ShipsGo Academy

ENVIRONMENTAL SENSITIVITY

CONTAINER TRANSPORTATION



www.shipsgo.com

Table of Contents

		PART III	
ABOUT SHIPSGO ACADEMY	1	DOES ENVIRONMENTAL SENSITIVITY OF THE CONTAINER CARRIER MATTER?	6
		PARTIV	
INTRODUCTION	2	WHAT ARE THE OTHER IMPORTANT FACTORS IN CONTAINER CARRIER SELECTION?	8
PARTI		CONCLUSION	
METHODOLOGY	3	WHAT WE LEARNED: SINE QUA NON	12
PARTII		ABOUT THE ACADEMIC CONTRIBUTOR	
PROFILE OF THE RESPONDENTS	4	DR. ONUR AKDAŞ	13

About ShipsGo Academy

ShipsGo's vision is to make people happy with the information.

Since the beginning of our journey in the container transportation business, we have been trying to organize the shipping industry's information and make it universally accessible and helpful to all parties. So far, we have developed our well-known two products in the digital container transportation market; **container tracking** and **route finder.** These two products attempt to solve the problem of "visibility" in container transport by supporting the information on the current position of containers and carriers' route performances (transit time and reliability). We have reached **5,000 daily searches** on our website from **65+ countries** and plan to reach **30,000 daily searches** worldwide at the end of 2022.

In order to enhance our mission of **making people happy with the information**, we developed **ShipsGo Academy** to produce case studies, instant learning packages, and research projects. Thanks to the powerful connection of ShipsGo with academia and industry, we design and pursue various projects with the participation of academia, university students, and our customers. Our case studies are produced with our customers' involvement and feedbacks to illustrate how their companies' visibility issues were solved. In addition to that, our team develops instant learning packages, including specific matters from logistics/container transportation, aiming to decrease logistics costs and increase competitiveness. We also design and develop research projects by collaborating with the research institutes and councils.

We are pleased to announce that this project was developed by collaborating with the **Scientific and Technological Research Council of Turkey** with the participation of university professors and students.

INTRODUCTION

The transportation sector emits more CO_2 than any other industry. Although shipping may seem like a clean form of transport- carrying more than 90% of the world's trade, ocean-going vessels produce around 3% of its greenhouse-gas emissions-, just 15 of the giant ships emit more of the noxious oxides of nitrogen and sulfur than all the world's cars put together.

Global emissions from international maritime transportation are expected to reach 709 million metric tons of CO_2 in 2025. However, according to the IEA (International Energy Agency), CO_2 emissions from shipping could fall to 120 million metric tons of CO_2 by 2070. Container transportation is also in this process, and needless to say, it is a long journey from 2021 to 2070. All related stakeholders expect "environmental sensitivity" from the carriers during this decarbonization process. On the other hand, in the first three quarters of 2021, cargo volumes between Asia and North America were up by approximately 30% compared with pre-pandemic levels, according to BIMCO. Freight rates on all routes have rocketed; the % change from the 2019 average is between 200% - 500% in some routes. This situation also put cost pressure on the users of this service.

In this study, the ShipsGo Academy team attempted to explore the level of "environmental sensitivity" of the container transportation users (BCOs and freight forwarders) while considering the other non-environmental factors by using trade-off analyses. The primary motivation of this study, to clarify the container transportation buying behavior of the users in the decarbonization process and find-out insights for all participants of the container shipping industry.

This project is the output of a University-Industry collaboration and was granted by Turkey's Scientific and Technological Research Council." We are delighted to share our findings and hope to get feedback from the container transportation ecosystem to improve our projects.

PART I METHODOLOGY

As the "ShipsGo Academy" team, we pursued comprehensive research to answer the significant question of the shipping industry community; "Does environmental sensitivity of the container carriers matter for beneficial cargo owners (BCOs) and freight forwarders?". In order to enhance the analysis of "environmental sensitivity," we also defined related questions;

• Are BCOs and freight forwarders willing to pay extra freight and accept longer transit times if the carrier has environmental sensitivity?

