

Subject Area
Social Studies, Maritime
Business Administration

Year: 2022
Vol: 8
Issue: 94
PP: 296-301

Arrival
01 January 2022
Published
31 January 2022
Article ID Number
3791
Article Serial Number
07

Doi Number
<http://dx.doi.org/10.26449/sssj.3791>

How to Cite This Article
İşler, B. & Esmer, S. (2022).
"Factors Effecting Service
Demand At Ro-Ro Terminals"
International Social Sciences
Studies Journal, (e-ISSN:2587-
1587) Vol:8, Issue:94; pp:296-
301



Social Sciences Studies Journal is
licensed under a Creative
Commons Attribution-
NonCommercial 4.0 International
License.

Factors Effecting Service Demand At Ro-Ro Terminals

Bilgin İŞLER¹  Soner ESMER² 

¹ Iskenderun Technical University, Maritime Business Administration Department, Hatay/Turkey

² Prof.Dr. Dokuz Eylul University Maritime Faculty, Izmir/Turkey

ABSTRACT

Terminals handling automotive cargo in Turkey are located in the Gulf of Izmit in the eastern part and also in the Gulf of Gemlik in the southern part of the Marmara Region. These terminals are also used by automotive manufacturers and distributor companies established in these regions and hinterland. On the other hand, companies operating car carrier make a choice between these ports and/or continue their cooperation in a strategic partnership. Studies examining customer trends and service demands in these terminals, which are called Ro-Ro terminals, are very limited in the literature. The fact that Ro-Ro terminals require relatively specialization compared to other terminal types and the difficulty of obtaining information about the sector has affected the number of studies conducted. In this respect, this study will be the first study to be conducted on Ro-Ro terminal selection.

The aim of this thesis is to examine the factors affecting the preference of the ports where the automotive cargoes are handled, which is among the most important export products of our country, by the ship line operators, to prioritize the factors according to the general trend, and to make recommendations and suggestions as a result.

Key Words: Ro-Ro Terminal, Automotive Industry, Port Selection

1. INTRODUCTION

Maritime transport meets approximately 90% of international trade in terms cargo volume and takes the most important place in overseas trade. Developing countries in the world have a serious need for maritime trade, especially in terms of raw material supply. While these countries developed, they also developed maritime trade. Meanwhile these countries have also become quite developed economically.

One of the main reasons for preferring maritime transportation is the difficulty in meeting the increasing raw material supply with industrialization in other transportation models. While maritime transportation developed, it also contributed to the growth of ports in all trade regions.

There are basically 3 groups of cargo transported in maritime transport. These cargoes consist of bulk cargoes (dry bulk and liquid bulk), general cargoes and passengers. General cargo has sub-expansions in themselves. These can be listed as containers, piece goods and special loads. Wheeled cargo transportation is an industrial type of cargo that is evaluated within the general cargo and special cargo group. Although there are many types of wheeled cargoes, this study focuses on Ro-Ro terminals and the automotive cargo handled in these terminals.

Terminals handling automotive cargo in Turkey are located in the Gulf of Izmit in the eastern part of the Marmara Region and also in the Gulf of Gemlik in the southern part. These cargoes are usually new vehicles, which are treated as "brand new vehicles". These terminals are mainly used by automotive manufacturers and distributor companies established in the related regions and in the nearby hinterland. The subject also has a seaway leg. Shipping lines calling at Ro-Ro terminals are regular liner shipping operators called Car Carriers. These shipping lines make a choice between ports and/or continue their cooperation in a strategic partnership.

Studies examining customer trends and service demands in these terminals, which are called Ro-Ro terminals, are very limited in the literature. There are many reasons for this. The fact that Ro-Ro terminals require relatively specialization compared to other terminal types and the difficulty of obtaining information about the sector has affected the number of studies conducted. In this respect, this study aims to be one of the pioneering studies on Ro-Ro terminal selection.

