12,500	+104.9	2023
Lyon Part-Dieu	4,100	9,000	+119.5	2023
Bordeaux Saint-Jean	2,500	4,830	+93.2	2020
Nantes	1,800	3,400	+88.9	2020

Source: Adapted from Cushman & Wakefield (2018)

Table 3: Variation rate of retail extension areas in high-speed railway stations – selected cases

As can be seen, leisure and consumption at airports and train stations are part of this desire to seduce the traveller, where in addition to finding fashion stores, restaurants, magazine stores, fast food and duty free, other facilities are generalised that show the recent transformations that are experienced in these infrastructures. As a result, other recreational equipment, with clear influence from the “entertainment economy” (STEVENS 2007) shows

<sup>8)</sup> This relevance can be observed in various parts of the world (BERTI 2018): In the United Kingdom, Network Rail footfall studies show that 25 percent of people coming to its stations are not travellers, but actually use them as hubs for shopping and dining, paving the way for more retail opportunities. In New York, the Director of Retail Leasing and Management of Grand Central Terminal describes this station as both a railway station and “a comprehensive shopping centre” where the audience is not solely comprised of travellers. According to *Leipzig Promenaden Hauptbahnhof* centre manager, the mall is proving extremely profitable with more than 120,000 people a day.

the recent transformation that airports and HSR stations are experiencing. Some remarkable examples are: luxurious shopping centres (Dubai Airport and Tokyo Station); theatres and cinemas (Singapore Airport and Kyoto Station); saunas, spas and gyms (Doha Airport and St. Pancras); swimming pools (Singapore Airport and Munich Airport); museums and art galleries (Amsterdam-Schiphol and Paris-Gare du Nord), gambling areas (Las Vegas-McCarran); botanical gardens (Singapore Airport and Madrid-Atocha Station); or medical clinics (Roma Termini), among others. In other cases, these leisure, entertainment and cultural resources extend beyond the infrastructure itself, as in the Plazas that are in front of some stations (Strasbourg or Liège). Berlin should also be highlighted with the large leisure areas along the river Spree and the avenues to the Bundestag and Potsdamer Platz, as a great reference axis in the new city.

These new services contribute to the modification of the conception of these infrastructures that evolve from being mere places of transit to becoming new meeting spaces for travellers and citizens. These changes allow users to have the impression of being part of a unique experience in the purchasing process, an experience which is the stimulus that generates consumption. This dynamic has opened a line of explanation that is linked to the concept of the “experience economy” (PINE and GILMORE 1999).

### **3.3 Homogenisation patterns and territorial identities in HSR stations and airports**

The duality established in world cities between homogenisation and singularisation is also observed in airport and railway infrastructures. Some authors interpret the fact as a dialectical relationship, linked to consumer societies, where access to goods and services must be sufficiently generalised to obtain benefits and, at the same time, users have the impression of being in front of unique experiences in the acquisition process, since precisely the latter are the stimulus that generates consumption (HARVEY 2012). With this intention, attempts to particularise airports and HSR stations can be observed as a way of “making passengers feel”, where local culture becomes an ally in city-branding practices. Some authors place culture and identity as essential factors that oppose patterns of cultural homogenisation (FRIEDMAN 2005).

Regarding the architecture, units that have a similar functionality, shape and appearance regardless of their geographical location (baggage management, arrival and departure zone, rest and waiting rooms, shopping areas, etc.) begin to acquire certain signs of identity that allow them to stand out within the homogenising so-called “avant-garde architecture” (SKLAIR 2017). Thus, architectural criteria are adopted that refer to the indigenous culture (motifs, shapes and colours), which allows the passenger to identify the building with the place, region or country where it is located. Following this interpretation, EDWARDS (2005) analyses the “memorable” image of the airports of Denver, framed in the Rocky Mountains, and Incheon, like a traditional Korean home. Other examples, works by Norman Foster, are representative such as the roof of the Beijing airport that recalls the morphology of a dragon, and the recently reopened Amman airport that imitates the “geometries of Arab culture”.

