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# **SUSTAINABLE SUPPLIER ASSESSMENT AND SELECTION**

Case study: an energy and technology industry company

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Master's thesis

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# ABSTRACT

Alisa Kaasinen: Sustainable supplier assessment and selection - Case study: an energy and technology industry company  
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Sustainable development has been a growing topic of debate among researchers and practitioners. Companies in particular have been seen as playing an important role in addressing sustainability challenges. Both internal and external stakeholders are demanding companies to extend their commitment to sustainability beyond their own operations to the supply chain. As supplier selection plays a key role in the development of sustainable supply chain management, companies increasingly need to focus on assessing suppliers based on their environmental and social performance.

In this research, the sustainable supplier assessment and selection is examined from the case company's point of view. The purpose is to find out what the current status of the sustainable supplier assessment and selection process is in the case company, and how it could be developed in terms of environmental and social sustainability. It is also explored what kind of contribution an ethical organizational culture has on decision making in sustainable supplier assessment and selection. In this study, previous literature of sustainable supply chain management, corporate sustainability and ethical organizational culture is combined on which basis the theoretical framework is formed.

This research follows the qualitative case study approach. The empirical research data consists of eight interviews conducted with nine interviewees, and case company's public documentary materials. The data was analyzed by using theory-guided qualitative content analysis method with the support of analytical framework developed during the analysis process.

The findings show that the sustainability issues are integrated into the case company's supplier assessment and selection, but there is room for improvement. Challenges were seen mainly in the relation of sustainability criteria to traditional criteria in supplier assessment and selection, the limited tools and guidelines to assess and compare suppliers' sustainability performance, and the uncertainty in ethical decision making. Additionally, the findings show that ethical organizational culture has a significant contribution to decision making, and it can be promoted especially by top management.

Based on the findings of the empirical study and previous research literature, three conclusions are formed. First, sustainable supplier assessment and selection process can be enhanced through continuous improvement of tools, clear guidelines, and compliance development. Secondly, an ethical organizational culture can significantly support decision making in sustainable supplier assessment and selection process. Thirdly, sustainable procurement can be defined as a process by which organizations meet their needs for goods and services in a way that provides value for money while minimizing harm to the environment and society. These conclusions are also the basis for the practical proposals presented to the case company to promote their transition to sustainable procurement activities.

**Keywords:** Sustainable procurement, sustainable supplier selection, sustainable supplier assessment, supply chain management, sustainable supply chain management, ethical organizational culture

The originality of this thesis has been checked using the Turnitin OriginalityCheck service.

# TIIVISTELMÄ

Alisa Kaasinen: Kestävä toimittajan arviointi ja valinta – Tapaustutkimus: energia- ja teknologiateollisuuden yritys  
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Kestävä kehitys on ollut kasvava keskustelunaihe niin tutkijoiden kuin yritysten keskuudessa. Erityisesti yrityksillä on nähty olevan tärkeä rooli kestävän kehityksen haasteisiin vastaamisessa. Sekä sisäiset että ulkoiset sidosryhmät vaativat yrityksiä laajentamaan sitoutumistaan kestävään kehitykseen oman toimintansa lisäksi myös toimitusketjuun. Koska toimittajan valinnalla on keskeinen rooli kestävän toimitusketjun hallinnan kehittämässä, yritysten on yhä enemmän keskityttävä arvioimaan toimittajia niiden ympäristöllisen ja sosiaalisen suorituskyvyn perusteella.

Tässä tutkimuksessa tarkastellaan kestävää toimittajan arviointia ja valintaa tapausyrityksen näkökulmasta. Tarkoituksena on selvittää, mikä on kestävän toimittajan arvioinnin ja valinnan nykytila tapausyrityksessä ja miten sitä voitaisiin kehittää ympäristöllisen ja sosiaalisen kestävyuden näkökulmasta. Lisäksi tutkitaan, millainen vaikutus eettisellä organisaatiokulttuurilla on päätöksentekoon kestävässä toimittajan arvioinnissa ja valinnassa. Tässä tutkimuksessa yhdistetään kestävää toimitusketjun hallintaa, yritysvastuuta ja eettistä organisaatiokulttuuria koskevaa aiempaa kirjallisuutta, jonka pohjalta muodostetaan teoreettinen viitekehys.

Tämä tutkimus on laadullinen tapaustutkimus. Empiirinen tutkimusaineisto koostuu kahdeksasta haastattelusta, joihin osallistui yhteensä yhdeksän haastateltavaa. Lisäksi aineistonkeruussa hyödynnettiin tapausyrityksen julkista dokumenttiaineistoa. Aineisto analysoitiin käyttämällä teoriaohjaavaa laadullista sisällönanalyysimenetelmää analyysiprosessin aikana kehitetyn analyttisen viitekehysten tuella.

Tutkimustulokset osoittavat, että kestävään kehitykseen liittyvät kysymykset ovat sisällytetty tapausyrityksen toimittajan arviointiin ja valintaan, mutta siinä on parantamisen varaa. Haasteita nähtiin lähinnä kestävyyskriteerien ja perinteisten kriteerien välisessä suhteessa toimittajan arvioinnissa ja valinnassa, toimittajien kestävyys suorituskyvyn arviointiin ja vertailuun tarkoitettujen ohjeiden ja välineiden rajallisuudessa sekä eettiseen päätöksentekoon liittyvässä epävarmuudessa. Lisäksi tulokset osoittavat, että eettisellä organisaatiokulttuurilla on merkittävä vaikutus päätöksentekoon, ja sen edistämistä voi tukea erityisesti ylin johto.

Empiirisen tutkimuksen tulosten ja aiemman tutkimuskirjallisuuden perusteella esitetään kolme johtopäätöstä. Ensinnäkin kestävää toimittajan arviointia ja valintaa voidaan tehostaa parantamalla jatkuvasti työkaluja, selkeillä ohjeilla ja kehittämällä vaatimustenmukaisuutta. Toiseksi eettinen organisaatiokulttuuri voi merkittävästi tukea päätöksentekoa kestävässä toimittajan arviointi- ja valintaprosessissa. Kolmanneksi kestävä hankinta voidaan määritellä prosessiksi, jonka avulla organisaatiot tyydyttävät tavaroiden ja palvelujen tarpeensa siten, että ne saavat vastinetta rahalle ja minimoivat samalla ympäristölle ja yhteiskunnalle aiheutuvia haittoja. Nämä johtopäätökset ovat myös perustana käytännön ehdotuksille, jotka on esitetty tapausyritykselle sen siirtymiseksi kestävimpiin hankintatoimiin.

Avainsanat: Kestävä hankinta, kestävä toimittajan valinta, kestävä toimittajan arviointi, toimitusketjun hallinta, kestävä toimitusketjun hallinta, eettinen organisaatiokulttuuri

Tämän julkaisun alkuperäisyys on tarkastettu Turnitin OriginalityCheck -ohjelmalla.

