

Cruise destination characteristics and performance: Application of a concept model to North Atlantic islands of Macaronesia

Abstract

The purpose of this study is to develop a conceptual model for both port and cruise destinations composed by site and situation-related factors as the main drivers with a direct influence on the performance of the cruise destination. A moderator variable was also included on the model, due to the different characteristics that cruise ports at distinct levels of development present. The conceptual model was then applied on the North Atlantic archipelagos of the Macaronesia region through a survey aimed at cruise specialists and stakeholders. The results of a structural equation model confirmed the concept model, which was subsequently validated through several interviews to cruise line operators. Significant differences were observed between the more and less developed ports of the region. For more developed ports, there is a shared influence of both site and situation-related factors, while in less developed ports the main drivers are, in a great extent, restricted to site-related factors.

Keywords: Cruise tourism; Cruise destination performance; Site-related factors, Situation-related factors; Structural equation model.

1. Introduction

The cruise industry ranks among the most dynamic tourism segments (Penco & Di Vaio 2014; Wang et al. 2014; Lopes & Dredge 2018; Chen et al. 2019), with a stable growth rate since the 1980s of around 7% per year, despite economic cycles of growth and recession (Cruise Market Watch 2020). This dynamic profile was possible through the continuous increase of the number, size and capacity of ships (Rodrigue & Notteboom 2013; Cruise Market Watch 2020), in a tendency towards gigantism (Soriani et al. 2009), and obtention of increasing economies of scale. Additionally, the processes of mergers and acquisitions observed since the early 1990s and the marketing strategies of several companies are also relevant factors in the success of the cruise industry (Gui & Russo 2011; Vogel 2011; Pallis 2015). Lekakou et al. (2009) describes the cruise market as an oligopoly dominated by three major groups: Carnival, Norwegian Cruise Lines, and Royal Caribbean, each one with multiple brands covering a variety of market segments. This multiplicity of brands creates in the consumer an illusion of supply diversity (Rodrigue & Notteboom 2013).

In this context, cruise lines marketing and designing of new ships have been consistently working on the development of the cruise ship as the focal point of the vacation experience (Whyte et al. 2018). In this sense, Rodrigue & Notteboom (2013) considers that the cruise industry sells itineraries, not destinations. However, for Karlis & Polemis (2018), the cruise product is a combination that includes the ship as a destination as well as the itinerary, which encompasses the ports-of-call along the way. In fact, ports still continue to be a central element in consumers' choice of the cruise product (Lopes & Dredge 2017; Whyte 2018). In this perspective, the cruise lines and the port cities establish a kind of joint venture that need to satisfy all the parties involved. Hence, cruise lines invest in the ships and ports cities invest in port facilities.

It is worth noting that cruise ports compete in two levels: on the first level, they try to be included in the cruise itineraries and attract cruise visitors; on the second level, they attempt to become a home-port, which is a port in the beginning of a cruise itinerary and/or the final disembarkation port, receiving thus greater economic benefits for the port and the local economies (Papachristou et al. 2020). However, and regardless the position of the cruise ports as home-ports or a mere port-of-call, cruise ports also develop cooperation practices to strengthen their market position in a perfect case of 'coopetition', in a constant attempt to increase their attractiveness and to better capture the economic benefits that cruise passengers can bring to local businesses and communities (Pallis 2015).

For both port authorities and cruise destinations stakeholder it is thus essential to investigate what are the most relevant attributes that ports should retain and develop in order to increase their attractivity as cruise destinations, and guarantee their future economic growth and sustainability. However, the literature has not dedicated much attention to these aspects, including only sporadically some topics associated to the attractiveness of cruise destinations and the maximisation of the benefits derived from cruise tourism. Major exceptions include Marti (1990), McCalla (1998), Wang et al. (2014), Lemmetyinen et al. (2016), Whyte et al. (2018) and Tao & Kim (2019), that

framed the importance of onshore attributes for cruise ports and destinations. Instead, the focus of the literature has been directed, to a great extent, to the economic impacts of cruise tourism on destinations (Chase & Alon 2002; Brida & Zapata 2010a; Merk 2013; BREA 2015, Castillo-Manzano et al. 2014; Vayá et al. 2017; Artal-Tur et al. 2019; Chen et al. 2019, etc.), to environmental impacts (Butt 2007; Caric & Mackelworth 2014; Lamers et al. 2015; Asero & Skonieczny 2018; etc.), or both (Brida & Zapata 2010b; Stefanidaki & Lekakou 2014; MacNeil & Wozniak 2018). Furthermore, the literature is absent on establishing the connection between the endogenous attributes of the ports and destinations and how these attributes may directly influence the performance of the destinations. There is, thus, a considerable gap in the literature about the identification of the most relevant attributes that cruise ports and destinations should possess to become relevant parties in the cruise industry.

The present study tries to contribute to fulfil this gap, enlightening about the multifaceted attributes, or drivers, that both ports (i.e., ports-of-call or home-ports) and destinations must develop to become increasingly relevant players in the cruise industry. Furthermore, the study establishes how those attributes can influence the performance of the cruise destinations. For that, a conceptual model was developed, through which the main onshore attributes of cruise port and destination were identified and connected to the overall performance of the destination. Information obtained through a survey focused on the particular case of the North Atlantic region of Macaronesia, which comprises the archipelagos of Azores, Canaries, Cape Verde and Madeira, was applied as an illustration of the conceptual model. The Macaronesia region, which has never been studied previously, has been gradually consolidating its position in the global market of cruise tourism, with a diversity of itineraries, especially during winter season, covering several islands with the Canary ports of Tenerife and Las Palmas working as home-ports, or repositioning itineraries mainly between the Caribbean and Europe or vice versa. It is believed that this study is the first attempt to determine both what are the main attributes of port destinations and the connection between those port destination attributes and the performance of the cruise destination. This is a particularly important topic for the policymakers and port authorities involved in the definition of their policies for this sector.

2. Literature review

The expectations of ports and local destinations is that cruise related activities will generate a catalytic effect on the city or region through the creation or development of businesses and the generation of added value activities directly linked to passenger visits ashore and to the supply of goods and services to cruise ships (Chang et al. 2016; Vayá et al. 2017). This is particularly important for policymakers, port authorities and local stakeholders involved on the cruise sector. The multiplicity of actors and complexity of activities associated to the cruise tourism business was illustrated by Gui & Russo (2011) through the presentation of the cruise Global Value Chain (GVC) that

establishes the links between ports, local destinations actors and global cruise lines¹. The cruise GVC puts in evidence the need of a holistic perspective for the local agents to enhance the generation of value at destination level. In this sense, local port destinations need to create an articulated and coherent set of attributes that creates on the cruise passenger an appeal to disembark and visit the destination. Also, Lemmetyinen et al. (2016) highlighted the need of a holistic perspective in the analysis of the cruise tourism business and particularly regarding the onshore experiences of the cruisers.

According to BREA (2015), 88% of cruise passengers disembark on the port and make an onshore visit. The expenditures by cruise passengers onshore are a particularly important source of revenue and generation of value at destinations, mainly associated to shore excursions, food and beverage and shopping, namely crafts. Furthermore, their behaviour when onshore is a fundamental aspect on the creation of economic impacts on destinations, referring the literature a positive relationship between the number of hours in a port and the money spent there by passengers (Henthorne 2000; Andriotis & Agiomirgianakis 2010; Penco & Di Vaio 2014; Aziz et al. 2020). Other relevant sources of revenue and generation of value at destinations include crew member spending, mainly associated to food and beverage, and cruise line purchases of shipping storage and port services. All these items constitute direct economic impacts, according to Chen et al. (2019) or BREA (2015), covering several geographical areas, namely in the American Continent, including the Caribbean (for example Chase & Alon 2002; Brida & Zapata 2010a, 2010b; BREA 2007, 2015) and Mediterranean or North Europe (European Commission 2009; Castillo-Manzano et al. 2014; Vayá et al. 2017; Artal-Tur et al. 2019) destinations, but also on less relevant markets like North Europe, Alaska or Australia or Asia (Chang et al. 2016). The perspectives and methodologies are diverse, including restrict methods focused almost exclusively on the level of expenditure of cruise passengers (for example European Commission 2009; Merk 2013; BREA 2015) and more sophisticated macroeconomic models contemplating also indirect and induced impacts (for example Vayá et al. 2017; Artal-Tur et al. 2019).

