

# FOREIGN EXPERIENCE

DOI: 10.15838/esc.2018.5.59.12

UDC 656.6, LBC 65.37

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## Development Opportunities of Liner Maritime Passenger Traffic in the Republic of Croatia



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**Abstract.** The main issue addressed in this paper relates to the analysis of maritime passenger ports in the Republic of Croatia and the impact of this type of maritime transport on tourism in the Republic of Croatia. Liner maritime passenger traffic is important for the development of coastal economies, especially tourism and trade, in preventing the emigration of the island population. Accordingly, it is necessary to

**For citation:** Naletina D., Ačkar I., Vuletić A., Petljak K., Štulec I. Development opportunities of liner maritime passenger traffic in the Republic of Croatia. *Economic and Social Changes: Facts, Trends, Forecast*, 2018, vol. 11, no. 5, pp. 182-197. DOI: 10.15838/esc.2018.5.59.12

invest in the modernization of liner passenger ships in order to respond to the difficult winter conditions of sailing, and the prolongation of the tourist season would lead to more frequent passenger lines. Considering that the liner maritime passenger traffic represents a significant type of transport in Croatia, the conducted research was directed toward that segment specifically. In order to achieve the set goals of this paper, the secondary and the primary research have been conducted. The aim of the primary research was to explore satisfaction of the consumers with the services of liner maritime passenger traffic in Croatia, and to identify possibilities for further improvements. A highly structured questionnaire has been used as the survey instrument. The survey was conducted during September 2017 on the sample of 119 respondents. Research results indicate that the major part of the respondents believe that it is necessary to increase the number of the lines. Also, they agree that high quality maritime passenger traffic is a prerequisite for adequate development of life and tourism on Croatian islands. Results reflect that respondents are not satisfied with the offer of additional services during the ride and they have marked that the prices of additional services, as well as the prices of the tickets are too high. It is crucial to increase the number of lines in the future and to ensure the entry of some new players on the Croatian market of liner passenger traffic.

**Key words:** Croatia, maritime transport, liner passenger transport, maritime passenger ports, tourism.

### Introduction

Maritime passenger traffic has been significantly expanding globally over the last decade. Modern passenger terminals are the prerequisite for the optimal running and development of liner maritime passenger traffic and cruises. An adequate and well-organized maritime passenger terminal is crucial for the development of many complementary services related to maritime passenger traffic, primarily promoting the upgrade of the tourist supply and development of tourism [1]. For the purpose of satisfying the regular needs for passenger transport from the starting to the destination point (ports), maritime shipping has developed liner passenger shipping, where passenger shipping has gained its type of shipping and its market. Liner maritime passenger traffic is organized on the limited regional markets, where the trips, sail routes and ports of load and discharge are constant and already pre-defined [2]. Liner passenger traffic is conducted under the current national and international rules and regulations. The participants in this type of traffic are the shipping companies, the passengers and the brokers (intermediaries) in providing transport services [3]. Liner

shipping companies that provide global liner services hold an exceptionally important role in attracting the load and developing maritime ports [2].

The presence of a transport complex functioning according to the needs of economy in a certain territory represents one of the basic development conditions [4]. One of the crucial prerequisites for the development of traffic and tourism, and for satisfying the passenger demands for transport, is the presence of maritime passenger ports. It is possible to stimulate a healthy development of the passenger port system by implementing port policies in line with the goals and measures of the overall economic policy framework of the country in question. Ports deliver value to the shipping companies, as well as to the intermediary service providers. They are locations where ships and loads are managed, with achieving operational efficiency [5]. The role of modern maritime ports is particularly important for the overall economic welfare of the specific region [6]. Developed countries have long since realized that the growth of ports and port systems are one of the

major preconditions for the development of national economy, i.e. the economy of the gravitational zone that belongs to a specific port. Ports represent a part of the entire country's traffic system in which all the traffic is accumulated. Ports operate according to the fundamental economic principles in order to provide adequate services, at the lowest costs possible, and help expand economy globally [7]. Considering the growing competition in the shipping industry, providing high quality services that generate pleasure in customers is crucial for the maintenance and the very survival of a company. Generally, a shipping company can satisfy its clients by offering high quality services or by providing a variety of services. One of the ways for distinguishing oneself from the competition is providing high quality services [8].

The very purpose of this paper is to explore the consumers' satisfaction with the liner passenger traffic services in the Republic of Croatia, with the aim of providing recommendations for the future development. To achieve the goal, the secondary and the primary research have been conducted. After the introductory part, there follows the chapter explaining in more detail the liner shipping, liner shipping disadvantages and measures for further development of this economic branch in the Republic of Croatia. The third chapter gives an overview of the existing research, while in the fourth chapter the instrument used in the primary research is explained, the results of the research are presented and limitations and suggestions for future research are listed.

