An examination of the territorial imbalance of the cruising activity in the main Mediterranean port destinations: Effects on sustainable transport

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ABSTRACT

The increase in cruise activity in Mediterranean port cities is overwhelming historic centres and tourist resources with implications in traffic congestion. Mobility is an important criterion for cruise destinations, besides being an economic resource for the city. The massification of destinations is forcing the adoption of sustainable approaches based on public transport. Starting with a comparative study of the main Mediterranean cruise ports, we define four indicators to identify different levels of the pressure range relating the volume of passengers to the local population, the level of port infrastructure, and the condition of the homeport. The results are classified into four settings, whose geographical distribution confirms the inherent imbalance of cruise ship activity in the Mediterranean. The dependence of a port on its status as a tourist destination, in addition to its geographical and urban conditions, facilitates the development of sustainable public transport as compared with the main destinations.

1. Introduction

There is no doubt that the cruise industry is an economic sector on the rise with many possibilities for the future considering that it is the most dynamic sector of maritime transport (Marti, 2004; Dwyer and Forsyth, 1998; Sun et al., 2011; Trujillo et al., 2013; Carić and Mackelworth, 2014). This industry is facilitating the improvement in the tourism potential, infrastructure, and the social development of a large number of Mediterranean port cities; however, it also has a negative impact on their maritime, urban, socioeconomic, and environmental resources (Dragović et al., 2015). Currently, the main international cruise routes are located in the Caribbean and the Mediterranean Sea (Mancini, 2004), which account for approximately 40 and 20% of the world traffic, respectively (Legoupil, 2013).

The benefits of cruise activity have led many port cities in the Mediterranean to accept a new role as “tourist ports” (McCarthy, 2003). Moreover, they have had to adapt their infrastructures for docking cruise ships, which have increased in size (WTO, 2004). The construction of cruise terminals (CTs) has improved the value of the nearby historic centres (Castillo-Manzano et al., 2014), with the consequent upgrading of the destination’s cultural resources (Brida et al., 2013). This process of adaptation, in most cases, has coincided with the expansion, redesigning, and improvement of urban waterfronts (Pavia, 2011). Nevertheless, as cruises have become more commonplace, the strong growth in activity has overwhelmed some parts of this sector (López-Carvajal, 2011). Coupled with the concentration of calls by cruise companies, this has increased the congestion of cruise port cities (Stefanidaki and Lekakou, 2014), where cruise ship visitors arrive in large numbers, all at once, overloading dock facilities and buildings (Manning, 2006).

Although the European Commission has recognized the economic impact of cruise liner activity and its contribution to the EU economy (Stefanidaki and Lekakou, 2014), many researchers question the short-term economic benefit to the destination. Johnson (2002) considers cruise passengers’ outlays in local economies low; for Legoupil (2013), the benefits derived from hospitality and transport are marginal compared to the “social costs” generated, and even Carić and Mackelworth (2014) concur that the environmental costs can be up to seven times larger than the economic ones. In addition, in the case of the Adriatic Sea, the economic imbalance is also territorial, benefiting cruise ports located in “developed countries” (e.g. Italy), as opposed to “transition countries” (e.g. Croatia).

To combat this imbalance, Heraty (1989) proposes the development of mobility in the destination as a source of income by increasing trips in extension and territorial rank, either as “guided tours or individual travel”. Individual travel is an alternative to guided tours (organized in tourist buses by cruise companies or local companies) depending on the transport offer of the destination, where public transport is more viable.
than a car for nearby cultural resources (Dickinson et al., 2004). However, the use of public transport depends on a change in the attitude of travellers towards their use (Verbeek and Mommass, 2008), on the quality of the offer, and good connections between CTs and tourist resources (Le-Klähn and Hall, 2015). In this line, Gronau and Kagermeier (2007) consider as key factors for the success of the offer a demand-oriented approach, focusing on individual attitudes and preferences; sufficient information for cruise passengers; and guaranteeing the quality of transport in the entire journey, thus minimizing transhipping. This makes ports, and especially CTs, a “spot” demand for transport services (Stefanidaki and Lekakou, 2014). Lack of planning produces road congestion and undermines both tourists, who see their visiting time reduced, and residents through the saturation of transport, by either public means or private.

In light of the above, we note the shortage of studies analysing this problem territorially. Some studies have focused on the spatial distribution of both the countries (Martínez, 2011) and the Mediterranean Sea (López-Carvajal, 2011). While the number of works on the impact of cruises is extensive in specific case studies (e.g. Boissevain, 1979; Robertsen, 2003), other studies have focused on partial aspects such as the physical transformation of the Mediterranean city-port fronts (Capocaccia, 2001), or on the influence of tourism on public transport in major European cities (Albital and Bel, 2010). Using the Mediterranean as a case study, this paper discusses the territorial effects of cruise activity on its main port cities in order to develop a comparative model of study. It also performs a categorization of the different urban scenarios by analysing the implications for the sustainable transport of each one.