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# 1 INTRODUCTION

## 1.1 Background and motivation

Sustainable development has become a widely discussed topic both by researchers and by practitioners. What it is, what should be done about it and how quickly? (Mohrman & Worley, 2010, 289.) The challenges facing society, such as climate change, loss of nature, over-exploitation of natural resources and global inequalities, require action based on a comprehensive understanding of both current and future sustainable development options (Hellström & Parkkonen, 2022). Businesses in particular are widely recognized as having a crucial role in promoting sustainable development (Koplin, Seuring & Mesterharm, 2007).

A company is only as sustainable as the suppliers it decides to select and retain (Krause, Vachon & Klassen, 2009, 18). In recent years, organizations are increasingly being held accountable for the actions of their suppliers, meaning that organizations must improve their sustainability performance beyond the supply chain and put more effort on assessing their suppliers' activities in terms of sustainability (Goebel, Reuter, Pibernik & Sichtmann, 2012; Vachon & Mao, 2008). To respond to the pressure from different stakeholder groups, focal companies need to find means to enhance their environmental and social sustainability aspects in their supply chain management (Koplin et al. 2007). Therefore, organizations must actively monitor and control their supplier cooperation to ensure that their suppliers are operating in a sustainable way. (Goebel et al. 2012; Vachon & Mao, 2008.)

Both internal and external stakeholders are demanding more effective management of environmental and social impacts from organizations at all stages of their supply chain. For purchasing companies to be able to keep their supply chain with high sustainability standards and monitor their supplier portfolio from the perspective of environmental and social sustainability, the aspects of sustainable development must be included in the supplier assessment and selection process. (Goebel et al. 2012, 8.) Thereby, buying organizations are increasingly requiring their suppliers to comply with the environmental and social standards (Seuring & Muller, 2008, 1704).

Zimmer, Fröhling and Schultmann (2016, 1431) outlined that as environmental and social sustainability criteria integration is widely studied in automotive and electronics industries, the investigations in other industries have remained rare. Moreover, most of the sustainable supplier assessment and selection research focuses on assessing and selecting suppliers based on environmental aspects, and they do not consider the social aspect of sustainable development (Song, Xu & Liu, 2017). Seuring and Muller (2008) found a clear overall lack of research on social issues in supply chain management and purchasing literature. Additionally, Dai and Blackhurst (2011) pointed out that the research of sustainability integration into supplier assessment and selection remains low, nor have traditional supplier selection studies emphasized environmental or social sustainability factors (Bai & Sarkis, 2010).

This qualitative research aims to examine the environmental and social sustainability of the current supplier assessment and selection process of a case company in the context of energy and technology industry. The research focuses on the sustainability practices and requirements included in the current supplier assessment and selection process, as several studies have found that the supplier assessment and selection is recognized to have an essential impact in the supply chain sustainability. (Goebel et al. 2012; Luthra, Govindan, Kannan & Mangla, 2017; Zimmer, Fröhling & Schultmann, 2016.)

## **1.2 Research problem and questions**

The purpose of this case study is to examine and evaluate the case company's current supplier assessment and selection in terms of sustainability. The aim of the research is to identify the gaps and development opportunities related to the case company's current sustainable supplier assessment and selection and examine how it could be enhanced. The aim is to find out how ethical organizational culture contributes to decision making in sustainable supplier assessment and selection. The research aims to increase the case company's understanding and awareness of its current sustainable supplier assessment and selection practices and how they could be enhanced from an environmental and social sustainability perspective.

The primary research question is:

- *How can the sustainable supplier assessment and selection process be developed?*

The research question is examined through a single case study. The study aims to first map the current state of the case company's supplier assessment and selection process from environmental and social sustainability point of view as broadly as possible to understand the challenges and opportunities involved in it. Thereafter, the empirical findings of the current state of supplier assessment and selection process are evaluated against the findings from theoretical framework.

Sub-questions supporting the primary research question:

- *What is the current state of sustainable supplier assessment and selection process in the case company?*
- *How does an ethical organizational culture contribute to decision making in sustainable supplier assessment and selection process?*

Although, the case company implements sustainability practices extensively throughout its operations, the case company representatives pointed out that there is no common definition of sustainability within the organization's procurement function. That is, there is a need for developing an understanding of what sustainable procurement means in relation to the case company's overall strategy. Herewith, a mutual definition for sustainable procurement will be provided for the case company's procurement function, as such has not been defined before. In addition, the research aims to find concrete means by which the case company can develop its supplier assessment and selection operations in accordance with the principles of sustainable development.

With that been said, the case study research also answers the question:

- *What is sustainable procurement?*

The research questions are answered with the support of the theoretical framework and the findings from the empirical data. The empirical data is collected through semi-structured interviews and the case company's documentary materials. The data is analyzed using a theory-guided content analysis method, supported by the analytical framework formed during the analysis process.

The keywords of the research are *(sustainable) procurement, sustainable supplier selection, sustainable supplier assessment, (sustainable) supply chain management, and ethical organizational culture*. Definitions of keywords are explained in the next Chapter (1.3).

### 1.3 Main concepts

The National Procurement Strategy's (NPS) defined **procurement** as the process of purchasing goods and services from third parties. The process starts with the identification of needs all the way to the end of contracts. (Local Government Association, 2014.) Miemczyk et al. (2012) defined **sustainable procurement** as achieving sustainable development goals through procurement and supply management processes. One of the most frequently cited definition of sustainable procurement is that of UK's Department for Environment, Food and Rural Affairs (DEFRA, 2006, 10), which defined sustainable procurement as follows:

*...process whereby organisations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organisation, but also to society and the economy, whilst minimising damage to the environment.*

A prerequisite to sustainable procurement is that all three sustainability dimensions - environmental, social, and economic - are included in all procurement processes. That is, sustainability should not be considered only in supplier assessment and selection, but also in supplier development and all other supplier management related processes. (Schneider & Wallenburg, 2012, 245.) Furthermore, Schneider and Wallenburg (2012, 245) argue that for sustainability criteria to be truly effective, they must go beyond legal requirements and impose restrictions that limit the freedom to make sourcing decisions.