#### **The term and characteristics of liner maritime passenger traffic**

Liner maritime passenger transport is a special type of passenger and vehicle transport from seaport to seaport using special ships, organized on limited regional markets, where there is a need for continuous transportation. One of the key prerequisites for the development

of transport, tourism and the satisfaction of passengers' needs for transport are maritime passenger ports. The economic potential of Croatian seaports is characterized by a favorable geographic position. Shipping agents have played the crucial role in organizing the liner shipping, being initiators and managers of this type of maritime ships exploitation [9]. In liner shipping, freight charges are formed as tariffs, and there are two types of tariffs: class tariff, set for specific groups of load, and commodity tariff, set for every type of load separately [10].

Economic potential of Croatian maritime ports is based on the favorable geographical position. Croatian maritime ports can ascribe their competitive advantage, in relation to other ports in the European Union, to the deep intrusion of the Adriatic Sea, which enables the most efficient and the shortest traffic connection of Croatian mainland with the eastern Mediterranean, and with Asian and East African countries through the Suez Canal. The amount of traffic in maritime ports depends on their geo-traffic position, the area of their gravitational zones, the size of the port capacity, the infrastructure and the substructure, the number of liner services, organization of the port operations and the competence of the port staff [11]. The Republic of Croatia has 409 ports open for public transport, out of which there are 95 ports with a least one regular ferry service [12]. There are six ports open for public transport that are of specific (international) economic interest for the Republic of Croatia, in Rijeka, Zadar, Šibenik, Split, Ploče, and Dubrovnik [13]. Croatian seaports have been integrated in a comprehensive network of European traffic corridors, which is recognized as the development potential that enables the inclusion in the trading flows on the inner, European market, as well as the global market. It also allows the transformation of the port systems into modern logistic and distribution centers [12].

In the area of maritime shipping, public transport is the important factor in the coastal liner traffic, because it enables permanent and regular connection of the islands and the mainland, as well as travelling between the islands. Without this, there would be no sustainable development of the inhabited islands in the inland maritime waters and territorial waters of the Republic of Croatia. In Croatia, public transport in the coastal liner maritime traffic provides navigation on regular basis between Croatian islands (73 island ports) and the mainland (22 mainland ports). Public transport in the coastal liner maritime traffic is characterized by unprofitability, and is therefore subsidized from the budget resources, in cases when the shipping companies cannot cover the actual costs of the line from their revenue. The shipping companies in the liner maritime traffic provide transport services based on the concession contracts or the public service contracts, which the shipping companies conclude with the Coastal Liner Services Agency. The public transport system includes 56 state service lines (27 ferry lines, 16 fast ferry (catamaran) lines and 13 regular lines). The system is maintained by 13 shipping companies with the fleet of 77 ships: 17 passenger ships, 17 fast passenger ships and 42 ferries. The largest liner shipping company is Jadrolinija Rijeka, fully owned by the state, and there are 12 private shipping companies in the system [12]. Out of 13 shipping companies that provide the liner passenger transport, Jadrolinija holds

the first place. It had 86.4% share in the total passenger transport, and 89.7% in the vehicle transport. In the second place, there is Rapska plovidba, but with a considerably smaller share in the passenger transport (6.2%) and with 10.3% in the total vehicle transport.

Liner passenger shipping is of extreme importance for the development of the coastal economy, tourism in particular and of trade. It is crucial for the prevention of emigration from the islands, and it influences the government balance-sheet because of the revenues from foreign passengers. For the steady development of a country, it is important to ensure a sustainable development of the islands and prevent further outflow of the island population. In line with this, coastal liner maritime passenger transport is crucial for the development of the islands, and it is performed by the total of 56 public shipping lines, crucial for the entire country [12]. Prominent factors that have positive influence on maritime passenger transport are tradition in connecting the islands to the mainland and between themselves, expertise, knowledge and experience, continuity and traffic connection, safety and good organization. Characteristics of Croatian maritime passenger traffic are [14]:

- 1) constant rise in demand,
- 2) society aiming at the development of the islands,
- 3) renewal of the passenger fleet supported by the government and
- 4) state subsidiaries for the unprofitable lines.