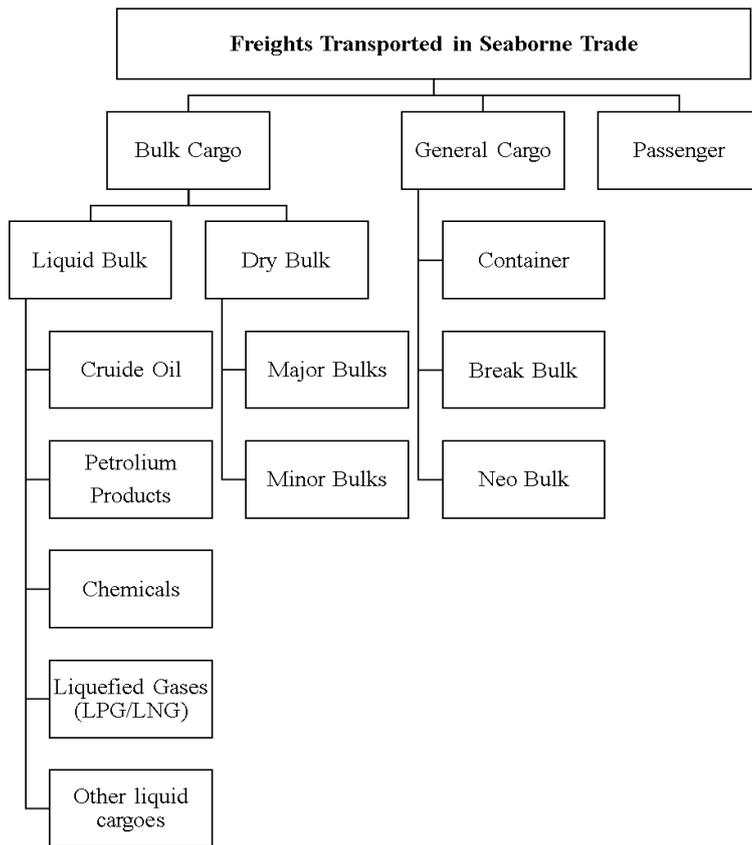


Figure 1. Main types of Freights Transported in Seaborne Trade (Esmer, 2019)

In this context, the aim of this study is to examine the factors affecting the preference of the ports where the automotive cargoes, which are among the most important export products of Turkey, are handled by the shipping line operators, to prioritize the factors according to the general trend, and to make recommendations and suggestions as a result.

2. LITERATURE REVIEW

The conditions of the ports directly affect the choice of these ports by the users. If a port is the only port in the hinterland it serves, there is no choice and port users have to get service from this port. Because, when the closest port is preferred instead of this port, quite high transfer fees can be encountered, which reduces the competitive power in international markets.

On the other hand, if there is more than one port serving in a particular hinterland, then a port competition arises, and these ports try to create their own competitive structure through service differentiation, focusing on a service and/or tariff.

Considering that the freight market in maritime transportation is divided into two basic groups as liner and tramp shipping, it is clear that the competitive conditions that will arise in these two cases will differ fundamentally.

In liner shipping, ships serve on a specific and pre-announced voyage plan and service schedule, while in tramp shipping, the ship's sailing plan is determined by charter parties each time. While container, passenger and Ro-Ro ship operations mainly serve in the liner shipping, dry cargo, liquid cargo and general cargo ship operations can be given as examples for tramp shipping operations (Esmer, 2019).

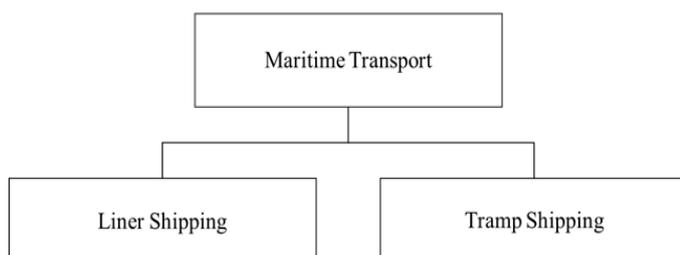


Figure 2. Main Types Of Maritime Transport (Stopford, 2008)

Ports are transportation infrastructures where all parties in the maritime sector come together. It is possible to divide the structures that receive service and provide service in ports into two main groups: Those who request the service and those who provide the service. Shippers, ship owners, charterers and ship agents can be counted among the "customers" requesting services. On the other hand, those who create service supply are divided into 3 main groups. These are commercial service providers, including terminal operators, public institution services, most of which are compulsory, and other trade facilitating institutions and organizations (Esmer, 2011).

