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Port hierarchy and concentration: Insights from the Mediterranean cruise market

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Abstract

The cruise industry provides a tourism service that is performed entirely by means of transportation: the vessel. While different characteristics of the cruise industry are well documented in the related academic literature, the role and influence of ports (and port cities) in defining cruise organisation is relatively understudied. Using public official data collected from all the major cruise groups operating in the Mediterranean Sea, the study investigates the role of the different ports (and cities) within different itineraries. The analysis highlights that although there is some sort of hierarchical structure among some main ports included in the Mediterranean cruise routes, the majority of the ports of call are in a somewhat vulnerable position within the cruise transport network. Moreover, the study discusses how ports' characterising elements, such as excursion packages, have a strategic role in ensuring the inclusion of peripheral ports within the cruise network.

Keywords: Cruise destination strategies, Cruise market, Excursion packages, Mediterranean ports.

1. Introduction

The cruise industry is one of the most dynamic transport sectors and one of the fastest growing areas of the tourism industry. According to Vogel (2011), the cruise industry is currently facing three relevant trends: net on-board revenues are outgrowing ticket revenues, ticket prices barely cover costs, and ticket prices are declining. To increase total revenues, the industry depends on additional revenues generated from customers during their stay on board or from sales of different alternative services during the time spent in the port. According to two interviews with cruise managers based in Italy¹, one of the main strategies to increase revenues is the efficient organisation of a pool of local visits (excursions) to be sold to as many passengers as possible at a given port of call. According to the Cruise Market Watch statistics (2014), on-board revenues currently account for almost one third of the total revenues of cruise operators, among which excursions generate the second largest financial income.

The relationship between a cruise company and the local territory's appeal is thus fundamental to expand the profitability of a cruise itinerary. The importance of attracting cruise companies for a seaport city has been widely discussed by different scholars (e.g., Seidl et al., 2006; Braun et al., 2002; Dwyer and Forsyth, 1998). The literature is divided by those who underline the positive effects – mainly in terms of monetary returns and destination marketing – and negative effects, namely environmental ones, due to massive tourist flows (e.g., Thureau et al., 2015). In this regard, Hall (2011) identified commonalities between the environmental effects of tourism and marine and coastal areas, underlining the potential threats of mass tourism.

The relationship between cruise companies and local communities is reflected by excursion packages. The current paper aims at analysing the organisation of cruise itineraries in the Mediterranean Sea, comparing different destination promotion strategies and organisational patterns. The study highlights the dual role of excursions: on the one hand, they are used by cruise companies as a means to differentiate services, while on the other hand, they can be used by port cities to promote themselves and to build up a durable

¹ The interviews took place in Genoa in the winter of 2015. They were conducted with a public relations and port development manager of RCCL and a junior manager of Costa Crociere.

presence within cruise itineraries. Despite this premise, as underlined by the current analysis, this potential role is far from being properly exploited.

The manuscript is structured as follows. After a general introduction to the cruise market characteristics and a literature review of the sector's main research trends, section three focuses on the Mediterranean cruise market organisation. Section four discusses the collected data and the different roles of the ports within cruise itineraries, while section five focuses on the role of excursions as a potential attraction factor for cruise operators. Finally, section six provides recommendations for future research and concludes.

2. How this paper contributes to the literature

The growing importance of cruising in the tourism sector is exemplified by the increased popularity of this topic in the economic literature. Taking into account the papers published in the past two decades, it is possible to identify the main perspectives of analyses of the economics of cruising; they are summarised in table 1, where the right column, "Sources", has only an illustrative meaning and not an exhaustive one.

Table 1 – Literature Review

Topic	Main research field	Sources
Cruise supply	Marketing strategies	Sun et al., 2011
	Revenue management	Lieberman, 2012; Vogel, 2011
	Itinerary design	Rodrigue and Notteboom, 2013; Barron and Bartolome, 2006; Lekakou et al., 2009
	Cruise supply characteristics	Weeden et al., 2011
The demand for cruising	Market segmentation	Langenfeld and Li, 2008; Barron and Bartolome, 2006
	Demand analysis	Li et al., 2008; Petrick and Li, 2006; Dwyre and Forsyth, 1998
	Customers' value perception	Brejla and Gilbert, 2014
Economic impact	Benefits for specific communities	Thurau et al., 2015; Ridderstaat et al., 2014; Sanz Blas and Carvajal-Trujillo (2014); Pranic et al. (2013); Torbianelli, 2011; Dwyer and Forsyth, 1998
	Cruise market studies	Vaggelas and Pallis, 2010; Soriani et al., 2009; Dowling and Vasudavan, 2000
	Residents' attitude towards the industry	Stewart et al., 2011; Andereck et al., 2005
	Customers' expenditures	Satta et al., 2015; Penco and Di Vaio, 2014
	Cruise organisation and inland expenditure	Penco and Di Vaio, 2014; Klein, 2005
	Case studies	Diakomichalis, 2009; Hall, 2003; Knowd, 2006; Henthorpe, 2000; Wilkinson, 1999
	Fleet and ship characteristics	Papatheodorous, 2006; Weaver, 2005a; Weaver, 2005b; Wood, 2000
Environmental concerns	General environmental impact	Thurau et al., 2015; Johnson, 2002
	Ship size vs. local environment	Dowling and Vasudavan, 2000
	Cruise waste generation	Brida and Zapata, 2010; Butt, 2007; Johnson, 2002