• What are the other factors/variables in carrier selection for BCOs and freight forwarders?

We designed an online questionnaire with logistics experts from both industry and academia and reached ShipsGo's users by e-mail. ShipsGo users' database includes more than 100,000 users. In order to increase the return rate from the respondents, follow-up mailings were initiated. The validity and reliability of the research are statistically acceptable.

Descriptive statistics illustrating the profile of the respondents and comparison of two groups (freight forwarders and BCOs) regarding the research questions were developed in this report.



PART II PROFILE OF THE RESPONDENTS

Geographical Distribution (%)

Eighty-one countries participated in our research. 70% of all participants are from 20 countries. USA and Turkey are the leading countries in participation.



PART II PROFILE OF THE RESPONDENTS

Industry of the Participants (%)



PART III DOES ENVIRONMENTAL SENSITIVITY OF THE CONTAINER CARRIER MATTER?

The environmental sensitivity of the container carrier has been regarded as the "carrier selection variable" by both beneficial cargo owners and freight forwarders. *71.8% of all respondents, 72.9% of the forwarders, and 71.2% of BCOs agree that* **"Environmental Sensitivity of the Container Carrier"** is the carrier selection variable. Besides, 14.3% of all respondents have no idea, whereas 13.9% do not agree.

These results reflect how big the environmental awareness of the users while selecting the container transport carrier. However, to cross-check the awareness level of users, we asked two more simple questions; are BCOs and freight forwarders willing to pay extra freight and accept longer transit times if the carrier has environmental sensitivity?



Does "Environmental Sensitivity" Matter?

PART III DOES ENVIRONMENTAL SENSITIVITY OF THE CONTAINER CARRIER MATTER?

Environmental Sensitivity & Cost of Freight

"Higher Cost of Freight" is acceptable if the carrier has "Environmental Sensitivity"



Overall, 56.8% of all respondents agree to pay more freight. 61.5% of the forwarders are willing to pay "Higher Cost of Freight" if the carrier has "Environmental Sensitivity": in contrast, this percentage is 54.5% for the BCOs.

Environmental Sensitivity & Transit Time



"Longer Transit Time" is acceptable if the carrier has "Environmental Sensitivity"

Overall, 62.9% of all respondents trade-off longer transit time with environmental sensitivity. 65.6% of the forwarders accept **"Longer Transit Time"** if the carrier has **"Environmental Sensitivity."** It is 61.6% for the BCOs.

We can conclude that although all users have a high environmental awareness level (71.8 %) when it comes to action, only 56.8% agree to pay more freight, and 62.9% accept longer transit times if the carrier has environmental sensitivity. When comparing the two groups, freight forwarders are more aware of both actions. This attitude might relate to being in the same industry (logistics and transportation) and facing the logistics environmental facts harsher than the BCOs. Our BCO sample mainly consisted of small & medium-sized companies in this study. We can conclude that those companies are still more cost and fast transportation oriented to be competitive.

We also attempted to measure the other factors apart from the environmental sensitivity to clarify the carrier selection process of the users. In addition, trade-off cross-checks were initiated among the other variables. Five variables are included in this analysis; **Schedule Reliability, Transit Time, Transshipment, Service Frequency,** and **Cost of Freight.**

We observed that, for both freight forwarders and BCOs, schedule reliability is the most crucial factor for carrier selection. On the other hand, transit time is regarded as the second most crucial factor. We can conclude that both freight forwarders and BCOs are focused on non-cost variables (reliability and transit time) to manage their supply chains. Due to the Covid-19 pandemia in the last two years, disruptions in supply chains originated from both of those variables. The responses of the users reflect that situation very clearly.