Goebel et al. (2012) introduced **sustainable supplier selection (SSS)** as a process where purchasing professionals consider social and environmental criteria when selecting new suppliers. In sustainable supplier selection, the criteria are determined based on three sustainability dimensions (Fallahpour et al. 2017). The purpose of sustainable supplier selection is to distinguish the environmental and social sustainability criteria from economic

factors in supplier selection. That is, sustainable supplier selection describes the extent to which purchasing professionals consider environmental and social factors when selecting new suppliers. (Goebel et al. 2012.) Rashidi, Noorizadeh, Kannan and Cullinane (2020, 2) defined sustainable supplier selection as:

*...a process by which the best suppliers (in terms of the triple bottom line of economic, social, and environmental objectives) are selected in order to improve the purchasing process, help strategic partnership selection, enhance product quality, increase customer satisfaction and, ultimately, to gain a competitive advantage in the market for a buyer.*

In this study, **sustainable supplier assessment** is considered as one part of the sustainable supplier selection process, where a potential supplier is assessed from an environmental and social sustainability perspective. According to Gimenez and Tachizawa (2012, 533) supplier assessment is related with any activity that includes evaluating suppliers, for example, by questionnaires and on-site audits.

**Supply chain management** includes all activities related to the transformation and flows of goods and services from raw materials to end user (Fallahpour et al. 2017; Seuring & Muller, 2008). Traditionally, it has been seen as primarily operational with its major target on reducing costs (Giunipero, Hooker & Denslow, 2012, 258). **Sustainable supply chain management (SSCM)** can be considered as an approach that comprises the traditional elements of supply chain, such as management of material, information and capital flows, and stakeholder cooperation along the supply chain, but also considering all three dimensions of sustainable development. (Fallahpour et al. 2017; Seuring & Muller, 2008.) In a sustainable supply chain, all members of supply chain must meet environmental and social sustainability criteria to remain part of the supply chain (Seuring & Muller, 2008, 1700).

An **ethical organizational culture** is a socially constructed phenomenon that includes those values and systems that can contribute to ethical behavior (Huhtala, Tolvanen, Mauno & Feldt, 2015). An ethical culture includes shared views in the organization about what is right and acceptable behavior. It represents how organizational values and norms support ethical behavior. (Kaptein, 2008; Trevino, 1986.) However, according to Trevino (1986) an individual's view of what is right or wrong is not enough to explain ethical behavior.

Situational variables, such as the normative structure of an organization, obedience to authority, responsibility for consequences, and other pressures moderate the individual's ethical behavior and decision making.

## **1.4 Assumptions and delimitations**

In order to limit the scope of the study to a manageable size and to facilitate the data collection process within a predefined time frame, the scope of the study has some limitations. In this context, below assumptions can be made:

- 1 This case study research concentrates on examining sustainable supplier assessment and selection in the context of the energy and technology industry, according to the case company's sector. The process of sustainable supplier assessment and selection is examined from the perspective of the case company, specifically the Facility Management & Services purchasing category.
- 2 This case study research focuses on the environmental and social dimensions of sustainability when examining the case company's supplier assessment and selection process. The development of supplier assessment and selection process from the perspective of environmental and social sustainability supports the case company's climate targets as well as the social sustainability related objectives. In addition, the narrower scope focusing on two dimensions of sustainability – environmental and social sustainability – enables a more thorough literature review and deeper analysis of the research topic. It should be therefore noted that this study examines the aspects of sustainability only from the perspectives of environmental and social sustainability and does not cover economic sustainability.

## **1.5 Scope and structure of the thesis**

The research process began in autumn 2022, by first discussing the possibility of conducting a master's thesis research in cooperation with the case company. As it was agreed to conduct the research in cooperation with the case company, the next step was to think about a suitable topic. Together with the representatives of the case company, it was strongly determined to

find a research topic that would support the case company's strategy and sustainability targets and interest me. In October 2022, the topic of sustainable supplier assessment and selection was chosen, and the seminar work on the thesis began. The thesis work started by writing and presenting the various stages of the report in seminars, such as the idea paper, topic analysis, literature review and research plan. In November 2022, the research plan was presented to the case company and in the seminar, after which the research topic was narrowed down to sustainable supplier assessment and selection from environmental and social sustainability perspectives. The final primary question and sub-questions took shape throughout the research process. The methodological choices for the research were made early in the research process, in parallel with familiarization with previous research literature. The theoretical part was gathered during the familiarization and complemented during the research data collection and analysis processes. The collection and analysis of the research data went partly hand in hand, as the first stage of the material analysis started while the empirical material was still being collected. The final theoretical framework was refined as the data collection and analysis of the data progressed. The study's conclusions were formed by examining the study's findings in relation to previous research literature.

The remainder of this thesis is structured as follows. Chapter 1, the introduction, discusses the background and motivation of the research, its aim, the research problem, questions, and the main concepts. Also, in Chapter 1, the research assumptions and limitations are defined. In the next Chapter the theoretical framework of the research is presented, which reviews previous literature on sustainable supply chain management in general and delves deeper into the elements, triggers and barriers involved in it. In addition, the literature on ethical organizational culture is reviewed as it was considered to contribute to ethical decision making in the context of sustainable supplier assessment and selection. Chapter 2 also examines the European Union's regulation and other widely recognized initiatives affecting supply chain management of organizations. Chapter 2 concludes with a theoretical synthesis, summarizing the theoretical framework of the study. Chapter 3 describes and justifies the methodological choices made in this qualitative research and presents the analytical framework of this study. Additionally, the main information of the case company under study is briefly outlined. In Chapter 4, the main findings of the study are presented. Chapter 5 presents the conclusions of the study and justifies its scientific and practical contributions. In Chapter 5, the reliability of the study is evaluated and proposals for further research are suggested.

## 2 THEORETICAL FRAMEWORK

### 2.1 Corporate sustainability

According to Giunipero et al. (2012, 260) there is no clear consensus on a definition of sustainability. The first mentions of sustainability or sustainable development were made in the context of preventing natural environment destruction, and minimizing its negative impacts on society, human health, and economy (Mohrman & Worley, 2010, 289). More recently, sustainable development is interpreted as a broader concept, including the environmental, social, and economic dimensions, together known as the triple bottom line (Mohrman & Worley, 2010, 289), developed by John Elkington (1999).

Today, the most common definition of sustainability is the one defined by the United Nations Brundtland Commission (1987, 8):

*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*

Although there is a growing common understanding on the definition of sustainability, there are still varied opinions on how to achieve it. At the organizational level, at one extreme are those who deny corporate responsibility for tackling pollution, social injustice, or other problems, and at the other extreme are companies that are fundamentally committed to building a more sustainable future and see preventing negative environmental and social impacts as the right business model. In any case, there is no doubt that organizations have an essential role in promoting sustainable development. (Mohrman & Worley, 2010.)

Interpreting the concept of corporate sustainability has lived with the way sustainability or sustainable development has been understood at different times. Corporate sustainability was first discussed in the world of academia. The concept of corporate sustainability did not enter the business world until the 1990s. Corporate sustainability at the time followed the vision of the United Nations Congress on Environment and Development (1992) of meeting environmental, social, and economic requirements simultaneously. (Hellström & Parkkonen,

2022.) Although corporate sustainability has received increasing attention in organizational and management literature, there is not much research on how the adoption of corporate sustainability practices can be achieved in organizations (Mohrman & Worley, 2010).

