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The Significance of Environmental Sustainability in the Procurement of Sea Freight

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Abstract

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This study reviews how the environmental sustainability is valued in sea freight purchasing. The objective was to determine if the cost-factors are more important for the sea logistics services buyers in the comparison to environmental factors and if the unstable global situation and higher freight costs impact negatively on sea freight users' commitment to environmental sustainability.

Environmental sustainability is a megatrend in global supply chains', logistics and transport due to increasing and widespread environmental concern, nature resource depletion and global warming. The study contains a comprehensive literature review on sustainable logistics and a case study with a survey conducted to sea logistics customers of a global freight forwarding company.

Overall, environmental sustainability of sea logistics and its development considered strategically important and a significance of consideration of environmental sustainability aspects on logistics purchasing is growing. However, other factors, such as the price and availability, are still the most important when purchasing sea freight. Based on the findings, the author has developed a framework for environmentally sustainable transport purchasing.

Keywords: logistics, sea freight, environmental sustainability, procurement

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Glossary

B2B	Business to Business.
CII	The Carbon Intensity Indicator.
EEA	European Economic Area. The European Union member states and Liechtenstein, Iceland and Norway.
EEXI	Energy Efficiency Existing Ship Index.
EMSA	The European Maritime Safety Agency.
EU	European Union.
FCL	Full Container Load.
GHG	Greenhouse gas.
GRI	Global Reporting Incentive.
IMO	International Maritime Organization.
LCL	Less than Container Load.
MCDM	Multi Criteria Decision Making.
PDCA	Plan-Do-Check-Act.
PSR	Pressure-state-response- model.
SBTi	Science-based targets are climate goals that “provide a clearly-defined pathway for companies to reduce greenhouse gas emissions, helping prevent the worst impacts of climate change and future-proof business growth.” (Science Based Targets. 2022.)

SCM	Supply Chain Management.
Traficom	The Finnish Transport and Communications Agency.
UN	United Nations.

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1 Introduction

Environmental sustainability is a megatrend in global supply chains', logistics and transport due to increasing and widespread environmental concern and global warming. The purpose of this study is to investigate how the environmental sustainability is valued in the procurement and purchasing decisions of companies when purchasing sea logistics.

Companies in need of transport and logistics cannot ignore the inspection of the logistics service provider's environmental responsibility (Bloemhof-Ruwaard, J., et al. 2008; Evangelista P. et al. 2017; Lammgård, 2012:37). To ignore sustainability may negatively affect the company's brand and thus the success of the business of the entire company. If the company does not highlight the importance of environment on its strategy, it will not be weighted in the purchasing nor the logistics strategy either.

At the same time, the unstable global political and economic situation force companies to act more cautiously worldwide and refine their strategies. Freight prices rise and people spend less, which directly affects companies' logistics needs. Supply chain management (SCM) and logistics operations of the companies should be an essential part of the business as it effects the success of the entire company strongly (University of Lincoln 2022).

This study covers a literature review on environmentally sustainable logistics and sea freight procurement. The first chapters focus on the foundations of sustainability, sustainable logistics and procurement. The author gathered the data from articles, literature and researches. In addition, active conversations with industry experts conducted for the review as the author is working at sea logistics customer service of a freight forwarding company.

At the end, the author's own case study on the topic is presented. The case study included a survey that was implemented and conducted on behalf of a global freight forwarding company, Company x. The study included a survey to

support the theoretical framework. The survey to the users of sea transport was produced and distributed to over 990 potential respondents. The answers proved that the topic is interesting and considered important. Finally, the recommendations based on literature review and the case study are presented in the final chapter.

2 Scope of the Study

In this study, the author focuses on the examination of the sea logistics purchasing values of the clients of a global freight-forwarding corporation, Company x. The main purpose was to investigate how environmental sustainability is valued when the international sea transport and logistics services purchasing decisions are made, and if environmental sustainability has influenced the choice of logistics service provider.

The research paper addresses on following key questions:

- Are the cost-factors, in the comparison to environmental factors, more important for the logistics services buyers? Thus, what are the priority factors when choosing sea logistics services?
- Does the unstable global situation and higher freight costs have a negative impact on sea freight users' commitment to environmental actions in general?
- Do logistics services buyers choose low-cost transport over low emission transport?
 - o Has environmental responsibility influenced the decision to purchase transport services from Company x?

The secondary data for literature review section was on books, newspaper and discussions with industry specialists. The primary data for the survey collected using quantitative and qualitative methods. The voluntary survey consisted

multiple choice and open questions about respondents background, sustainability visions and strategies and knowledge about Company x's sustainability services and imago.

3 Introduction to Company x

Company x is one of the logistics industry leaders globally having over 1400 offices around the globe. The focus is on providing IT-based specialized and tailored logistics solutions to the long-term Business-to-Business customers as well as consumer clients. Company x has approximately 200 employees in Finland, and it offers logistics solutions for all modes of transport, with a focus on full container (FCL) and piece goods transportation (LCL), project logistics, and the transportation of oversized and refrigerated products (Company x 2022).

Company x has a clear vision on providing more sustainable logistics solutions to the customers and wants to have a brand as an industry forerunner. The company cooperates in various parts of the world with projects based on the United Nation's (UN) sustainable development goals and wants to create a route towards carbon neutrality with innovative and customer-oriented solutions (Company x 2022).

Company x Finland promotes global goals of the corporate's Net Zero Program with own sustainability strategy. The sustainability program follows the UN sustainable development goals and has science-based targets to reduce greenhouse gas (GHG) emissions. Science-based targets are climate goals that "provide a clearly-defined pathway for companies to reduce greenhouse gas emissions, helping prevent the worst impacts of climate change and future-proof business growth" (Science Based Targets 2022). The company wants to provide its customers trustworthy information about CO2 emissions and offer

climate-neutral freight solutions in which the carbon footprint of sea freight is compensated or already carbon-neutral (Company x 2022).

Going forward, compensation is being phased out, when biofuel solutions are offered which means that the client company receives the entire package as carbon-neutral. Company x as well participates the development and using of environmentally sustainable biofuels as well as developing transparency on to emissions caused by transport through global and local collaborations (Company x 2022).

In terms of sea freight, Company x operates as freight forwarder which means that the company does not own cargo vessels. Instead, it has a contract with carrier to move the goods and use the containers and the space of cargo ships. Company x cooperates with all largest shipping companies and world shipping alliance and is committed to the goals and strategies of International Maritime Organization (IMO) such as most of the largest logistics and transport companies. For instance, the green lanes give priority to ships with the lowest emissions and reducing the movement of empty containers, switching to the most responsible form of transport and preventing unauthorized transport of dangerous substances or illegal hazardous waste are among the targets of Company x (Company x 2022).

The customers are offered customized, customer-oriented environmentally sustainable solutions tailored to their interest and needs. Company x's smart platform for sea freight services offers the customer a view where it is possible to choose the cheapest, the fastest or the least polluting route for the shipment. When a customer shows interest towards biofuel solutions, the compensation is allocated to the customer's cargo and documentation of emission-free cargo sent to the customer. The biofuels are available to the clients on all the trade lanes and any services. In addition, the customer can find accurate information about the emissions caused by their individual transport from tracking system or invoice, and the customer receives transparent data on emissions for its own reporting (Company x 2022).

If Company x knew more about their customer's values and their preferences of choosing logistics services provider, the company could use this information in sustainability communication, sales and marketing as well as take steps towards its internal sustainability goals. The survey will highlight to the customers that the environmental sustainability is considered as an urgent topic onward during the world's unstable situation and increased freight prices (Company x 2022).

4 Environmental sustainable logistics and sea freight procurement

The goal of the transport is to get a product from the origin to the destination (Holter et al., 2022:23). Different types of products require different types of transportation, which also affects the choice of the transport mode. In addition, transport rates, transit time, transport visibility, on-time delivery, and cost of transport management and sustainability of transport have an effect on the customer's choice of transport (Holter et al., 2022:23).

Logistics is considered as freight management, which deals with handling, sorting and transportation of the goods via overland, ocean or air (Moody, W., 2022). The process starts with an order and finishes with the delivery of the goods to the final destination. The goal is to have the process handled as cost-efficiently and timely as possible. Usually, logistics companies have their own assets such as trucks, boats or planes. Freight forwarding companies are the middlemen, that use mostly someone else's assets to get the goods from the origin to destination and connect the transport provider company and customer in a need of transport (Huolintaliitto 2022).

As a conclusion, transport is considered as the movement of goods when logistics means the whole process including planning of the overall supply

chain. Logistics service provider is a logistics or freight forwarding company (Holter et al., 2022:23 and Huolintaliitto 2022).

4.1 Environmental sustainability and its measurement

Sustainability can be measured in assessing the so called the triple bottom line, the economic, social, and environmental principles, and performances. This model was developed in early 1990's. An ideal goal of the firm is to perform in the highest possible level in all the categories, but it is not realistic. However, this study concentrates on environmental sustainability, which is defined, according to UN Environmental Programme, "aiming to improve the quality of human life without putting unnecessary strain on the earth's supporting ecosystems". (United Nations 2022.)

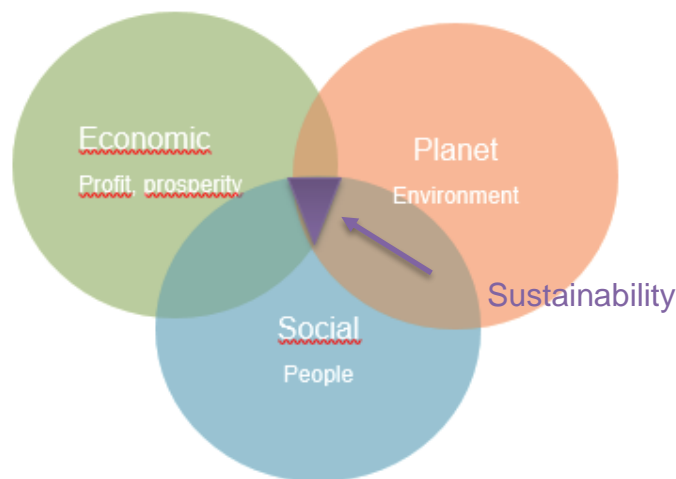


Figure 2; Illustration of the triple bottom line of sustainability (Own illustration).