Table 1. Basic guidelines of the maritime passenger transport

Maritime passenger transport	
BASIC ELEMENTS	BASIC INFRASTRUCTURE
1. seafarers and other employees at the passenger shipping companies, 2. passenger ships as a means of transport, 3. sea as the traffic route, 4. passengers and vehicles as the objects of maritime transport.	1. construction and maintenance of the maritime passenger ports (passenger terminals), 2. construction and maintenance of the signaling and other devices and equipment at the beginning and the end of the maritime route.
Источник: Delibašić T, Vidučić V. Међуовисност путничког морског бродарства и туризма у Хрватској. <i>Zbornik radova Ekonomskog fakulteta u Rijeci: časopis za ekonomsku teoriju i praksu</i> . 2003, Rijeka: Faculty of Economics, University of Rijeka, 21(2), p. 80.	

For the economic and, therein, tourist valorization of the Kvarner islands, being among the most frequently visited islands in the Adriatic, traffic connections with the adjacent mainland has always played the crucial role. In the past, these connections were maintained by the steam ships, while today, ferries hold the most important role. The combination of the ferry and road transport has included the islands in the Croatian transport system. This transport is exceptionally important for achieving the integration of the islands with the mainland, i.e. the unification of the entire country's territory, because of the demographic revitalization of the islands, and as the essential basis for the economic growth of the islands and tourism [15]. The tourist service is closely connected to the transport service. Without the transport service, there is no tourist service, for the transport service always precedes the other one. Transport and tourism are important because they increase the prosperity of individuals, providing them with the transport service, and therefore interconnecting them and giving the possibility of using other material, spiritual and cultural values. Both these activities positively affect other economic branches [16].

Liner passenger transport is important for the improvement of the demographic situation on Croatian islands. Passenger liner traffic should take into consideration the needs of the islands population, those that live there permanently and those that visit occasionally (tourists and holiday homes owners), many of whom stay there for longer periods and have needs like the permanent residents. Most of the 20th century demographic development of Croatian islands was characterized by a depopulation that started in 1921 and ended in the last decade of the same century. It was caused by long-term emigration from the islands, primarily because of the development policy of the State where the emphasis was

placed on the industrialization of the land. It is also important to point out that most researchers state that the increase in the number of inhabitants in the last decade of the 20th century has increased due to fact that huge number of Croatians has declared their holiday homes as a place of their residence[17]. Due to the Census of Population, Households and Dwellings from 2011 the number of inhabitants on Croatian islands was 124.955, which was only 2.07% compared to the 2001 [18, 19]. In the period from 2011 to 2014, a slight increase (2.4%) of the population of Croatian islands was achieved, primarily due to the numerous development and revitalization measurements and investments in the islands [20]. For the last few years, there is still no official data, but decrease in number of inhabitants at Croatian island is expected due to imigration of inhabitants and lack of faith in the major life style changes. It is certainly important to point out that the cost of living on the Croatian islands is considerably higher than on the mainland. As well inhabitants on islands are not encouraged with the number of lines and nor high prices of services of liner companies. Even state subsidies are not having a significant influence on keeping inhabitants on islands. If it is observed the number of inhabitants on islands, on the individually level, than it is evident decreasing trend on smaller islands. It is also important to point out that the total number of inhabitants on the islands has increased to a large extent as a result of consequence of the migration of older and economically inactive population.

One of the characteristics of the maritime passenger shipping is its seasonality which has negative influence on the organization of the passenger ships. The negative aspect is seen in high technological overload for old ships and long working hours for the crew members. The positive side of the seasonality is the possibility it provides to the shippers of generating considerable revenue, which enables business

activities during the off-season, when the costs surpass the revenue. The biggest challenges shipping companies in liner maritime transport in Croatia face are unfavorable age structure of the fleet, high fuel prices in the total transport costs, and significant seasonal oscillations. Technical, technological and organizational inferiority in relation to the ports of the developed countries, slow port manipulations, low investments in modernization of the port capacities and their poor maintenance have lowered the appeal and competitiveness of Croatian ports. Most neglected are the small ports that serve the needs of the locals, and investing in them would ease the transport of goods and passengers between the islands and the mainland, as well as among the islands. The biggest limitation in the development of the maritime passenger traffic mostly comes from the low demand for shipping capacities in the off-season, i.e. the problem of seasonality.

Croatian liner shipping has come into a crisis because of the slow replacement of classic general cargo ships with container and semi-container ships and irresponsible usurious credits, which has led the largest domestic shipper "Croatia Line" to go bankrupt, along with some other smaller shipping companies. This has brought a major blow to the once strong liner fleet, and liner services in domestic ports have also considerably decreased at the expense of national economy. There are also other limitations to further development of maritime economy, most obvious being: lack of the investment and working capital, unfavorable exchange rate, exodus of many workers and experts into developed countries, low investments in research and modern technologies development, strong competition of specific maritime economy branches in developed countries on the global maritime market, regular conjectural fluctuations, crises and recessions on the market, considerable