## **2.2 Ethical organizational culture**

The organizational context of ethical culture has previously been studied in relation to job satisfaction and organizational commitment. Additionally, the previous research has mainly focused on individuals, rather than considering whether the perceptions of ethical values and norms are shared within the organization. (Huhtala et al. 2015). Regardless of increasing interest and concerns to ethical decision making in organizations, very little empirical research has been conducted. Additionally, the lack of theory to guide research has made it challenging to develop the research area systematically. (Trevino, 1986.)

Many researchers argue that adopting ethical organizational culture leads to achievement of corporate sustainability principles (Linnenluecke & Griffiths, 2010). Transformation to ethical organizational culture sets the foundation for success and provides a basis for ethical decisions and behavior in everyday life of the organization and its members. However, building a strong ethical culture is a challenging process and it requires strong leadership and careful planning. The process of creating an ethical organizational culture starts with identifying the issues and gaps within the culture, which is why it is important to measure the overall organizational culture on a regular basis. (Nelson, Taylor & Walsh, 2020.)

Ethical organizational culture can be measured by Kaptein's (2008) Corporate Ethical Virtues (CEV) model, which provides a framework for assessing and measuring the culture of an organization through corporate ethical virtues. The CEV model holds that individuals and organizations should possess certain virtues to act ethically. The CEV model includes eight dimensions that are presented in Figure 1.

<b>Clarity</b> <i>The clarity of normative expectations of employees' behavior</i>	<b>Congruency of supervisors</b> <i>The supervisors' example and congruency of behavior and actions</i>	<b>Congruency of senior management</b> <i>The senior managements' example and congruency of behavior and actions</i>	<b>Feasibility</b> <i>The conditions created by the organization for the employee to comply with normative expectations</i>
<b>Supportability</b> <i>Organizational support for employees to achieve normative expectations</i>	<b>Transparency</b> <i>Transparent communication on the seriousness of the actions and consequences</i>	<b>Discussability</b> <i>Employees' possibilities to raise and discuss ethical issues</i>	<b>Sanctionability</b> <i>The consequences of the actions are clear and known to all</i>

Figure 1: The eight organizational virtues of the CEV model (Adapted from Kaptein, 2008; Huhtala, 2013).

The first dimension of the CEV model, *clarity*, refers to the clear and unambiguous presentation of rules and norms so that all employees have an equal understanding of how to act and behave in the organization. As moral intuition may not be enough for employees to distinguish between ethical and unethical behavior in the workplace, it is important to be clear about the ethical standards to which employees should adhere. The second dimension can be distinguished into two separate categories: *congruency* of supervisors and *congruency* senior management. In addition to having a clear set of ethical principles, it is important that management acts in accordance with these standards. If management does not act in accordance with the ethical principles, it creates inconsistent and conflicting signals to employees. The virtue of *feasibility* describes the extent to which an organization's actions create the conditions for employees to comply with normative standards. It was found that unethical behavior occurs when employees do not have enough time, money, tools, knowledge, and authority to perform their duties. The fifth virtue, *supportability*, is also extremely important for employees to reach the normative standards expected of them. Supportability refers to the extent to which an organization encourages its employees to commit to the normative expectations of the organization. The virtue of *transparency* refers to the open and transparent communication of information within an organization about the seriousness and consequences of actions. If the employees are not aware of the seriousness of their actions, they have no opportunity to draw attention to the consequences. The seventh virtue, *discussability*, refers to the extent to which the employees have opportunities to raise and discuss ethical issues. A culture of discussion encourages employees to learn from each

other's mistakes by allowing discussion, reflection, and analysis among employees. Finally, the last virtue, *sanctionability*, is about defining clear and well-known consequences of all actions. The employees should be aware of the consequences of unethical behavior. (Kaptein, 2008; Huhtala, 2013.)

When examining the background factors of sustainable supply chain management and sustainable supplier assessment and selection, ethical culture has been perceived to have a significant role in making environmentally and socially ethical decisions (Goebel et al. 2012). The findings of Goebel et al. (2012) research suggest that top management's ethical behavior as viewed by the purchasing managers has a positive influence and provides motivation on environmentally and socially sustainable supplier selection.

According to Gimenez and Tachizawa (2012) having a clear definition on sustainability is not enough, but senior management support for implementing the changes and developing the supply management capabilities and resources are needed. In other words, rather than just requiring the purchasers or other supply management employees to act in accordance with the code of conduct or other ethical principles, the management should establish an ethical culture rooted in the environment from the beginning, so that the purchasing professionals can make ethical decisions in sustainable supplier assessment and selection without uncertainty. A lack of understanding of the impact of organizational perceptions on sustainable procurement practices can result in ineffective management of these perceptions. This in turn can lead to weak sustainability procurement practices, with negative consequences for organizational ethical practices. (Etse et al. 2022.)

Hence, if ethical culture is adopted by the purchasing professionals, one should naturally be making sustainable decisions (Goebel et al. 2012). In addition, members of an organization working in the same unit and interacting with each other are likely to have common perceptions of ethical values, norms, and other dimensions of ethical culture (Huhtala et al. 2015). As ethical organizational culture has been found to have a significant impact on sustainable supply chain management and sustainable supplier assessment and selection related decisions (Goebel et al. 2012), it was deemed necessary to include it as part of the theoretical framework of this study. This study explores how those working on supplier assessment and selection in the case company perceive the ethical organizational culture to contribute to their decision making and what would further support them in making ethical

decisions. In addition, the extent to which the previous literature on the impact of ethical organizational culture on decision making in sustainable supplier assessment and selection is consistent with the empirical findings of this study is examined.

## **2.3 Supply chain management**

### **2.3.1 Sustainable Supply Chain Management (SSCM)**

The literature in sustainable supply chain management (SSCM) research field has been growing since the early 1990s (Quarshie, Salmi & Leuschner, 2016; Zimmer et al. 2016). Many practitioners and researchers have paid more attention to sustainable supply chain management as the awareness of environmental and social issues has increased. Especially, the research area saw a significant lift in 2006, after which the research literature in SSCM has only increased. (Song et al. 2017.)

Moreover, the researchers believe that the increasing global interest is expected to continue. (Zimmer et al. 2016.) A significant part of previous SSCM research literature did not have any substantial theoretical framing, and the theoretical background was often missing (Seuring & Muller, 2008). However, for those studies that had a theoretical framework, they were mostly supported by the natural resource-based view (NRBV) or stakeholder theory. (Quarshie et al. 2016.) In addition, Kannan (2018) explored stakeholder theory and critical success factor theory in the context of sustainable supplier assessment.