Environmental sustainability performance measurement often include environmental standards or certificates, which are guidelines to demonstrate commitment to sustainable development (PECB University 2014). They can be such as ISO 14001, International Reporting Standards (Global Reporting Incentive - GRI), SCOR model, Life Cycle Assessment, Multi Criteria Decision Making (MCDM) tools, Rough Set Theory, Fuzzy Set approach, Composite indicators, and conceptual models (A.P.K.J. Prabodhika et al. 2021). Many

studies bring along pressure-state-response- model (PSR) that presents the interaction and sustainability between a system and external influencing factors. Plan-Do-Check-Act (PDCA) is a four-phase cyclic system of continuous improvement that measures sustainability according to ISO 14031 (Jereb B., et al. 2019:1479).

Nonetheless, many companies have their own way by choosing criteria and analyzing methodology of data but some have adopted the Triple Bottom Line-framework. Walmart, an American retail chain, for instance, assess its sustainability based on a questionnaire in various fields, such as the reduction of energy costs, reduction of air emissions and efficient handling of materials (Jereb B., et al. 2019:1479).

Emissions are measured in tons. For instance, annual emissions of the world are around 50 billion tons of CO₂e (Our World in Data 2021). The companies' category their emissions in three categories: scope 1, scope 2 and scope 3. Scope 1 emissions are direct emissions that are caused by reporting company, such as company facilities or their vehicles. Scope 2 emissions are indirect emissions associated with company's energy use. Therefore, scope 3 emissions are the most difficult to cope with as they are all other emissions taking place in the value chain of the company and caused by upstream and downstream activities (Marine Digital 2022 and Sievo 2022). For a freight forwarding company, scope 3 is the most important scope of emissions as those mean almost all transportation related emissions from leased assets and distribution. Scope 3 emissions are also emissions in which procurement department has the biggest change to influence with supplier relationship management, transparency and cost management (Marine Digital 2022; Sievo 2022.).

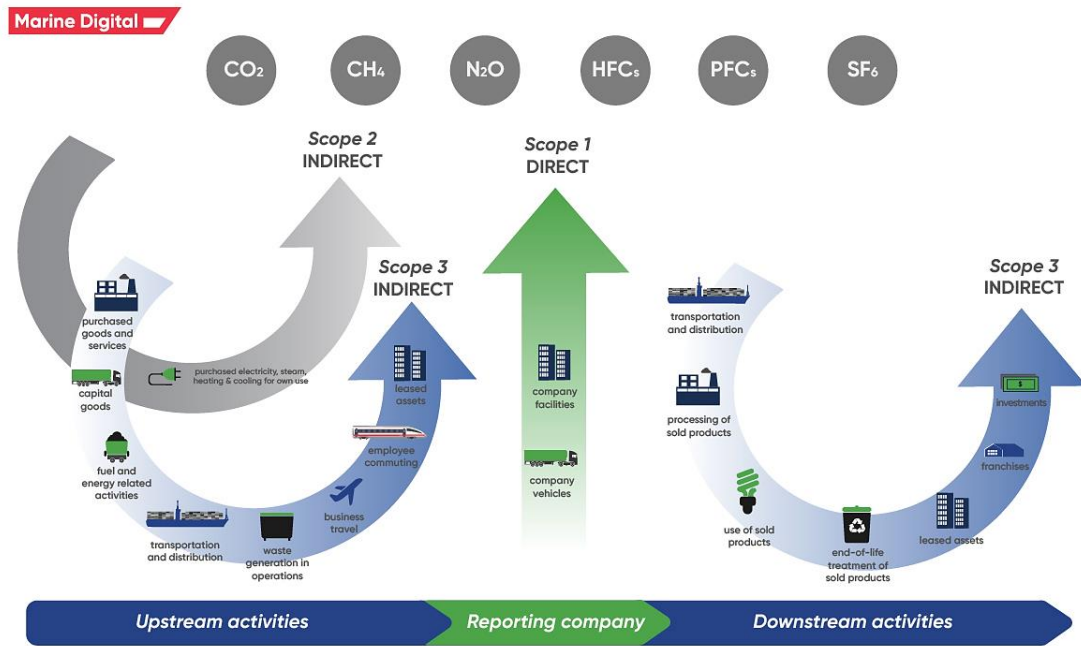


Figure 2; Scope 1, 2 and 3 emissions of sea freight (Marine Digital 2022).

For instance, the logistics giant Kuehne + Nagel is already completely carbon neutral in all direct and indirect emissions and aims to be completely carbon neutral in other indirect emissions by 2030 (Kuehne+Nagel 2022). DHL and DSV have the same science-based targets (DSV 2022; DHL 2022). Many other companies have set a target for the same year. More specific information about emissions related to sea transport is presented in figure 2 and in the paragraph 4.4, sustainability of sea freight.

4.2 Sustainable Logistics

Logistics and transport are quite traditional industries but the whole industry has taken concrete steps towards sustainable innovations to meet customer demands. Increasing environmental concern and global warming, environmental sustainability has growing imperative on shipping companies' strategies as well as freight forwarding companies' actions (Sustainable Logistics – Logistiikan Maailma. 2021).

The discussion around environmental sustainability and green supply chain management started over recent decade and the interest and value have

increased during the years. The motivations have changed and nowadays it is an assumption that companies offering logistics services are considering environmental sustainability in their actions (Osto ja Logistiikka 2022). Karin Isaksson's study (University of Linköping) about logistics service provider's green transition from the year 2012 confirms the observation that environmental sustainability and green logistics have been seen as a potential business opportunity a decade ago.

Due to high emissions and the volume of the transports, logistics sector plays a major role in meeting climate targets and is one of the industry megatrends. Logistics and transport have harmful effects on nature and environment as environmentally adverse fossil fuels, diesel, and oil, that release carbon dioxide and other greenhouse gases, are still in use in all the modes of transport (European Environment Agency 2022). Transport produces one fifth of the greenhouse gas emissions in Finland (Liikenne- ja viestintäministeriö 2022). This is mainly because of the shape of the country of Finland and the long distances. Therefore, logistics sector plays a key role when companies in Finland are talking about "zero emissions"-goals on sustainable development strategies (Climate 2035 2022). Logistics professor Alan McKinnon from Kuehne Logistics University has recently mentioned in the interview of Finnish Osto & Logistiikka- magazine that "the five most effective ways are to reduce freight traffic are to transfer as much of the freight as possible to low-carbon vehicles, optimize the use of vehicle capacity, improve energy efficiency, and reduce the use of fossil energy". (Osto & Logistiikka 2022).

The European Union (EU) defines the framework for sustainable development in the European region. Transport has a crucial role on meeting the climate goals as it currently generates the quarter of EU area emissions (Transport - EUR-Lex 2021; European Union 2021). EU is responsible on law and directives for ensuring the safe, smooth, and sustainable movement and transport operations on the EU area. The European Union member states have committed to develop and implement legislation that requires companies to develop sustainable processes for manufacturing, distribution and recycling

(Quariguasi Frota Neto, J., et al. 2008:2). Electric vehicles and alternative fuels are also priorities for EU (European Commission 2021). Generally, all the transport providers in the EU area need to follow guidelines set by EU, but sustainability controls are often deficient or non-existent, so 100% implementation cannot be guaranteed. However, the system is designed to ensure the continuous development and investments on the zero- and low-emission heavy-duty vehicles on the EU market during upcoming years (Transport - EUR-Lex 2021).

The companies perceived as responsible actors in the minds of the public. Recent research by Martec, from 2020, showed that “81% of companies are more focused on sustainability today than they were three years ago”, and to keep competitiveness, the companies must focus on sustainability actions and to take active role on that. (Business Wire 2020.) The research also showed that the shipping industry is prioritizing on environmental friendly solutions in order to achieve success more than before and the trend will most likely remain. As well, the consumers require environmental sustainability from supply chains. According to Retail and Sustainability Survey by Global business applications (CGS 2022), 79% of the respondents say that sustainability is "somewhat important" or "very important." The survey conducted in the United States of America, and it got 1000 responses from the consumers between ages 18-65. (Inbound Logistics 2022.)

Going forward, therefore, environmental sustainability increasingly affects the companies' choices of transport service providers (Quariguasi Frota Neto, J., et al. 2008:2; Evangelista P. et al. 2017:7). In addition, logistics and freight forwarding companies are required to have emission-free or other sustainability targets as well as detailed sustainability reports with ambitious plans by default. The giants of the logistics industry, such as DHL, DSV and Kuehne + Nagel, have science-based sustainability programs leading the industry to the point that all the transport companies must pay more and more attention to the environmental sustainability of their actions. Adopting environmentally friendly

logistics criteria effects positively on company brand and image among the consumers.

However, sustainable transport options in the market are still limited and the measurement methods vary. In addition, there is no clear scientific definition on how the sustainability of the transport is measured. It would be essential for the companies to have reliable information about emissions so that they could be compared and environmental sustainability knowledge developed. The common European Standard, CSN EN 16258, analyses the freight and passengers or both and concludes the emissions based on those (Transporeon GmbH 2021). In Finland, also the Greenhouse Gas (GHG) protocol and GLEC- framework are commonly used emission calculation methods in the logistics industry. However, the issue of many calculation methods has already been identified, and the goal of CountEmission - project, led by EU, is to create the objective emission measurement tool that is based on ISO 14083 standard (Laitinen, P. 2022).

Finally, as the emission targets are strict, sustainability actions are needed actively to maintain global competitiveness. In Finland, the country's government has set a goal of halving emissions caused by traffic by 2030 (Climate 2035 2022). The data analysis and transparency are the key solvers as it is essential to know where the major emissions come from to achieve the goals and increase the realism of the goals with awareness.

4.3 Sustainability of sea freight

More than 90% of world trade is transported by sea (Review of Maritime Transport 2021). Sea freight is popular because of the low cost considering the high load capacity of the ocean vessel despite the slowness and recent declines in schedule reliability. As well, sea freight services are available worldwide. The containers are standardized, and the container size can be selected as per needs. The containers also make the whole process very convenient from the customer point of view as the containers can be loaded and unloaded on the

site and placed on the trucks for the first- and last-mile. Ten shipping companies control 85% of the entire world's 25 million TEU transport capacity. These same shipping companies have three operational alliances that share their service and ship offerings to the market (Review of Maritime Transport 2021).

