

ABSTRACT

Crews disembarking from cruise ships at ports of call have significant economic effects on the host destination. This paper studies the determinants of cruise ships crews' spending while visiting the city of Livorno. The importance of the port of Livorno for the cruise tourism is due to the vicinity of touristic destinations. Compared with other Italian ports, such as Naples and Civitavecchia, that are a gateway to the tourist hotspots of Pompei and Rome, Livorno receives a lower share of passengers' expenditures. Indeed, the related economic impact must therefore be allocated to the tours destinations. Unlike the passengers, crews spend mostly all their time in Livorno purchasing food, beverage, transportation and other goods. The paper opted for an exploratory study, including seven hundred interviews to crews and two expert group discussions with Ship agents and Crew Human resources managers. The data were complemented with desk analysis, including statistic data. It provides empirical insights about crew expenditures and port facilities requests in Livorno call. It suggests how economic benefits that accrue to the port city economy arises from different sources among which cruise ship crews' expenditures for goods and services associated with cruise ships arrival have an increasing important role in port-city management development.



The economic contribution of cruise crew to Livorno call: the port-city management implications

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KEYWORDS

Crew expenditures; Economic impact; Cruise tourism; Port facilities; Port-city management; Local development

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Introduction

The economic impact produced by sea cruise tourism in European coastal regions is due to different factors, such as tourists' and ship crews' expenditures in transit and turnaround destinations.

In recent years several studies have underlined the economic contribution of cruise ships crews to local destinations, showing how the cruise crew onshore expenditures per capita within different destinations adding significant economic value to coastal regions and local destinations.

The port of Livorno is one of the main transit call¹ in the Mediterranean area for cruise ships, where passengers and crew are effectively day visitors. In this type of port, the generated tourist consumption is mainly related to shopping, guided tours and on-land excursions.

The importance of the port of Livorno for cruise tourism is due to the vicinity of touristic destinations, such as Pisa, Florence and Lucca. Compared with others Italian ports, such as Naples and Civitavecchia, that are a gateway to the tourist hotspots of Pompei and Rome, Livorno receives a lower share of the passengers' expenditures. Indeed, the related economic impact must therefore be allocated to the tours destinations.

It is known that European port cities by themselves receive a low share of passenger's expenditures. In those ports, most of passengers that disembark leave the city to visit touristic destinations. That is the case of ports such as Livorno (Florence and Pisa) and Le Havre (Paris).

For this reason, in those port cities, crew expenditures give an increasingly important contribution to local development.

The study mainly focuses on the assessment of economic impact at local level. This paper combines a variety of methods using quantitative and qualitative approaches. In order to collect empirical data on crew expenditures and their port facility's needs, we carried out a survey research from January to June 2016. The empirical study included seven hundred interviews to crew, one expert group discussions with Ship Agents and twenty face-to-face interviews to Crew human resources on board of cruise ships.

The survey outcomes reflect the flows of economic impact derived from cruise crew spending in Livorno, and those derived from Ship Agencies. It also provides empirical insights about crew port facilities requests and suggestions and about how investments in crew port facilities could improve their spending impact in port cities.

The paper is organized in three sections. The first paragraph provides quantitative data about cruise ships in transit through the port of Livorno and seamen boarded during 2015. As we mentioned before, Livorno is a transit call where cruise ships, while at berth, stand about twelve hours. During this time passengers and crews have the opportunity to spend time onshore. The second paragraph describes the results of the empirical research, focusing on crew expenditures and on crews' needs concerning port facilities.

Based upon the data collected, the third paragraph analyzes the efforts needed for the exploitation of opportunities in Livorno call.

¹ In general a transit call, or a port of call is a place where passengers disembark temporarily, and then embark again in order to continue the cruise. Differently, in a home port passengers begin and finish their cruise travel.

Research methodology

This paper combines a variety of methods using a quantitative and qualitative approach in order to analyze the economic contribution of cruise ships crews in Livorno call. A desk analysis and a literature review conducted on economic literature and transport statistics provide relevant data on cruise tourism economic impact in coastal region and local destinations and general data on crew expenditures.

The annual report of Livorno Port Authority and other data collected by the Harbor Master and the Maritime Police Force provide information on the cruise ships in transit through the port of Livorno during 2015, the number of passengers and crews boarded, the relation passengers/crew per ship and the characteristics of seamen in transit within the port call (nationality, gender, age).