Based on the previous literature, it is clear that while the environmental and economic sustainability aspects have been widely studied under the umbrella of SSCM, the social aspect has been neglected. (Fallahpour, Olugu, Musa, Wong & Noori, 2017; Gimenez & Tachizawa, 2012; Luthra et al. 2017; Quarshie et al. 2016; Zimmer et al. 2016.) Usually, the social aspect has been discussed and studied simultaneously with other sustainability dimensions, but very few papers focus solely on social aspect (Gimenez & Tachizawa, 2012). Also, discussion around social aspect of sustainable development in sustainable supply chain management research is far less developed than the environmental aspect (Seuring & Muller, 2008, 1704). Additionally, assessing the sustainability of suppliers from a social perspective is perceived as more difficult (Koplin et al. 2007).

The reason for the rare use of social criteria in the research field of SSCM is mainly due to the vagueness of social criteria, as social aspects seem to be even more difficult to measure and quantify than environmental aspects (Zimmer et al. 2016, 1431). Similarly, Miemczyk et al. (2012) discovered that the social dimension of sustainable development has been studied less in sustainable procurement literature than from the environmental perspective. Explanation for this could be that the measures and definitions for environmental dimensions are far more developed than those for the social dimension.

### **2.3.2 Triggers and barriers**

Although sustainability has received a great amount of attention, little is known about the triggers and barriers in adopting sustainability practices within organizations, especially in the purchasing and supply management functions (Giunipero et al. 2012, 258). This finding is supported by Paulraj, Chen and Blome (2017) who found that there is relatively little research on drivers and barriers to sustainable supply chain management.

Different stakeholder groups are increasingly demanding the focal companies to enhance their supply chain in terms of sustainability (Koplin, Seuring & Mesterharm, 2007). Koplin et al. (2007) recognized two major triggers for enhancing sustainability in supply chain management of focal companies. The first trigger is that the focal companies are held accountable for their suppliers' environmental and social performance, and the second one is that an increasing share of value is created at the supplier level.

Seuring and Muller (2008, 1703-1704) discovered that the main triggers for sustainable supply chain management are the legal demands and regulations, customer demands and response to stakeholders, followed with competitive advantage, environmental and social pressure groups, and loss in reputation. Giunipero et al. (2012, 258) agreed that governmental regulation compliance is a significant driver to sustainable supply management efforts within organizations and added top management initiatives as another key driver.

Triggers for implementing sustainable supply chain management practices can either be classified as internal or external factors (Ageron, Gunasekaran & Spalanzani, 2012; Seuring

& Muller, 2012). Previous literature shows that sustainable supply chain management practices are mainly driven by external incentives, such as government regulatory requirements (Ageron et al. 2012) and pressure from customers or other external stakeholders. The external pressure is usually passed on to suppliers, whereby one specific feature of sustainable supply chain management arises. (Seuring & Muller, 2008.) Ageron et al. (2012) identified top management vision, customer demand and supplier sustainability initiatives as internal triggers for sustainable supply chain management practices.

Seuring and Muller (2008, 1704) discovered that the barriers for implementing sustainable supply chain management are higher costs, coordination effort and complexity, and insufficient communication in the supply chain. Also, economic uncertainty and high costs of supplier and buyer investments in sustainability were found to be barriers to sustainability. In addition, balancing the need to satisfy stakeholders' short-term profit objectives with longer-term sustainability objectives is also seen as a barrier. (Giunipero et al. 2012.) Seuring and Muller (2008) identified supporting factors for sustainable supply chain management to overcome these barriers, such as increased efforts in communication and training of purchasing and suppliers' staff, incorporating sustainable supply chain management objectives into company policies, and monitoring, evaluating, reporting, and enforcing sanctions on suppliers' performance.

### **2.3.3 Sustainable procurement**

The research in sustainable procurement literature has experienced a rapid expansion in recent years, and it can be considered a very current topic under the research field of SSCM. Especially, the research on sustainable procurement experienced a special boost in 2005 when numerous papers on the topic were published. Ever since, an increasing number of papers were published every year at least until 2010. (Miemczyk, Johnsen, Spencer & Walker, 2012.) According to a recently conducted literature review by Kabra, Srivastava and Ghosh (2023) publications on sustainable procurement have been increasing until 2022, and the research area continues to grow.

Previous sustainable procurement research has relied mainly on stakeholder theory and agency theory. However, theoretical frameworks have hardly been developed in the recent

literature of sustainable procurement, and thus theories should be further developed and implemented in the future. (Miemczyk et al. 2012.) In addition, the connection between perceptions of sustainable procurement and related organizational practices has not been sufficiently studied. (Etse, McMurray & Muenjohn, 2022).

As part of sustainable supply chain management, many organizations have been implementing sustainable procurement to an increasing extent (Rashidi et al. 2020, 3). Although the benefits of sustainable procurement have highly been emphasized (Krause et al. 2009), the rate of actual usage has remained low (Schneider & Wallenburg, 2012, 252). Schneider and Wallenburg (2012, 252) have recognized the reasons to be in the challenges of implementation and resources. Some organizations might not be aware that sustainable procurement is an integral part of corporate sustainability and therefore needs to be implemented systematically.

However, although some organizations are aware of the vital role sustainable procurement has in corporate sustainability, the organization is lacking the capabilities, knowledge or other resources needed to introduce sustainable procurement as part of the corporate sustainability. In addition, it is worth noting that the performance of purchasing professionals is still evaluated according to the traditional value-for-money model, including price, cost and quality of the products or services purchased (Goebel et al. 2012, 14). In other words, no suitable method has been found that combines traditional criteria with environmentally and socially sustainable criteria. Consequently, Seuring and Muller (2008) recommended extending the objectives for purchasing professionals to environmental and social sustainability issues. Although the behavior of many firms shows that to remain competitive, they need to find the lowest-cost supplier, there are few studies to support the claim that some firms find it beneficial from a revenue perspective to work with suppliers whose business practices are considered sustainable (Mefford, 2011).

To overcome the challenges related to sustainable procurement, it is recommended to put more effort on communication and engagement with different business functions. In order to achieve successful sustainable sourcing, the procurement function must cooperate systematically and closely with internal stakeholders and customers. (Schneider & Wallenburg, 2012, 254.) As the company's focus on sustainability is mainly driven by stakeholder pressure and competitive advantages, the focal company should take the

stakeholders' concerns into consideration in sustainable supplier assessment and selection. In previous literature, stakeholders' role in the implementation of corporate sustainability has been explained in terms of stakeholder theory. (Dai & Blackhurst, 2011.)

Igarashi et al. (2013, 256) argue that to align supplier selection with the strategy of an organization, a mutual understanding of “green” needs to be developed, and what it means from the organization’s procurement point of view, in particular, in the context of supplier assessment and selection. Understanding what sustainability means from an organization’s procurement perspective will enable more meaningful supplier assessment requirements to be justified. Otherwise, it becomes more challenging to define sustainability requirements and a lengthy list of criteria will lose its significance (Igarashi et al. 2013, 256), as well as the outcomes might provide the decision makers with misleading information about the suppliers’ performance (Rashidi et al. 2020, 13).