The sea transport is vital for Finland because of the location surrounded by the sea. The majority of Finland's foreign import and export trade goes through the seas. In 2021, the total amount of foreign sea transport was 94.1 million tons. The transports decreased by 2% compared to 2020 (Logistiikan Maailma 2022). The products transported are very different in terms of export and import. A small number of large industrial companies, such as the forestry, metal and engineering industries, are dominating the export side while the number of importers is greater and the selection of products is more diverse. Most exports and imports pass through the major European ports, such as Hamburg, Antwerp or Rotterdam, where the containers transfer from the ocean vessels to the smaller feeders to cross the Baltic Sea. (Merikuljetus – Logistiikan Maailma 2022)

Sea freight is often seen as the most environmentally friendly mode of transport. However, the European Maritime Transport Environmental Report by the European Environment Agency (EEA) and the European Maritime Safety Agency (EMSA) (2022) shows that the ships produce 13.5 % of all the greenhouse gas emissions of the transport in the EU area. In addition to the emissions, the maritime traffic causes many other harms to the environment. The underwater noise levels, the air- and oil pollution, the spread of non-native species with the ballast water and the traffic itself affect the environment and the diversity negatively. Therefore, for instance, the ballast water treatment equipment has been developed and the restrictions on the waste discharges in the Baltic Sea have been tightened (Kohti vastuullisempaa logistiikkaa-webinar 2022).

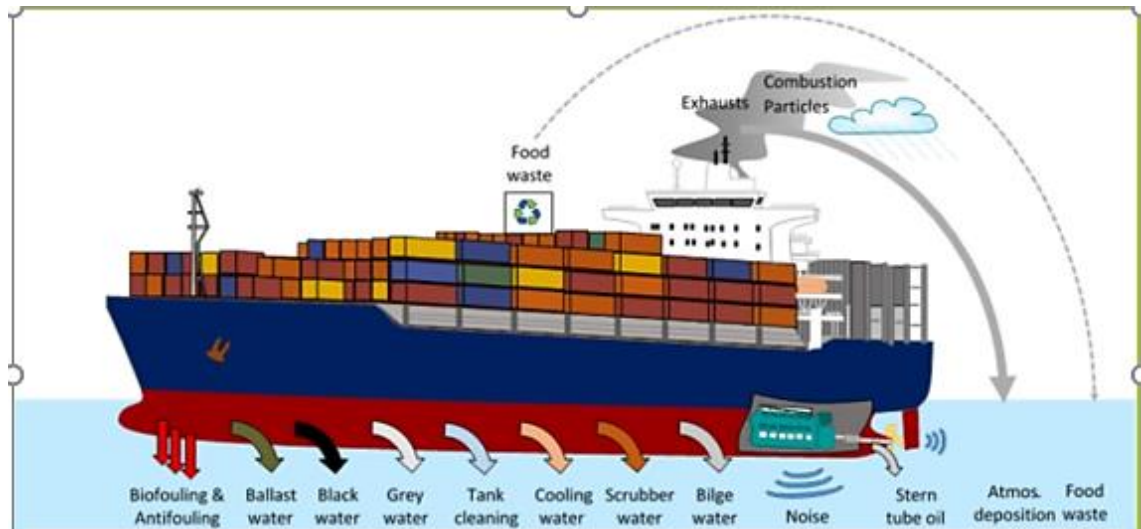


Figure 3; Emissions of maritime traffic. (Jalkanen et al. 2020)

Still, the traffic on the seas is predicted to grow during the upcoming years, and the industry has to work on improving its environmental footprint with the ships and more environmentally friendly fuels development. The growth must happen in harmony with the environment (International Maritime Organization 2022). These days, a small part of the ships is running fully on biofuel but it is not the industry standard. Still, it is unclear what will be the winning technology in the shipping industry in the future as an extremely large number of ships are still using traditional fuels. Two out of three of the ships under construction are using fossil fuels as presented on figure 4. The cargo ships are long-term investments, and therefore the renewal of the fleet is very slow. It is important to consider how the current ships could operate in more energy-saving and environmentally friendly way, and whether the old ships could turn into the ships that use biofuels instead of renewing the entire fleet. (Kohti vastuullisempaa logistiikkaa 2022).

The debate on biofuel regulations is very timely, and divides opinions inside the industry. The Finnish Transport and Communications Agency (Traficom) has recently commented that “the methane emissions from shipping should not be reduced” and the European Union is not planning to address the escaping methane from LNG oil, which is marketed as “environmentally friendly fuel” for cargo ships (Helsingin Sanomat 2021). Although, the emissions and the harm

they cause are undeniable, the expert commentator in the article mentions that she does not see a need to limit the methane emissions from ships. She adds that better usage of time is to be prepared for the alternative fuels such as the hydrogen and ammonia.



Figure 4; Alternative fuels in the shipping industry. (DNV Maritime Forecast to 2050 2022.)

The International Maritime Organization (IMO) is the driving force of the maritime industry driving sustainability policies and standards. The goal of the IMO is to reduce greenhouse gas emissions by 70% by 2050. (International Maritime Organization 2022) Therefore, the IMO has developed the Energy Efficiency Existing Ship Index (EEXI) for ships. In order to reduce CO₂ emissions and obtain the EEXI approval, 6000 ships will have to be decommissioned to make the necessary technical changes, which will temporarily reduce the ship capacity. The IMO has also defined a new index for ocean vessels. The index measures the carbon dioxide emissions and is called The Carbon Intensity Indicator (CII). The CII gives shipping operators a coefficient and in accordance to that, they must reduce the carbon dioxide emissions annually to ensure agreements compliance and continuous development. The CII will be mandatory from 2023 under the MARPOL Annex VI, which limits the main air pollutants in ships (International Maritime Organization 2022). These agreements and related repairs required from the shipping companies, will affect strongly the reliability of the shipping schedules again. Moreover, according to the European Maritime Transport Environmental

Report (2022) most vessels have reduced their emissions by reducing their speed up to 20% in comparison to the year of 2008 so the direction seems correct from the environmental perspective (EMSA 2022). The speeds of the ships are also affected by the aforementioned EEXI- index.

Furthermore, the digitalization has a vital role on sustainability development on maritime industry. For example, the optimal route and cargo volume planning and even more precise optimization of the port schedule planning help supply chains to operate smoother and in a more optimal way. In addition, in the future, artificial intelligence can support the planning of the cargo flow in the port and routing. (Yong Sichun, S. 2022.) The transparent and open data sharing on the emissions develops the sustainability perspectives of the entire industry as awareness of environmental impacts of supply chain is the first step towards the change. (Laitinen, P. 2022.)

4.4 Environmental sustainability as a competitive advantage for logistics service provider

In addition to the fact, environmental sustainability itself creates efficiency and operational reliability it can create a competitive advantage to the logistics company. Since clients are increasingly interested in environmental sustainability these days, the logistics companies can benefit and discover new business sources by adopting green thinking and practices. Similar findings have been done in the article of Pietro Evangelista. Based on the group's study, environmental sustainability is something that is recognized by medium-sized third-party logistics providers but that is not consistently implemented in their mission, values and actions (Evangelista, P. et al, 2017:18).

Then, Traficom has conducted a study that investigated the current state of responsibility in the road freight transport procurement with literature review and case study. The study focused on the financial and social responsibility in addition to environmental responsibility. The study showed that the importance of sustainability is growing in the industry. The respondents of the case study, road transport purchasers, saw the assessment of environmental sustainability

challenging, but in general it was seen to influence positively on the quality and reliability of transport (Lammintausta, 2019:2). In addition, environmental sustainable transport procurement in the road freight was observed to be interesting for respondents.

However, environmental sustainability of the organization should not be confused with the financial side. The most important reason should be the will to operate in more climate-friendly way and generate innovative ways of doing business in more sustainable way. Environmentally friendly companies are outperforming also financially as the reputation and savings increase, and thus, sustainability create competitive advantage to the logistics company as well. (Green Journal 2016.)

Finally, figure five shows why green innovations are important also financially. Picture brings an overview of the drivers and outcomes of environmentally sustainable innovations. Whilst the IMO, the governments as well as sea freight users require more environmentally sustainable solutions and innovations, the requirements will also yield other positive outcomes for both supply and demand side. The figure rationalizes why it is a competitive advantage for transport service provider to constantly seek on for green innovations driven by regulations, demand, internal goals and external pressures (Qudrat-Ullah 2018).

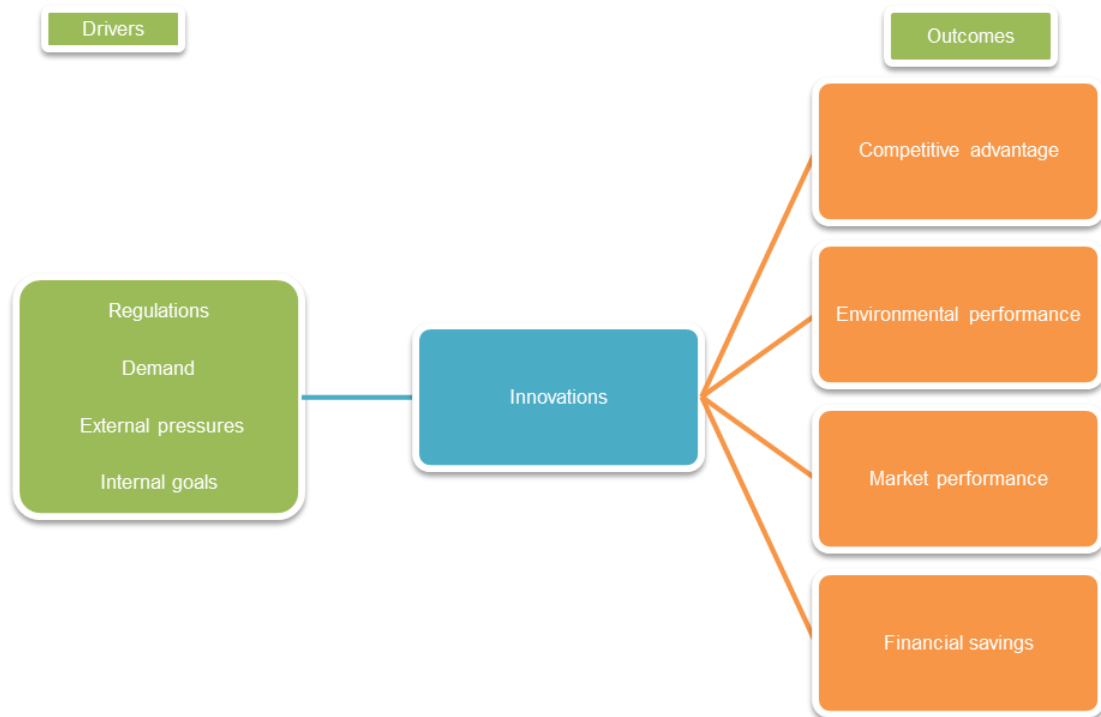


Figure 5; The drivers and outcomes of the green innovations. (Qudrat-Ullah 2018; Own illustration).