Those data were implemented by a research survey that took place from January to June 2016. The research survey was structured in two phases. In the first one, we organized an expert group with Ship Agents and their Association in order to identify the indirect expenditure in favor of crews made by Ship Agents. Indeed, the ship owners incur expenditures in favor of the crews through ship agents especially associated with the crew change in Livorno call.

In the second phase, we conducted twenty face-to-face interviews on cruise ships board to Crew Human Resources Manager or Crew Pursue Managers. The interviews provide information on the number of crew disembarked where the ship was on berth, the average time they normally spent onshore, their purchases in city and their needs in terms of port facilities. These interviews were very important to deeply understand the expenditure rate of crews, but also their needs in terms of port facilities. The access to some port facilities, such as transport service from port to city center, free wi-fi options and others services resulted very important to stimulate crews to reach the city center and spend money.

Finally, in order to analyze the direct expenditure of crews, a questionnaire was distributed on board of cruise ships to crew members, asking them to fill it, indicating the expenses incurred in Livorno call. In total, the survey involved about twenty "privileged witnesses" in face-to-face interviews and about 700 crew members that filled the questionnaires.

The Cruise Ships Crews in Livorno Call

Livorno is an important transit call for cruise as it is conveniently located along the Western Mediterranean and offers a variety of excursions in Tuscany region. Furthermore, the cruise port is located a few kilometers from the city center, which is easily accessible by bus.

In order to explore the expenditures of crews in Livorno call, this paragraph point up the number of cruise ships in transit in Livorno call during 2015 and the number and characteristic of seamen boarded.

The table below describes the number of cruise ships in transit in Livorno call in 2015 detailed per gross tonnage class and ships touchdown.

Gross tonnage class	Ships number	Ships touchdowns
TSL < 40.000	28	73
TSL >40.000 <100.000	35	229
TSL >100.000	11	67
Total	74	369

Table 1. Cruise ships in transit in Livorno call in 2015.
Gross tonnage and touchdown details. (Source: *Avvisatore Marittimo*)

As shown in table 1, the largest number of cruise ships transited in Livorno call have a tonnage between 40.000 and 100.000 Tons. Only a few number of ships have a higher or lower tonnage compared with this class. In 2015 the cruise ships made 369 touchdowns in Livorno call.

As regard to cruise ship rating, Livorno is affected by the transit of Standard, Premium and Luxury cruise ships. In the reference year, the amount of Standard ships arrivals was 68, while the Premium and Luxury touchdowns were respectively 154, and 147.

During 2015, the port hosted 697.955 cruise passengers. According to the Maritime Police Force data, the number of seamen transited on cruise ships in Livorno call in 2015 is equal to 277.981 unit. Based upon the data collected by the Harbor Master of Livorno, it is about sixty percent of the total number of seamen transited through the port on different ships.

Normally the number of crew is congruent with the number of passengers. However, the crew widely varies depending on the market segment, reaching the proportion 1:1 in the Luxury ships. On average, a cruise ship has one crew member every two/three passengers. The table below shows the data regarding the crews of cruise ships entered in Livorno port in 2015 and the correlation between passengers and crew.

Gross tonnage class	Average number of cruise crew members per ship entering the port	Ratio Pax/crew per ship entering the port
TSL < 40.000	205	1,51
40.000 < TSL < 100.000	738	2,49
TSL > 100.000	1.403	2,59
Total	753	2,47

Table 2. Crews of Cruise ships entered in the port of Livorno. (Source: our elaboration based on Polmare data)

As shown in table 2, each cruise ship entering the port of Livorno has an average crew of 753 unities. In the big cruise ships (TSL >100.000) this number is higher (1.403 unity). The ships of medium tonnage class (40.000 < TSL < 100.000) boarded in average 738 seamen, while, for ships with lower tonnage (<40.000), the average of seamen boarded is 205 unities.

The analysis of the crew list of each cruise ship that entered the port of Livorno in 2015 provides information about seamen nationality, gender and age. Regarding gender, most of the seamen that transited in Livorno call in 2015 are men (81%), while women represent 19%. Seafarers are relatively young. The majority is between 20 and 41 years of age. If we look at their countries of origin, most of them are from Asia.