slow technical and technological development of some maritime branches as a consequence of the Domestic war and long-term low investment, insufficient coordination and competence inconsistencies of the government in the public guidance of some maritime branches [21]. In the Republic of Croatia, the greatest drawback in liner maritime passenger traffic is the monopolistic position of Jadrolinija - the company for passenger and cargo transport. Jadrolinija, with its high prices, slow modernization of the fleet and lack of ships in the high season, affects passengers and gives the tourists a poor picture of Croatia. Likewise, Jadrolinija, with its monopolistic policy, smothers smaller shipping companies and makes fair competition impossible. More and more European tourists decide to travel to Croatian coast, and most of them opt for travelling by road. Tourists that choose Croatian islands as their destination are the most significant users of liner maritime passenger transport, and it is therefore important to ensure a good mainland traffic connection of the maritime passenger ports with the emissive tourist areas. Maritime passenger transport depends on the successfulness of the tourist season, especially on the Croatian islands. As has already been stated, one of the limitations to the development of maritime passenger transport is insufficient demand for shipping capacities during the off-season. The problem of seasonality can be mitigated by prolongation of the season and supply on the islands, and attention should be directed towards the tourists of higher purchasing power. In line with that, modernization of liner passenger ships is necessary in order to navigate during the heavy winter conditions, and the prolongation of the tourist season would lead to more frequent lines. In order to impose more control over the budget, i.e. exceptionally high privileges the population on Croatian islands enjoys, the Coastal Liner Services Agency has started a

project of informatization of the coastal liner maritime transport (SEOP). The SEOP system has introduced more control over the privileges used by the passengers, and over the shippers as well. The buying of the tickets is made simpler, the privileges of the islanders are identified with a special kind of island pass, the preconditions for keeping the accurate record and control of the number of passengers and vehicles and the use of the budgetary resources have been ensured.

In the context of the coastal passenger liner traffic, the goals and associated measures have been adopted, relating to [12]:

**GOAL 1:** Improve the system for providing public services of connecting the islands with the mainland and among the islands with the aim of contributing to the sustainable development of the islands through the development of socially sustainable, economical and efficient system of public coastal maritime liner transport in the Republic of Croatia.

**MEASURE 1:** Redefine the liner traffic system (the line system, the relation of ferry, classic and fast ferry - catamaran lines);

**MEASURE 2:** Connect the coastal maritime liner traffic with other types of traffic, in line with the traffic strategy of the Republic of Croatia;

**MEASURE 3:** Conduct a gradual, effective and transparent system of privileged transport for the islands' population and economy.

**GOAL 2:** Enable providing public services based on the principles of safety, stability, punctuality and commodity.

**MEASURE 1:** Introduce informatization in coastal maritime liner transport, which will enable business transparency and upgrade the availability of the service;

**MEASURE 2:** Plan and construct assigned ships for the lines that connect small islands with no road infrastructure;

**MEASURE 3:** Stimulate development and the use of new technologies in coastal maritime

liner transport, and the use of ecologically acceptable ships in the coastal maritime liner shipping system.

#### Literature review

In foreign scientific literature, there are a number of research papers dealing with the analysis of the maritime liner market – *competitive strategies* (J.E. Davies [22], P. Evangelista A. Morvillo [23], P.M. Panayides, K. Cullinane [24], R. Midoro, E. Musso, F. Parola [25], P. Cariou [26], D.Y. Lin, C.C. Huang, M. Ng [27], K.F. Yuen, V.V. Thai, Y.D. Wong [28], *port integration – strategic alliances* (D.K. Ryoo, H.A. Thanopoulou [29], R. Midoro, A.A. Pitto [30], D.W. Song, P.M. Panayides [31], A. Frémont [32], T. Notteboom, J.P. Rodrigue [33]; R. Agarwal, Ö. Ergun [34], P.M. Panayides, R. Wiedmer [35], E. Hirata [36], *the quality of the services in the industry* has also been researched (V.V. Thai [37], A. Miremadi, S. Ghalamkari, F. Sadeh [38]; S.T. Huang, E. Bulut, O. Duru [39]; Y. Shin, V.V. Thai [40]; S. Han et al. [41], Y. Shin et al [42].

K.F. Yuen and V.V. Thai [8] analyzed the quality of the service, as well as the satisfaction of the consumers in the maritime liner transport. In the research, they point out that the satisfaction of the consumers is defined as the cognitive and affective reaction to the process of the service, where the experience of the consumers is compared with their expectations from the service. The quality of the service is determined by 4 key dimensions: reliability, speed, responsiveness and value. The crucial difference between the quality of the service and the consumers' satisfaction is that the quality relates to the very core of service providing management, while the satisfaction reflects the experiences consumers have with that service. The improvement of the quality that is not based on the needs of the consumers, will not lead to consumers' satisfaction. In line with that, they point out that the quality

of the service can only be seen as one of the prerequisites of the consumers' satisfaction [8].