4.5 Environmental sustainable logistics procurement

Identifying and choosing the suppliers for logistics service is a substantial strategic decision, which is becoming increasingly important for the firm's performance but also from the sustainability point of view (Jauhar and Pant, 2017). The procurement process is the whole process that possibly ends up to the act of purchasing a service. Purchasing is a subset of procurement (Purchasing Insight 2021). Green procurement, known also as affirmative procurement, means the purchase of environmentally preferable products, utilities, materials and services in accordance with one of more 'green' procurement preference programs. (European Commission 2021)

In addition to environmental sustainability, the procurement of logistics purchasing decision is influenced by price, speed, the brand of the transport company, customer service, recommendations and many other factors. The importance of procurement for the company is significant as the share of procurement activities in turnover is on average 53% for companies (European Commission 2021). A well-organized procurement process of logistics services enables financially wise and efficient purchasing.

The starting point for considering the environment in procurement process is to have environmental sustainability included in the business strategy. If the company does not highlight the importance of environment on its strategy, it will not be weighted in the purchasing nor logistics strategy and purchasing decision either. Sustainability goals of the company are achieved only if the whole organization and supply chain are committed to the sustainability and therefore environmental factors are considered when choosing logistics service suppliers (IMD 2022).

The standard procurement process of the companies proceeds as follows.

- Recognize the need for supplier selection.
- Identify key sourcing requirements.
- Determine key sourcing strategy (single, dual or multi supplier).
- Identify potential supply sources.
- Limit suppliers in selection pool.
- Determine method of supplier evaluation and selection.
- Select supplier and reach agreement.

Table 1; A standard framework for procurement process. (Gromova, Muss. 2017.; Wang T. et al. 2017; Own illustration.)

From the environmental sustainability point of view, there are few key spots on the process. In the evaluation section, the firm can especially weight environmental sustainability, or vice versa. Perhaps, some suppliers get selected because the environmental issues are in a better state than in another alternative. The different metrics, certificates or the company's own criteria can be used in the evaluation process. The companies can also benefit from the external data analytics that are giving a more enriched view on supplier's environmental sustainability performance. (Sievo 2022) For instance, Ecovadis is providing business sustainability ratings, benchmarks and scorecards for its customers to avoid sustainability risks. (EcoVadis 2022.)

In the clause of the agreement, the supplier may be required to commit to certain environmental requirements and provide some certificates or action plans, for example. In addition, the supplier contract may have its own mandatory environmental annex as part of the agreement package. Especially in the corporates, based on conversations with industry specialists, this is a mandatory part of the procurement process.

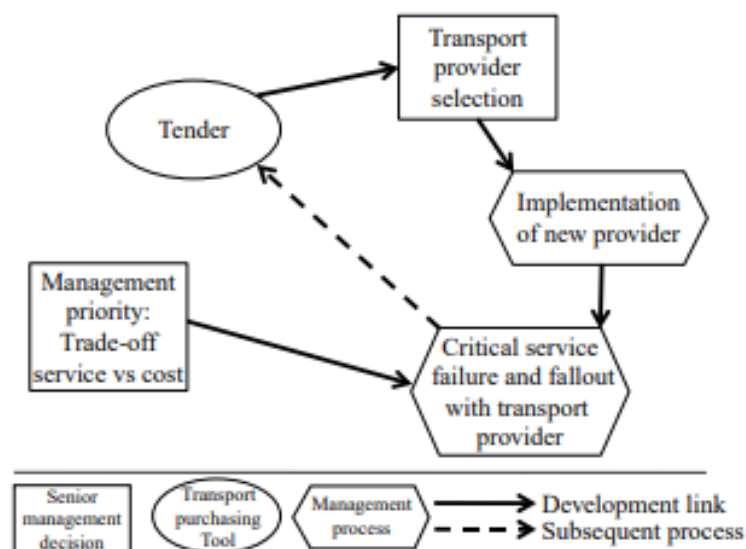


Figure 6; Example of transport purchasing and management process. (Andreas R. Holter et al.,2008.)

A transport and purchasing framework by Andreas R. Holter et al. identified that a transport provider was re-tendered only after critical and long-standing problems. According to the model, purchasing logistics should not be different from the other purchasing functions of companies. However, this relatively old model (2008) does not take into account sustainability factors and how do they affect the purchase of logistics services but gives guidelines for what is important to the companies when tendering logistics services as well as for the supplier's performance management. In addition, sustainability is a logical extension for this model and supplier's possible issues on the environmental sustainability side affect the re-selection of the logistics partner like other problems critical service failures would.

5 A case study – Company x

A case study was conducted in order to examine how much the environmental sustainability is valued among the companies using sea freight. A review of the current state among the sea freight users benefits the study's literature review bringing current information. The survey was executed in cooperation with a global freight forwarding company.

5.1 Research setting and design

The primary data for the study collected from the companies using sea freight for their logistics operations. The relevant questions developed by analyzing the literature and discussing with the industry experts. The goal of the survey was to collect information about respondents purchasing, environmental values and supplier selection methods to assess the significance of environmental sustainability in the purchasing decision-making. Additionally, to find out how the purchaser evaluates environmental sustainability, and whether it is important in the company strategy.

An online survey been selected as a method to collect data because of the easiness to share and access. Besides, online surveys are simpler to spread to the wider population and to analyze and reporting happens in real-time. Additionally, people will answer sensitive questions more honestly as the answers are anonymous. Although, the risks are misunderstanding of the questions and survey fatigue which occurs in case of long and tiring survey questions.

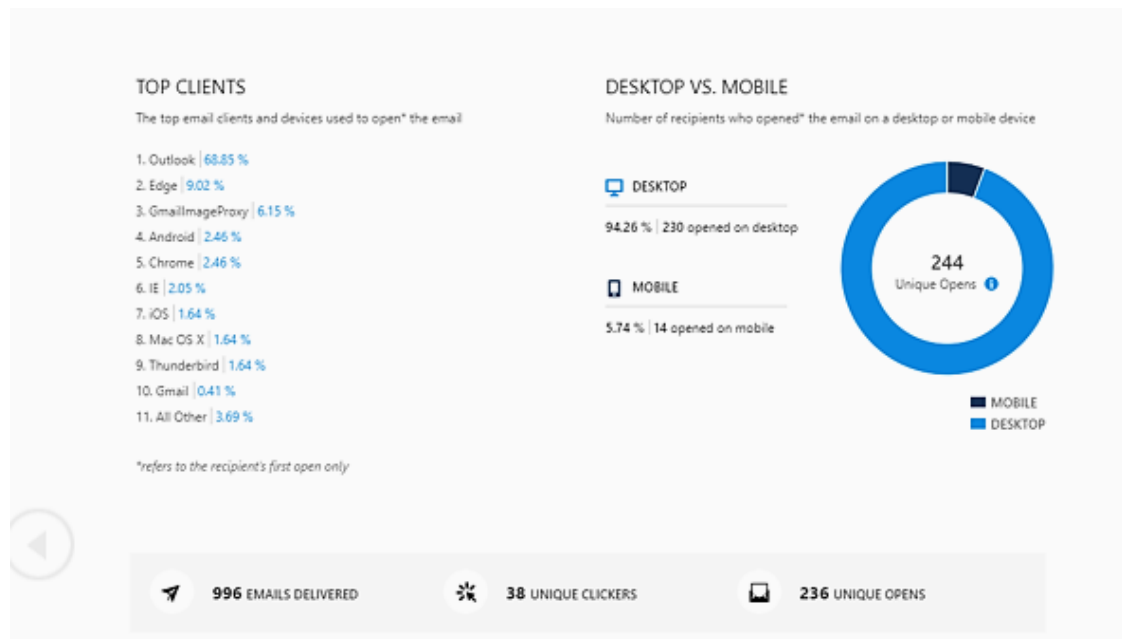


Figure 7; Statistics of respondents from ClickDimensions.

The survey posted online to the sea freight customers of Company x. The posting happened through ClickDimensions Marketing Software, which led the respondent to the survey created with QuestionPro survey software tool. The message sent to the email contacts of the Company x's mailing list using the Company x's mail. The link was not shared outside this population. The active number of the recipients was 996. The survey link had 244 unique opens, mostly via desktop. More information about questionnaire statistics is presented in the figure 8.

Survey got 53 responses via Question Pro but only 26 of those were complete. Then, 27 of the responses were incomplete and declined from the results. The

reason for incomplete responds is unknown. The survey was viewed in Question Pro 458 times and therefore completion percent was 5,68%.

Survey Statistics Report				
	Count	Completed / Started	Completed / Viewed	Started / Viewed
Completed	26	49,06 %	5,68 %	11,57 %
Terminates	0			
Incompletes	27			
Total Responses	53			
Viewed	458			

Figure 8; The Survey Statistics Report (Question Pro)

5.2 Survey questions

The number of questions was 16. The questions designed to encourage high-response rates and the layout of the questions was simple and easy in order to keep the respondent's interest until the end of the survey. The language of the survey was Finnish, because the majority of target group of the respondents consisted of Finnish customers, who prefer to answer the surveys in their native language. A full copy of the survey questions and the English translation are available in appendix 1.

The survey divided into three sections. The first set of the questions assessed the background of the respondent's company, size and values. The goal was also to get more information on how important is environmental sustainability strategically for the company.

The purpose of the second part of the questions was to evaluate which factors are important for the company when choosing transport services. In addition, the goal was to find out how the respondent evaluates the environmental friendliness of logistics and why sea freight has been chosen as the mode of transport.

Finally, the questions in the third section focused on the services of Company x. The respondent evaluated the services of Company x and whether Company x was chosen as a logistics service provider because of environmental sustainability. At the end, the respondent had an open comment field for a free word.

Four questions were multiple-choice questions and requested to rate the importance of the presented issue on a Likert- scale from one to four. A forced Likert- scale was used, because the respondent's opinion was sought and required. All the multiple-choice questions set as mandatory.

Moreover, the survey included four open-end questions providing respondents an opportunity to describe their ideas or share feedback with own words. Open questions left optional to ensure higher answer-rate and to prevent survey fatigue.

One question was a scale question. A respondent used the slider to point how many percent (0-100%) more would he or she be willing to pay for the environmental sustainable transport option. This question set as mandatory and came available to the respondent if he or she was willing to pay more for the environmentally friendly transport.

5.3 Research ethics

The ethical considerations need to take place when collecting any data from the respondents. This means research designs and practices. The approval to conduct the survey with these questions was requested and given from the management board of Company x.

The survey was voluntary for the participants and they were free to choose to respond the survey or not. Leaving the survey was possible at any time. The participants got the information about the study's purpose and duration, anonymity and confidentiality in the annex letter. Unnecessary demographic data was not gathered and sharing contact information was voluntary. Some

common democratic questions about gender or age were not necessary for research and therefore not asked.