The difference in the structure of liner and tramp shipping is also reflected in the service delivery and demand structure of the ports. On liner shipping, shippers generally do not request service directly from the port, they convey these requests through carriers and agencies or logistics service providers (Esmer, 2019).

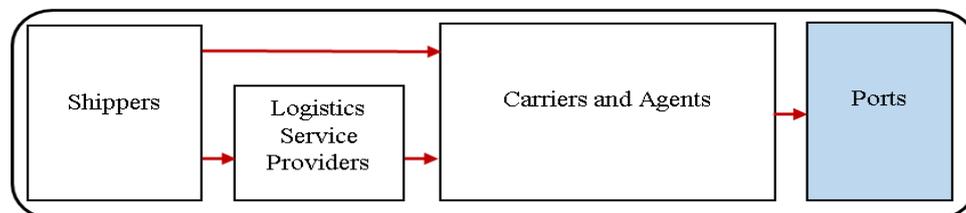


Figure 3. Demand structure for liner shipping (Esmer, 2019)

On tramp shipping, however, shippers mainly forward their service requests directly to the port operator, shippers and agents. In tramp shipping, it can be said that the communication between the shipper and the port operator is higher (Esmer, 2019).

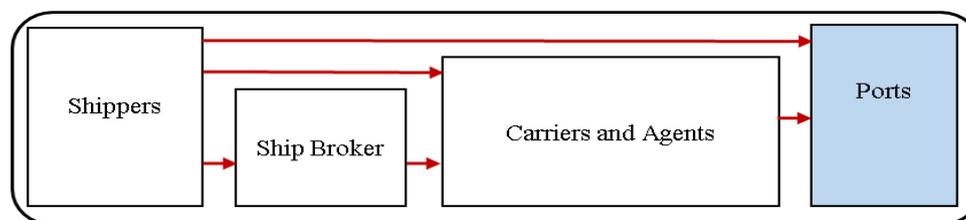


Figure 4. Demand structure for tramp shipping (Esmer, 2019)

Ro-Ro transport has the typical features of liner shipping. Although there is no comprehensive study on port selection in Ro-Ro transportation in the literature, there are many studies on liner shipping, especially for container terminals. The basic port selection criteria covering these studies are presented on Table 1.

Table 1. Port selection criteria in the literature (Baştuğ et al., 2022; Parola et al., 2016, Yeo et al., 2014; Low et al., 2009; Lin and Tseng, 2007).

Criteria	Remarks
Port tariff	These are the fees for the service items provided by the port operator.
Hinterland proximity	It is the proximity of the port to the relevant industrial establishments in its immediate surroundings.
Hinterland connectivity	Transport links between the port and its hinterland.
Port location	It is the location of the port in both sea and land routes.
Port facilities	These are the service infrastructures and service facilities owned by the port.
Operational efficiency	It is the efficiency of the service provided by the port and the cargo volume of the port resulting from this efficiency.
Port service quality	It is the service delivery quality of the port.
Maritime connectivity	It is the safety of the approaching seaway and its position on international maritime routes when approaching the port from the sea.
Financial resources	It is the state of the equity capital and financial structure of the port.
Port reputation	The port's reputation compared to other ports in the region.
Legal framework	Obligations arising from the legal legislation to which the port is subject and the consequences of these obligations in terms of time / cost.
Port ownership	It is the nature of the institutions and organizations that own the port.

In the next part of the study, research on Ro-Ro terminals was carried out.

3. METHODOLOGY

The aim of this research is to examine the factors affecting the preference of the ports where the automotive cargoes, which are among the most important export products of Turkey, are handled by the shipping line, to prioritize the factors according to the general trend, and thus to make recommendations and suggestions to the relevant parties.

In this sense, the general scope of the research is the Ro-Ro terminals that handle automotive loads and the car carrier, which are the main customers of these terminals. This scope also defines the limitations of the research.

In this study, qualitative methods were preferred due to the limited number of academic publications on this subject in the past, the fact that studies on port selection were focused on container transportation. Besides, the number of players in the sector was not sufficient to conduct a survey.

The main question of this research is “*what the factors are affecting the service demand in Ro-Ro terminals*”. Due to the limited literature, the interviews were conducted in a completely unstructured method, and a specific data collection form was not prepared.

Boddy (2016) underlined that at least 12 interviews should be conducted for the data collected in qualitative research based on expert interviews to reach a certain level of satisfaction. On the other hand, Brayman (2008) stated that the sample size could reach at a satisfactory level if new data are no longer available as the interviews progress.