Most of crews transited in Livorno are from Asia (62%), mainly from Philippine, India and Indonesia. 15% of crews are from Latin America, while 10% are from Western Europe. Seamen from the East Europe are 9%, while just 2% are from Africa. Only 2% are from North America, while the lowest share comes from Oceania (0,3%).

The Crew's expenditures

As we mentioned before, it is estimated that when the ship berths in Livorno just around 25% of passenger tourists remain in Livorno, while 75% leave the city in order to reach other important places in Tuscany. It is estimated that an important part of passengers that remain in Livorno spend the day on board. That means that the percentage of passengers that effectively spend the day in the city center go shopping.

According to the survey data, when the ship berths in Livorno, around 50% of the cruise personnel disembark to spend time onshore. The time available for crew members is typically less than for passengers. The time of disembarkation for crews is around 11.00-12.00 am, while the time of embarkation is 4.00 pm. The amount of hours that crews spend onshore depends on their role on board and on their work activities schedule. Indeed, the work activities of crews do not end when the ship arrives in port in the early morning, but a lot of crew members continue working until 12.00 am. Some of them have to work all day without having the opportunity to go onshore.

Moreover, during the morning, the crew are often involved in safety drills. The deck crew, that is the majority in the cruise crew composition, normally spend between two and five hours onshore. In order to understand the economic behavior of crew, it is important to consider the characteristics of seafarers work and the features of facilities available on shipboard.

Crew generally come from Asia and South American countries. Even if their salary is good, compared with the standard of their country of origin, their work is hard. Indeed, seafarers are engaged in hard work shift seven days a week. Their work activities do not stop when the ship berths in port. They have only a few hours onshore. Regarding shipboard facilities, we have to consider that crew cannot use facilities available for passengers, such as medical services, and often they cannot use telecommunications services on board to keep in touch with their families. Indeed, those services are very expensive.

For all the reasons mentioned before, while passengers remained in Livorno may decide if going onshore or stay on board, crews, when free from work, are motivated to go onshore during the ship stop.

The figure below shows the number of hours spent onshore by crews in Livorno call.

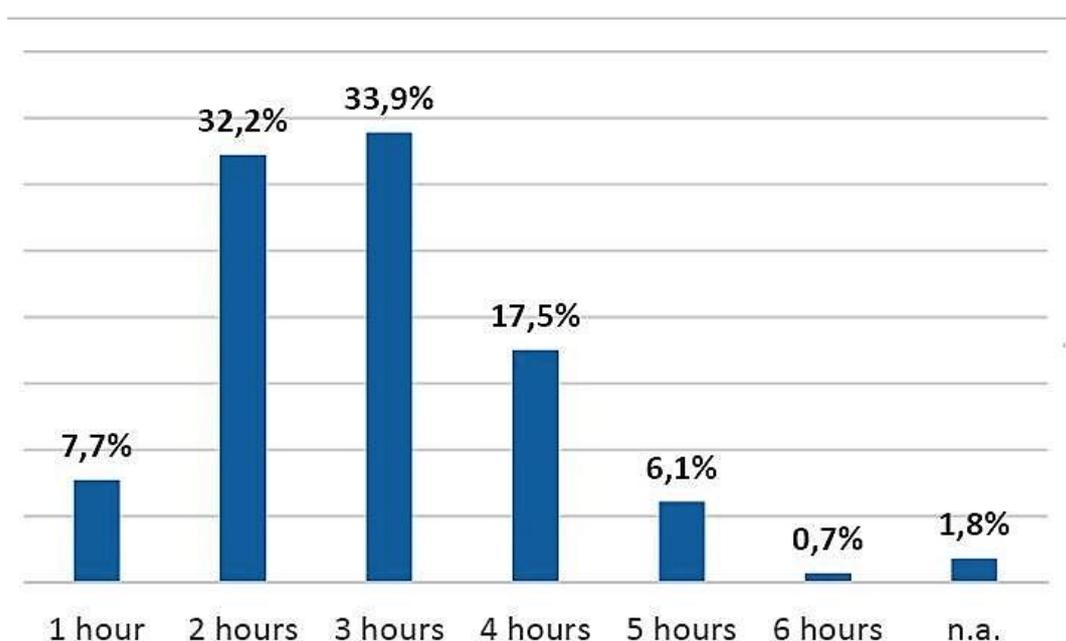


Figure 1. Hours spent onshore by crews in Livorno call %. (Source: Cruise crew survey, Livorno Port Authority)

Based upon the data collected by the filled questionnaires, 66% of the crews in Livorno call spend between two and three hours onshore. Only 17% spend four hours onshore, and 6% stay out board 5 hours. The time that crews spend onshore is from 11.00 am to 4.00 pm. During their stay onshore, crew normally reach the city center that is easily accessible by bus in ten minutes, looking for bar, restaurants, shops, bank and postal services.