This search for identity is also observed in the architecture of the HSR stations that each become a symbolic “gateway to the region”. Through symbols, shapes, colours and unique materials, the architects seek to reinforce the identity of the place. According to Foster, the Arab stations of Makkah, Madinah, Jeddah and King Abdullah Economic City are inspired by the ancient architectural traditions of the region where their columns and arches reference the colonnades found in much of the region’s traditional architecture. Additionally, Santiago Calatrava’s design for the Lyon-Saint-Exupéry Station has the aerodynamics of a bird preparing to take flight. This image facilitates its association with the character of the region, by bringing together the idea of an Alpine landscape with that of a drive for progress. The same author, in Liège, contributes to the specificity of the place through the peculiar curvature of the roof that “follows the natural curve” of the *Cointe Hill* that borders the station, and the use of blue limestone, traditionally used in Belgium, as a sign of understanding “the personality and specificities” of the city.

Other characteristic examples can be found in Berlin, where the spectacular curved roof becomes one of the characteristic symbols of the unified city, of the railway as a crossroads of regions and countries; Rotterdam Central, where container-shaped buildings recall the city’s commercial importance; California, where the extruded arch structure is inspired by the area’s huge blimp hangars; and Guangzhou, where the traditional architecture is revealed with a physiognomy in the shape of banana leaves, among others.

Local identity is also staged in some infrastructures that offer other types of experiences by emphasising fun, leisure and relaxation, and that have revolutionised the “anodyne” waiting room. In Las Vegas-McCarran slot machines are located in some of its corridors so that travellers continue to experience the atmosphere of the city’s casinos. In Louis Armstrong-New Orleans, passengers may enjoy a live jazz concert like in many other places of the city. The Auckland Airport Arrivals Hall welcomes international passengers in an atmosphere recreated in “Middle Earth”, referring to Tolkien’s book. Finally, in Tocumen-Panama and Singapore-Changi, several gardens allow one to meet the fauna and flora of their respective local regions without leaving the enclosure, becoming both elements of the airport experience.

In this way, faced with the homogenisation of the activities that take place in both infrastructures (billings, passport control, similar global brands, etc.), there is a phenomenon of particularisation or “exaltation of the specificity of the place”, both inside and outside the infrastructure, highlighting the global-local dualism present in these facilities. It is, therefore, why some authors consider them key places within the “global-local” interaction (HAUBERMANN et al 2007; LECONTE 2020). Thus, both infrastructures could be considered “glocal” places, where the intermingling and macro-micro interdependence are particularly evident.

## 4 Discussion

As pointed out at the beginning of this article, since the 1970s, these large infrastructure works have been used as tools to favour the repositioning of cities in a global context and improve urban competitiveness (TAYLOR and DERUDDER 2016; YU et al. 2019), while be-

coming important initiatives for attracting investment, developing places and transmitting an image of status and power (SKLAIR 2017).

However, what some call an opportunity for the social and economic development of the region, others consider a backwardness, a model that only benefits – and enriches – the promoters under a dubious promise of quality jobs. Thus, various expressions of social opposition arise, focused above all on their negative social and environmental effects. These actions are centred especially on the intrusion into local communities, engineering and financial risks, significant land-use changes with consequences for landscapes and biodiversity, top-down planning with limited or no possibilities for participation and co-decisions, and environmental and human health consequences of infrastructure operations (HE et al. 2016; HORNING 2017).

Therefore, if a holistic view of these infrastructures is claimed, along with presenting the spectacular and media effects of these “urban regeneration” processes, it is necessary to mention this current of critical thought, stimulated in its beginnings by the reflections by Jane JACOBS (1969; 1984). This author considers that in the spatial forms proposed by neoliberal urbanism, aspects of efficiency and competitiveness prevail over human capital, the ideals of equity and sustainability, putting on the table the question “for whom” these pieces of global infrastructure are provided. In this sense, MOULAERT et al. (2017) affirm that the success of a city depends not so much on its physical structure, but especially on its social and human values, in accordance with the theories that defend the so-called “fair city” (FAINSTEIN 2016).

As FLYVBJERG (2017) points out, there are many interests that are mixed in the decision to carry out large infrastructure projects, which often do not respond to major public objectives. There is a diversity of promoters of this type of projects that seek to account for certain particular interests that are not always in line with public purposes or needs, an issue that is aggravated by the problems of underestimation of costs and overvaluation of benefits. Unfortunately, it is all too common for demand forecasts to be set well above actual expectations, while environmental impacts are underestimated, and foreseeable economic benefits are exaggerated.