Regarding the average values for passengers' spending on destinations, there is an extreme diversity of values, depending on the authors and the geographical areas under study². The work of Chen et al. (2019), which presented a meta-analysis of the direct economic impacts of cruise tourism on port communities provides a very appropriate synthesis on the topic. The authors found that expenditures per passenger, number of passengers, number of crew members, expenditures per cruise line, and number of cruise lines would add direct economic impacts on ports significantly.

¹ Gui and Russo (2011) mention a variety of actors that establish a complex set of relationships on their cruise global value chain, highlighting transport, hotel, port and onshore services, which have evident linkages with the visited destinations.

² For further detail about the topic one can read the work of Merk (2013), that assembled data for 75 different ports, obtaining a minimum of 34 USD, an average of 100 USD, and a maximum of 309 USD. Similar values were reported by Rodrigue & Notteboom (2013). The European Commission (2009), based on responses to 17,400 questionnaires conducted in different European cruise destinations, reported an average expenditure by a transit tourist in a European destination of 86 USD, while a turnaround tourist spends 136 USD.

For both monetary and non-monetary impacts, the attractiveness factors of the port and the destination are critical elements, being produced by the plethora of actors and activities that operate on the cruise destination, as highlighted above by the cruise GVC of Gui & Russo (2011). Marti (1990), in his seminal work about cruise port selection process, identified site and situation geographic conditions as the most important factors affecting cruise port selection. His work is the first reference on the literature about the influence of onshore elements that work as attractiveness factors on the context of the cruise-ship port selection process. The site conditions of the port refer to physical and economic characteristics of outstanding significance (such as port infrastructures and superstructures), being mostly related to the attributes of a location. The situation conditions are physical or cultural qualities related to other locations (such as the proximity to markets of cruise passengers and the attractiveness of the port region for cruising), reflecting the connectivity of a location in relation to others and its constant changing pattern.

Regarding home-ports performance, the author includes the following criteria: (1) close proximity to other forms of transportation; (2) capacity to handle with a great amount of people at one time; and (3) ability to provide a pleasing environment, adding the need of easy access to the port from an airport since many cruise passengers join the vessel via scheduled air services as a part of an air/sea package. McCalla (1998) followed the work of Marti (1990), stressing also the importance of site and situation requirements for cruise ports. For the author the identification of what are exactly these characteristics or requirements for each port varies according to the classification of cruise ports. For example, in the case of home-ports, a good connectivity to airports is essential. These ports also need modern, efficient and large dedicated cruise ships terminals and need to be close to the cruising area, although not necessarily in its heart.

More recently, Wang et al. (2014), focusing on East Asian markets, identified (1) tourism attractions, (2) connectivity and agility, (3) cruise terminal facilities and (4) natural environment of the hinterland as the most important categories for cruise port selection. Whyte et al. (2018), based on the concept of co-destination, developed a quantitative measurement scale for cruise destination attributes, identifying five factor groups: (1) onshore activities; (2) learning and exploration; (3) visual surroundings; and (5) destination development. These attributes contribute directly to the overall competitiveness of a destination and directly and/or indirectly impact visitor satisfaction and may be framed on the site concept mentioned above. Also, Tao & Kim (2019), based on big data analytics of online comments of Asian cruisers, concluded that onshore attributes of cruise were the most important factor associated with cruiser satisfaction, contemplating six dimensions: “Shuttle”, “Bus”, “Taxi”, “Airport”, “Hotel” and “Shopping”, which, again, may be considered site and situation dimensions. According to the authors, these attributes occupy an instrumental role in the cruise overall experience, although rarely studied or mentioned in the literature.

The marketing of onshore attributes experienced by cruisers can influence destination image and the potential for repeat visitation. In this line, Ferrante et al. (2016) stressed that services provided by the destinations should be markedly customized in order to maximise the benefits derived from cruise tourism. Furthermore, the authors mention the importance of an improved understanding of cruise passengers’ behaviour at their

destination as an essential prerequisite for the management of tourism destinations, given the challenges of cruise tourism at many coastal destinations. Following this direction, Lemmetyinen et al. (2016) contributed to the cruise destination literature by linking the perceived brand awareness of a destination to motivational factors of the tourists.

Besides these references, several other authors have sparsely mentioned some onshore-related elements that justify the success of cruise destinations from the economic perspective. For Soriani et al. (2009) the most relevant aspects for the maximisation of the benefits derived from cruise tourism include the organization and operationality of the individual ports and the passengers' terminals, as well as the economic and infrastructural characteristics of the catchment areas of the cruise port. Andriotis & Agiomirgianakis (2010) found that 'product and services', formed by variables assessing onshore satisfaction on attributes of the offered product and services, and 'tour pace', which include variables associated to feelings of personal safety and security, overall feelings about visiting the destination (Crete, Greece) and time do use comfort facilities and shops, were important dimensions that affect cruise passengers' satisfaction. For Teye & Paris (2011), satisfaction with a port destination and the activities in which passengers participated in could influence passengers' intention to return. Furthermore, passengers that ranked the more developed destinations higher, spent more money on port and travelled further from the port area. Aziz et al. (2020) found that the level of passengers' expenditure varies according to age and length of the visit. Penco & Di Vaio (2014) consider that the cruisers' expenditures are influenced by a variety of factors such as weather conditions, the number of hours spent ashore and the demographic, economic and sociocultural characteristics of the cruise tourists. Ferrante et al. (2016) found that passengers with higher incomes, a higher education level, and aged between 36 and 55 years seem to seek what can be described as an intense experience of the destination, in terms of time spent onshore, places visited, and transportation mode. Douglas & Douglas (2004) point out a set of factors with direct influence on the level of passengers' spending, namely: (1) weather in the port, whereas most pleasant weather leads to a greater propensity to spend; (2) port characteristics, in which those with direct access to a city are more likely to encourage spending; (3) cruise passengers' profile, depending on cruisers' age, consumption patterns differ; (4) vendors' profile, in which cultural and linguistic aspects are contributing factors; and (5) acquisition of shore excursions, the majority of passengers buying it on board several days before arriving to the respective port. This topic of shore excursions is a particularly important spending category for passengers (BREA 2015) and a relevant part of the actual business model of cruise operators (Gui & Russo 2011; Vogel 2011), being in most cases sold onboard, with prices substantially higher than onshore (by around 50% according to Huijbens 2015, or up to 70%, according to Lopes & Dredge 2017)³. Other literature references that illustrate the relevance of the topic include

³ BREA (2015) calculated that 53% of the passengers that disembark on Caribbean destinations go on such excursions, being the average value of each excursion 43.99 USD. Also, the European Commission (2009) estimates that 65% of the passengers participate in an organized tour and that around 80% of them purchase it on the ship.

Johnson (2006), Parola et al. (2014), Lee & Lee (2017), Buzova et al. (2019), or Navarro-Ruiz et al. (2019).

UNCTAD (2001) mentions five key points as the criteria used by the cruise industry to choose their home-ports: (1) outstanding port services and an equally appealing city; (2) modern and efficient airport with substantial airlift; (3) attractive tourist destinations and itineraries; (4) large population centre; and (5) good land accessibility to that centre, following the perspective already expressed by Marti (1990) and McCalla (1998). Castillo-Manzano et al. (2014) that studied the case of the home-port of Barcelona, found that the likelihood of having cruise traffic seems to be linked to ports located in populous areas and close to large airports, and to ports not specialized in container traffic but sharing facilities with regular ferry passenger traffic and having a minimum depth of berth and channels. Papachristou et al. (2020) stressed the importance of the presence of an international airport with good international connections, along with the guaranteed security levels at the port, as sine que non elements for the selection of a port as a home-port. For Niavis & Vaggelas (2016) there are internal and external factors that affect the potential of a port to become a cruise home-port. Internal factors include adequate infrastructure allowing the facilitation of the last generation of cruise ships and the presence of a private enterprise in ports' operations seems to foster home-port traffic. Additionally, efficiency in operations seems to be a crucial element. For external factors, i.e., hinterland elements, connectivity of ports' hinterlands, tourism infrastructures and the level of economic growth increase the likelihood of a port to attract additional cruise port traffic. Bayazit et al. (2015), based on data from cruise industry key players, consider that the main factors in selecting a home-port are the cost of port services and the port services to ships.