Table 1 shows how several research questions have been addressed, focusing on the supply side and the demand side of the cruise market using both theoretical bases and several case studies. Studies on supply also include the evolution of the cruise fleet, namely the deployment of ever larger vessels and the implications in terms of technical requirements for the ports of call (and the induced selection of ports), along with the increasing industry concentration (through both M&As and internal growth) and the contextual segmentation of supply (with each company managing several brands).

Another important research field addresses the impact of cruises. In this research field, the main studies focus on the economic impact, but several also focus on the environmental implications of cruise tourism, namely in particular environments, such as small islands around the world, or specific vulnerable sites, such as Venice.

The current paper belongs to the studies that investigate supply. It focuses on the different roles that ports can have within different cruise itineraries and how specific local characteristics (e.g., a set of excursions proposed to cruisers) can improve the importance of a given port of call within certain cruise itineraries. Rodrigue and Notteboom (2013) highlight the role of itineraries (i.e., the selection process of a sequence of ports of call) in the appeal of a cruise service, and our intention is to complement this work, focusing on the set of tourism experiences that city ports set up to address cruisers' needs. Our analysis – despite starting from a different viewpoint and studying a different geographical market – reaches conclusions comparable to those of Chang et al. (2016): the impact of cruises on a port of call are strongly dependent on the investment made by the port city to welcome cruisers.

Concerning the relation between potential benefits and threats for local communities, both Sanz Blas and Carvajal-Trujillo (2014) and Pranic et al. (2013) underline how specific thematic cruises might contribute to promoting local areas and emphasise how excursions could affect the overall knowledge of the region in which the cruise ship calls (e.g., Hall, 2003; Knowd, 2006). Cruises are experience goods; the visited amenities are then key factors in generating the value of the service for cruisers. Moreover, a diversified and ever changing set of excursions may contribute to attracting repeaters and developing word of mouth (e.g., Satta et al., 2015), thus increasing the visibility and knowledge of certain places (e.g., Pranic et al., 2014).

An interesting classification of shore-side excursions is found in Johnson (2006). Excursions simultaneously represent a characteristic feature of any cruise service (in this sense, they characterise cruise itineraries) and contribute to satisfying the second set of motivations for cruising, i.e., “learning/discovery”, as noted by Hung and Petrick (2011); however, they also determine the revenues that city ports acquire from cruise calls, i.e., an important component of the economic impact of cruises.

Despite the importance of excursion packages in linking ports, local communities and cruise services, this issue seems under-investigated in the literature. The current paper attempts to contribute to filling this gap with a case study focused on the Mediterranean Sea, the second largest market worldwide for the cruise industry.

3. The cruise market evolution and the Mediterranean region

The emergence of the modern cruise industry began in the late 1960s and early 1970s with the founding of Norwegian Cruise Line (1966), Royal Caribbean International (1968) and Carnival Cruise Lines (1972), which are still the largest operating cruise lines today. Carnival promoted its vessels as “Fun Ships” in the United States, and they – not the ports of call – were advertised as the main holiday destination for a growing number of tourists (Weaver, 2005a).

The strategic goal of the cruise industry in the 1970s on was to make the cruise experience, which was initially affordable for a small, wealthy *elite*, available to a growing number of passengers. Economies of scale through larger ships capable of accommodating more customers have created additional opportunities for on-board sources of revenue (Weaver, 2005a).

Today, on average, cruise ships can accommodate between 3,000 and 4,000 passengers, with a maximum of 6,000 (on Royal Caribbean’s Allure and Oasis ships). According to the president of the Cruise Lines International Association (CLIA), which represents 95 percent of cruise capacity worldwide with 63 members, the current trend is to develop theme park-style attractions and new offerings in dining and entertainment instead of even higher capacity. The novelty of the modern cruising industry is that the ship itself represents the destination, acting as a floating resort (Klein, 2002) with all the related facilities (e.g., bars, restaurants, theatres, casinos, pools). As underlined by Rodrigue and Notteboom (2013), this aspect has permitted cruise lines to develop a captive market

within their ships and for shore-based activities (e.g., excursions or facilities entirely owned by subsidiaries of the cruise line). “Destination cruising”, where ports play a fundamental role and are central to consumers’ choices, is now considered to have a reduced role in comparison with the past.