5.4 Population

The survey population is a target team whose opinion is needed to conduct the survey. (Australian Bureau of Statistics 2022) In this case, the population is sea freight clients of Company x. Therefore, the survey sent to 990 customers of Company x, who had signed in to the mailing list and given permission to receive emails. The reached customers are Finnish big, medium and small companies using sea transport or other mode of transport for their logistics operations.

5.5 Study's nature

The goal of study can be descriptive, exploratory or explanatory. As goal of this study is to gather data and describe the situation. Both qualitative and quantitative methods used in this study, and therefore it is a descriptive study.

5.6 Time Horizon

The study was a short-term study. The respondents had two weeks, between 19.09.2022 and 03.10.2022, to complete the survey. The opening and closing times mentioned in the annex letter and a reminder sent in the middle of the given time limits. The study included the collection of data from many individuals and the data analysis, which means that it is a cross-sectional study.

5.7 Software and Analysis

The survey sent with Click Dimensions- tool. Then, the data retrieved from QuestionPro, and further processed and analyzed in Microsoft Excel.

5.8 Reliability and Validity Analysis

The reliability describes if the results of given study could be repeated under the same conditions. The validity of study refers to the study's accuracy. (Carroll, K. 2022.)

The results of the study would be reproducible under the same conditions. Therefore, the measurement is considered reliable. However, with the different participants, the answers could be divergent, and the results change over time. In addition, the cover letter introduced the respondents to the topic, so those who were not interested in environmental sustainability could withdraw from the survey because of this or leave the survey unfinished.

The survey conducted to measure the environmental sustainability values of the customers of Company x. The results can predict the larger opinion amongst the sea freight users. Therefore, the survey has a criterion validity. However, the results might not be generalizable to the other groups such as the customers of the other companies because of the population.

5.9 Limitations

Several limitations might have influenced the results of the research. First, the sample size was not large as less than 30 replies were received during the given time period. Therefore, the results cannot be generalized to the whole market.

The methodology of the study may not have reached those potential respondents for whom environmental sustainability is not an attractive priority. The survey topic presented in the annex letter, which might have influenced the willingness to respond the survey. Therefore, measure used to collect the data might not have been the most optimal for the generalizable research and more optimal results might have been gathered with some other method.

6 Data analysis

In this section of the study, the results of the survey questions are presented with accurate illustrative charts and in writing.

6.1 Respondents background and values

The survey had three questions whose purpose was to gather information about the company's size and values concerning environmental sustainability. This part also served as an introduction to the more detailed questions.

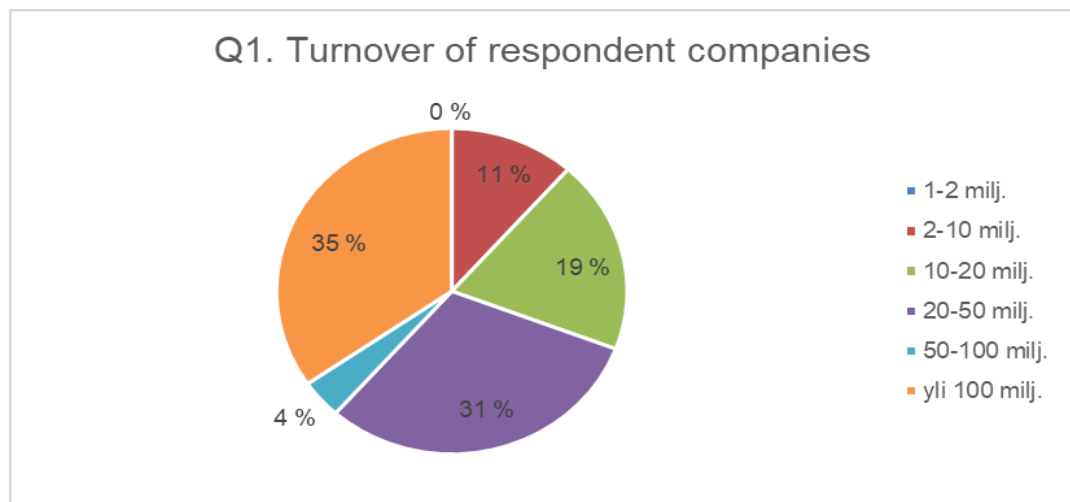


Figure 9; Turnover of respondent the companies. Sample size (n) = 26.

The most respondents, 61.54%, were from the companies with turnover less than 50 million euros. Therefore, the most respondents were from small or medium size (SME) companies while 34.62% of the respondent's companies have turnover over 100 million euros. The companies having larger than 43 million euros turnover are classed as large corporations (Business Finland 2022). The size of the company matters the management style and organization structure, which can affect the procurement and whether it is a responsibility of one person or a team. The size of the company may also affect how important environmental responsibility is valued in the company, and how important and strict the related reporting is.

Then, on the second survey question (figure 10), over 92.3% of the respondents declared that the unstable global situation and increased freight prices do not affect at all or somewhat affect negatively company's commitment to the environmental actions. Only 8% declared that it does affect a lot. Overall respondents seem to be committed to environmental sustainability despite global uncertainties.

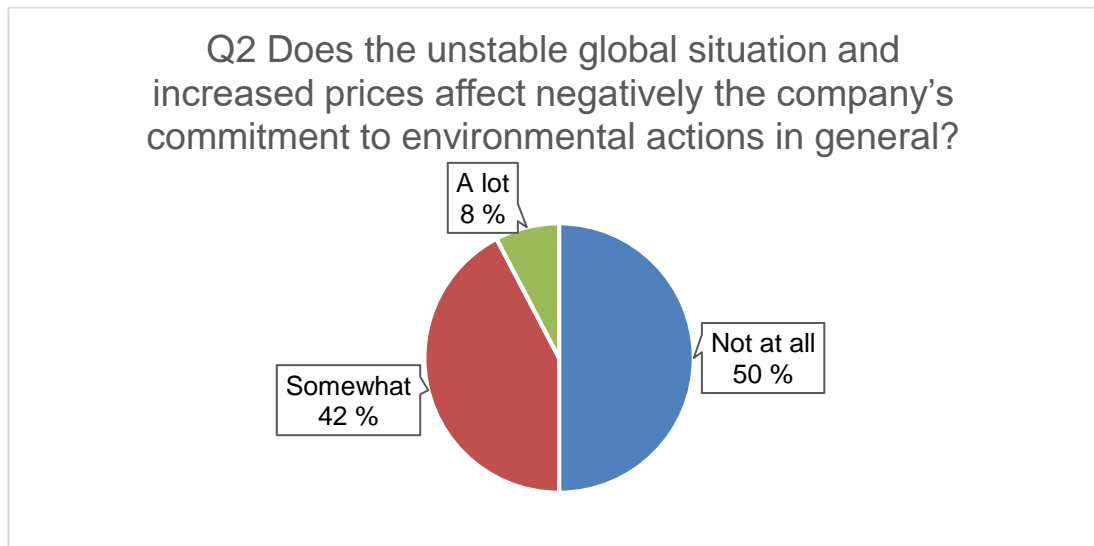


Figure 10; Does the unstable global situation and increased prices affect negatively the company's commitment to environmental actions in general? n=26.

In addition, 59% of the respondents stated that environmental sustainability effects on the company's purchasing decisions very much or a lot (figure 11). Then, for 41% of the respondents the impact of environmental sustainability effects somewhat or not at all. However, only 8% said that it has no effect on purchasing decision. As a conclusion, the influence of environmental sustainability in their activities when purchasing logistics services is not very high but considered on decision-making.

In general, environmental issues are seem to be valued to the respondents despite the unstable global situation and increased transport costs. However, the layout and distribution of the survey probably already initially reached those who consider environmental issues important in their purchasing processes.

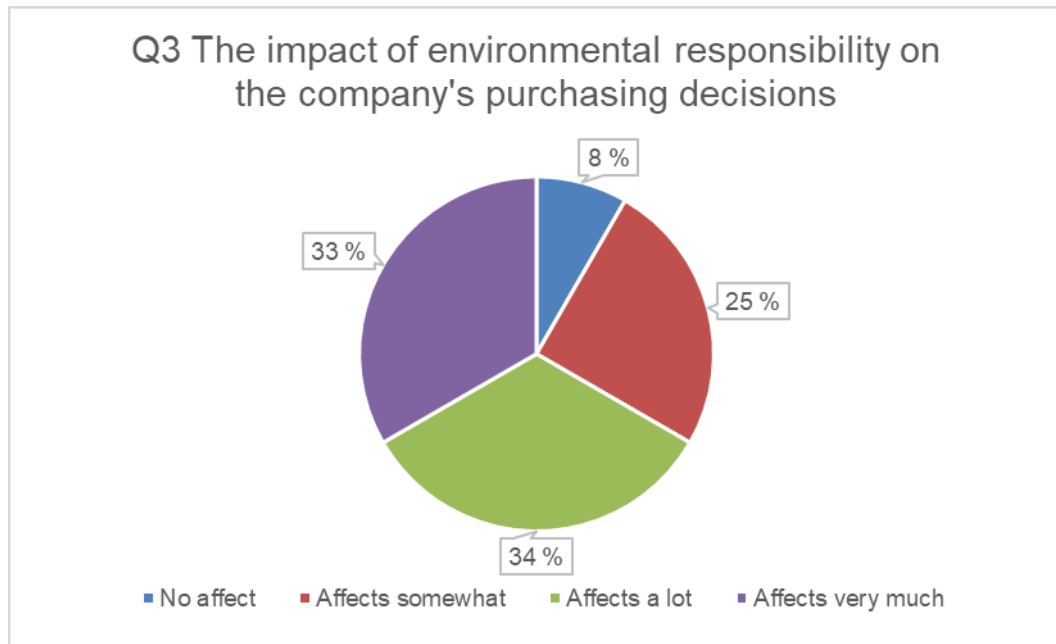


Figure 11; The impact of environmental responsibility on the company's purchasing decisions. n=26

6.2 Multiple-choice questions

In the first multiple-choice question, the respondents evaluated the reasons of their usage of sea freight. The respondents considered price, availability, customer service and reliability as very important factors. The brand of logistics company seems not to be the key point of choosing sea freight in the comparison to the other factors.

Especially reliability seems to be very valued among respondents (figure 12). This is interesting because the shipping via sea is relatively slow and port declines, bad weather or port duties, for instance, can affect the schedules quite a lot and tracking of the shipment can sometimes be challenging. The global schedule reliability has decreased to 30%-40% during the year 2022 (Container News 2022). However, the customers who responded to the survey consider sea transport reliable.