Analyzing the economic benefits deriving from cruise ship crew expenditures in Livorno, we have to distinguish the indirect expenditures, i.e. expenditures sustained by the ship owners in favor of the crews through ship agents, from those sustained directly by crews onshore.

The maritime agents contribute economically to cruise ship crews in different ways. They ensure the cost related to crew turnover for the ship owners, such as the transport of seamen from ship to airport or vice versa and the accommodation costs in hotels. Furthermore, sometimes the Ship Agency claims medical expenditures in favor of crews and the relative transport costs.

In the table below the expenditures sustained by the main Livorno Ship Agencies in favor of crews.

Expenditure category	Euros
Transport expenditures	€ 78.125,00
Accommodation in Hotels	€ 43.732,00
Medical expenditures	€ 43.242,00
Other expenditures	€ 3.900,00
Total	€ 168.999,00

Table 3. Expenditures sustained by Ship Agencies by category, 2015.

Based upon the data collected by the main Ship Agency in Livorno, in 2015 the total expenditures in favor of crews were the medical expenditures, followed by the transport expenditures (Taxi to and from airport, and to other destinations) and the accommodation expenditures. Other expenditures regard electronic purchases for the ship supply. Regarding the direct crews expenditure onshore, the table below shows the distribution of crew expenditures in Livorno call by category.

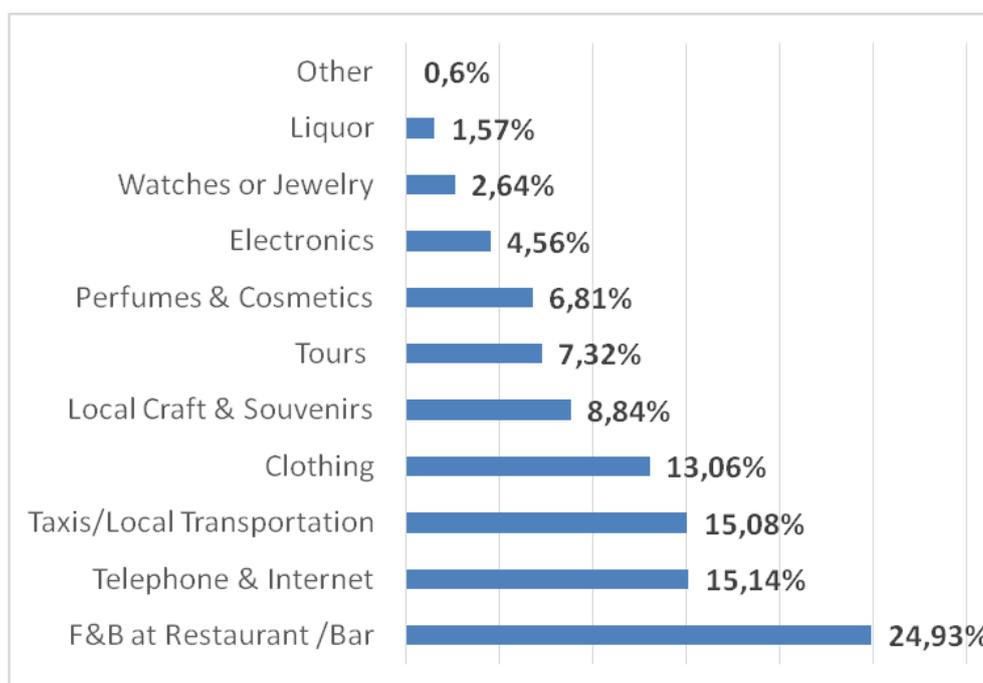


Figure 2. Crews expenditures by category. (Source: Crew survey)