In view of fulfilling the desires of its guests, the cruise industry has transformed itself through the development of new destinations, new ship designs, new and diverse on-board amenities, facilities and services, plus wide-ranging shore-side activities. Most cruise ship operators work around specific cruise themes, and voyage lengths can vary to meet the changing vacation patterns of customers (Rodrigue and Notteboom, 2013). Furthermore, the sector is trying not only to attract first-time cruise passengers but also to manage the more demanding expectations of experienced cruisers. An element that has proven to be a successful marketing tool is word-of-mouth communication, i.e., when visitors, after their cruise experience, recommend the same destination to relatives, friends and colleagues (Penco and Di Vaio, 2014; Satta et al., 2015). Indeed, as the industry continues to mature and diversify its products, there will be a greater need for operators to appreciate the needs of these different customer groups (Weeden, et al. 2011). According to the CLIA State of the Cruise Industry Report (2015), the Caribbean remains the key market (accounting for approximately 36% of all cruises), followed by the Mediterranean (approximately 20%) due to their season complementarity.

Figure 1 shows the current world market capacity distribution and highlights the geographical concentration of the market.

Figure 1: World capacity distribution

Source: Author elaboration from F-C Cruise Association Data, 2015.

Apart from being one of the main world markets for cruises, the Mediterranean region also represents one of the fastest growing regions in the world, recording a growth rate of approximately +50% during the last five years in terms of offered bed-days (CLIA, 2013). Statista (2014) foresees a doubling of the current passenger movements before 2020. Concerning the studied area, the West Mediterranean area accounts for almost 80% of the overall passenger movements, while the East Mediterranean and the Black Sea account for 20% (Torbianelli, 2011). However, in 2015, the fourth largest home port in the region was located along the East Mediterranean routes: Venice is the only large hub port located in the region, and this increases the importance of the Eastern part of the studied area. According to the Cruise Industry Statistics Report (2014), the main companies operating in the basin are Mediterranean Shipping Company (MSC) Cruise (accounting for approximately 20% of the deployed capacity, operating 12 ships) and Costa (accounting for approximately 19% of the deployed capacity and using 12 ships). Other competitors appear far from the leading companies, with the main brand of the second largest world cruise group (i.e., Royal Caribbean [RCCL]) operating only 7 ships in the Mediterranean.

In general, a great market concentration can be observed, with the main two world groups (i.e., Carnival plc and Royal Caribbean Line plc) controlling approximately 60% of the market and the only regional company (i.e., MSC) controlling another 20%. The remaining 20% is served by small companies, normally operating only 1 ship – although there are few exceptions in which the operator holds more ships – that are focused on specific itineraries or market niches. Moreover, few groups operate several brands, and therefore, the market supply is highly differentiated – in terms of itineraries, styles, sizes of ships – to meet the diversified tastes of first-timers and repeat cruisers. This also determines the need to differentiate the itineraries in terms of the ports of call, on-board services and offerings of land excursions.

4. The regional port structure

Ports of call play a large part in both organisation of a cruise and the success of the itinerary. The literature stresses the role of the whole cruise itinerary instead of simply selling just a group of ports (Rodrigue and Notteboom, 2013), but the selection and characteristics of ports still represent a strategic issue in planning a cruise service. Traditionally, cruise ports are divided in two main categories: home ports and ports of call. While the former are the key nodes of a cruise company's network, managing a huge volume of people during the (dis)embarkation operations of each cruise, the latter are intermediate transit points in which land infrastructures and intermodal connections are not fundamental (or even meaningful). In fact, efficient connection systems, accessibility and check-in facilities are key strategic features in home ports. For these reasons, they are normally located close to logistics hubs and count on particular transport facilities (e.g., specialised cruise terminals, dedicated parking spots, international airports). In these ports, cruise operators usually invest in specialised terminal facilities (e.g., Barcelona, Civitavecchia, Savona) or set up complex logistics services aimed at managing passenger flows (e.g., flight charters) and needed ancillary activities (e.g., supply services, waste management). The ports of call, on the other hand, need only berthing facilities and the right amenities to attract passengers and persuade cruise operators to call at that port. They usually include ports located in very attractive local areas (e.g., Dubrovnik, Balearic

Islands) or in areas that are sufficiently close to them (e.g., the port of Leghorn for its closeness to Pisa, Florence and Cinque Terre). The third port category includes ports characterised by a mixed role within different itineraries since they have the characteristics of both a home port and a port of call, such as Venice.

This port classification, based on ports' characteristics, is also useful to investigate the potential degree of substitutability of a certain port within a specific itinerary. In fact, while home ports are fundamental structural nodes within a cruise network, ports of call can be easily substituted by other ports within a given itinerary. This latter fact is mainly linked to the degree of direct involvement of cruise companies in the activities of the ports of call (which, in home ports, represent a sunk cost). One example is the ports of Leghorn, La Spezia and Genoa in the North Tyrrhenian Sea. These three ports have registered several changes in terms of the number of cruise ships calling at them in the past five years due to the modified preferences of the cruise companies that use these ports as interchangeable solutions, depending on the conditions bargained with the local port authorities and other market players (Informare, 2014).