Liner shipping companies specify services that are performed at the appropriate time as being the priority, not the price, i.e. the value. Therefore, it can be implied that the differentiation based on the services performed at the appropriate time is more effective than the application of cost management [8].

J. Othelius and U. Wemmert [43] conducted the analysis of the consumers' needs and the quality of the service at the leading container shipping company Maersk Line. The research analyzed two segments of the consumers – the direct consumers and the shipping agents. The results have shown that the consumers define and prioritize the needs differently. Although the clients have expressed the needs in a similar manner, their perception on what represented the need and how they wanted it to be satisfied is different. In line with that, what is considered a quality service differs among the consumers, and between the two segments of the consumers. Likewise, the research has presented the differences in providing the services at different stages at Maersk Line, which exist because the needs of the consumers have not been met. The difference in the service providing and the consumers satisfaction with the service is present if the needs are not included in the service. Hence, the supply at Maersk Line did not completely satisfy the needs of their consumers. Furthermore, the differences in “the delivery” of the service exist if the service ensures the satisfaction of the needs, although the consumers do not understand how the needs will be met during the delivery. This discrepancy meant incompatibility between the supply of the service at Maersk Line and the consumers' perception on what is actually delivered. Direct buyers delivered their goods with fewer suppliers than the shipping agents. Moreover, they do not possess as much knowledge of the area or the possibilities for solving the problems that

can arise during the transport. Direct buyers were more dependent on their suppliers of the maritime means of transport than the clients of the shipping agents. As the result, relations that are marked with trust have become more important than the factors like efficiency and price for this segment of the consumers [44].

A. Miremadi, S. Ghalamkari and F. Sadeh [38] explored the satisfaction of the consumers with the quality of the service in the maritime industry in Iran. The research analyzed the quality of the service of the most prominent shipping companies, like the IRISL (Islamic Republic of Iran Shipping Line) and the maritime area, operating ports and shipping agents. The purpose of this research was to measure expectations and perceptions of the consumers in maritime industry in Iran by implementing the SERVQUAL model. The results have shown that there is a significant discrepancy between the consumers' expectations and the perception of the managers in the Iranian ports and industry. Furthermore, the research has revealed that certain factors, like investing and monitoring at different time help improve general conditions of the Iranian ports. Ambiguity in the processes leads to conflict in the service providing, and therefore, integrated control systems for the prevention of those discrepancies and for the redefinition of the processes are needed. The research suggests that deep market research on the evaluation of the services periodically, along with the organization of the qualified staff that would improve their knowledge in order to finally create a marketing strategy model to the satisfaction of the consumers in the Iranian ports [38].

During the research of the quality of the service in the maritime liner industry in Asia, a comparison of numerous leading companies has been conducted, and the key factors of the implementation of the quality of the service have been established. Among several

technical measures, the implementation of the ISO 9001 framework has been ascertained as a highly influential factor for the consumers' satisfaction. The implementation of the ISO 9001 can ensure consumers trust in the liner delivery services. For this reason, strategies and standards are very important for the shipping companies. *Table 2* shows the results of the conducted empirical research in Asian countries, i.e. it shows the demands of the consumers and the two most important demands: cheaper service and shorter transit time. Likewise, the need for the combination of the logistic capabilities is evident, with the aim of improving liner activities. The accent placed on more diversified services can significantly increase the satisfaction of the consumers and avoid the battle of prices of the transport on the shipping market [39].

The domestic literature overview has shown that up until now, two researches that relate to the maritime passenger liner traffic have been conducted. So, the problematic of the one paper is directed towards the research of the management and the quality of the services of the shipping hospitality at fast international lines in the Republic of Croatia. The research has shown that the standardization of the food and meal offer in the sense of regulating

individual meals a la carte or the daily menu should be insisted upon. The offer should be based on the wishes and preferences of the passengers, which can be achieved with the continuous system of conducting surveys, i.e. gathering information on the passengers' satisfaction with the assortment on offer, as well as with the service quality, and adjustment of the food assortment to the modern trends of healthy diet [44]. The other paper deals with preferences of the customers in choosing the type and the size of the vessel, based on the example of Split-Dalmatia County, where three groups of respondents have been surveyed: passengers, long-time captains (navigating the lines of the area in question – Split-Dalmatian area) and the maritime economy experts. The passengers have given most significance to regular maintenance of the line, with minimal travel discontinuations over the year (23%), then the maintaining the line over the entire year (15%), while the third place occupies the speed of the navigation (13%) [45]. The research results conducted on the captains have indicated that most importance is given to the technical and technological characteristics of the vessel that maintain this demanding line (18% of the respondents), then the condition of the ports (17%). The third