As shown in Figure n. 2, crews' expenditures are heavily weighted toward food and beverages, telephone and internet and local transportation services. Unlike passengers that normally come back on board to have lunch, crews prefer to spend all the time they have onshore, buying food and beverages in bars or restaurants. With approximately 24,93% of crew purchasing food and beverages. 15,14% of crew make purchases in Telephone and internet shops. As we mentioned before, crews need to keep in contact with their families. Considering the high cost of wi-fi on board, when onshore they normally buy a smart card and a support cell phone for calls from Italy. Crews spend 15,8% on taxis and local transportation. Indeed, they need to reach the city center from the port area or other destinations. As shown in the Figure 2, crews' purchasing is also distributed in clothing (13,06%), local craft souvenirs (8,84%). They also are interested in short tour to Pisa, for which they have spent 7,32% of the total. The Figure below shows the crew expenditures by cost category.

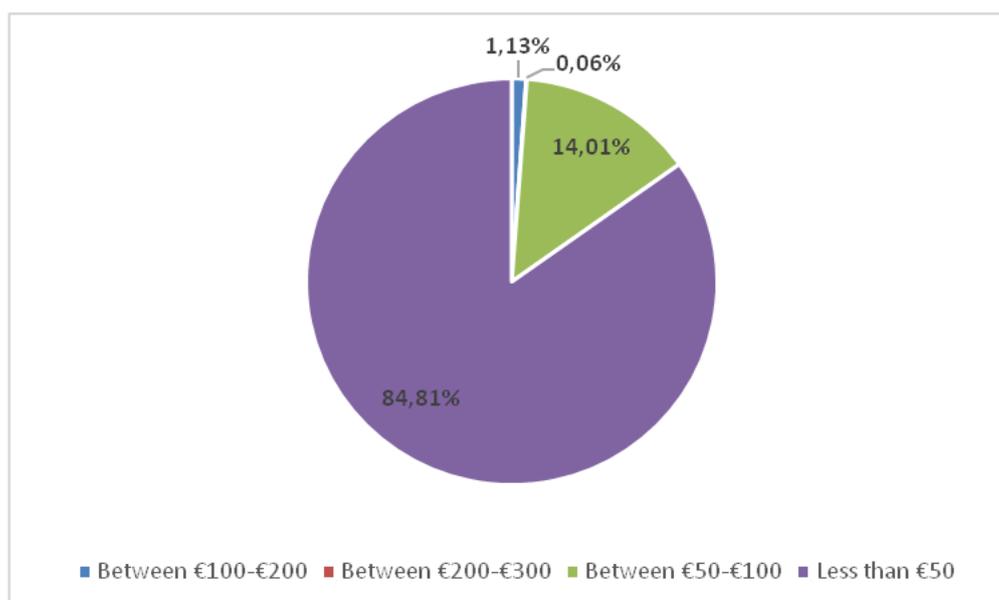


Figure 3. Crew expenditures by cost category. (Source: Crew survey)

Utilizing data from the crew survey, transit crew expenditures are higher in the cost category “less than 50€” where we reach 84,81%, while lower in the cost category “Between €50-€100 (14,01%)” and “between €100-€200” (1,13%). The crew expenditures in the cost category “between €200-€300” are percentually the lowest. Based upon the data collected from crews’ questionnaires, only 12% of the total does not make purchases during the Livorno call, while 88% make at least one purchase for less than 50 € or more than one purchase at or above 50 €.

Crossing the data obtained from the questionnaires with those obtained from the interviews on board, we can estimate that crews spend an average of 20-30 € on restaurants, about 50 € on shopping and about 10 € on transport services.

Taking into account the high number of cruise seafarers in transit to Livorno who went onshore during the call (277.981 in 2015), the economic impact of the crews expenditures in the city is relevant.

Based upon the data collected, compared with other Mediterranean transit port, Livorno offers good opportunities for crew shopping needs. Indeed, due to the vicinity of the cruise port to the city center, crews can reach shops in less than ten minutes by bus. In addition, the city center is quite small and crews can easily found restaurants, supermarket and shops in the same area. Given the limited time that the crew can spend onshore, the proximity of shops to the cruise port and the high availability of shops are two important key factors.

Port facilities for crews

Port facilities are one of the key successful factors of ports for cruise tourism in conjunction with touristic attractiveness and accessibility of destinations.

The port facilities offer is important not only for passengers, but also for crew members in order to improve their level of expenditures in the city.