## **2.4 Supplier assessment and selection**

### **2.4.1 Sustainable supplier assessment and selection**

Supplier assessment and selection is an essential process in supply chain management, as it is not only to provide buying organizations with the right materials, products, and solutions at a competitive cost, but also to improve its performance in sustainability, for example by considering ethical solutions. It is usual in supplier assessment and selection that representatives from different functions are involved in various stages of the process. It is typical that the procurement representatives may take a role in the later stages of the process, for example when selecting tenders. (Igarashi, de Boer & Magerholm Fet, 2013, 256.)

Supplier assessment and selection process comprises multiple tasks within the activity, as shown in Figure 2. Usually, the process starts with identifying the needs and specifying what is wanted to be achieved by selecting a supplier (1). This involves formulating the problem and deciding whether one or more suppliers are needed, or whether the existing supplier should be replaced by a new one. Then, the supplier assessment criteria are defined (2), after which the potential suppliers are called for tendering phase (3). In the qualification phase, the number of suppliers is reduced to a smaller group of suitable suppliers, after which the

suitable ones are called for tendering phase (4), after which the final supplier selection (5) among the qualified suppliers is made based on the information provided by the suppliers during the process. (de Boer, Labro & Morlacchi, 2001, 77-80; Igarashi et al. 2013, 248.)

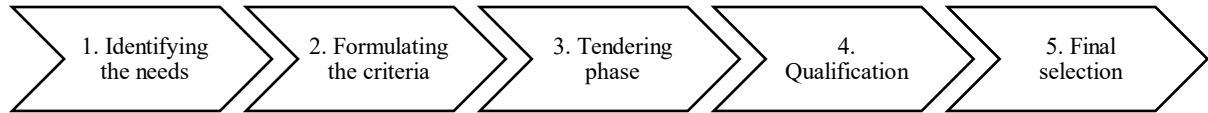


Figure 2: Supplier assessment and selection process (Adapted from de Boer et al. 2001, 77-80; Igarashi et al. 2013, 248).

In this study, it is noteworthy that *supplier assessment and selection* refers to the entire process from the identification of needs (1) to the final selection of the supplier (5). When reference is made to *supplier assessment*, this refers to the qualification phase (4) of the supplier assessment and selection process, where a potential supplier is assessed before the final selection. It is, however, worth noting that the criteria based on which the supplier is assessed in the qualification phase are determined in the second phase (2) of the process. *Supplier selection* refers to the final selection phase (5) that takes place after the supplier assessment.

The importance of sustainable supplier assessment and selection is highly emphasized in the previous literature, as it is seen to play one of the most important roles in building a successful supply chain (Gurel, Acar, Onden & Gumus, 2015) as well as reducing risks of supply chain challenges (Kannan, 2018). Previous literature in SSCM research strongly supports the essentiality of considering sustainability aspects in supplier assessment and selection (Rashidi et al. 2020, 3). Supplier selection can be seen as a first step in building a sustainable supply chain (Gimenez & Tachizawa, 2012), with procurement taking place as a gatekeeper (Goebel et al. 2012) which means that procurement acts as an intermediary that controls the access of suppliers to the firm's supply chain.

Selecting the right criteria was identified as one of the main challenges in supplier assessment and selection process (Fallahpour et al. 2017). Traditionally, the common competitive criteria for supplier assessment and selection have been quality, flexibility, and cost (Goebel et al. 2012; Luthra et al. 2017). In addition to these, Rosenzweig and Roth (2004, 354) recognized

delivery time as one traditional assessment criterion, and Gurel et al. (2015) added service, and strategic alliance capabilities as competitive non-green business criteria.

Moreover, Gurel et al. (2015) and Fallahpour et al. (2017) emphasized the importance of considering both, sustainable and traditional, criteria in the decision making of supplier assessment and selection process to maintain the profitability of the organization's operations. The importance of evaluating suppliers' sustainability factors is strongly emphasized as it brings additional value to the traditional set of competitive priorities for purchasing. Therefore, it is proposed that sustainability should be addressed and manifested in addition to quality, cost, delivery-time, and flexibility as part of the supplier selection and assessment decisions. (Krause et al. 2009.)

Although adding sustainability criteria in supplier assessment is necessary, the complex nature of sustainability components creates challenges for the assessment process (Brandenburg, Govindan, Sarkis & Seuring, 2014; Dai & Blackhurst, 2011). The challenge of sustainable supplier assessment and selection is to find such sustainable supplier selection criteria that contribute to the organization's sustainability targets without compromising other fundamental goals such as profit or quality (Igarashi et al. 2013, 256). Whereas the traditional assessment criteria for supplier selection are evident in a product or service, sustainability is rather more difficult to detect and ensure. Additionally, the weighing between traditional assessment criteria and sustainability is not always clear. (Krause et al. 2009, 20.)

Although sustainable supplier assessment and selection is seen to have a substantial impact on the organization's overall sustainability performance, assessing the suppliers' sustainability alone is not enough. Hence, supplier assessment and selection must be continued with collaborative relationships with the suppliers to keep improving the environmental and social performance. (Gimenez & Tachizawa, 2012.)

#### **2.4.2 Environmental and social sustainability criteria**

The common environmental and social criteria for sustainable supplier assessment and selection have been identified based on the literature review. Figure 3 of environmental and social sustainability criteria for sustainable supplier assessment and selection has been

developed applying the suggestions by Gurel et al. (2015), Luthra et al. (2017) and Zimmer et al. (2016).

Environmental and sustainability criteria can be categorized into different categories, such as environmental performance and environmental practices. Whereas environmental performance refers to consumption of resources and pollution production, environmental practices include policies and procedures. (Bai & Sarkis, 2010.) According to Bai and Sarkis (2010) social sustainability criteria can be categorized as internal social criteria which contain factors such as employment practices and health and safety, and external social criteria including local communities influence and stakeholder influence. However, for the categorization of social sustainability criteria, the same division has been used as for the categorization of environmental sustainability criteria, as this was considered to be the most efficient way to classify the criteria. That is, the environmental and social sustainability criteria are both divided into two different categories.