Table 2. Most important consumers/clients' demands when choosing the shipping company

RANK	CONSUMERS DEMANDS
1	Cheaper service
2	Shorter time needed for the transport of goods
3	Cargo security
4	Less time needed for the customs service
5	Responsible running
6	Qualified staff
7	Intermodal service
8	Quick response to demands
9	Cargo tracking system
10	Simple paperwork
11	Reputation
12	Shorter cargo handling time

Источник: Huang S.T., Bulut E., Duru O. Service quality assessment in liner shipping industry: an empirical study on Asian shipping case. *International Journal of Shipping and Transport Logistics*, 2015, vol. 7 (2), p. 233.

survey has encompassed 28 experts from the areas of maritime passenger traffic – where five groups of criteria have been considered: institutional, hydro-meteorological, technical, technological, economic and socio-cultural group. The most importance has been given to hydro-meteorological conditions (30%) that are present on the specific navigational route and the season when the navigation is performed, while the least significance has been given to socio-cultural features (10%) [45].

### Research on the satisfaction of the consumers with maritime passenger liner transport in the Republic of Croatia

#### Research instrument and data collection

Maritime transport in Croatia, as well as in many other countries, represents an extremely important transportation activity. Not only because of importance for the functioning of the national and international trade system, but because of the connection of islands with

mainland. By the very least, liner shipping, apart from the scarcity of the possibility of using air transport, is the only link between the Croatian islands and the mainland. The importance of maritime liner transport in Croatia is best reflected by the fact that 13.53 million of passengers in 2017 have been transported by maritime and coastal transport [19].

For the purpose of this paper, the primary research has been conducted, using the questionnaire as the research instrument. The research was based on the method of collecting data via the Internet, by posting the questionnaire on Facebook. The respondents from all over Croatia participated in the research, varying in age, men and women over 18, and of different education (*Table 3*).

The research was conducted in September 2017 on the sample of 119 respondents. The questionnaire consisted of 12 questions. The

Table 3. Socio-demographic characteristics of the respondents

		Frequency
GENDER	Male	43 (36.44%)
	Female	75 (63.56%)
AGE	below 18	2 (1.69%)
	18 - 25	55 (46.61%)
	26 - 35	49 (41.53%)
	36 - 45	11 (9.32%)
	46 - 55	0 (0.00%)
	over 56	1 (0.85%)
QUALIFICATIONS	No lower qualifications/no elementary education	0 (0.00%)
	Elementary education	3 (2.54%)
	Qualified (a three-year vocational school)	1 (0.85%)
	Highly qualified (a four-year vocational school or a gymnasium)	37 (31.36%)
	Student	29 (24.58%)
	Higher or highest level of education	42 (35.59%)
WORK STATUS	Master's/doctorate	6 (5.08%)
	Employed; contract of indefinite duration	57 (48.31%)
	Employed; contract of definite duration	13 (11.02%)
	Part-time job	6 (5.08%)
	Working via the student service (SC)	20 (16.95%)
	Working undeclared	2 (1.69%)
	Self-employed	3 (2.54%)
Unemployed	17 (14.41%)	

Source: compiled by the author based on the collected data.

first part of the questionnaire encompassed questions with one possible answer, while the other part of the questionnaire consisted of the statements that relate to the maritime passenger liner traffic, where the respondents were asked to express their level of agreement. They could state their level of agreement with the grades 1–5, where 1 = completely disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=completely agree. The questions also encompassed socio-demographic factors like age, gender, residence, education, working status and monthly income. The aim of the research via the questionnaire was to present the findings on the satisfaction of the consumers with the maritime passenger liner transport in the Republic of Croatia, i.e. to what extent the users of the liner transport are satisfied with the number of lines, quality and organization, services during the navigation, staff courtesy, and the very prices of the tickets.

In the research, there participated 119 respondents, but one of the respondents had skipped the questions related to the socio-demographic characteristics, so, for this feature, there were the total of 118 respondents, 43 men and 75 women. Most respondents belonged to the age group between 26 and 35, only two respondents were below 18, and no respondents were between 46 and 55. Out of the total number, most respondents (42) have higher or high education (college, university), and there were no respondents with no lower qualifications (no elementary education). Most respondents are employed: indefinite employment contract (57) or student service (20), only two of them work undeclared, there are three self-employed and six part-time respondents (Table 3). Out of the total number of the respondents, 90.76% live in Zagreb or the vicinity, 0.84% live in northern Croatia, Slavonija, Istria, Primorje and Gorski kotar. None of the respondents were from Lika, Kordun or Banovina.