In addition, to cross-check users' responses, we initiated trade-off analyses among container carrier selection variables. Those findings support initial findings, too. Both freight forwarders and BCOs agree to pay more if the carrier has the "schedule reliability" and "shorter transit time." However, when *comparing the two groups, freight forwarders are more focused on those variables than the BCOs.*



Schedule Reliability



69.8% of the forwarders agree that **"Schedule Reliability"** is a criteria in container carrier selection whereas it is 71.7% for the BCO's







68.8% of the forwarders agree that **"Transit Time"** is a criteria in container carrier selection whereas it is 69.7% for the BCO's

Transshipment





59.4% of the forwarders agree that **"Transshipment"** is a criteria in container carrier selection whereas it is 66.2% for the BCO's.



Is "Service Frequency" Criteria in Container Carrier Selection? (%)

Service Frequency

A% of the forwarders a

59.4% of the forwarders agree that **"Service Frequency"** is a criteria in container carrier selection whereas it is 69.7% for the BCO's.

Cost of Freight







62.5% of the forwarders agree that **"Cost of Freight"** is a criteria in container carrier selection whereas it is 70.2% for the BCO's.

Cost of Freight & Transit Time

"Higher Cost of Freight" is acceptable if there is "Shorter Transit Time"



Cost of Freight & Schedule Reliability

"Higher Cost of Freight" is acceptable if there is "Schedule Reliability"



Transit Time & Service Frequency

"Longer Transit Time" is acceptable if there is "Higher Service Frequency"



CONCLUSIONS



WHAT WE LEARNED: SINE QUA NON

"Environmental Sensitivity" is highly considered as the container carrier selection variable both by BCOs and forwarders. "Schedule Reliability," "Transit Time," "Cost of Freight," "Service Frequency," and "Transshipment" are all variables and consequently have less importance than "Environmental Sensitivity."

In line with the research findings, IEA suggests that ammonia, which is considered a renewable fuel, will replace oil and become the dominant fuel type in the shipping industry by 2070. Besides, oil is expected to be fourth after biofuels and hydrogen. This significant change expectation verifies the environmental trend that is expected to occur. Therefore, it should be stated here, the trend is evident, and the users are getting ready in their perceptions.

A high willingness to pay rate for the extra cost of freight to have a more environmentally friendly container transportation service is the vital finding of this study. It reveals that the unique and significant motivation of doing business -profit- has been sacrificed for environmental concerns, and it underlines the term "sustainability." *The more sustainable container transportation, the more sustainable the profit.*

It should be underlined that "Environmental Sensitivity" is not the only container selection variable explored in this study. In addition, "Schedule Reliability" and "Transit Time" are also explored as the other two variables for which BCOs and forwarders are willing to pay more freight. We conclude that users tend to use an integrated approach in the container carrier selection process. Carriers should be environmentally friendly, be reliable for their schedule, and have shorter transit times. Together, these three characteristics can be called a "**perfect set**" in the container carrier selection process.

All components in the "perfect set" are considered **"sine qua non"** of the container selection process; however, environmental sensitivity is the most sensitive variable of being untransferable to schedule reliability or transit time. All three components are measurable due to their measurable data nature, and the carrier itself generates this data.

Consequently, "Environmental Sensitivity" has been positioned as the matter by the demand side of the container transportation, and trade-offs of environmental sensitivity create an insightful business model for service providers of ocean-going container carrier transportation.

About the Academic Contributor

Dr. Onur Akdaş

Dr. Onur Akdaş, is working as an assistant professor, has been affiliated and teaching at Dokuz Eylül University Maritime Faculty. He received B.Sc., M.Sc and Ph.D. degrees from Dokuz Eylül University, Department of Maritime Business Administration. His research interests consist of Social Marketing, Financial Evaluation of Maritime Investments, Social Valuation, and Coastal Area Management.

Burak Yaylacı, student of the Dokuz Eylül University Maritime Faculty, is also the contributor of this project as an assistant.