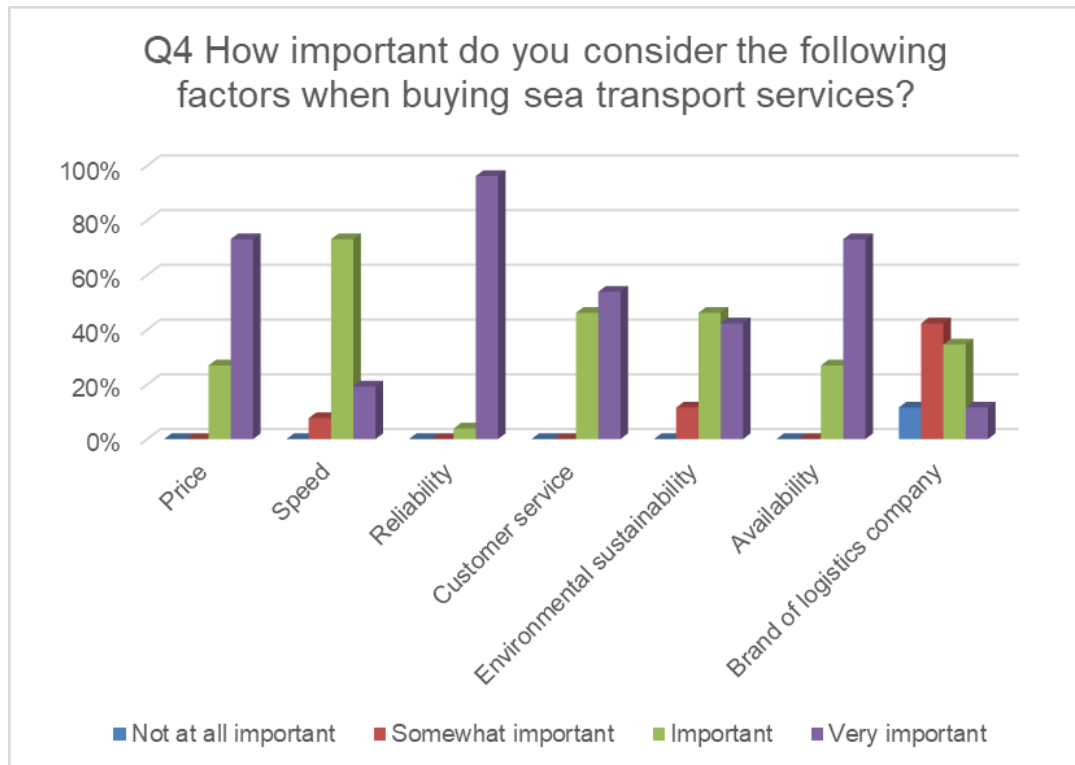


Figure 12; How important do you consider the following factors when buying sea transport services? n=26

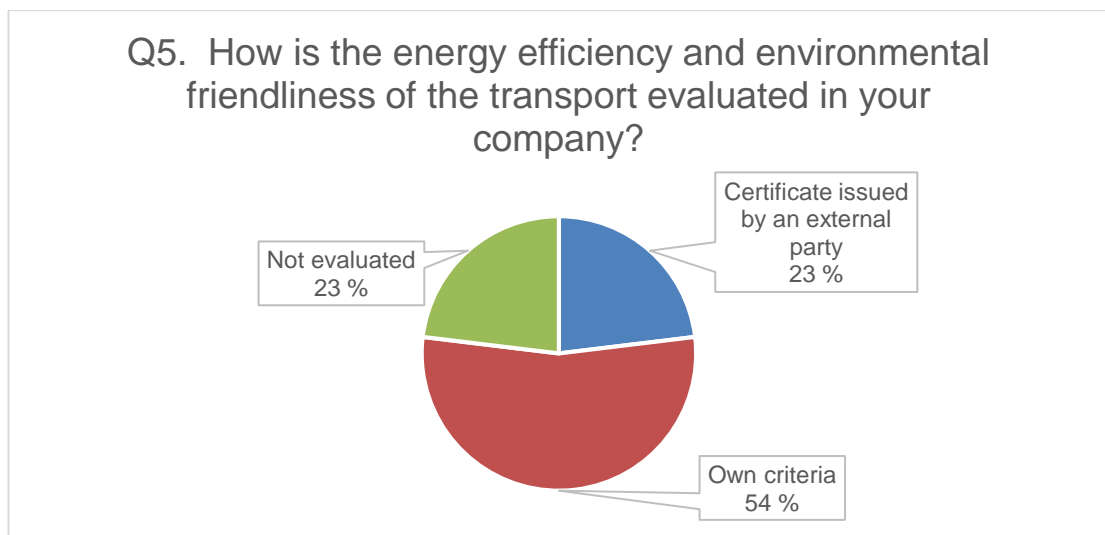


Figure 13; The evaluation method of the energy efficiency and environmental friendliness of the transport service provider. n=26

The question six asked about the evaluation method of the energy efficiency and environmental friendliness of transport service provider. Most respondents

have their own criteria for the evaluation of transport (figure 13). Therefore, the most of the companies, 54%, trust their own assessment of the environmental friendliness of transport more than an external assessor. Naturally, the survey does not tell what kind of requirements the own criteria contains but the number of those who trust their own criteria is considerable. In addition, 23% of the respondents do not evaluate the energy efficiency and environmental friendliness of transport service provider.

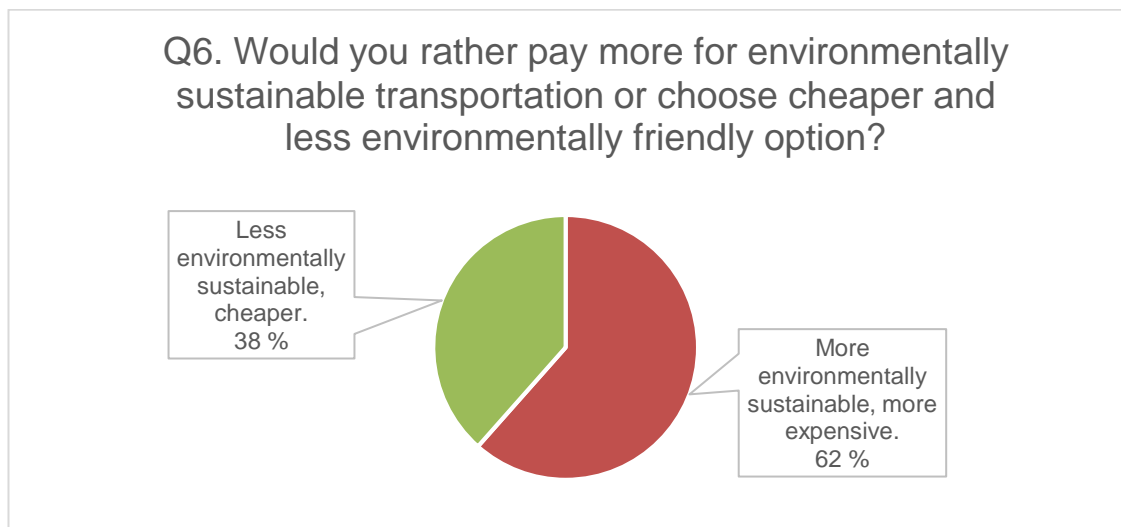


Figure 14; Would you rather pay more for environmentally sustainable transportation or choose cheaper and less environmentally friendly option? n=26.

The majority of the respondents, 62%, would choose an environmentally friendly and more expensive transport instead of a cheaper and less environmentally sustainable transport. However, considering the answers in the background section, such as a commitment to environmental friendliness, the result is expected. However, the price and other factors of the transport service also matter, and a very few companies make their decisions in such a few criteria.

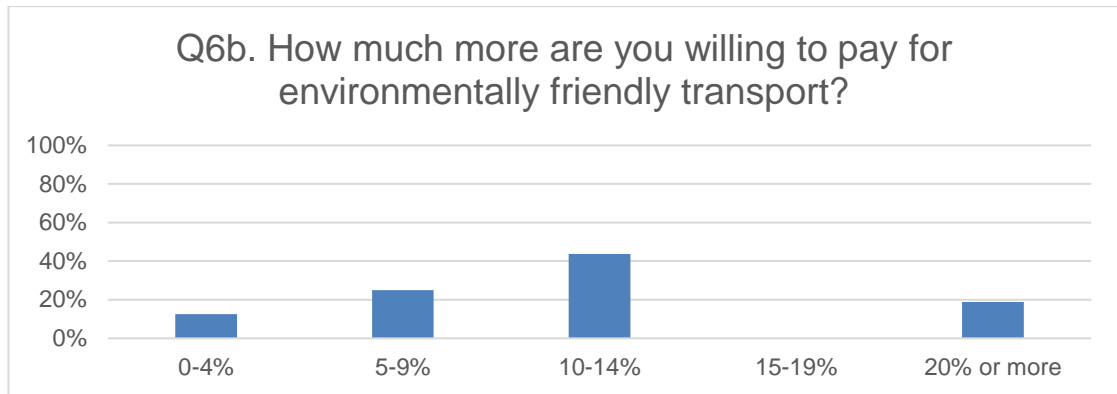


Figure 15; The willingness to pay more for environmentally friendly transport. n=16

Question 6b was presented to the respondents who chose option “more environmentally sustainable, more expensive” in question seven. Therefore, the sample size (n) is different and smaller than in the other questions.

The majority of respondents, who are positive about the additional costs for climate-friendly transport, could pay 1-14% more from the transport. Therefore, large additional costs not seemed as positive thing when transport costs have increased anyway, but a small additional extra charge is not completely excluded idea.