If we stop at some empirical pieces of research, we observe that the comparative studies of costs in megaprojects are relatively new: FLYVBJERG (2003) carried out a study of the causes of cost overruns in transport infrastructure projects based on the analysis of 258 projects developed in 20 countries. As a result of the analysis, it is observed that nine out of ten projects presented cost overruns during the planning phase, with the railway projects reaching the highest figures. Regarding the estimation of demand, the most significant study was also carried out by FLYVBJERG et al. (2005), when data from 210 projects in 14 countries were statistically compared. The results showed how 90 percent of the railway projects presented overestimates of demand that, according to the authors, are justified by the uncertainty about the distribution of trips and the deliberately manipulated forecasts of demand.

For this reason, in the analysis of these large urban infrastructures, it is necessary to focus on a series of key aspects that, on many occasions, are ignored voluntarily or involuntarily: who how decides their approval, how they are financed, their adjustment to the figures of existing planning and the implication and participation of the different levels of

government. In fact, this complexity causes execution times to be extended and subject, on numerous occasions, to the ups and downs of economic cycles. In this sense, it is also essential to identify the composition of the power coalitions that support megaprojects, both in their gestation process and in their subsequent development.

Along with these considerations, other authors belonging to this current of critical thought reject this type of strategy by arguing that the constant repetition of these buildings could devalue the specificity that they were originally intended to be attributed to. Thus, this trend, that of designing emblematic buildings from one city to another, rather than distinguishing, leads to a homogenisation of the urban landscape, which has recently been called “McGuggenisation” (MCNEIL 2000) or “Urbanization” (MUÑOZ 2008).

Other criticisms focus on the so-called “entrepreneurialism of urban management” (HARVEY 1989) or “commodification of culture” (BAUMAN 2013) where private initiative, driven by speculative interest, accumulates cultural and symbolic assets in the city with which to be able to market by guaranteeing the exclusivity and originality of the place. In HARVEY’s words, this “unique” character is understood as monopolisable; from there derives the concept of “monopoly rents” (HARVEY 2012). The problem, according to HARVEY, occurs when the collection of these goods causes a commodification of culture and place and, therefore, urban entrepreneurship is encouraged.

## 5 Conclusions

Although this article has focused on the study of these large infrastructures from a more symbolic perspective, without entering into the existing controversy between “enthusiasts” and “critics” of their implementation, it is important to recognise that this work is not opposed to the implementation of these large urban projects, given that the challenge is how to reduce the negative impacts produced by this type of urban intervention and explore other urban management and regulation mechanisms that reduce socio-territorial inequalities; in short, advocate for a more exhaustive knowledge of the costs, benefits and risks involved to guarantee the correct viability of these infrastructures.

Having made this nuance, it can be stated that airports and high-speed train stations are vectors of contemporary mobility whose relevance goes beyond the movement of people and goods that are produced in them or the social and economic dynamism that they generate in the cities that support them. At present, both infrastructures have acquired symbolic and experiential connotations (representative nature, brand, and image) that have become important city-marketing strategies that help to promote the international projection of cities; something that is of great interest in the new current context of urban competitiveness, where cultural dynamics, linked to leisure-consumption, typical of globalisation, acquire great prominence.

That is, this research has emphasised the need to embrace a symbolic perspective for a full understanding of these infrastructures, especially, given the greater presence of non-aeronautical uses of these places, which has caused a change of conception in its design, in the activities that are developed, and in the attempts to project territorial identities in the face of global homogenisation. For these reasons, it is stated that airports and

high-speed train stations are vectors of contemporary mobility and, therefore, in the face of those anthropological conceptions that define them as “not places”, they can be referred to as “places of globalisation”, that are defined, or are at least heavily influenced, by the contemporary emphasis on leisure, consumption and global mobility.

However, despite the fact that both modes of transport have visibly facilitated the compression of the world, lately it has been highlighted that, as vectors of globalisation, they have also contributed to the spread of diseases, viruses and pandemics, such as that of the Covid-19. This has caused a profound setback in the global economy, in general, and in the aviation and railway industry, in particular. The confinement and closure of borders decreed almost simultaneously by governments around the world to contain the Covid-19 outbreak led to an unprecedented drop in activity, with a gradual restart of operations and where, as of today, the starting figures have not yet been reached (WYMAN 2020; Hosteltur 2021).

In view of the fear of new outbreaks and waves around the world, it is not possible to predict exactly when all travel restrictions will be lifted and when a pre-Covid “normal” situation will return. Therefore, we believe that it is essential to provide certainty in terms of health and safety to rebuild trust in society in the short, medium and long term.

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