In this context, the following questions were asked directly to the participants and the research findings were formed based on the answers received without any intervention. The questions asked are as follows:

1. What are the most important criteria when choosing a vehicle terminal?
2. Rank these criteria in order of importance.

The sample and data collection process determined within the scope of the research are presented in the next title.

3.1. Sampling and Data Collecting

The data collection process, which was carried out with the unstructured interview method, was carried out in the period of November-December 2021. The basic research question was conveyed to the interviewees via telephone, e-mail and face to face visit, and their answers were collected. Responses are usually provided in writing by e-mail.

Since the sectors receiving service from Ro-Ro terminals are automotive manufacturers, distributors and ship lines, 4 experts from each group were interviewed. The expert profile is presented in Table 2. As it can be seen, all of the experts consist of experienced people who take part in important positions.

Table 2. Interviewed experts

#	Group	Position	Experience (Years)
1	Manufacturer	Vehicle Foreign Trade and Logistics Manager	10
2	Manufacturer	Automotive Logistics and Sales Assistant Manager	21
3	Manufacturer	Purchase	4
4	Manufacturer	Logistics Services - Regional Manager	21
5	Distributor	Finished Vehicle Logistics Director	17
6	Distributor	Automotive Logistics Manager	21
7	Distributor	Automotive Logistics - Operations and Customer Services Manager	16
8	Distributor	Import Unit Manager	19
9	Shipping line	Country Manager	22
10	Shipping line	Operations Deputy General Manager	26
11	Shipping line	Regional director	26
12	Shipping line	Vehicle Transportation - Manager	9

Research findings are presented in the next title.

3.2. Research Findings and Discussions

The research findings are presented in Table 3. In the left column of the table, the overarching criteria in the literature, which were mentioned in the previous parts of the study, are included, while the answers given by the participants are shown in the right column. These criteria were grouped by the authors as subheadings of the criteria in the literature. In this way, repetitive criteria were reduced, and similar statements were placed under the same criteria. Although some differences were detected between the 3 main groups interviewed, they were not mentioned here, but to be presented in future studies, not within the scope of this study.

Different from the container transportation sector, the Ro-Ro sector has a different structure according to itself has enabled the differentiation of the criteria used. However, it has been observed that Ro-Ro terminal users use criteria that overlap with the main criteria in the literature. The fact that there is a concentration in the criteria related to the service clearly shows that Ro-Ro terminal users especially focus on service quality.

The location of the port and the infrastructure, superstructure and facilities of the port were also highlighted as selection criteria, which were especially emphasized by the port users. Finally, the expressions shown under the hinterland connectivity criterion are a clear indication that port users also care about port connections.

Unlike the criteria in the literature, one participant stated the issue of climate change. The fact that meteorological events are an important issue in vehicle logistics is thought to be effective in the emergence of this result. The determination of this criterion is one of the most important findings of this study.

Table 3. Grouping of all criteria by literature

Port tariff	Service Tariff
	Warehouse free time/Free time
Hinterland proximity	Current and future trade potential of the region
Hinterland connectivity	Hinterland connections
	Road/Railway connection
	The port entrances and exits are close to the main road connection.
Port location	Location
	Proximity to customs and agencies
	Paint, ash, etc. that will damage the vehicle from the facilities located near the vehicle terminal. items not arriving
Port facilities	Ship acceptance capacity
	Storage area capacity/Flexible storage facility
	Dock length and depth
	Infrastructure possibilities
	Facility physical conditions/Physical structure of the site (Geometry, Slope)/Cleanliness
Operational efficiency	Operation speed and quality
	Ship's open time (Window/Priority)
	Multiple ship operations at the same time
	Making field separations in common areas with other brands in a way that is safe
	Availability of pier or pier for ships to berth in accordance with the given ETA
	Fast discharge (400 Vehicles/hour) and more than two loading-unloading at the same time
	Operation performance
Port service quality	Occupational safety approach/compliance with ISG rules
	invulnerability
	Business partnership enthusiasm
	port services
	organizational structure
	Ability to offer solutions to problems
	Communication
	service quality
	Customer and line focus
	Expertise
	IT / Technology infrastructure / Vehicle tracking
	operational quality
	Applications that make a difference
	Transparent information sharing/Reliability
	Providing door-to-door service to the customer such as PDI-duty-free storage at the port
Continuous improvement and compliance with processes	
Security	
Maritime connectivity	N/A
Financial resources	Payment term (Current account contract possibility)
Port reputation	Corporate identity
	References
Legal framework	Existing logistics facilities are connected to the same customs office and vehicle terminal (Port and outer stock area are connected to the same customs administration)
Port ownership	Corporate identity
Climate Change	Meteorological features of the field (in terms of geography)