In short, most of the onshore elements stressed by the literature may be framed on two major groups, directly related to site and situation geographic factors, following the perspective of Marti (1990) and also that of McCalla (1998). Other elements highlighted by the literature, namely those associated to the cruise passengers' profile (Douglas & Douglas 2004; Penco & Di Vaio 2014 or Aziz et al. 2020) or the number of hours spent ashore (Penco & Di Vaio 2014; Ferrante et al. 2016 or Aziz et al. 2020) are mainly external factors, oriented by the cruise operator decisions or policies. In this sense, although they may have direct consequences on the performance of both the port and the destination, they transcend the category of onshore drivers and cannot be included on the model. Regarding the cruise tourism impact on local economies, the literature focuses on three distinct dimensions: the direct impact, mostly associated to passengers' expenditures, crew member spending and cruise lines purchases; the indirect and induced impacts, illustrated by indicators like the creation of jobs on the economy or the increase on the GDP derived from the activities promoted by cruise tourism; and the non-monetary impacts, expressed by the possibility to visit the destination as a land-based tourist or the word-of-mouth publicity.

3. Cruise tourism in Macaronesia

In the present section we will focus on the Macaronesia region, showed in Figure 1. This is a group of four archipelagos on the North Atlantic Ocean, just outside Gibraltar

Strait, and with enormous potential for cruise tourism. In fact, its proximity to Europe, the second most important source market for cruise tourism, and the importance of the tourism sector on all four archipelagos, representing more than 18 million tourists annually, means an outstanding opportunity for this region regarding cruise tourism.

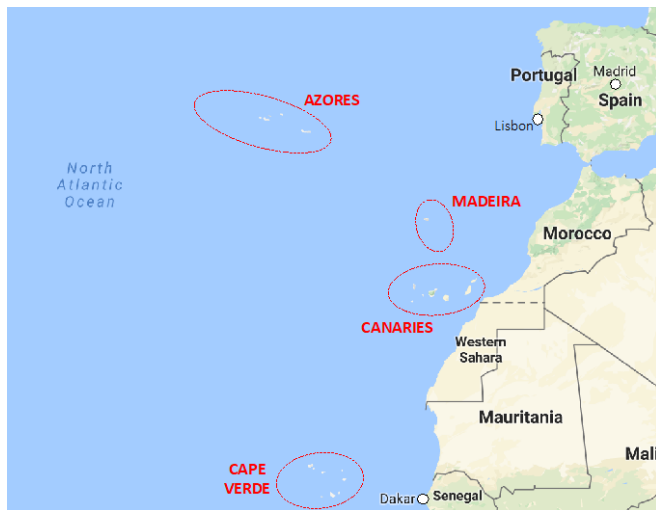


Figure 1. The Macaronesia region

The evolution of cruise tourism in Macaronesia has been dominated by several exogenous drivers. First of all, as mentioned, the proximity to Europe, the second largest cruise market source after North America. Secondly, the favourable climate conditions for tourism activity in the low and medium seasons. An additional driver is associated to the political instability in the Eastern and Southern Mediterranean, which has been compromising the development of the cruise industry in that area. Furthermore, the region is composed exclusively by island cruise destinations, which is a major strength for cruise destinations, as stressed by Castillo-Manzano et al. (2014).

The magnitude of cruise tourism in the Canaries is absolutely outstanding in the context of Macaronesia, with two major ports, Santa Cruz de Tenerife and Las Palmas de Gran Canaria that work as home-ports for itineraries covering several islands of this region. The volume of passengers starting and/or ending a cruise in these two main Canary ports is significantly, representing about 30% of all passengers in each port, according to reports of both port authorities. Investments in several port infrastructure and facilities have been consistently executed over the years. In the season of 2016/2017, the port of Santa Cruz began to operate a new cruise terminal with capacity to become the base-port for up to five simultaneous cruise ships.

Focusing on Madeira, Sousa (2004) highlights the existence of good-quality facilities and services to visitors, the mild climate, a favourable geographical location, the gentleness of the people and the peacefulness and political stability. Investment dedicated to cruise tourism began in the early 1990s with the transformation of the port of Funchal. More recently, in 2015, the port finished the construction of additional 330 meters of quay integrated in a rehabilitation project of Funchal seafront. Yet, the port of Funchal did not manage to reach the level of attractiveness of the major ports of the Canary Islands regarding embarkation or disembarkation operations.

In relation to the Azores, Silvestre et al. (2008) consider that the two main factors driving the behavioural intentions of cruise passengers are linked, in the first place, to the city and its attractions in general, and secondly, with less importance, to the perceptions of hospitality, safety, services and cleanliness of the environment. Ponta Delgada and Horta are the only two dedicated cruise terminals of the archipelago, in both cases built in the framework of seafront city renewals executed in the last two decades.

On the other hand, Cape Verde is characterized by the inexistence of dedicated cruise terminals and a limited number of good-quality facilities and services to visitors. The port of Mindelo, the most important cruise port of this archipelago, will only start the building of a cruise terminal later this year (2021).

In regard to onshore attributes, the archipelagos of Madeira and Canaries, have an established set of facilities with a positive impact on the attractiveness and dynamics of the cruise destinations, due to their long tourism tradition. The Azores and Cape Verde have a relatively modest endowment of onshore attributes, with difficult logistic operations, particularly in smaller islands.

The diverse levels in terms of port and onshore endowments are the result of the particular political status of the different archipelagos. In fact, the European outermost regions of Azores, Canary Islands and Madeira have access to European Funds for the provision of infrastructure, being therefore more developed than Cape Verde, the only independent state among all Macaronesian archipelagos. This puts in evidence the fact that the Macaronesia archipelagos are in two distinct stages concerning cruise tourism. The Canary Islands and Madeira are well-established destinations for cruises, as expressed by the number of calls and passengers, being at the consolidation phase. In contrast, the Azores and especially Cape Verde, still with a limited number of calls and passengers, are at the developing phase. Table 1 highlights the main characteristics of the archipelagos of the Macaronesia region in the context of the cruise industry.

Table 1. Characterization of the archipelagos of Macaronesia relative to the cruise industry

	Azores	Cape Verde	Canary Islands	Madeira
Political status	Outermost region	Independent state	Outermost region	Outermost region
Position in the cruise industry	Development phase	Development phase	Consolidation phase	Consolidation phase
Classification of cruise itineraries	Repositioning	Repositioning	Seasonal	Seasonal, repositioning
Predominant types of cruise itineraries	Transatlantic transitions, Atlantic cruises	Transatlantic transitions, Atlantic cruises	Atlantic cruises	Atlantic cruises, Transatlantic transitions
Classification of cruise ports	Ports-of-call	Ports-of-call	Hybrid-ports, Ports-of-call	Ports-of-call
Main cruise ports (number)	3	2	6	1
Ports with modern cruise terminals (number)	2	0	4	1
Volume of cruise calls (2018)	138	199	1 135	293
Volume of cruise passengers (2018)	164 073	47 094	2 352 684	541 467
Recent cruise related actions	Infrastructure development, promotion	Promotion, aggregation of partners	Infrastructure development, promotion	Infrastructure development, promotion
Shore excursions percentage	40%*	Unknown	13%	20%
Amount spent by passengers in a cruise visit	14 USD	62 USD	57 USD	< 65 USD

4. Conceptual model

The present section focuses on the perspective of the industry players that operate in Macaronesia. For this purpose, a conceptual model was defined, based on the empirical literature, and the authors knowledge about the topic, reinforced by previous contacts with cruise industry operators. Later, the conceptual model was applied to the Macaronesia region, through a survey directed at cruise specialists and stakeholders that operate directly on this region.