4.1 Cruise industry data

The data collected concentrate on the itineraries offered by MSC Cruise, the Carnival group and the RCCL group during the October 2013-January 2014 period. After the data collection and analysis, two interviews were conducted – one with a representative for Carnival and another with a representative for RCCL – aiming to better understand the preliminary research findings and their possible use for further policy implications.

While MSC operates its services using only one brand, the other two groups use several brands. Carnival manages 9 different brands, and RCCL manages 6. Altogether, these operators offer almost 300 different itineraries that “touch” at least one Mediterranean port (e.g., some itineraries sail from non-Mediterranean ports, such as Southampton or the Canary Islands). These itineraries may be seasonal (operating only during the spring-summer season), perennial (operated year-round) or linked to special occasions (for instance, to a particular festivity, such as New Year's Eve). Moreover, some itineraries differ from others by just one port within the proposed voyage. This usually happens when there is more than one single home port in the itinerary (and then, the company

chooses to sell the itinerary as a different one using the two home ports as starting/ending points of two distinct services) or for a re-positioning cruise (Rodrigue and Notteboom, 2013).

The database built with the abovementioned data is characterised by a series of general information (e.g., ports, duration, price) and specific data (e.g., official name of the itinerary, specification of famous destinations, number of excursions) in order to better understand the characteristics of the sold itineraries and locations. The assessed 300 itineraries are characterised by 2600 calls at 196 different ports distributed along all the Mediterranean countries, with only a few exceptions (e.g., Libya).

Table 2 shows the general statistics of the collected services.

Table 2: General statistics of the studied cruises

Group	Brand	Itineraries	Deployed Ships	Called port/Sold services	Avg. excursions' package per port	Avg. duration in days
Royal Caribbean	RCCL	12	7	2.8	2.6	9.1
	Celebrity	6	3	5	16.5	11.7
	Azamara	31	2	2.2	3.4	8.6
	Pullmantur	11	4	3.4	2.5	7.1
	CdF	10	2	4.2	*	9.5
	Tui	5	2	4	11.6	9.6
Carnival	Ibero	20	2	1.4	4.7	11.8
	Aida	25	8	2.7	10.6	9.9
	Princess	19	5	2.8	10.7	14.9
	Seabourne	34	5	3.1	7.5	13.0
	Carnival	6	2	2.3	*	13.1
	Costa	18	8	2.2	11.5	10.3
	Hollande	31	8	2.6	17.8	12.9
	Cunard	31	1	1.1	8.0	18.7
	P&O	26	8	2.2	8.6	17.6
	MSC	14	9	3,2	*	8.3

Source: Own elaboration from companies' websites. * represents companies that do not always show the number of sold excursions.

The table shows several differences among the brands, even among brands belonging to the same group. This issue is mainly linked to the price, duration, and specificity of the itineraries and to the number of ports called. The number of itineraries varies considerably and depends on the tendency to promote roundtrip cruises (the majority of cases) or long trips in which the company sells parts of the whole trip as separate itineraries (which happens for Azamara, for instance); this is a means to constantly differentiate their services. The number of ports concerns not only the average number of calls within the

set of offered itineraries but the ratio between the number of ports used by the company – thus avoiding port repetition and summing up all the times that a port is inserted in more than one itinerary – and the number of provided services. This value indicates the real differentiation of the services in terms of ports called at, at least on average.

Another element related to the service organisation is the average number of offered excursions and how different brands promote their excursions once they call at a port. For several brands, in fact, the average number of offered excursions per destination is low (i.e., three). However, customers may perceive this number as higher because companies tend to carry out diversification strategies by offering differentiated value-added services, such as language assistance or premium transport connections, within the different excursions. Considering cruise duration, the maximum recorded value is three weeks, while the minimum is three days. On average, the value is between one and two weeks, though it is possible to make the itinerary shorter with special selling options.

4.2 Port data analysis

According to Eurostat (2016), there are currently only a few ports accounting for over 1 million cruisers in Europe – the most recent public data refer to the year 2014 – and only three of them are included in the studied itineraries. Figure 2 shows Eurostat's trend for the top 5 Mediterranean cruise ports plus the port of Southampton, which is the largest extra-Mediterranean port included in this study, and the port of Hamburg, which currently ranks higher than the fifth-ranked Mediterranean port.

Figure 2: Trends of cruise passengers

Source: Eurostat, 2016.

While the statistics shown above consider all flows, the distinction between home and ports of call may consistently change the picture. For instance, ports such as Dubrovnik and Naples would appear in the top of the transit ports, while Savona registers almost 100% of its cruise traffic for embarkation procedures (thus being a full home port). According to data collected by Torbianelli (2011), only few ports, such as Civitavecchia and Barcelona, register a share of approximately 50% for both activities (i.e., transit and embarkation), while all the other ports in the area are specialised within different itineraries (thus being a home port or a port of call but not both).

