Revista de Estudios Andaluces (REA) | Núm. 38, julio (2019) | e-ISSN: 2340-2776.
http://dx.doi.org/10.12795/rea.2019.i38 | © Editorial Universidad de Sevilla 2019
https://editorial.us.es/es/revistas/revista-de-estudios-andaluces
https://revistascientificas.us.es/index.php/REA

SUMMARY OF ARTICLE: doi: http://dx.doi.org/10.12795/rea.2019.i38.02

Maritime Transport, Atlantic and Mediterranean Port Networks. The Example of the Canary Islands

Gerardo Delgado-Aguiar
gerardo.delgado@ulpgc.es https://orcid.org/0000-0002-5947-0483
José Ángel Hernández-Luis
jose.hernandez@ulpgc.es https://orcid.org/0000-0002-7680-2574
Departamento de Geografía. Universidad de Las Palmas de Gran Canaria.
Calle Pérez del Toro, 1. 35004-Las Palmas de Gran Canaria.

KEYWORDS

Ports
Maritime transport
Network systems
Regional spaces
Canary islands

This paper is based on three axes of a research project currently under development:

a. (a) Maritime transport infrastructure contributes to the economic transformation of the territory, especially at regional and subregional levels.
b. (b) The territory is the scene of the processes of location and, consequently, where mobility and transport are developed.
c. (c) European ports (Atlantic and Mediterranean) and African ports are part of an articulated and hierarchical globalisation process through intricate networks, assigning maritime port functions and specialisation.

One of the main objectives focuses on the role played by transport in the territory, particularly the maritime transport. This paper presents some basic theoretical and conceptual reflections and analyses to understand the spatial function of maritime transport, especially in insular environments. A conceptual, geographical and topological view of transport networks is also presented (Taylor & Potrykowski, 1984; Haggett, 1976, 1988; Hoyle, 1998; Rodrigue, 2006, 2013; Lavissière, 2017) to show the scenario of maritime transport networks in the middle and eastern Atlantic and particularly the case of the Canary Islands.

The theoretical framework based on the role of port systems in territorial development is presented, and the practical case applied to the Canary Islands is analysed in this context. It is a territory in which the remoteness of the continent and territorial fragmentation hints at a high dependence on transport and, in particular, on maritime transport (Fundación Tomillo, 2001; Ramos, 2001; Hernández, 2002).

From a methodological perspective, a basic analysis of land and maritime accessibility between the islands is approached from the basis of the integrating philosophy through transport that arises from the Trans-European Transport Networks, which in the case of the Canary Islands is included in the policy of the Transinsular Transport Axis. In addition, a cursory evaluation of the conditions of port and road infrastructu-

DOI: http://dx.doi.org/10.12795/rea.2019.i38.02
Formato de cita / Citation: Delgado-Aguiar, G. y Hernández-Luis J.A. (2019). Transporte Marítimo, Redes Portuarias Atlánticas y Mediterráneas.El Ejemplo de Canarias. *Revista de Estudios Andaluces,* 38, 28-49. doi: http://dx.doi.org/10.12795/rea.2019.i38.02
Correspondencia autores: gerardo.delgado@ulpgc.es (Gerardo Delgado-Aguiar).

res is carried out, which makes it possible to detect physical accessibility problems. For this purpose, we take the information provided by the Port Authority of Las Palmas; the Port Authority of Tenerife and "Puertos Canarios", a public entity of the "Consejería de Obras Públicas" of the Government of the Canary Islands. We also collect information from the Autonomous Government's Road Service, especially for the land routes connecting the island capitals with the ports that support the maritime connection with the other islands.

A temporal accessibility analysis is also performed following the steps of previous methodological studies (Yamaguchi, 2007; Neutens, 2012; Chowdhury, 2015).

The Transinsular Axis of Transport has as one of its main objectives that goods in road traffic are transported by the Archipelago on the same day. For this reason, the analysis of maritime timetables is necessary, as it will indicate the territorial integration capacity resulting from the current offer of the shipping companies.

From this point of view, the main source for measuring temporal accessibility is the timetable of the shipping companies, based on two scenarios: a) the real timetable based on the hourly operability provided by these shipping companies; and b) the ideal timetable, which is the result of our elaboration based on the time of land transport between one port and another, always prioritising that the time of permanence of the goods in the port is the minimum and, therefore, providing greater commercial speed from one point to another in the Archipelago.