4.1. Conceptual model

The conceptual model was defined considering that a multiplicity of activities and a diversity of actors are involved in this industry, being in general onshore elements associated to site and situation concepts, as depicted earlier on in Sections 2 and 3. It follows from this multiplicity and diversity that the performance in this industry has a multidimensional character. The model aims to identify the most relevant onshore characteristics or drivers with direct impact on the performance of the cruise destination. Some variables such as port infrastructure and other transportation services are vital to the access of cruise ship and passengers to the destination. Additionally, shore excursions and tourist services on the destination, including shops, museums, hotels and restaurants, etc., were also considered in the literature as important elements for cruise passengers when ashore. Those elements can be included on the category of site factors. Other elements such as the proximity to large airports with modern and efficient infrastructure and substantial international connections are associated to the location of the cruise port and destination and, in this sense, can be defined as situation factors. Our hypothesis is that all these aspects as a whole have a direct influence on the performance of the cruise destination. Due to different port development stages registered in Macaronesia, a moderator variable was also included on the model, reflecting the expectation that significant differences occur between ports in a consolidated situation and ports in a developing phase, in which ports in consolidated position can work as home-ports for some itineraries, while ports in a developing phase will work as mere ports-of-call.

The aim of the conceptual model is to provide an understanding and a measure of the importance of the cruise port and onshore characterization factors and how they are related to the overall performance of the cruise destination. As far as we are concerned, this methodology has never been used in the literature covering the cruise industry. Thereby, it may be considered particularly relevant to the selection, prioritization and aggregation of the most important drivers that cruise ports and destinations should consider when establishing a strategy on the area.

The conceptual research model reproduced in Figure 2 consists of three factors covering: (1) 'Port/onshore site-related characteristics'; (2) 'Port/onshore situation-related characteristics'; and (3) 'Cruise destination performance', being the first two factors linked to a set of attributes of both the port and destination and working as independent factors. The model also establishes a connection between the port and destination attributes and the performance of the cruise destination, as a dependent

construct. Moreover, a moderator variable was included to determine how this connection varies depending on the port development level.

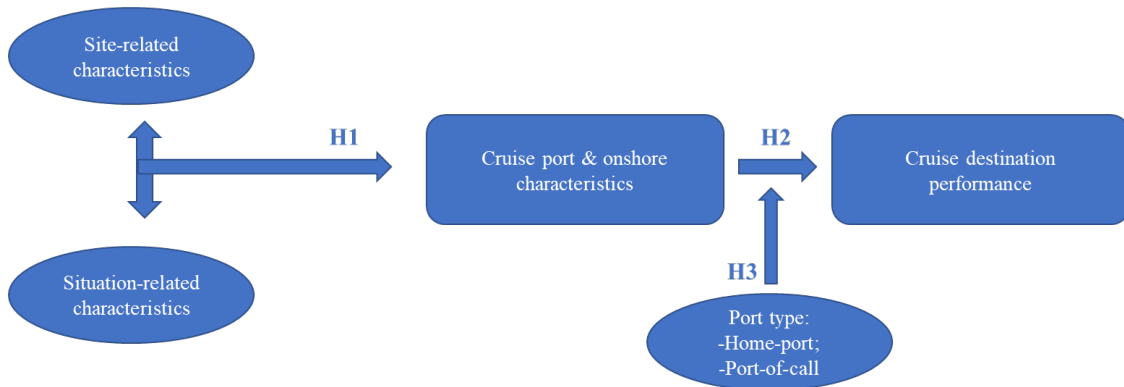


Figure 2. Conceptual model

Therefore, the main hypothesis can be disaggregated as follows:

H1 – The factors that characterize the cruise port and onshore model are ‘Port/onshore site-related characteristics’ and ‘Port/onshore situation-related characteristics’.

H2 – ‘Port/onshore site-related characteristics’ and ‘Port/onshore situation-related characteristics’ constructs have a direct influence on ‘Cruise destination performance’.

H3 – ‘Port type’ is a moderator variable associated to the level of development of the port and its impact on the relation between ‘Cruise port and onshore characteristics’ and ‘Cruise destination performance’. A significant difference between ports on a consolidated phase, namely those of the Canary Islands and Madeira, and those in a developing phase of the Azores and Cape Verde islands, is expected.

The factor ‘Port/onshore site-related characteristics’ aggregates a set of variables associated to tourism services, tours excursions and quay capacity for cruise ships, being partially based on the cruise Global Value Chain approach. Further variables to be considered in this factor are related to cleanness and safety, other port services like fuel supply, waste management, bus parking for excursions and promotion of the port. In opposition, the factor ‘Port/onshore situation-related characteristics’ aggregates variables associated to the connectivity of the port region, including passenger terminal capacity for cruise starting or ending, airport with good international connections and location of the port relative to cruise itineraries.

4.2. Application to the Macaronesia region

The application of the conceptual model on the particular case of the Macaronesia was possible through a survey carried out with cruise experts and industry players that operate on this region. The data obtained was subsequently used in a confirmatory factor analysis over the factor scores to test the validity of the conceptual model. The survey covered several variables associated to the port and onshore characteristics as well as to cruise destination performance. Additionally, the survey included questions about the cruise ships’ profile, companies and cruise passengers’ profile. A 7-point Likert scale was used and a total of 41 closed questions were included in the survey.

Regarding port and onshore characteristics, the survey distinguished two perspectives. The first one, with 10 questions, reflected the general opinion of the respondents about the characteristics that both ports and destinations should have to become well positioned in this industry. The other, with 11 questions, focused on the real conditions of the ports and destinations they knew best. Those topics included elements such as port infrastructure and services, onshore infrastructure and services, as well as marketing strategies of the destination in respect to cruise tourism. Appendix 1 presents the structure of the survey and identifies all the variables.

Concerning the profile of cruise ships and cruise lines that operate in the region, a total of 7 questions addressed the cruise ship type and dimension, the position of the port in the cruise itinerary, the port of origin of the cruise voyage and the level of seasonality registered in the port. When defining passengers' profile, the focus was on their nationality, age, if they travelled with family and friends, if they previously knew the destination or if they were cruise repeaters. A set of 7 questions were used in this case.

Finally, a set of 6 questions addressed the indicators associated to port and destination performance, namely the number of cruise ships' calls, the number of cruise passengers, the creation of employment and GDP increase, as well as the quality of the experience for the passengers and their intention to return.

In summary, 16 variables were considered to carry out the proposed analysis. These variables are shown in Table 2, where they are grouped according to the set of factors of the proposed conceptual model to which they belong. Additionally, Table 2 shows the main previous studies where these variables were also included.

Table 2. Factors, variables, and references

Factor	Variable	Name of the variable	References
Port/onshore site-related characteristics	Terminal with capacity for transit passengers in general	TransitTerminalGen	Andriotis & Agiomirgianakis (2010); Bayazit et al. (2015); BRE (2015); Buzova et al. (2019); Douglas & Douglas (2004); Ferrante et al. (2016); Gui & Russo (2011); Huijbens (2015); Johnson (2006); Lee & Lee (2017); Lemmetyinen et al. (2016); Lopes & Dredge (2017); Marti (1990); McCalla (1998); Niavis & Vaggelas (2016); Parola et al. (2014); Penco & Di Vaio (2014); Silvestre et al. (2008); Sousa (2004); Tao & Kim (2019); Teye & Paris (2011); Wang et al. (2014); Whyte et al. (2018)
	Tour excursions in general	ToursGen	
	Quay capacity for cruise ships in general	QuayGen	
	Bus park for excursions in general	BusParkGen	
	Promotion of the port in general	PromotionGen	
	Tourism services in general	TourismServicesGen	
Port/onshore situation-related characteristics	Cleanness and safety in general	CleannessGen	Bayazit et al. (2015); Castillo-Manzano et al. (2014); Marti (1990); McCalla (1998); Navarro-Ruiz et al. (2019); Niavis & Vaggelas (2016); Tao & Kim (2019); UNCTAD (2001)
	Airport with international connections in general	AirLinksGen	
	Location of the port in the itineraries of cruise ships in general	LocationGen	
Cruise destination performance	Terminal with capacity for embark and disembark in general	InOutTerminalGen	Artal-Tur et al. (2019); BRE (2007,2015); Brida & Zapata (2010a,b); Castillo-Manzano et al. (2014); Chang et al. (2016); Chase & Alon (2002); Chen et al. (2019); Douglas & Douglas (2004); European Commission (2009); Merk (2013); Rodrigue & Noteboom (2013); Vayá et al. (2017)
	Number of cruise passengers	NbPaxOut	
	Number of cruise ships	NbCruisesOut	
	Jobs creation	JobsIncreaseOut	
	GDP increase	GDPIncreaseOut	
	Quality of the cruiser experience	ExperiencePaxOut	
Intention to return as shore tourist	ReturnPaxOut		