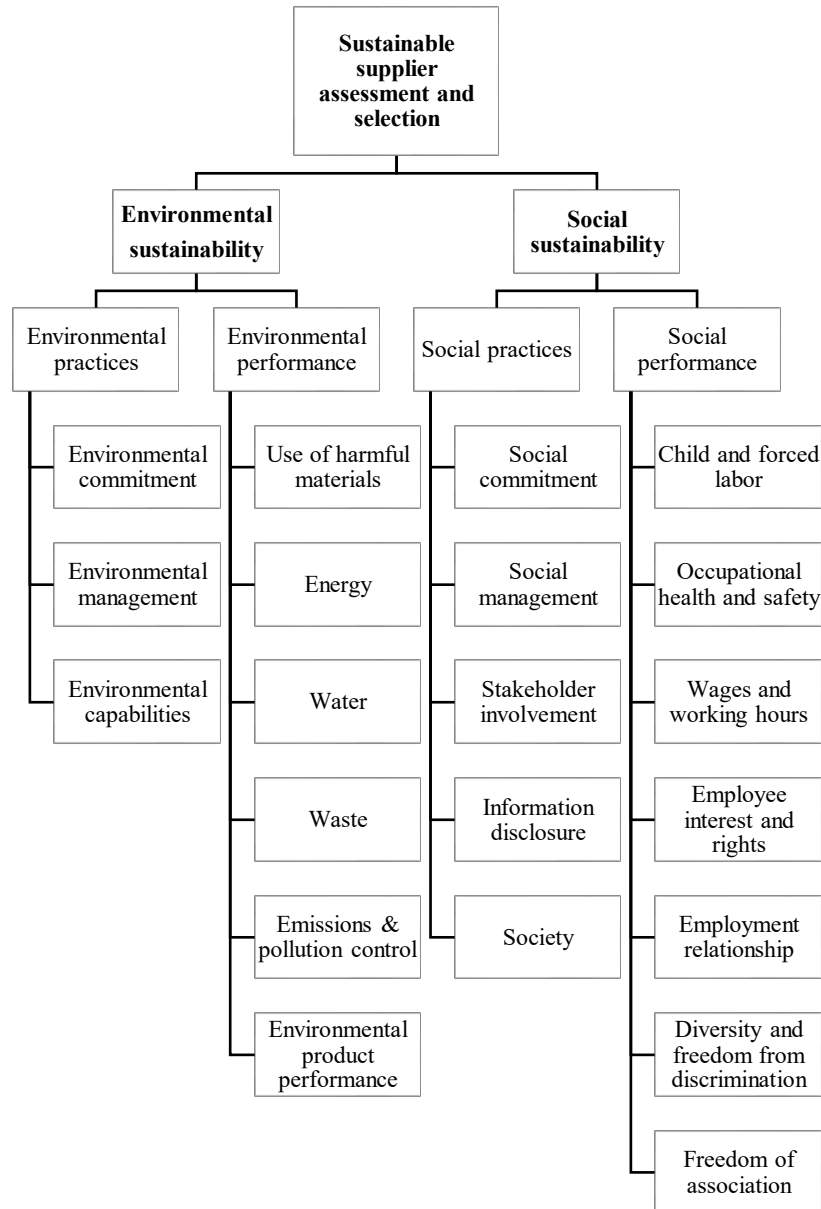


Figure 3: Framework of requirements for sustainable supplier assessment and selection (Adapted from Gurel et al. 2015; Luthra et al. 2017; Zimmer et al. 2016).

Igarashi et al. (2013, 253) discovered that the environmental assessment criteria usually include certification of the environmental management system, an environmental policy, compliance to legislation, and an evaluation of the second-tier suppliers' environmental performance. When assessing the supplier product-related performance, the typical criteria include reduced use of toxic substances, recyclability, environmental labelling, recycling of packaging, the use of green technology and reduced use of resources. It is also suggested to put effort into employee training to raise the awareness of environmental consideration.

Environmental management system was considered the most important criterion of environmental sustainability in the SSCM literature sample (Luthra et al. 2017; Zimmer et al. 2016). ISO14001 is a common example of an environmental related certification (Fallapour et al. 2017; Gurel et al. 2015). Other common environmental supplier assessment requirements were environmental commitment and capabilities, use of harmful materials, emissions and pollution control and prevention, energy consumption, water and waste control, and green products. (Gurel et al. 2015; Luthra et al. 2017; Zimmer et al. 2016.) Igarashi et al. (2013) added an environmental policy, compliance to regulations, an evaluation of environmental of second tier suppliers, reduced use of toxic substances, recyclability, environmental labelling, and the recycling of packaging as typical environmental criteria.

As for the social dimension of sustainable development, occupational health and safety system and the rights of employees received the most attention when determining the sustainable supplier selection criteria (Fallahpour et al. 2017; Luthra et al. 2017; Zimmer et al. 2016). Additionally, social management and commitment, stakeholder involvement, transparency, society, child and forced labor, wages and working hours, employee rights, employment relationship, diversity and freedom from discrimination and freedom of association were recognized as essential supplier assessment requirements as well (Gurel et al. 2015; Luthra et al. 2017; Zimmer et al. 2016).

According to research conducted by Luthra et al. (2017), the environmental dimension of sustainable supplier selection evaluation was considered the most significant criterion of all, followed by economic and social aspects. However, referring to Fallahpour et al. (2017), the economic aspect was considered by far the most dominant aspect in sustainable supplier selection criteria, followed first by the environmental aspect and then the social aspect. In any case, both ranking positions were somewhat expected as the environmental dimension is seen as one of the most important aspects in today's business scenario, and the economic dimension can be seen as a basic motivation for any organization (Luthra et al. 2017).

## **2.5 Regulatory and mechanisms for sustainable supply chain management**

### **2.5.1 European Union and United Nations regulatory and mechanisms**

Alongside growing expectations from stakeholders, regulatory requirements, and binding obligations on sustainable business practices are tightening. The European Union has been active in pushing for ambitious sustainability regulations, the impact of which companies need to prepare for in their business operations. Similarly, companies are extending regulatory requirements to their supply chains, meaning, the companies that supply them. (Elinkeinoelämän keskusliitto, 2022.)

The European Green Deal is the European Union's strategy towards a climate-neutral and resource-efficient competitive economy. The purpose is to make Europe the first climate neutral continent in the world, by first reducing greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels. (European Commission, 2022.) Accordingly, Finland aims to be carbon neutral by 2035, and carbon negative soon after. Electricity and heat production should be close to zero emissions by the end of 2030. (Valtioneuvoston kanslia, 2020, 18-19.)

The work of all countries in the world on sustainable development is guided by the 2030 Agenda for Sustainable Development agreed at the United Nations in 2015. It contains 17 sustainability goals with 169 related targets that countries should collectively achieve by 2030, known as the Sustainable Development Goals (SDGs). The purpose of the SDGs is to eliminate extreme poverty and ensure well-being for everyone without compromising the environmental needs. The main responsibility for achieving the objectives of the 2030 Agenda lies with national governments. (Ministry for Foreign Affairs of Finland, 2022.) The Paris Agreement, entered into force in 2016, supports the achievement of the SDGs. The Paris Agreement aims to provide a long-term framework for the world's transition towards carbon neutrality, with the aim of keeping global warming below 1,5 degrees. (United Nations, 2022.) To reach this target, greenhouse gas emissions must drop by 50% by 2030 and fall to net zero by 2050 (Science Based Targets, 2023a).