2. Methodology

In the analysis of territorial imbalances, the “annual volume of passengers” (V) who disembark in Mediterranean port cities is taken as the main study datum utilised, and CTs as the main nodes of origin and destination of displacement flows. This study only considers the main cruise destinations which exceed or equal 500,000 passengers per year (termed a “DS500” by the authors), similar to the global ranking of the top destinations for world cruises offered by Wild (Ramón, 2012). Ports with cruise activity and their tourist resources are identified by checking the commercial offers of cruise lines (López-Carvajal, 2011), while various port authorities normally provide passenger volumes.

According to Murias Lopez (2002), the development of cruise activity depends on the availability of coastline a country offers, equipment and services that facilitate cruise traffic, and the tourist and historic attractions of its surroundings. However, the cruise line's commercial strategy is also an important factor in cruise port activity. Castillo-Manzano et al. (2014) link the amount of cruise traffic a port can generate to its proximity to populated areas and large airports. Frequently, these ports are not specialized in the traffic of containers, share facilities with ferry traffic, and have a minimum depth of water. To develop a study model (Table 1), we consider the variables described in the following subsections.

2.1. Geographical variables

The “type of territory” (T) is highly relevant to tourist impact studies. This variable has two values: mainland or island. Islands are more vulnerable to the effects of tourist activity due to their limited natural resources, and the potential environmental impact of cruise activity is larger (Marakogianni and Papaothimiou, 2015). Many of the works on cruise tourism impact refer to small island destinations (Boissevain, 1979; Johnson, 2002; Robertsen, 2003; WTO, 1996), and the WTO (2004) considers them as the representative case associated with cruise tourism.

The “port city population” (P), sourced from the municipal population census, determines the range of urban settlement and the capacity of the public transport system. This variable does not differentiate between metropolitan and evolved urban systems, an aspect that we correct later in the determination of scenarios.

2.2. Cruise port infrastructure

Port infrastructure investment facilitates the development of cruise tourism activity. It allows berthing to a higher number and size of vessels simultaneously, with a potential increase in the number of cruise passengers to the destination. However, the construction of CTs in the Mediterranean would necessitate major refurbishment work, due to the lack of space, on both land and water (Capocaccia, 2001). This is determined by the “number of CTs” (nCT), sourced from CLIA Europe (2013, 2014) and MedCruise (2014); the “Total Length of Docks” (TLD) corresponding to the measure in m of the total number of docks dedicated to cruise berths; and “Maximum Draft of Berth” (MDB), which is related to the possibility of docking large cruises (Castillo-Manzano et al., 2014).

2.3. Cruise line activity: Homeport vs. destination port

The tourist-commercial nature of a port corresponds to its status as a homeport (beginning and/or end of cruise travel) or port-of-call (intermediate stop on a travel itinerary for a tourist visit), as a result of cruise companies’ selection criteria (Lekakou et al., 2009). McCarthy and Romein (2012) point out that this typology has implications for the infrastructure needs of destinations and has potential effects on host-cities.

“Homeport” (nH) expresses the number of cruise line companies which use the port as a homeport. On the one hand, the homeport must offer developed infrastructure for embarking/disembarking passengers: Capocaccia (2001) highlights that the CT of a homeport may need to cater to over 10,000 passengers per day and deal with more than one ship at a time. On the other hand, incomes are generally higher (de la Vina and Ford, 1999) as they are visited recurrently before and after travelling. Therefore, homeports require a major hotel infrastructure (Garay-Tamajón and Canoves-Valiente, 2012; López-Carvajal, 2011).

The homeports’ access to international airports and high-speed trains with good territorial coverage is important (Mendiluce and Schipper, 2011). Soriani et al. (2009) emphasise access to airports. Regionalization considers ports as part of the territorial transport system and, according to the literature, it creates a challenge for their future development (Nebot et al., 2017). This we express by the distances between “CTs and international airports” (CTA) and ‘CTs and train stations for passengers’ (CTT).

“Destination port” (nD) refers to the number of cruise line companies which use the port as a port-of-call. In this situation, increases in passenger flow can saturate the CTs (McCarthy, 2003) and may have a particular impact on sensitive historical urban cores where heritage conservation and enhancement is a key aim (Shaw, 2001). CTs act as a communication spot with tourism resources, where the time of berth and the quality of the transport infrastructure influence the development of mobility. According to Manning (2006), cruises land for 10 to 12h. Subsequently, the tours will have a maximum of eight hours. In Mediterranean ports, when docking near the centre of the town, berthing times and the radius of influence may be lower. De Cantis et al. (2016) describe this in the study carried out on the port of Palermo, where the displacements ranged from 0.5 km to 58 km, with an average displacement of 3 km. Given the great tourist potential of the Mediterranean city-ports, we can only consider the World Heritage Sites (WHSs) included in UNESCO (2016) in two ways:

- ‘Number of WHSs in the port city’ (nM). The city must manage the movement of cruise passengers based on the capacity of its infrastructure and public transport.
- ‘Number of WHSs in the cultural hinterland’ (nMH). These are the
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