The accessibility of city center from the cruise port and the availability of food, drink, retail and leisure activities are important key drivers for cruise crew spending power.

The figure below shows the facilities required by crew during their staying in Livorno.

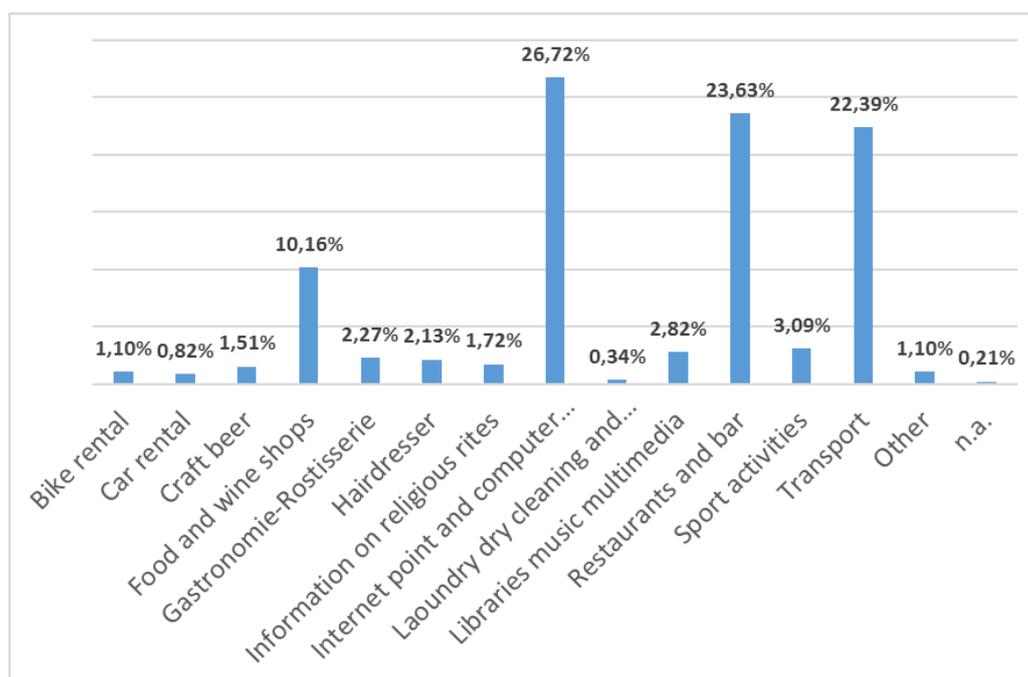


Figure 4. Facilities required by crews. (Source: Crew survey)

As shown in the Figure, the main facilities required by crews are internet points and computer shops (26,72%), restaurants and bars (23,63%) and transport services (22,39%). Based upon the results of the interviews conducted during the crew survey, transport plays a very important role in improving crews shopping activities. Considering the low amount of time off available, crews need frequent transport facilities from port to city center and vice versa (approximately every 10 minutes). Improving transport facilities, crews could more easily reach the city center and go shopping. In the opinion of interviewed crew managers, offering free transportation services would encourage seafarers to reach the city center and go shopping. Internet facilities are also very important for crews; in fact, they need to know where to purchase internet and computer devices. Restaurants and bars are very required too. Also the food and wine shop are required (10,16%). Crew onshore normally need to buy food and drink to store onboard. In this context, considering the high percentage of crews coming from Asia, the ethnic food shops are very required. Indeed, crews have not available their native food on board.

Crews are also interested in short tour in Livorno or in other close cities, such as Pisa that is distant almost 30 km from Livorno. Based upon data collected 7,32% of total expenditures of crew regarded short tour to Pisa. The tours are normally purchased on site by crews with the support of the dedicated ship office or by the contribution of Ship Agents.

Based upon the data collected, crew are also interested in short tour to seaside. Indeed, they want to reach some beaches during their stay in Livorno, especially in summer time. They appreciate spending their spare time on the beach, having lunch and practicing sports activities there.

Due to the long stay on board they show interest in sport facilities opportunities and ask for tennis or basketball courts or football field renting.

Other facilities, such as car and bike rental, or laundry dry cleaning and ironing services are not so much in demand.