### Research results

The answer to the question “*How often do you use maritime passenger liner transport (ferries) in the Republic of Croatia?*” for most of the respondents, 94.02% of them, was that they travelled one to four times a year, 3.42% of them travel once a week, 2.56% of the respondents travel once a month, and no respondents travel on the daily basis. Most respondents stated that the reason they travel was holidays (79.49%), 10.26% stated they travelled for business, 9.40% visits relatives, and 0.85% stated other reasons. Likewise, most of the respondents travel with the family (41.03%), 40.17% travel with friends, 11.97% travel alone, and only 6.84% of them travel with an organized group. Most of the respondents think that there should be more lines introduced during the high tourist season, most of them stating that in that way, there would be less traffic jams, the waiting period between the lines would be shorter, there are too many tourist during the peak season, trip planning is made difficult, and there are no lines from the islands during the night. Fewer respondents think that there is no reason for introducing additional lines, because there are enough lines during the tourist season. A small number of the respondents have no opinion on the question.

Table 4 shows the level of agreement with the statements relating to maritime passenger liner transport, where 1=completely disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=completely agree. Based on the results, it can be clearly concluded that 50.00% of the respondents completely agree with the statement that “*During the peak tourist season there should be more lines introduced*”. Most of the respondents (63.56%) completely agree with the statement that “*The quality of maritime passenger liner transport is a prerequisite for the development of life and tourism on the islands*”. 40.68% of the respondents neither agree, nor disagree with

Table 4. The level of agreement of the respondents relating to the satisfaction with maritime passenger liner transport services

STATEMENTS	1	2	3	4	5	Weighted Average
During the tourist season there should be additional lines introduced	6.78%	8.47%	16.10%	18.64%	50.00%	3.97
The quality of maritime passenger liner transport is a necessary prerequisite for the development of life and tourism on the islands	5.08%	1.69%	11.86%	17.80%	63.56%	4.33
During the tourist season, the shippers are well-organized and there is no long waiting time for the transfer	5.93%	18.64%	40.68%	28.81%	5.93%	3.1
The ships for passenger liner transport are dated and in need of modernization	5.08%	4.24%	28.81%	35.59%	26.27%	3.74
The offer during the navigation is poor and dissatisfying	7.63%	16.95%	38.98%	26.27%	10.17%	3.14
The prices of additional services (food, drinks) on liner drinks are too high	1.69%	5.08%	24.58%	27.12%	41.53%	4.02
It is necessary to introduce online tickets in the near future	3.39%	0.85%	6.78%	11.02%	77.97%	4.59
I am satisfied with the ratio of price and quality of the service provided at maritime passenger liner transport	3.39%	27.12%	53.39%	12.71%	3.39%	2.86
I am satisfied with the staff courtesy during the travel on maritime passenger liner transport	4.24%	8.47%	44.07%	34.75%	8.47%	3.35
I would use maritime passenger transport services more often if the prices of the tickets were lower	5.93%	9.32%	28.81%	24.58%	31.36%	3.66
It is necessary to increase competitiveness for most of the existing lines.	8.55%	5.13%	29.08%	27.35%	29.91%	3.65

Source: compiled by the author based on the collected data.

the statement that “*During the tourist season, the shippers are well-organized and there is no long waiting time for the transfer*”, while 35.59% of the respondents agree that “*The ships for passenger liner transport are dated and in need of modernization*”. Most of the respondents neither agree nor disagree with the statements that “*The offer during the navigation is poor and dissatisfying*” (38.98%), “*I am satisfied with the ratio of price and quality of the service provided at maritime passenger liner transport*” (53.39%), “*I am satisfied with the staff courtesy during the travel on maritime passenger liner transport*” (44.07%). Furthermore, most of the respondents completely agree that the prices of additional services (food, drinks) on liner ships are too high, and that is necessary to introduce online tickets in the near future. Likewise, most respondents completely agree

that they would use maritime passenger transport services more often if the prices of the tickets were lower, and they also agree that it is necessary to increase competitiveness for most of the existing lines.

During the evaluation of the drawbacks, most respondents answered that long waiting time is the biggest drawback (44.92%), then, there is the ticket price (34.75%), insufficient ship capacity (16.95%). 3.39% of the respondents stated “something else”, out of which only four of them wrote the reasons. One person stated that the reason was insufficient number of departures per day, the other person wrote that he/she did not know, while the third person does not see any disadvantages. No respondents wrote that they saw unkind staff as a disadvantage in maritime passenger liner transport.