The analysis of economic accessibility is provided. It is an important variable that measures the mobility capacity of traffic units in the territory. Obviously, the basic source is the tariff of the main maritime operators (Fred. Olsen and Naviera Armas), considering a door-to-door system, as recommended by the Transinsular Transport Axis. There is also an approximation of the costs of depreciation of vehicles, repairs, cost of drivers, which was provided by the "Observatorio de Transportes de Canarias" ("Consejería de Obras Públicas", Government of the Canary Islands).

After assessing the state of infrastructures, economic accessibility and time, the hypothesis is raised as to whether the current state of development of the inter-island maritime network would make possible the territorial integration objectives derived from the Transisland Transport Axis policy.

The Canary Islands is made up of eight inhabited islands and sixteen ports with regular passenger and freight traffic. These ports have a very disparate importance, since the main ones, which coincide - in the case of goods - with the capitals of each island, are in turn of unequal relevance depending on their hinterland. Similarly, it should be pointed out that, in the case of passenger traffic, it is some regional ports that take on this leading role, since here above all the shortest distance between land enclaves of two or more islands, as is the case of Los Cristianos, Agaete, Morro Jable, among others. It is indisputable that the movement of these county ports is also highly conditioned by the hinterland of each island.

The disparity in terms of traffic demand is notorious in line with the aforementioned hinterland and even with the main economic activity developed, as is fundamentally the case of tourism in the islands of Lanzarote and Fuerteventura, with very relevant consequences from the point of view of traffic demand. It should also be said that the particularity of maritime transport, especially its lower transport speed in relation to the air mode, has severe implications from the point of view of enhancing the regional ports, hence, for example, in the case of Lanzarote and Fuerteventura, the capital ports of Arrecife and Puerto del Rosario, barely have significance for traffic between islands in relation to the regional ports of Orzola, Playa Blanca, Corralejo and Morro Jable.

The Transinsular Axis of Transports of the Canary Islands is based on the modal change and, especially, the terrestrial with the short sea shipping. The aim of transport policy is to ensure that a rolling stock, leaving from any island, can reach another in the same day, including also the return to the island of origin (Government of the Canary Islands, 2005; Hernández, 2007). This process is conditioned to the links of the maritime schedules that take place between the previous and the following island, being greater the risk that not even the outward journey can be carried out in the same day as the transit times in other islands increase, for example, between Lanzarote and El Hierro, via Fuerteventura, Gran Canaria and Tenerife.

Although all the islands have some section considered within the transinsular axis, at least three are vital for the objectives pursued with this policy: that a traffic unit can cross the Archipelago in the same day, even that the vehicle that transported this merchandise can return to the point of return in the same day. These

three routes connect Corralejo with Morro Jable in Fuerteventura; Las Palmas de Gran Canaria and Agaete in Gran Canaria; and Santa Cruz de Tenerife and Los Cristianos in Tenerife.

This paper presents the analysis of hourly accessibility based on travel times (Chowdhury, 2015). By itself, having a high number of moorings, vehicle loading ramps and optimised roads would be meaningless and useless if maritime connectivity, measured in the schedules and travel times of shipping companies, did not allow the smooth movement of transport units.

Another important factor is mobility as a function of the costs to users, which measures the territorial integration of a space (Hernández, 2010), which also suggests the level of development (Tindemans, 2005).

In summary, the total cost can even exceed 800 euros in a single trip of 540 kilometers, including land and sea routes between the port of Santa Cruz de La Palma and Playa Blanca in Lanzarote (through Tenerife, Gran Canaria and Fuerteventura), costs ranging between 1.30 and 1.54 euros per kilometer, compared to 1.05 euros per kilometer in the Iberian Peninsula, ie about 570 euros for the same journey in peninsular territory. Transporting goods in the Canary Islands in a large truck is at least 35% more expensive than on the mainland.

It has been found that the possibility of having an optimal infrastructure does not guarantee a true integration of island spaces. In particular, a large part of the problems are the tariff policies and the schedules of the shipping companies. Consequently, deregulation of transport has been a good strategic policy, as it has facilitated a greater variety of fares and timetables.

Finally, we conclude that it is more important to have good connections that promote minimum (and sustainable) mobility for those operating in maritime transport, rather than focusing all efforts on monumental port constructions. For this reason, timetables have been considered a priority, while in the current market structure the operating times of truck fleets are measured in costs and territorial integration and, therefore, in possibilities of social and economic development of the territory, which is one of the main objectives.