The different roles within the itineraries and the cruise company strategies are also underlined by the Herfindahl-Hirschman Index (HHI) analysis per port and per company. The HHI index allows assessing concentration in a given reality, and it has been widely used in tourism research aiming at evaluating market concentration (for instance, in the case of the MedCruise Report 2015 [Pallis et al., 2016]).

In this case, the HHI is low for all companies, showing no concentration in the usage of some specific ports. There are considerable differences between the brands; Carnival's value doubles that of the others and is almost five times more concentrated than the value

registered by Seabourne and Azamara, the two brands that diversify their ports of call the most.

In terms of ports, a greater concentration is registered. Only 15% of ports account for an HHI lower than 1800, underlining a differentiation among the brands calling at those ports, while approximately 40% of the ports attract only one brand and are then more dependent on the decision made by the cruise company.

Table 3 shows a summary of the results of the HHI analysis.

Table 3: HHI results

Company Analysis		Port Analysis	
Companies	HHI values	HHI range	N. of ports
Ibero	578.4	HHI = 10,000	87
Aida	366.1	1,800 < HHI < 10,000	83
Princess	372.6	1,200 < HHI < 1,800	17
Seabourne	213.2	HHI < 1,200	9
Carnival	1,008	The Herfindahl-Hirschman Index highlights market concentration. If the index is below (1,000-) 1,200, there is no market concentration; if it is included between (1,000-) 1,200 and 1,800 (-2,000), there is low market concentration; if it is included in the range of 1,800 (-2,000) and 10,000, there is market concentration; and if it is equal to 10,000, there is a monopolistic situation. Classes of variation also depend on the market characteristics, and there can be concentrations for values lower than 1,200 (as underlined in parentheses).	
Costa	746.9		
Hollande	277.7		
Cunard	533.8		
P&O	531.7		
RCCL	425.9		
Celebrity	510.4		
Azamara	297.1		
Pullmantur	404		
CdF	454.2		
Tui	726.6		
MSC	517.5		

Source: Own elaboration from companies' websites.

This last issue is also confirmed by the breakdown analysis of the collected data per port. Table 4 shows a ratio between the number of calls per port and per cruise company and the number of itineraries offered by the same cruise company. This ratio – which from now on will be called the IM value (i.e., Indicator of *IM*portance) – underlines the importance of a certain port within the company's network, and it is strategic to better

understand the role of each port in the cruise organisation. If the ratio is equal to 1, it means that the port is, on average, called at in each itinerary offered by a certain cruise company. If it is below 1, it means that the port is called at only in certain itineraries; the closer the value is to zero, the less important the port is (for that specific company). In the few cases in which the ratio is above 1, it means that the port is included more times in the same itinerary (this happens, for instance, in cases of circular voyages).

Table 4 shows the top 10 ports in 2015 for passenger traffic with the related value of the IM ratio. The first thing to underline is that there is no connection between IM and passenger movements. Moreover, as underlined in the table, only few ports – home ports – account for a value greater than 1, and this usually happens a few times (or once) for every company. On the other hand, the strict majority of the ports account not only for few calls but also for few (or only one) companies. When the IM value is 0, it means that the company is not calling at a certain port. More than 50 ports account for the null value, while less than 30 have an average value greater than 0.1, testifying to a marginal contribution or influence of these ports on cruise operator strategies and a great differentiation in itineraries. An emblematic case is the port of Savona, which is one of the top 10 ports in Europe for number of cruisers and the home port for Costa (Carnival) but is used by only one brand (plus Ibero, which calls at Savona when it sells services together with Costa).