The survey was made available online in July 2018 to 170 cruise experts and professionals operating on that cruise market. The total number of valid responses was 96 (56%). The distribution of respondents by port and activity is described in Tables 3 and 4.

Respondents covered all Macaronesian archipelagos, with a relative predominance of the Azores (45% of the answers). Port authority officials, consultants, shipping agents and destination management companies (DMC) were the stakeholders covered, being the first category the most represented, accounting for 38% of the respondents.

5. Results and analysis

5.1. Results on Macaronesian port and destination characteristics

In general, the answers confirmed the perceptions expressed above on Section 3 about the existence of two distinct levels of development on Macaronesia. In Figure 3, relative to the real conditions of both the port and onshore characteristics the respondents knew best, i.e., the Macaronesian cruise destinations, one can see that the Canaries have significantly more adequate or sophisticated port infrastructure and services and also a more strategic situation than the equivalent ones in the other archipelagos. The variable ‘TransitTerminalPort’, associated to the capacity of the terminal to support the volume of transit passengers, and ‘PortServicesPort’, associated to port services to cruise ships like supply of goods and waste reception facilities, are the only ones in which respondents’ opinions reveal some similitude between the ports of the Canary Islands, Madeira and Azores. This is an immediate consequence of the investments made over time in cruise terminals on the ports of those archipelagos. For Cape Verde, the opinions reflect the lack of adequate port infrastructure, with direct impact on the level of quality of services provided. This is even clearer when comparing the characteristics of only the main ports of each archipelago (Figure 4).

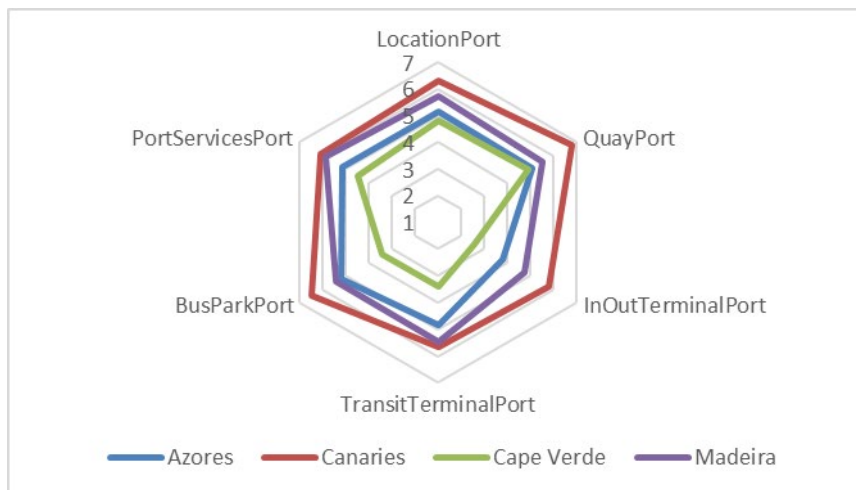


Figure 3. Port characteristics of all ports of each archipelago

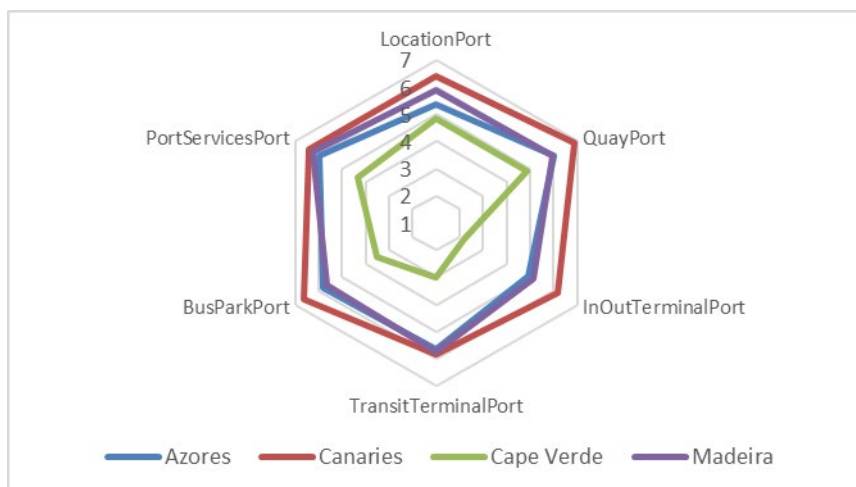


Figure 4. Port characteristics of the main ports of each archipelago

In the context of onshore infrastructure and services on the destination, presented in Figure 5, the relevance of the marketing promotion strategies is recognized by the respondents of all archipelagos as a vital element for the projection and recognition of the destination by cruise operators (variable 'PromotionPort'). The other items considered in this group of questions presented less homogeneous results. In fact, the respondents' answers reveal the existence of two different levels of service. On one hand, the Canary Islands and Madeira are characterized by the existence of a set of well-established services to cruises and tourism in general. In this sense, onshore services, including coach operators, local guides, museums, parks or historic sites, and local shops or stores contribute to the quality and diversity of the cruise product in both archipelagos.

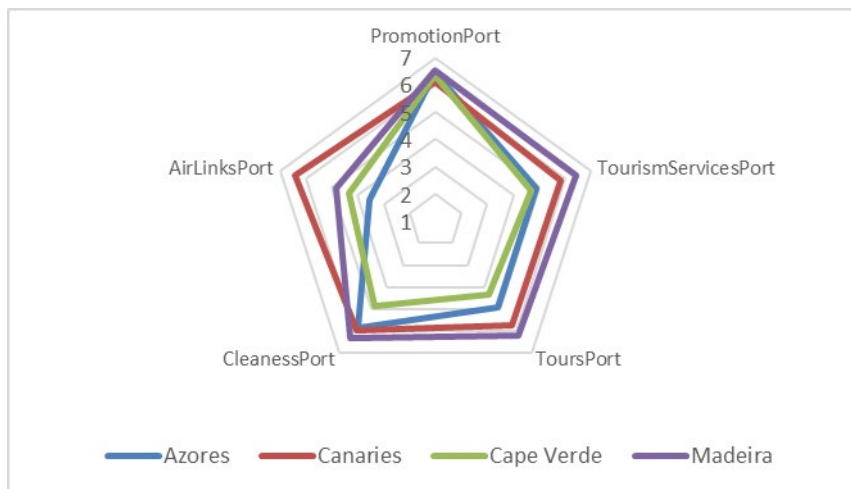


Figure 5. Onshore characteristics of each archipelago

In contrast, the perceived quality of tourism services provided in Cape Verde and the Azores is significantly lower than the registered in the Canaries or Madeira, according to the inquired specialists. It should also be highlighted the opinion of the specialists about the restrictive conditions in air connectivity of the Azores, even more than Cape Verde, which may be interpreted as a severe limitation for the development of cruises with itineraries in the archipelago.

Due to the huge amount of investment still necessary to the development of the cruise industry in Macaronesia both in port infrastructure and onshore services, particularly in less developed destinations, the information collected through the survey is an important source to set priorities when defining future strategies.