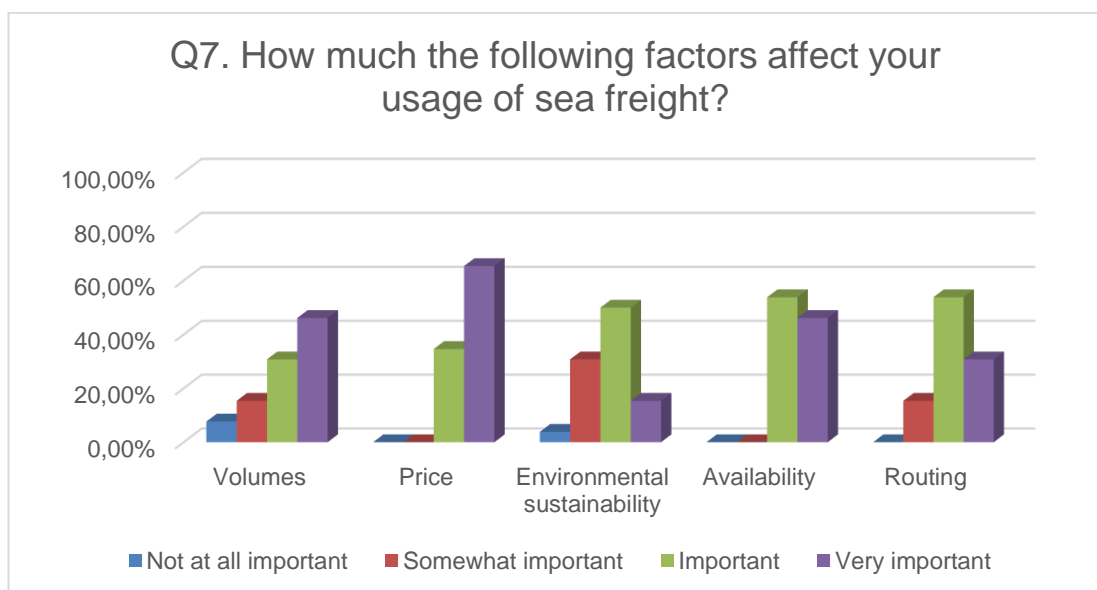


Figure 16; The main factors affecting usage of sea freight. n=26

The price is the most important influencing factor for the use of sea freight. In addition, carrying capacity of large volumes is an important influencing factor for customers to choose sea freight. Routing and environmental sustainability are not very important factors influencing the choice of sea freight.



Figure 17; Sustainability actions of logistics companies. N=26

The purpose of the question nine was to find out how actively the sea logistics services users follow sustainability actions of logistics companies or how aware the market's sustainability offerings and actions are to them. Only half (54%) of the respondents followed actively the sustainability trends and actions of logistics companies. The survey did not ask how these trends and actions are followed.

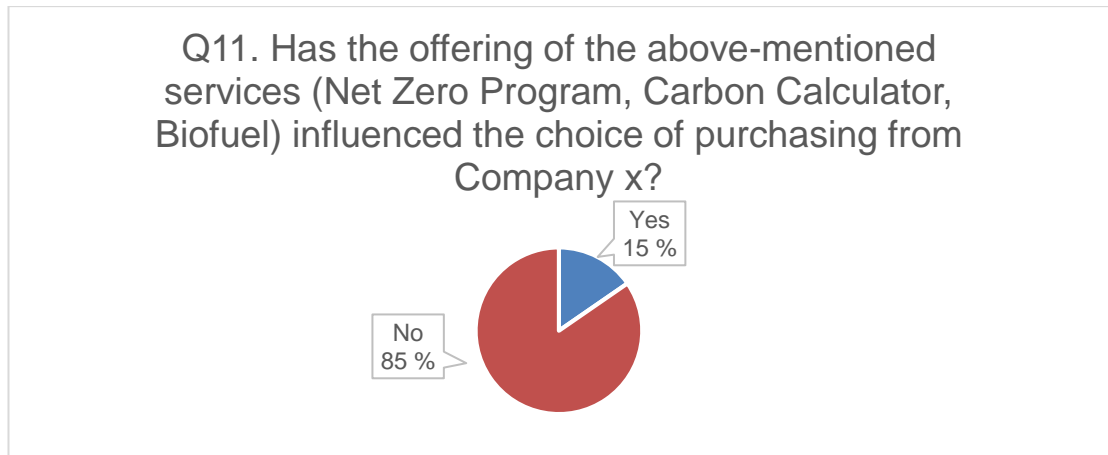


Figure 18; The services influencing the purchasing decision. N=26

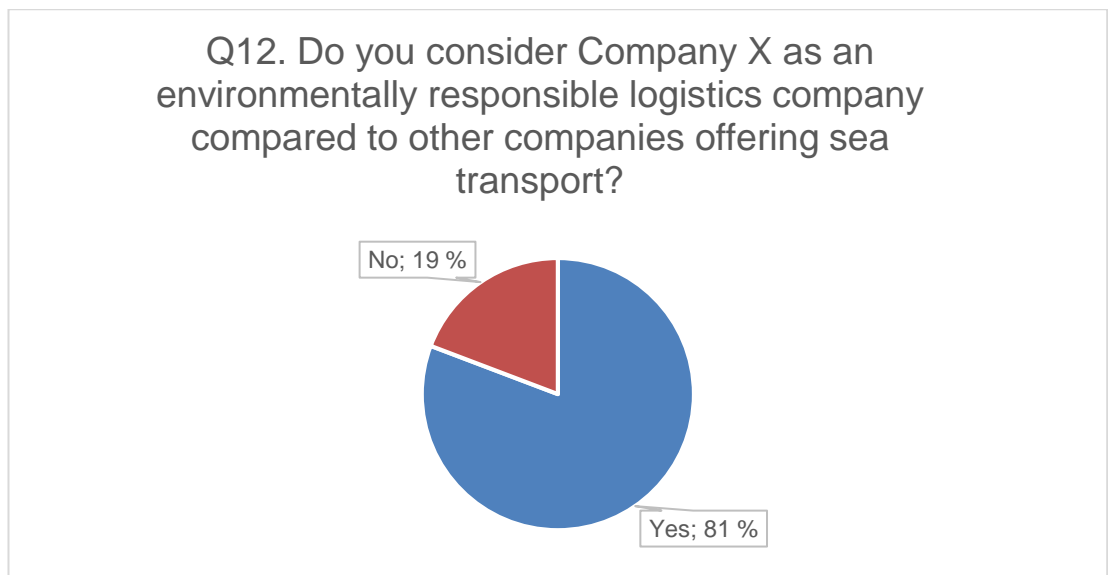


Figure 19; Company x in comparison to the other logistics companies. N=26

Intention of the questions 11 and 12 (figure 18 and 19) was to find out whether the customers consider Company x is an environmentally responsible logistics company and whether the offering of sustainability services influenced the customer's decision to purchase services from Company x.

The services mentioned in the survey were Net Zero Program, Carbon Calculator and Biofuel-solutions. Net Zero Program is Company x's plan to the net zero emissions. Carbon calculator is an intelligent and visual platform in the browser or application that enables route planning and comparison of the

prices, the emissions and the delivery times of different routes. Biofuel solutions provide environmentally friendly alternatives, such as biomass, to traditional fossil fuels, and the customer receives the documentation of the choice for the record (Company x, 2022).

Based on answers on question 12, the most respondents considered the brand of Company x environmentally sustainable but the service offering have not influenced the purchasers to buy logistics services from Company x.

6.3 Open questions

The survey had four open questions the purpose of which was to give customers the opportunity to come up with ideas for the future services. These questions were not set as mandatory to avoid survey fatigue and leaving survey unfinished.

With the question number eight, the respondents provided sustainable solutions they would wish transport services provider be providing in the future. The answers revealed that transport service providers are expected to act in environmentally sustainable way anyway. Logistics companies are expected to develop their offering in a way that there is always an opportunity to choose a more environmentally friendly transport option, or a compensation for environmental impacts is included to the service.

In addition, respondents mentioned that the quotation should already include emissions the offered transport and route will cause, because in the future emissions will be compared in addition to prices. Apparently, it is not yet done in all the companies. The importance of the price and pricing also came up in the answers. The price and speed are valued factors when booking sea freight, as well as the professionalism and customer service contact until the final delivery. Furthermore, routing optimization, speed, reliability, environmental friendliness, fleet development, compensations, and development of innovative solutions referred.

Open question number 12a asked why clients think that Company x is an environmentally responsible logistics operator. This question was optional and popped up only if Company x was seen as a responsible environmental actor in the previous question. Many responds mentioned that Company x has been talking about environmental sustainability for longer time than others have done. As well, responsibility was seen as a requirement for logistics companies or that Company x is as responsible as the competitors are.

Question 14 asked if respondent has any thoughts about other additional services related to environmental sustainability that Company x or other logistics companies could offer in the future. This question did not get many answers but the environmental responsibility wanted to level at the normal price level. In addition to carbon neutrality, one was hoping for compensation combinations to offset the carbon footprint, where the compensation allocated to the country of origin and the destination country, and the customer can decide the percentage ratio.

The purpose of the last open question was to give feedback and additional comments related to environmental responsibility. A few comments highlighted the importance of the topic and keeping the topic it up and asking customers opinions about environmental sustainability considered important. The survey considered successful, because of received positive comments.

6.4 Development targets and further research proposals

- This survey conducted to the sea freight customers. A similar survey could be generated for customers of road and air transport to investigate how much environmental sustainability is affecting their choices of transport providers. In addition, a wider study for customers of different logistics companies would be interesting.
- Due to the small number of respondents, conclusions about the effects of the company size and the sustainability strategy could not be drawn in this study. Sustainability strategy implementations between SME and

larger companies may be significant (Balasubramanian, S. et al, 2020). Therefore, studying any performance differences between large and small companies could be interesting.

- This study concentrated on sea freight users in Finland. Similar research could be conducted in a different country or continent. Finnish companies are in general aware of environmental sustainability factors and responsible actors while in some other country the situation might be radically different.

7 Conclusion

To conclude the findings of the study, environmental sustainability is a valued topic to the companies purchasing sea freight services. Moreover, the sea freight buyers are increasingly interested the significance of environmental sustainability when making a purchasing decision. On the other hand, the cost-factors affect the choice of the transport service provider more than environmental factors. As well, reliability, customer service and availability are considered more important than environmental factors when choosing sea logistics services.

The clients suggest transparent data sharing and clear pricing and quotation. The survey respondents would prefer to have the environmental sustainability included in purchased transport service and not sold as an extra package so that increasing environmental sustainability does not mean additional work. Developing co-operation between the logistics services provider and service purchaser increases environmental sustainability performance management and development.

The debate on study topic is very timely. The transport and logistics industry is committed to working to decrease the greenhouse gas and other emissions to meet the climate goals. The most important issues to solve in the near future will be the development of the emission data comparability framework

(CountEmission) and how the current ships in more energy-saving and environmentally friendly way. (European Environment Agency 2022; Laitinen, P. 2022; Kohti vastuullisempaa logistiikkaa 2022). The development of data comparison is the key to increase awareness of environmental impacts of logistics.

Finally, in general, global political and financial uncertainties have no significant influence on companies' commitment to environmental goals. Being an environmentally responsible actor regarded as strategically important and not compromised primarily when searching for savings targets. As a conclusion, environmental sustainability is a future requirement and strategic target for every company operating in the field of transportation and logistics.