4. CONCLUSION AND RECOMMENDATIONS

The aim of this research is to examine the factors affecting the preference of the ports where the automotive cargoes, which are among the most important export products of Turkey, are handled by the shipping line, to prioritize the factors according to the general trend, and thus to make recommendations and suggestions to the relevant parties. In this sense, the general scope of the research is the Ro-Ro terminals that handle automotive cargoes and the Car Carrier, which are the main customers of these terminals. This scope also defines the limitations of the research.

Terminals handling automotive cargo in Turkey are especially located in the Marmara Region. These terminals are also used by automotive manufacturers and distributor companies established in these regions and hinterland. On the other hand, companies operating Car Carrier make a choice between these ports and/or continue their cooperation in a strategic partnership.

Studies examining customer trends and service demands in these terminals, which are called Ro-Ro terminals, are very limited in the literature. The fact that Ro-Ro terminals require relatively specialization compared to other terminal types and the difficulty of obtaining information about the sector has affected the number of studies conducted. In this respect, this study will be the first study to be conducted on Ro-Ro terminal selection.

Although the findings obtained within the scope of the study overlap with the criteria preferred by the users of container terminals in the literature, they differ terminologically. In addition to the criteria overlapping with the literature within the scope of the study, the determination of a new criterion related to climate change has increased the originality of this study. On the other hand, besides the findings of this study, it is also important with the criteria that the participants did not mention. For example, no evaluation has been made regarding the equipment of the ports. However, as in every port operator, there are value-added equipment in Ro-Ro ports (Tug master, forklift, etc.).

In future studies, the ports themselves may be included in the scope of the research as well as the port users. In this way, it can be determined how the ports evaluate themselves and what issues they attach importance to. In this way, the perspectives of port users and port operators on port selection can be compared.

REFERENCES

- Baştuğ, S., Haralambides, H., Esmer, S. and Eminoğlu, E. (2022) Port competitiveness: Do container terminal operators and liner shipping companies see eye to eye? *Marine Policy* 135 (2022) 104866.
- Esmer ve Çetin (2016) *Liman İşletme Yönetimi*. Editörler: Cerit, G., Deveci, A., & Esmer, S. *Denizcilik İşletmeleri Yönetimi*. *Denizcilik İşletmeleri Yönetimi*, 3-21.
- Esmer, S. (2010). *Konteyner Terminallerinde Lojistik Süreçlerin Optimizasyonu ve Bir Similasyon Modeli*. İzmir: Dokuz Eylül Üniversitesi Denizcilik Fakültesi Dokuz Eylül Yayınları.
- Esmer, S. (2011). *Liman İşletmelerinde hizmet pazarlaması: pazarlama iletişimi*. Detay Yayıncılık.
- Esmer, S. (2019). *Liman ve Terminal Yönetimi*, Anadolu Üniversitesi, Eskişehir: Anadolu Üniversitesi Basımevi.
- F. Parola, M. Risitano, M. Ferretti and E. Panetti. (2016) The drivers of port competitiveness: a critical review, *Transp. Rev.* 37 (1) 116–138.
- G.T. Yeo, A.K. Ng, P.T.W. Lee and Z. Yang. (2014) Modeling port choice in an uncertain environment, *Marit. Policy Manag.* 41 (3) 251–267.
- J.M. Low, S.W. Lam and L.C. Tang. (2009) Assessment of hub status among Asian ports from a network perspective, *Transp. Res. Part A: Policy Pract.* 43 (6) 593–606.
- L.C. Lin ve C.C. Tseng. (2007) Operational performance evaluation of major container ports in the Asia-Pacific region, *Marit. Policy Manag.* 34 (6) 535–551.
- Stopford, M. (2008). *Maritime economics* 3e. Routledge.