On several other topics, the survey responses were not very conclusive and failed in terms of statistical consistency. It was the case of the opinion of specialists about the profile of cruise ships and companies or the profile of cruise passengers. In both cases the information gathered was omitted from this analysis without major loss.

5.2. Model validity and model results

The data analysis was performed in the following sequence of stages. Firstly, the reliability and validity of the answers of the survey were assessed by a confirmatory factor analysis to test the main model factors and measure their scores and observed

variables coefficients, using SPSS25. This was followed by the execution of the confirmatory structural equation model. A set of latent variables with Cronbach's Alpha greater than 0.6, corresponding to 16 variables of the general perspective model, was selected (Table 3). One of the factors is 'Cruise destination performance' that aggregates six variables. The remaining two factors are related to site-related characteristics of cruise ports and destinations and also to situation-related characteristics of cruise ports and destinations, aggregating ten variables.

Table 3. Variables' statistics

Factor	Name of the variable	Mean	SD	Variance
Port/onshore site-related characteristics	PromotionGen	6.33	1.102	1.214
	CleanessGen	6.21	0.857	0.735
	ToursGen	6.16	1.136	1.291
	QuayGen	5.97	1.244	1.546
	BusParkGen	5.96	1.045	1.093
	TourismServicesGen	5.89	1.195	1.429
	TransitTerminalGen	5.39	1.625	2.639
Port/onshore situation-related characteristics	LocationGen	5.75	1.231	1.516
	AirLinksGen	5.32	1.720	2.958
	InOutTerminalGen	4.88	1.669	2.784
Cruise destination performance	ExperiencePaxOut	5.91	0.996	0.991
	NbPaxOut	5.88	1.190	1.416
	ReturnPaxOut	5.71	1.187	1.409
	NbCruisesOut	5.48	1.170	1.368
	GDPIncreaseOut	5.21	1.486	2.209
	JobsIncreaseOut	5.10	1.504	2.263

Using structural equation modelling for the confirmatory analysis of the research model for the variables concerning the general perspective of cruise ports, and hypotheses, we obtain important coefficients of the relations between latent and some of the observed variables. The model's convergent validity was confirmed, implying that the model is suitable for data (Garver & Mentzer 1999). The results confirmed the validity of the latent variables, distinct and robust. Results also confirmed unidimensionality and robustness of the structural equation model (Hair et al. 1998). The goodness-of-fit indicators for the total data demonstrate the adequacy of the measurement model: $\chi^2 = 250.958$, $\chi^2/df = 2.642$, IFI = 0.843, CFI = 0.829, RMSEA = 0.131.

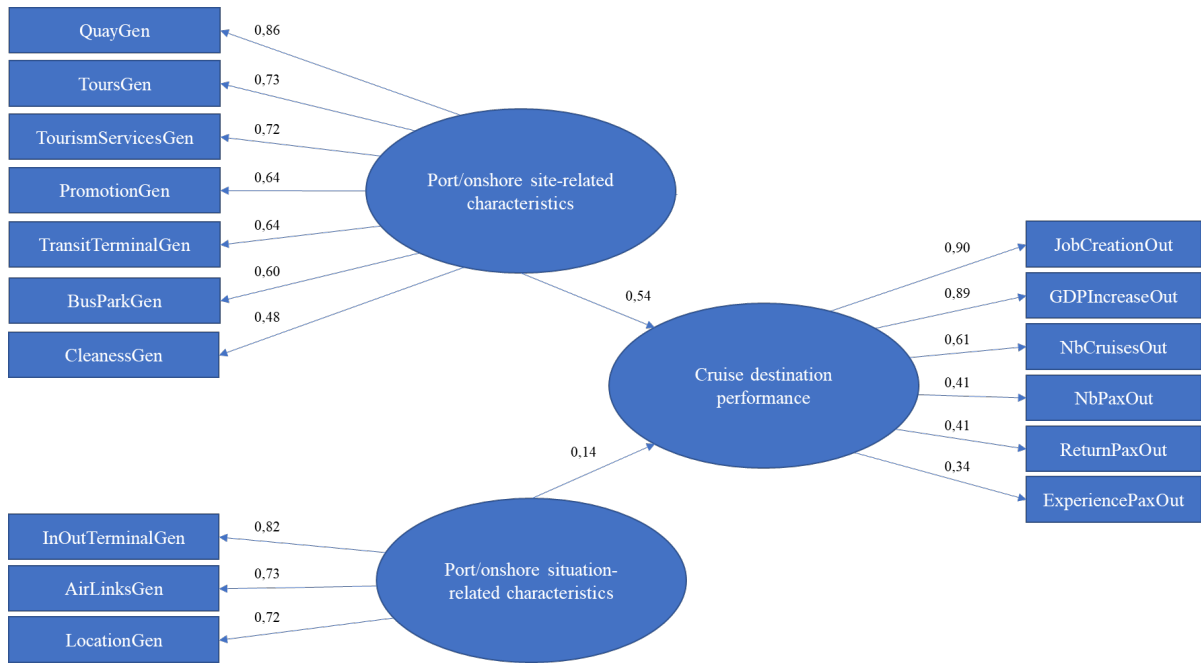


Figure 6. Results of the confirmatory model

The results reveal the importance of the latent exogenous variable of ‘Port/onshore site-related characteristics’ ($\beta=0.54$), including the observed exogeneous variables ‘QuayGen’ ($\beta=0.86$), related to the adequacy in terms of length and depth of the quay to cruise ships, ‘ToursGen’ ($\beta=0.73$), related to the availability of shore excursions at the destination, ‘TourismServicesGen’ ($\beta=0.72$), related to the diversity of tourism services at the destination, namely restaurants, hotels, museums, parks, etc., ‘PromotionGen’ ($\beta=0.64$), associated to the level of promotion of the port and destination directed to the cruise industry players, TransitTerminalGen’ ($\beta=0.64$), related to the existence of a cruise terminal with capacity to transit cruise passengers, ‘BusParkGen’ ($\beta=0.60$), related to the existence of a bus parking area at the cruise terminal, and ‘CleanessGen’ ($\beta=0.48$), related to the feelings of safety, cleanness and adequate signage for cruise passengers at the cruise destination.

The results show the relevance of the latent exogenous variable of ‘Port/onshore situation-related characteristics’ ($\beta=0.14$), including the observed exogeneous variables ‘InOutTerminalGen’ ($\beta=0.82$), related to the existence of a cruise terminal with capacity to cruise passengers in embarking and disembarking operations, ‘AirLinksGen’ ($\beta=0.73$), related to the existence of an airport with good international connections, and ‘LocationGen’ ($\beta=0.72$), related to the location of the port in the context of cruise itineraries and in relation to other cruise ports.

Additionally, the results also reveal the importance of the latent endogenous variable of ‘Cruise destination performance’ ($R^2 = 0,42$), including the observed endogenous variables ‘JobCreationOut’ ($\beta=0.90$), related to the creation of new jobs derived from the cruise tourism impact, ‘GPDIncreaseOut’ ($\beta=0.89$), related to the increase on GDP derived from the cruise tourism impact, ‘NbCruisesOut’ ($\beta=0.61$), associated to the number of cruise ship calls at the port, NbPaxOut’ ($\beta=0.41$), associated to the number of cruise passengers that visit the port and the destination, ‘ReturnPaxOut’ ($\beta=0.41$), related to the expectation of the cruise passengers to return as shore tourists, and

‘ExperiencePaxOut’ ($\beta=0.34$), related to the quality of the experience of the cruise passengers at the destination as an indicator of a probable future visit as shore tourist.

The variables mean, resulting from the survey and used in the factor analysis, assumes values higher than 3.5 (in a 7-point Likert scale), reinforcing its importance. The results confirm the factors used in the model. These results verify H1, which defines that the factors that characterize the cruise destination conceptual model were ‘Port/onshore site-related characteristics’, and ‘Port/onshore situation-related characteristics’.