Table 4: Key nodes of the Mediterranean cruise networks

	Athens	Barcelona	Civitavecchia (Roma)	Dubrovnik	Genoa	Marseill e	Naples	Palma de Mallorca	Savona	Venice
<i>Ibero</i>	0.20	0.70	0.50	0.35	0.00	0.35	0.25	0.20	0.35	1.20
<i>Aida</i>	0.20	0.24	0.08	0.16	0.00	0.00	0.04	0.84	0.00	0.24
<i>Princess</i>	0.53	0.58	0.74	0.26	0.16	0.00	0.42	0.00	0.00	0.84
<i>Seabourne</i>	0.62	0.53	0.41	0.29	0.00	0.26	0.12	0.12	0.00	0.56
<i>Carnival</i>	0.33	1.33	1.00	0.83	0.00	0.83	1.00	0.33	0.00	1.67
<i>Costa</i>	0.22	0.67	0.83	0.11	0.00	0.50	0.06	0.11	1.56	0.22
<i>Hollande</i>	0.74	0.55	0.55	0.23	0.00	0.13	0.32	0.10	0.00	0.35
<i>Cunard</i>	1.00	0.35	1.35	0.45	0.00	0.00	0.68	0.00	0.00	0.71
<i>P&O</i>	0.08	0.46	0.35	0.31	0.31	0.04	0.12	0.27	0.00	0.54
<i>RCCL</i>	0.42	0.42	0.58	0.08	0.17	0.17	0.08	0.25	0.00	0.33
<i>Celebrity</i>	0.50	0.00	0.83	0.33	0.00	0.00	0.83	0.00	0.00	0.50
<i>Azamara</i>	0.23	0.35	0.48	0.16	0.00	0.10	0.00	0.03	0.00	0.16
<i>Pullmantur</i>	0.27	0.18	0.36	0.09	0.09	0.64	0.00	0.18	0.00	0.09
<i>CdF</i>	0.10	0.20	0.40	0.10	0.10	1.00	0.10	0.10	0.00	0.10
<i>Tui</i>	0.40	0.20	0.60	0.20	0.00	0.00	0.20	0.20	0.00	0.00

<i>MSC</i>	0.21	0.29	0.50	0.14	1.14	0.43	0.07	0.21	0.00	0.57
<i>Avg.</i>	0.38	0.44	0.60	0.26	0.12	0.28	0.27	0.18	0.12	0.51

Source: Own elaboration from companies' websites.

The concentration of the ports of call in different locations is explained by the collected statistics: the top 10 called ports represent 40% of the overall value in the Mediterranean Basin. Table 5 proposes an organisation of the ports based on their role within the cruise network of each brand.

Table 5: Port role in Mediterranean cruise networks

	Pivotal Ports (IM $\geq$ 0.7)	% of Spoke Ports (0.7>IM $\geq$ 0.2)	% of Satellite ports (IM<0.2)
<i>Ibero</i>	Venice; Istanbul ; Barcelona	59%	15%
<i>Aida</i>	Palma de Maiorca	10%	64%
<i>Princess</i>	Venice ; Civitavecchia	25%	58%
<i>Seabourne</i>		9%	91%
<i>Carnival</i>	Venice ; Barcelona; Civitavecchia; Naples; Leghorn; Messina; Marseille; Dubrovnik	29%	14%
<i>Costa</i>	Savona; Civitavecchia	8%	72%
<i>Holland</i>	Piraeus	10%	78%
<i>Cunard</i>	Civitavecchia; Piraeus; Venice	34%	34%
<i>P&O</i>	Southampton	18%	63%
<i>RCCL</i>		19%	78%
<i>Celebrity</i>	Civitavecchia; Naples	20%	50%
<i>Azamara</i>		13%	84%
<i>Pullmantur</i>		18%	79%
<i>CdF</i>	Marseille	19%	62%
<i>Tui</i>	La Valletta	60%	15%
<i>MSC</i>	Genoa	9%	76%

Source: Own elaboration from companies' websites.

Table 5 suggests a new cruise port classification based on three types of ports.

As stated, there are few “pivotal” ports in the current cruise structure. These ports are present in almost all the itineraries of a specific brand (accounting for a value of more than 0.7), and they are mainly located in the West Mediterranean. In table 5, ports in bold type represent the few pivotal ports outside the West Mediterranean area; among them, Venice and the Piraeus are the only two main ports also acting as home ports for several companies. There are only a few companies that avoid using “pivotal” ports, and these companies adopt a different supply structure by offering a wide range of services that normally do not call the same port often, thus affecting their IM value.

The second category is represented by ports that are often included in the company's itineraries (0.2>IM>0.7), and then, they may be categorised as “traditional spokes” of a

cruise network. These two port categories represent the core offer of each brand, and they are normally included in each cruise package (with few exceptions).

The third category comprises the so-called “satellite” ports, i.e., those ports that appear rarely in more than one itinerary and only for few (or only one) companies. These ports – representing the greatest share of the ports at which companies call – register the lowest IM ratio values and are strongly dependent on the cruise company’s strategies regarding the service structure. Therefore, they could be easily replaced within the itineraries.

5. Cruise port replacement and excursion activity

Cruises may be a valuable tourist driver for port city destinations, even if some consequences may negatively influence the cruise activities (e.g., congestion, pollution), and few direct positive effects occurs if cruise passengers decide to visit an attraction in another region instead of the port city². The induced income for the local communities visited by cruisers have been widely analysed in the literature. This has been mainly performed in relation to specific case studies (e.g., Diakomichalis et al., 2009; Dwyer and Forsyth, 1998) in order to discuss the opportunity to invest in dedicated cruise terminals or to evaluate the possibility of promoting a certain city as a cruise destination. In this regard, the “centrality” of a port within a cruise network may be a valuable indication of the potential tourist flows that may be attracted by the port city and then of the positive effects deriving from the cruise activities. Positive marketing destination and tourist repercussions, such as word of mouth and the occurrence of second visits (e.g., Li et al., 2008), may occur only if the city has the chance to be known, discovered and explored by the cruisers.