Discussion and implications

Cruise tourism necessarily involves the city and the port both in the definition of spatial organization for operational modalities and in the elaboration of development strategy. Cruise tourism has also a close link with urban tourism development. Indeed, the tourist presence in the city is conditioned by the city cultural offers and by the "global quality" of the stay. In this

framework port-city should think more strategically about using port as driver of economic growth (OECD, 2014).

The city economic development requires first of all a local political intervention, becoming an issue of governance between public Institutions, the Port Authorities, the local economic actors and the civil society.

The city of Livorno offers good opportunity of shopping and recreational activities for crews. Based upon the data collected, seafarers express their satisfaction with shops availabilities and ask for recreational opportunities within the city. Nevertheless, there are still demanding improvements that need to be faced in order to enhance the spending power of crews in the city.

Starting from crew expenditures recorded and considering the seafarers' facilities requests, it seems to be important to explore how to direct the efforts aimed to the development of city opportunities. The table below matches opportunities with corresponding efforts.

Opportunities	Efforts needed to exploit opportunities
To improve crew welcome	Crew club in the city center
To improving crew touristic activities	Sufficient accessibility for city center and other areas More touristic information Short time touristic tour for crew Information tourist office available in the port area
To implementing crew shopping	Free shuttle bus availability More frequent bus (every ten minutes) Crew shopping card More information about shops, supermarket and shopping center

Table 4. Efforts needed for the exploitation of opportunities.

The first opportunity is related to crew welcome. One of the most important facilities request expressed by crews is the necessity of improving crew welcome facilities in Livorno. Welfare services in the port are provided by Stella Maris Seamen's Club. The little center offers mail, telephone and fax, satellite tv, magazines, minishop and a small library. Unfortunately, this center in the Port of Livorno is very small and quite far from the passengers terminal. Based upon the data collected, crews asked for a bigger seafarers club located in the city center area close to the port and close to supermarkets and other shops. The opening of a crew club in the city center could support the presence of crews in the shopping area.

The second opportunity is linked to touristic activities. In order to improve crew touristic activities within the city, it is important to improve the accessibility to the city center and to other interesting areas (touristic sites, religious sites, seaside and beach areas). Opening a tourist information office inside the port area could be useful for crew in order to get information about shops and services location. In Livorno the tourist information offices are located only in the city center, while inside the cruise terminal there is only a little tourist information desk, mainly accessible to passengers.

Based upon the data collected by the survey, crew are interested in purchasing tours. Considering their brief time available, short excursions fit better for them. In this field, a wide range of tour opportunities could be drawn up, proposing retail and leisure activities. In this context, specific tour packages for crews could be created, especially in the summer time, providing to the crew members the opportunity to reach some beaches close to the city and to have lunch there.

Also religious tour could be created, given the importance of the Sacred Place of Montenero that is considered a Catholic pilgrimage destination in Italy. Taking into account the request of information about religious rites expressed by crews, this kind of tours could be implemented.

In their free time onshore crew members are also interested in sport activities. They are interested in renting tennis or basketball courts or football fields located close to the port area in order to spend some of the free time doing physical activities. The city of Livorno offers a high variety of

sport opportunities, ranging from mountain bike in the hills to surf practices on the seaside, close to the port. In this context, short sport tours for crew could be organized.

The launch of all those tours could promote new revenue for the city, creating employment opportunities in the touristic field.

The last opportunity is related to shopping activities. In order to implement crew shopping it is important to improve the transport services from port to city center and vice versa proposing more frequent bus. City center is easily accessible by bus from cruise port. The trips by shuttle bus take about ten minutes. According to the crew manager interviewed, by offering a shuttle bus free, crew could be incentivized to get the city center for shopping. In order to improve the buying power of crews, other facilities should be implemented. Crews ask for more information about shops, touristic places to reach in the city during their stay onshore. Particularly, considering that they stay onshore approximately from 11.00 am to 4.00 pm, they are interested in getting information about shops open at lunchtime.

Moreover, the creation of a crew card with exclusive offer in the city center could be another way to increase seafarers shopping power within the city. Also information about shops, supermarkets, restaurants and bars available in city center are important for crew. The launch of a crew card offering exclusive discounts in the city center for food, drinks, retail and leisure activities could promote new revenue. According to the crews' facilities request, we could suppose that by improving the dedicated services, their local spending could increase and hence create employment and income in the city.

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