Regarding H2, which is related to ‘Port/onshore site-related characteristics’ and ‘Port/onshore situation-related characteristics’, both mechanisms have a direct influence on ‘Cruise destination performance’, and the R^2 obtained and the values of the relations confirm H2. These results are, in general, in accordance with the literature, as mentioned in Section 2.

Due to the difference observed between the archipelagos of Macaronesia, being the Canaries and Madeira at a more developed stage concerning cruise tourism when compared to the Azores and Cape Verde, we also proceeded with a separated analysis of the two groups of islands, considering in the model a moderator variable named ‘Port type’, associated to the level of development of the port and its impact on the relation between. ‘Cruise port and onshore characteristics’ and ‘Cruise destination performance’. H3 assumes that a significant difference between ports at the consolidation phase, namely those of the Canary Islands and Madeira, and those at the development phase, namely Azorean and Cape Verdean ports, is expected.

The results obtained on the analysis of main and secondary cruise ports, namely for the ports of the Canary Islands and also of Madeira, on one side, and those of the Azores and Cape Verde, on the other, are shown in Table 4. These results reveal a significant difference between the regression weights of the latent exogenous variables of ‘Port/onshore site-related characteristics’ and of ‘Port/onshore situation-related characteristics’. For the main ports, ‘Port/onshore site-related characteristics’ ($\beta=0.44$) and ‘Port/onshore situation-related characteristics’ ($\beta=0.42$) are quite similar, while on the less developed cruise ports of the Azores and Cape Verde, the ‘Port/onshore site-related characteristics’ ($\beta=0.63$) have a clearly predominance over ‘Port/onshore situation-related characteristics’ ($\beta=0.22$). This is in accordance with the literature, as evidenced by Marti (1990) or McCalla (1998), who highlighted the importance of situation attributes for home-ports, that work as the main ports in the cruise itineraries.

Table 4. Results of the confirmatory model and comparison of groups of ports

Factors and variables	Regression weights		
	General model	More developed ports	Less developed ports
Port/onshore site-related characteristics	0,54	0,44	0,63
QuayGen	0,86	0,86	0,84
ToursGen	0,73	0,64	0,84
TourismServicesGen	0,72	0,59	0,88
PromotionGen	0,64	0,63	0,54
TransitTerminalGen	0,64	0,83	0,38
BusParkGen	0,60	0,61	0,66
CleanessGen	0,48	0,57	0,40
Port/onshore situation-related characteristics	0,14	0,42	0,22
InOutTerminalGen	0,82	0,95	0,54
AirLinksGen	0,73	0,81	0,67
LocationGen	0,72	0,61	0,99
Cruise destination performance	0,42	0,65	0,60
JobCreationOut	0,90	0,95	0,67
GDPIncreaseOut	0,89	0,95	0,62
NbCruisesOut	0,61	0,67	0,74
NbPaxOut	0,41	0,63	0,85
ReturnPaxOut	0,41	0,46	0,55
ExperiencePaxOut	0,34	0,53	0,43

Regarding the site-related exogenous variables, a significant similitude occurs on the variable ‘QuayGen’, which is related to the length and depth of the quay for the berthing of cruise ships. This is a vital element of the cruise visit since, as noticed by Douglas and Douglas (2004), in case of a tendering call, the majority of tourists may choose not to go ashore at all. For ‘BusParkGen’, a variable related to the existence of a bus parking area for shore excursions, the results are relatively similar, meaning that this is also an important element for the experience at the destination of the cruise passengers. For ‘ToursGen’, a variable associated to the quality and diversity of shore excursions at the destination, the results for both types of ports are important, particularly for less developed ports where the limitation of tourism services and the small size of the cities turn shore excursions a relevant option for cruise passengers.

In opposition, significant differences between both types of ports occur on the variables ‘TourismServicesGen’ and ‘TransitTerminalGen’. On the first case, associated to tourism services at the destination, the beta coefficient is substantially higher on less developed ports relatively to more developed ports, which can result from the perception among local players on less developed ports about the need of a greater diversity of activities for cruise passengers at the destination, which does not occur in more developed ports. For the variable ‘TransitTerminalGen’, associated to the existence of a terminal with adequate conditions for transit passengers, the beta coefficient is significantly higher on more developed ports, which can be interpreted as the recognition among local players about of the need of a terminal with capacity to accommodate a significant number of simultaneous calls of cruise ships. For less developed ports, the number of cruise passengers in the terminal is much lower than in more developed ports and, therefore, the importance of the terminal is not so critical.

For situation-related exogenous variables, one can see that the location of the port (‘LocationGen’) is particularly important for less developed ports. This may be related to the fact that, in this case, the port is not a marquee or relevant destination, which

increases substantially the possibility of the port to be excluded from the cruise ship itinerary. In opposition, for more developed ports, the exogenous variables associated to existence of an airport with good and frequent international connections ('AirLinksGen') and to the existence of a terminal with adequate capacity for cruise passengers at the beginning or ending of a cruise ('InOutTerminalGen') are critical to the consolidation of the cruise port and destination success.

Finally, the results reveal the importance of the latent endogenous variable of 'Cruise destination performance' ($R^2 = 0,65$) on more developed ports and of also of less developed ports ($R^2 = 0,60$). The observed endogenous variables have, however, different beta coefficients. For more developed ports, the creation of jobs in local communities ('JobCreationOut') and GDP increase in the region ('GDPIncreaseOut') have substantial higher impact than on less developed ports. This can be associated to the significant difference regarding the dimension of the cruise activity on both types of ports, with a considerably major flow of cruisers on developed ports (2.3 million cruise passengers on the Canary Islands and less than 50.000 on Cape Verde). For the less developed ports, the major beta coefficient is associated to the number of cruise passengers ('NbPaxOut'). This is clear evidence about the margin for progress of these ports regarding cruise tourism and the impacts on the local communities. For the indicators associated to the quality of experience of the cruise passengers ('ExperiencePaxOut') and the expectation of their return as shore tourists ('ReturnPaxOut') the results obtained reveal that they are not particularly relevant for the local specialists that operate on this region.

5.3. Model confirmation

Due to the limitations derived from the size of the sample, we proceed with eight open interviews to cruise line operators to obtain a complementary and confirmatory analysis about the results of the survey and the model obtained. The cruise line operators interviewed included senior international officials at Crystal Cruises, Hapag-Lloyd, MSC, Mystic Cruises and Saga Cruises, accessed with CLIA (Cruise Lines International Association) support. In general, the cruise line operators considered the model as a reference tool for the ports and destinations cruise market, with only one cruise operator considering it an oversimplification. Three other cruise operators considered the need of additional topics, but classified the model as an interesting tool. Four of them classified the model as globally adequate. Thus, the conceptual model can be considered valid, with site and situation-related factors that directly influence the performance of the cruise ports and destinations.

For the interviewed cruise operators, it was possible to order the site-related factor variables, confirming the importance of the factors included on the model. The *Availability of tour excursions at the destination* (mean value: 6.13; maximum possible: 7.00) is the most relevant variable to cruise line operators, followed by *Cleanness and safety of port and destination* (6.00), as well as *Quay capacity for cruise ships* (5.75). Regarding to situation-related items, the cruise line operators classified the *Location of the port* (6.25) as the most important element, followed by the existence of an *Airport with adequate international links* (6.00). Despite the differences between the averages

for the factors obtained through the survey and the interviews to cruise line operators, these interviews confirm the conceptual model obtained from the survey, as well as the importance of the explanatory variables.