The role of ports within the cruise market is the result of a combination of the number of companies calling at the harbour and the level of attractiveness that a port region may offer to cruisers (e.g., Barcelona as a central home port and Leghorn as a mere access point to Pisa and Florence). In accordance with the literature (e.g., Rodrigue and

² On several occasions, ports of call are used only as transit points to reach a “close enough” appealing and famous place, such as Cinque Terre for Genoa, La Spezia and Leghorn. In these cases, local towns are less promoted than other locations, and those ports seem easily replaceable by other close port cities.

Notteboom, 2013) and the interviews conducted, the main strategic drivers within a cruise itinerary are hardly replaceable and easy to sell to passengers.

These characteristics may derive from one of the following conditions:

- being a home port, i.e., a port that is necessary to organise a cruise service (e.g., Barcelona);
- being a renowned tourist attraction as a main market destination (e.g., Venice, Naples);
- being close enough to one or more mainland tourist attractions (e.g., Leghorn in respect to Florence, Civitavecchia in respect to Rome) to organise tours that have a maximum duration of 12 hours;
- having the possibility to insert a special characterisation in a specific cruise (e.g., Dubrovnik for the Venetian city cruises).

Some ports may record several of these conditions, but their characteristics might change over time due to market evolutions (e.g., due to decreasing interest in a specific cultural site) or competitors' investments (e.g., Costa moved its home port from Genoa to Savona in the early 2000s in order to invest in a dedicated terminal).

This context, in which over 80 ports serve only one cruise company, along with the fact that over 50% of the ports serve fewer than 4 different itineraries, highlight the weakness of the position of ports in comparison to the cruise company and how easy and simple it could be for a cruise company to replace the majority of the ports visited.

Furthermore, within the sample, 16% of ports are included in one or more itineraries with a misleading name, i.e., the port replaces its own name with the name of a famous place. This is the case of small cities close to appealing sites such as the Greek town of Volos (used to serve the Meteora site) or the general indication of "Canary Island" along with the port of call (e.g., Tenerife or Las Palmas). This strategy is also used when home ports are included in itineraries as ports of call. An example of how this approach is carried out can also be found in the case of the ports of Piraeus, simply called Athens, and Civitavecchia, called Rome, even though the two capitals are several kilometres away from the ports.

On the one hand, this misnaming is strategic for cruise companies to attract tourists to iconic places and for a port that is capable of binding a specific cruise service. On the other hand, this strategy represents a threat to the possibility to attract future tourist flows due to the reduction of the visibility of the real local sites where the cruise calls. Furthermore, wherever the main place can be served by a plurality of ports (e.g., Pisa and Florence, which can be easily reached by the ports of Leghorn or La Spezia), this misnaming strategy might also make it easier for a cruise company to substitute the ports of call without actually changing its “public” itinerary arrangement.

As mentioned above, the characterisation of a certain itinerary “forces” the presence of some compulsory stops. For instance, the “Venetian cities” cruise cannot avoid Venice, and so-called “Holy cruises” have to call at Haifa and Ashdod (ports used to visit Nazareth and Jerusalem, respectively). These cruises represent less than 5% of the studied itineraries and only a small part of the cruise market.

A strategic role for the port of call is then represented by the possibility to offer a wide range of excursions, and this is even better if they are difficult to replace (due, for instance, to their cultural, naturalistic, or historical characteristics). According to the data collected online and the interviews conducted, cruise operators normally offer visits to sites that are reachable from the port in less than 2 hours (with some exceptions). In this regard, each port city that is close enough to a world tourist attraction may become a cruise destination as a port of call. For this reason, only a wide range of excursions or a recognised advantage in the location of a specific port can make that port difficult to replace. Moreover, concerning excursion fares, all brands offer similar tariffs for similar excursions (with an average value between 80 and 100 euro per excursion), even if additional services (e.g., the possibility to lease a car or multilingual guided tours) may increase the fares. According to the two consulted interviewees, time limits and monetary budgets represent the most important variables in identifying possible excursion packages in proximity to a cruise terminal.