### Limitations and recommendations

The conducted research on the satisfaction of the users with the maritime passenger liner transport services in the Republic of Croatia has certain limitations. The main limitation relates to the lack of research on that topic in the Republic of Croatia, and the old data, and is therefore difficult to compare the data to other researches. Considering the fact that the research was conducted via an online questionnaire, the research could be affected by the method of data collection, because it is impossible to control the conditions in which the respondents fulfil the questionnaire, and there is also the issue of whether the questions were completely clear. Furthermore, the questionnaire was conducted *online*, and it can be assumed that many people could not participate, mostly senior citizens, persons of lower education and lower pay class. It should be noted that the research was conducted in September, when the number of tourist on the Croatian coast is decreasing.

For the purposes of a research without limitations, a paper questionnaire should be constructed, and the research should be conducted during the peak tourist season, especially from the middle of July till the middle of August. The paper questionnaires should be distributed to the tourist boards in cities and towns where maritime passenger liner transport is performed, and they could collaborate with the shipping companies and distribute them to the tourists during the trip or before they board the ships. It would be necessary to translate the questionnaire into English and German language, so that the questions would be asked in three different languages. But, for this kind of research with no limitations, more financial means are needed, as well as more time for collecting and analyzing the data.

In the following surveys of similar topics, data could be collected by polling managers of liner shipping companies as well as captains of

liner. Due to enormous importance of state institutions for development of measures for Croatian islands and for liner navigation, it would certainly be necessary to interview key persons that are creating those measures. In that way the assessment of the status of liner shipping in Croatia could be rounded up as all interested parties would be included.

### Conclusion

Coastal liner shipping is a special form of maritime shipping that uses special ships, like the RO-RO passenger ships, catamarans and classic passenger ships for the transport of passengers and vehicles. Passenger shipping can be divided into liner and cruise shipping, where liner shipping plays an important role in connecting the islands to the mainland and the islands among themselves, and the island economy, while cruise shipping is important for the satisfaction of the tourist needs.

Considering that Croatia has a developed coast and numerous islands, and that it is a tourist destination, passenger liner shipping is an important prerequisite for the development of the coastal region and prevention of emigration from the islands. This type of transport in Croatia is performed by RO-RO passenger ships and high-speed passenger ships. Maritime passenger traffic depends on the dynamics and successfulness of the tourist season, primarily on Croatian islands. One major limitation to the development of maritime passenger transport is insufficient and unsteady demand for the transport, which leads to the ship capacities not being fully used, i.e. big oscillations during the winter and summer months, making many lines unprofitable and in need for government support. Besides seasonality, there are other issues that arise in Croatian shipping, like unfavorable age structure of the fleet, insufficient number of passenger lines during the season, monopolistic position of the largest shipping company (Jadrolinija),

constant traffic congestions, and the lack of investment and working capital. In order to solve these issues, it is of great importance to prolong the tourist season and the offer on the islands, invest in the modernization of the ships, increase the number of lines during the peak season, weaken the monopolistic position in transport and foster competitiveness, build access roads, detour freeways and other road infrastructure.

An important prerequisite for the functioning of the passenger shipping, and the precondition for satisfying the needs of the consumers, are passenger ports which more or less attract the passengers with their services and diversity they offer. Maritime passenger terminals for domestic and international traffic have to be equipped for the purposes of liner shipping, for the ferry transport, and provide easy navigation for the cruise ships as well. Ports represent a major economic strength and hold an important position in Croatian national economy and international passenger trade. There are six ports open for public transport that are of significant economic interest for the Republic of Croatia, situated in Rijeka, Zadar, Šibenik, Split, Ploče, and Dubrovnik, and 13 different shipping companies, with Jadrolinija being the largest.

The conducted research on the satisfaction of the consumers with maritime passenger liner transport services has led to the conclusion that most respondents think that there should be more lines introduced, the reasons for that being that it would decrease traffic congestion and waiting time; planning is made more difficult and there are no night lines from the islands. Also, most respondents think that the quality of maritime passenger liner transport is crucial for the development of life and tourism on the islands, and that the ships are dated and in need of modernization. Most respondents state that the staff on the ships is courteous, but the offer is poor, and the prices of the services and the tickets are too high. Most respondents would use maritime passenger liner transport services more often if the ticket prices were lower, and they support more competition on the most of the existing lines, and purchase of the tickets online. Due to vast knowledge and tradition in maritime shipping, the government resolution for subsidizing unprofitable lines and “The strategy for maritime development and integral maritime policy in the Republic of Croatia for the period between 2014 and 2020”, maritime passenger traffic in Croatia has considerable prospects for the successful development in the future.

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Received July 02, 2018.