Table 5. Means of the survey and interviews for site and situation-related attributes

Factor	Variable	Name of the variable	Means	
			Survey	Interviews
Port/onshore site-related characteristics	Promotion of the port in general	PromotionGen	6.33	4.25
	Cleaness and safety in general	CleanessGen	6.21	6.00
	Tour excursions in general	ToursGen	6.16	6.13
	Quay capacity for cruise ships in general	QuayGen	5.97	5.75
	Bus park for excursions in general	BusParkGen	5.96	5.25
	Tourism services in general	TourismServicesGen	5.89	4.50
	Terminal with capacity for transit passengers in general	TransitTerminalGen	5.39	3.13
Port/onshore situation-related characteristics	Location of the port in the itineraries of cruise port in general	LocationGen	5.75	6.25
	Airport with international connections in general	AirLinksGen	5.32	6.00
	Terminal with capacity for embark and disembark in general	InOutTerminalGen	4.88	5.63

As mentioned above, some of the cruise line operators expressed the need to include additional attributes on the model. The most relevant ones are linked to environmental and social impacts. Taking in consideration that cruise ships constitute one of the most energy-intensive forms of tourism, generating large amounts of waste and emission, environmental impacts stand as a relevant dimension of cruise shipping, leading to unwanted externalities that cannot be neglected. The literature has widely covered the topic, including Lester & Weeden (2004), Butt (2007), European Commission (2009), Caric & Mackelworth (2014), Lamers et al. (2015), Paoli et al. (2017) and MacNeill & Wozniak (2018). Social sustainability aspects were also a major concern for the interviewed cruise operators. The increasingly antagonistic relationships between locals and visitors were particularly highlighted by one of the interviewees that stated that “we don’t want to go to places where we aren’t wanted”. Stefanidaki & Lekakou (2014) addressed the topic, putting in evidence the need of a monitoring scheme to prevent it. Therefore, both of these topics should be analysed in future studies and considered in further developments of the conceptual model.

Other issues reported by the cruise line operators were mainly associated to cruise port costs, a particularly important attribute for cruise companies, given the fact that they are constantly looking at the profitability of their activities. This is in accordance with the literature as referred, among others, by Bayazit et al. (2015). These variables should also be included on further studies.

An unanimously aspect highlighted by the cruise operators interviewed is linked to the future possibility of a further involvement of cruise lines and terminal operators on the development of cruise terminals, a topic recently introduced on the literature. For example, Pallis et al. (2018) consider that the cruise terminal industry is experiencing the first phase of a privatization and internationalization path, with the emergence of International Cruise Terminal Operators (ICTOs) and the active presence of cruise lines and other types of entities (including port and shipping companies, shipping agents, chambers of commerce, etc.). This subject is directly associated to the evolution of cruise port governance models. Pallis et al. (2019) analysed the diverse patterns of governance regimes, identifying four distinctive cruise port governance models: (1) the active leader; (2) the investor (ICTO); (3) the marketer; and (4) the passive managers.

Thus, it seems plausible that, following the opinion of the cruise line operators and the perspective of the literature, a further evolution is inevitable on the cruise industry with a growing involvement and synergies between players. However, as depicted by Pallis & Papachristou (2020), it should be questioned how much a “one size fits all” policy approach would provide an effective response.

For Macaronesian ports, with substantial differences in terms of dimension, all these issues are keen and pertinent. As stated by Niavis & Vaggelas (2016), the risks entailed in ports’ investments should be extensively evaluated by port authorities. This is particularly important for the less developed cruise ports in the Azores and Cape Verde. Furthermore, a closer relationship between ports and cruise lines would be essential for a desired longer-term engagement in the cruise industry of these archipelagos. Following the perspective of Pallis & Papachristou (2020), ports capable to interact in the planning phase with cruise lines, and then balance the quality and quantity of the services offered with the requests of cruise lines, are the ones best positioned to reach the desired longer engagement of cruise lines. Additionally, ports should develop knowledge about the differences between cruise lines that might call, including their source markets and the basics of how they operate, but also to research other ports and itineraries in order to define the goals for the ports and destinations.

Conclusions

The present paper has developed a cruise destination conceptual model that aims to identify the most important port and onshore attributes of the cruise destination as well as the more relevant performance indicators associated to the cruise destinations. Additionally, the conceptual model establishes the connection between the port and onshore attributes and the performance indicators. Due to the potential differences between ports at distinct levels of development, a moderator variable was also included on the model, reflecting the possibility of significant differences between the different types of ports. Finally, in order to illustrate the conceptual model, the data resulting from a survey applied on the Macaronesia islands, an insular region in the North Atlantic Ocean, was used on a structural equation model and validated afterwards through the consultation of international senior cruise line operators.

The results of the structural equation methodology reveal the importance of the latent exogenous variable of port and onshore site-related characteristics and, in a lower degree, of port and onshore situation-related characteristics. However, a significant difference between the most developed ports and the less developed ones was observed, with a quite similar relevance between site and situation-related factors for the main ports, while on the secondary cruise ports, the site-related factors have a clearly predominance over the situation factors.

Regarding site-related characteristics, the results highlight the following observed exogenous variables, in decreasing order of importance: the quay’ adequacy for cruise activity; the availability of diversified shore excursions at the destination; a wide variety of tourism services at the destination, namely in terms of restaurants, hotels, museums, parks, etc.; the promotion of both the port and the destination oriented to the cruise

industry players; the existence of a cruise terminal with capacity to transit cruise passengers; the existence of a bus parking area at the cruise terminal; and finally, the feelings of safety, cleanness and the adequate signage for cruise passengers at the cruise destination. Although some differences between both types of ports were observed, they are not particularly substantial.

For port and onshore situation-related characteristics, the existence of a cruise terminal with capacity to cruise passengers in embarking and disembarking operations is the most relevant factor, followed by the existence of an airport with good international connections and by the location of the port in the context of cruise itineraries and in relation to other cruise ports and destinations. For the main cruise ports of the Macaronesia region, the main situation factors are related to the last two variables, while for the less developed ports the main variable is associated to the location of the ports relative to the cruise itineraries.

The results also reveal the importance of the latent endogenous variable of cruise destination performance, particularly for the observed endogenous variables associated to the level of employment and regional GDP generated by cruise tourism. Other endogenous variables like the volume of cruise ship activity and passengers or the expectation to return at the cruise destination as a shore tourist have also relevant impact, while the variable associated to the quality of the passenger' experience obtained the less significant results.

The data collected through the survey and the results presented in this study are an important source of information about the understanding of the most important drivers for the development of cruise destinations for port and destinations stakeholders, namely authorities and operators, enabling a more accurate definition of priorities for local stakeholders when establishing future strategies. Furthermore, the methodology used on this study may be considered a valuable and innovative contribution to science and management, since it presents a clear and structured approach for cruise destinations stakeholders on the promotion of more reliable interventions for the qualification of the destinations.

This is particularly valuable for developing cruise destinations, taking into consideration the substantial investments that still need to be made. Furthermore, the challenges that cruise ports face differ substantially depending on their stage of development, their size, and their governance model. For more developed cruise ports, it is expected that they will evolve to a greater intervention of private players and a more complex cruise port governance model.

Additionally, we must not ignore the effect of COVID-19 on the tourism sector worldwide and, in particular, on the cruise industry. In the case of Macaronesia, the resumption of the cruise activity raises the possibility of the establishment of a coordinated process of regionalisation with individual improvements in the provision of local services. This process would contribute to the creation of more integrated itineraries in the region, based on the 'Cruises in the Atlantic Islands' brand, and the maximization of mutual benefits for destinations. The alternative would be a competition strategy, with uncertain results for each archipelago. It should be expected that the more developed ports and destinations would reach better results in the future

than the less developed ones, but the potential impact of a cooperation is probably much higher. So, a more collaborative reflection and the strengthening of coordination and cohesion between the different port and local authorities and stakeholders is necessary, in order to enhance the economic impacts and at the same time promote sustainable destinations in the post COVID-19 scenario.

To the best of our knowledge, this is the first study where the situation of the cruise industry in the Macaronesia region is dealt with in a comprehensive manner. However, some limitations must be considered. The first one has to do with the reduced size of the dataset, directly associated to the small number of experts or managers that operate in the region. In this regard, it should be stressed that this was not a survey to a population but to specialists of a particular field in a specific geographical area with a substantial potential in the cruise industry, due to its proximity to Europe and the favourable climate conditions in the low and medium seasons. A possible field for future work would be to extend the study to other destinations to enlarge the dataset and confirm the results of the present study. Another possible field for future work would be to study in more detail the variables that integrate onshore services in the perspective of shippers, passengers and local operators.

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