A wide range of excursions is a good indication of the competitiveness of a port and its capacity to promote itself within a cruise itinerary. There is great variability around the average number of cruise excursions offered (i.e., 10 different excursions); the mode is 9, the maximum is 35, and the minimum is only 1 (for some small ports). This considerable difference among the ports of call is attributed to the number of attractions close to the

harbour and to a differentiation in terms of services that some locations can offer (e.g., through different transport means, food & beverage quality services, specific cultural attractions). In this regard, it is also interesting to observe how companies offer different baskets of excursions for the same destination when it appears on different cruise itineraries (for instance, depending on the itinerary, Istanbul registers a maximum of 35 excursions and a minimum of only 7 alternative visits). This choice may depend on the itinerary differentiation strategy in terms of cruisers' profiles (e.g., income, age, origin) or the itinerary characteristics (e.g., religious, special occasion, season). An interesting fact worth noting is that there is no correlation between the number of offered excursions and the cruise (average) price. Some specific cruise brands (such as Hollande Cruise) specialise in offering a greater number of excursions to their customers, while some cruise brands tend to propose only few limited visits (approximately 5 alternatives). Another interesting correlation is the one between the cruise organisation and the number of offered visits. The collected data indicate that the more ports are included in an itinerary, the fewer packages are provided by a certain operator. This is mainly due to the strategic role of the excursions as a company income generator: cruise operators gain by selling on-boat attractions (on long cruises and those with multiple stops) or through the organisation of excursions (on shorter cruise trips).

6. Concluding remarks

The aim of this paper was to investigate the structure of the current cruise services to better understand whether there is a hierarchy behind the port selection process and a strategy in promoting cruise destinations. Moreover, the paper discusses the role of excursion packages as part of destination marketing strategies and highlights how excursions can represent a viable competitive tool to limit the risk of replacement of some ports by their immediate competitors, thus assuring their position.

In practical terms, the market trends and the main threats and opportunities of the Mediterranean cruise sector were identified. This study analysed approximately 300 cruise itineraries calling at approximately 200 ports. The analysis revealed a hierarchical

structure among ports, only few of which could be defined as pivotal, and therefore strategic, for the majority of the cruise companies.

In contrast, the majority of the ports behave as satellites and therefore have a peripheral role within the cruise network. Only few itineraries call at such ports, making them easily replaceable within a certain cruise service. In practice, this may reduce the positive effects of hosting a cruise service, namely the possibility to increase the visibility and reputation of a port city among cruisers and other tourists.

The limitation of the positive (economic) effects of not being a hub port within cruise itineraries has been also recently analysed for growing cruise markets, such as Asia (e.g., Chang et al., 2016). Normally, only specific investments in binding cruisers to the port community increase the positive effect of hosting cruise liners. Recognising the salience of local residents as a stakeholder group, however, is only the first step toward drawing them into the attraction's decision-making processes: specific strategies are needed to engage effectively with them (Garrod et al., 2012).

In this scenario, taking into account the viewpoint of port city stakeholders, only a strategy aiming at making the port less vulnerable and generate income for the cruise company may increase the difficulty of replacing the port itself. This could be achieved through the organisation of a wide range of excursion packages that represent an added value for every cruise company. At the same time, this is the way port cities have to “export” their amenities – cultural, environmental, and historical – to a wide population of tourists.

Thus, excursions can contribute to a win-win strategy, representing both valuable income for cruise companies and a promotional tool for the port city to attract future second-visit flows.

Considering port city stakeholders' perspective, dedicated investments or public-private investments – with cruise companies as partners – may help to upgrade the role of the port within a cruise network or to bind a certain operator to that specific port, which is what happened, for instance, when Carnival decided to invest in the port of Savona. According to Chang et al. (2016), the creation of specific facilities (e.g., shopping malls) and infrastructures might increase the long-term benefits of investing in a cruise market; then, these benefits might be shared between the local community and the cruise company. The potential shared income derived by such facilities, together with

operational benefits generated by managing dedicated facilities, can indeed justified the investment of cruise companies in specific ports.

Although cruise services are a valuable tourism driver for many Mediterranean cities, the current structure of cruise services presents several critical issues for the majority of ports of call, namely when high investments by ports are required for their inclusion in cruise itineraries. In light of this potential risk, co-participating with cruise companies can contribute to avoiding useless investments and assuring more stability.

These preliminary results should be confirmed by an analysis focused on the actual demand of the excursion packages sold to cruisers at different ports. Nonetheless, the results of this study highlight the necessity of enhanced and tighter cooperation among port authorities, cruise companies and municipalities to fully exploit the positive economic impact of cruise tourism.

The original contribution of the current paper is not only the proposition of a cruise port hierarchical structure but a better definition of the extent to which a port of call can rely on the benefits linked to the current level of cruise activity. In a time characterised by an increasing importance of sustainable tourism, a need for public investments, and a generation of benefits for local communities, the proposed further categorisation of the different port roles can help public authorities to implement specific policies in order to stabilise their role within the cruise market, better understand potential threats, and be aware of the risks related to their role within a specific cruise business.

Lastly, in line with other studies, this analysis highlights the important role of itineraries in making a cruise service appealing to an ever growing population of cruise repeaters. At the same time, the cities that are part of those itineraries have a marginal role in this choosing process; this is especially the case for ports that do not represent, for a variety of reasons, an “obligated” call. The need to develop actions aimed at diversifying services, developing a specific role within the cruise companies’ strategy, is represented by the excursions, and this is valid for all ports, regardless of their role within the cruise sector.

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