7.1 Recommendations to Company x

From Company x point of view, the client companies greatly appreciate keeping the topic of environmental responsibility up in the discussion and visible investing in sustainable development. In addition, the survey itself received positive feedback, as it indicates a will to develop the organization's internal operations to be more environmentally responsible and customer-oriented.

Environmental responsible brand of Company x has partly influenced customer's decisions to purchase transport services from Company x. In addition, the customers considered Company x to be an environmentally sustainable company. Some respondents took it for granted that the big transport companies participate actively the development of biofuels and other transport innovations. However, the services available (Net Zero Program, Carbon Calculator and Biofuel solutions) have not influenced the purchase decision. This may be because the information about services have not reached or interested all clients. Alternatively, the original reason for buying transport services from Company x might have been something else, such as brand, customer service or reputation in the industry. Therefore, Company x should

improve customer's awareness of the available services and prepare customized solutions and increase sustainability communication.

Half of the respondents expressed that they would be ready to pay more for environmentally friendly services. In addition, for the majority of this population a 10 per cent price increase because of environmental sustainability was appropriate. However, the respondents were not interested in separate compensation payments. Keeping pricing simple is thus essential.

In addition, the responses to the open questions were positive. The respondents suggested that logistics companies should develop their offerings and transparency so that the client could always choose the most environmentally friendly option, because in the future the company's choices will compare not only prices but also emissions. The options should be built simple so that the client gets the most environmentally sustainable option in the same package without too complicated pricing and is offered the most environmentally sustainable option primarily.

Finally, Company x should continue keeping the sustainability topic on the discussion with the webinars, the newsletter and the publicity. Environmental sustainability is the megatrend of logistics industry and all the industry operators talk about it nowadays, but keeping the role of a pioneer, transparent cooperating with other actors in the field as well as data sharing and communicating about the topic are valuable and noticed.

7.2 A framework for sustainable logistics purchasing

Identifying and choosing logistics services provider is important decision from the sustainability point of view (Jauhar and Pant, 2017). A framework for sustainable logistics purchasing developed based on standard procurement process presented on paragraph 4.6. The framework concentrates on the purchasing decision making stages from purchaser point of view.

The author developed a framework for green procurement because of the growing interest in the environmental sustainable procurement and a little information and guidelines available. The framework (table 2) is a simple outline of the key points emerged in the different stages of this study.

- Recognize the need for sustainable supplier selection.
- Identify key sourcing requirements and create categories and strategy for environmental sustainability.
- Determine sustainable sourcing strategy (single, dual or multi supplier).
- Identify potential supply sources that could meet sustainability requirements by analyzing external certificates or own criteria.
- Limit suppliers in selection pool by selecting suppliers that meet sustainability requirements.
- Determine method of supplier evaluation and selection.
- Select suppliers and reach agreement with sustainability requirements. Agree on performance targets and finalize contracts with sustainability annexes.
- Sustainability performance management by sharing and analyzing data collaboratively. Comply with environmental sustainability principles in order to reach sustainable development targets.

Table 2; Framework for an environmentally sustainable logistics procurement process creation (Own illustration based on Gromova, Muss. 2017.; Wang T. et al. 2017.)

Firstly, the purchaser should understand the concept of environmental sustainability and which factors to evaluate for that. Environmental sustainability

should be highlighted in the company strategy; otherwise, it is not considered in the purchasing process. Then, the company should determine their own analysis method and decide how they want to define and evaluate the environmental sustainability of their transport services provider. In this part, purchaser can use external evaluation or company's own assessment criteria.

Then, after choosing and nominating transport service providers, the supplier databases with sustainability evaluations can be generated and common sustainability strategy agreed with logistics service provider. The final stage includes the implementation, performance evaluation and development. Furthermore, the transparent data sharing about emissions already in the transport booking is a part of continuous development and co-operation. Monitoring sustainability performance in co-operation accelerates the way towards the sustainable development targets.

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Appendix

The survey sent to the respondents in Finnish but translated in English. The translated survey is available from page 30 of Appendix 1.

Survey in Finnish

* -merkityt kysymykset olivat pakollisia.

TAUSTA

1. Yrityksenne liikevaihtoluokka (miljoonaa euroa)*

- 1-2 milj.
- 2-10 milj.
- 10-20 milj.
- 20-50 milj.
- 50-100 milj.
- yli 100 milj.

2. Onko epävakaalla maailmantilanteella ja korkeammilla rahtikustannuksilla negatiivinen vaikutus yrityksenne sitoutumiseen ympäristötoimiin/ohjelmiin yleensä? *

- Ei ollenkaan
- Jonkin verran
- Paljon

3. Kuinka suuri vaikutus ympäristövastuullisuudella on yrityksenne ostopäätöksiin? *

1 – ei vaikutusta 2 – vaikuttaa jonkin verran 3 – vaikuttaa paljon 4 – vaikuttaa erittäin paljon en osaa sanoa
--

VASTUULLISUUS

4. Kuinka tärkeinä pidätte seuraavia tekijöitä merikuljetuspalveluita ostaessanne? *

Hinta	1 – ei lainkaan tärkeää
Nopeus	2 – ei kovin tärkeää
Luotettavuus	3 – melko tärkeää
Asiakaspalvelu	4 – erittäin tärkeää
Vastuullisuus	
Kuljetuksien saatavuus	
Kuljetusliikkeen brändi/tunnettavuus	

5. Miten kuljetushankintojen energiatehokkuutta ja ympäristöystävällisyyttä arvioidaan yrityksessänne? *

- Ulkopuolisen tahon myöntämä sertifikaatti tai todistukset
- Omat kriteerit
- Ei arvioida

6. Maksatko mieluummin enemmän ympäristövastuullisemmasta kuljetuksesta vai valitsetko halvemman ja vähemmän ympäristöystävällisemmän vaihtoehdon? *

- Ympäristöystävällisyys, kalliimpi
- Vähemmän ympäristöystävällinen, halvempi

JATKOKYSYMYS, jos edellisen vastaus ”ympäristöystävällisyys, kalliimpi”:

- a. Kuinka paljon enemmän olette valmiit maksamaan ympäristövastuullisemmasta kuljetuksesta?

0% - 100% slider

7. Kuinka paljon seuraavat syyt vaikuttavat siihen, että käytätte merirahtia? *

Suuret volyymit	1 – ei lainkaan tärkeää
Hinta	2 – ei kovin tärkeää
Ympäristövastuullisuus	3 – melko tärkeää
Saatavuus	4 – erittäin tärkeää
Reitit	

8. Millaisia kestäviä ratkaisuja odotat käyttämältäsi kuljetusyritykseltä tulevaisuudessa?

(AVOIN VASTAUS, vapaaehtoinen)

YRITYS x

9. Seuraatko aktiivisesti kuljetusyrityksien vastuullisuustoimia? *

Kyllä

Ei

10. Ovatko seuraavat Yritys x:n tarjoamat palvelut sinulle tuttuja? *

Net Zero Program

Carbon calculator

Biofuel- ratkaisut

11. Onko yllämainittujen palveluiden tarjonta vaikuttanut Yritys x:n valintaan kuljetuspalveluiden tarjoajaksi? *

Kyllä

Ei

12. Koetteko Yritys x:n ympäristövastuulliseksi logistiikkatoimijaksi muihin merikuljetuksia tarjoaviin yrityksiin verrattuna? *

Kyllä, miksi? _____

Ei, miksi? _____

13. Kuinka tärkeää Yritys x:n hiilineutraalius on sinulle? *

1 – ei lainkaan tärkeää

2 – ei kovin tärkeää

3 – melko tärkeää

4 – erittäin tärkeää

14. Onko teillä toiveita tai ajatuksia, mitä muita ympäristövastuullisuuteen liittyviä lisäpalveluita Yritys x voisi tarjota jatkossa?

(AVOIN VASTAUS, vapaaehtoinen)

15. Onko teillä muita ympäristövastuullisuuteen liittyviä kommentteja?

(AVOIN VASTAUS, vapaaehtoinen)

16. Haluaisitteko lisätietoa Yritys x:n ympäristövastuullisuudesta?

Kyllä, sähköpostiosoitteenne: _____

Ei

Survey in English

Questions marked with * set as mandatory.

BACKGROUND

1. The company's turnover category (million euros).*

1-2 milj.

2-10 milj.

10-20 milj.

20-50 milj.

- 50-100 milj.
- yli 100 milj.

2. Do the unstable global situation and increased freight prices affect negatively your company's commitment to the environmental actions/programs in general?

*

- Not at all
- Somewhat
- A lot

3. How much environmental sustainability affects the company's purchasing decisions? *

- | |
|-----------------------|
| 1 – No affect |
| 2 – Affects somewhat |
| 3 – Affects a lot |
| 4 – Affects very much |
| Unable to say |

SUSTAINABILITY

4. How important do you consider the following factors when buying sea transport services?*

Price	1 – Not at all important
Speed	2 – Somewhat important
Reliability	3 – Important
Customer Service	4 – Very important
Environmental sustainability	
Transport availability	

Brand of transport company	
----------------------------	--

5. How is the energy efficiency and environmental friendliness of the transport evaluated in your company? *

- A certificate issued by an external party
- Own criteria
- Not evaluated

6. Would you rather pay more for environmentally sustainable transportation or choose cheaper and less environmentally friendly option?*

- More environmentally sustainable, more expensive.
- Less environmentally sustainable, cheaper.

If "more environmentally sustainable, more expensive " chosen:

- a) How much more are you willing to pay for more environmentally responsible transportation?

Slider 0-100%

7. How much the following factors affect your usage of sea freight? *

Volumes	1 – Not at all important
Price	2 – Somewhat important
Environmental sustainability	3 – Important
Avaliability	4 – Very important
Routes	

8. OPEN QUESTION: What kind of sustainability solutions do you expect from the transport company you use in the near future?

COMPANY x

9. Do you actively follow environmental sustainability actions of the transport companies? *

- Yes
- No

10. Are you familiar with the following services of Company x? *

- Net Zero Program
- Carbon calculator
- Biofuel

11. Has the offer of the above-mentioned services influenced the choice of Company x? *

- Yes
- No

12. Do you consider Company x as an environmentally responsible logistics company compared to the other companies offering sea transport? *

- Yes
- No

a. OPEN QUESTION: Why?

13. How important is Company x's carbon neutrality to you? *

- 1 – Not at all important
- 2 – Somewhat important
- 3 – Important
- 4 – Very important

14. OPEN QUESTION: Do you have any thoughts about the other additional services related to environmental sustainability that Company x could offer in the near future?

15. OPEN QUESTION: Do you have any other comments regarding to environmental sustainability?

16. Would you like to receive any additional information about environmental responsibility of Company x?

Yes, email:

No