The European Union requires large companies and listed companies to report on the social and environmental risks they face and the impact of their activities on people and the

environment (European Commission, 2023b). In practice, this has been a statutory corporate responsibility report, which includes information on environmental impacts, human resources, respect for human rights and other social aspects, and the fight against corruption and bribery (Elinkeinoelämän keskusliitto, 2022). This helps stakeholders to assess the sustainability of companies as part of the European Green Deal (European Commission, 2023b). Before the new rules on corporate sustainability reporting, companies have been able to follow the principle of materiality, meaning, to decide for themselves which issues are the most important for their company to report on. However, as part of the new Directive, this discretionary flexibility will be removed. (Elinkeinoelämän keskusliitto, 2022.)

The Corporate Sustainability Reporting Directive (CSRD), which came into force in 2023, introduces a set of new requirements for sustainability reporting and strengthens existing requirements. The target group for the CSRD is listed companies with more than 500 employees and they will provide sustainability report under the new Directive for the first time in 2025, in addition to which the sustainability reporting will be extended to SMEs, reporting in the year 2026. Additionally, it will be separately considered by the European Commission in the future whether the reporting obligations should be extended to small businesses. In addition to the environment, the topics to be reported on include social impacts such as working conditions, equality, and human rights, as well as corporate governance practices such as risk management and internal audit. Companies covered by the CSRD are required to report in accordance with the European Sustainability Reporting Standard (ESRS). Additionally, the CSRD requires that the information should also be certified by an auditor or other official body, and that the sustainability reports should be included as part of the annual reports. (Elinkeinoelämän keskusliitto, 2022; European Commission, 2023b.)

To achieve the European Union's climate targets for 2030 and implement the European Green Deal, it is essential to make investments towards sustainable activities. To this end, a classification system for sustainable economic activities, the EU Taxonomy, was created. The purpose of the EU Taxonomy is to provide a clear definition of environmentally sustainable activities. (European Commission, 2023a.) The EU Taxonomy entered into force in 2022 for listed companies with more than 500 employees, with the aim of diverting capital to sustainable business and the green economy. The EU Taxonomy classifies business investments and other financial projects to how sustainable they are from climate and environmental perspective. The taxonomy also has an indirect impact on the SME sector as

the taxonomy guides large companies to pay more attention also to the environmental footprint of their suppliers. So far, the taxonomy criteria for climate change are in force, and criteria for other environmental objectives are currently being prepared by the European Commission. A social taxonomy is also under discussion, which would examine the sustainability of companies in terms of human rights and working conditions, for example. (Elinkeinoelämän keskusliitto, 2022.)

In 2022, the European Commission proposed a new Directive on corporate sustainability due diligence. The new regulation of Corporate Sustainability Due Diligence Directive will impose obligations on companies to prevent, identify, and take responsibility for harmful sustainability impacts in their supply chains. The aim is to eliminate environmental and human rights abuses, such as forced labor or child labor, in particular in developing countries. (Elinkeinoelämän keskusliitto, 2022.) The new Directive will ensure that companies tackle the harmful impacts of their activities throughout their value chains in Europe and beyond. Additionally, as part of the new Directive some large companies shall ensure that their business activities are compatible with limiting global warming to 1.5 degrees in accordance with the Paris Agreement. (European Commission, 2023c.)

### **2.5.2 Science Based Targets initiative (SBTi)**

The Science Based Targets initiative (SBTi) is a partnership between CDP, the United Nations Global Compact (UNGC), World Resources Institute (WRI), and the World Wide Fund for Nature (WWF) established in 2015 (Science Based Targets Initiative Annual Progress Report, 2021). The core funders of the SBTi are Bezos Earth Fund, IKEA Foundation, and Amazon (Science Based Targets, 2023b). The Science Based Targets initiative aims to help organizations in the private sector to reduce greenhouse gas emissions and prevent the worst impacts of climate change. The goal of the SBTi is to guide the companies to set emission reduction targets based on climate science and in line with the objectives of the Paris Agreement (Science Based Targets, 2023c).

Most companies are focused on reducing greenhouse gas emissions from the activities under their control (scope 1) as well as from the purchased electricity, heat, and steam (scope 2). That is, often the other indirect upstream and downstream emissions in the company's value

chain (scope 3) are left unaddressed, as they occur from sources that are not under the company's ownership or control. However, due to depletion of the remaining global carbon budget, greenhouse gas reduction is needed on a broader scale, including reducing emissions in the company's value chain. Upstream value chain emissions are most often associated with indirect sources such as purchased goods and services, upstream transport and distribution and business travel. That is, the scope 3 emissions reduction can start from the company's procurement department. (Farsan et al. 2018.)

As well as encouraging companies to reduce greenhouse gas emissions in their own operations, the SBTi emphasizes the importance of setting targets to engage the suppliers in reducing their emissions in line with climate science. In most sectors, the emissions from scope 3 have the greatest share of the carbon footprint. Since the emissions from the value chain often overlap with emissions from other companies, there is an opportunity to collaborate with other companies such as suppliers, to reduce emissions in more than one company at the same time. (Farsan et al. 2018.)

SBTi has addressed several levers for buying companies to decrease their carbon footprint in scope 3, such as developing a supplier engagement strategy, and implementing procurement policy and choices for low carbon solutions. The options included in procurement policy implementation are purchasing from suppliers with a low carbon footprint or choosing a low-carbon alternative from the supplier's product portfolio. Additionally, a company can reduce emissions from its supply chain by engaging with suppliers in communication, collaboration, support, monitoring, and reinforcement to reduce emissions throughout the value chain. (Farsan et al. 2018.)

## **2.6 Theoretical synthesis**

Based on the previous literature, there are still many challenges and open issues, but also a lot of potentiality in implementing sustainable supply chain management practices at organizational level. Although the integration of sustainability into supply chain management of organizations was seen as involving challenges, previous literature also highlights the benefits and opportunities it brings.

The theoretical framework of this study has examined sustainable supply chain management, including sustainable procurement and sustainable supplier assessment and selection, as well as research on corporate sustainability and ethical organizational culture, to address the elements and factors identified in the assessment and selection of sustainable suppliers. Building on previous literature, these research areas are combined by proposing that developing sustainable supplier assessment and selection requires an organizational transformation to sustainable development practices and an ethical organizational culture, as well as effective implementation of sustainable supply chain management. The theoretical framework of this study is presented in Figure 4.



Figure 4: Theoretical framework of the study

Previous research shows that ethical organizational culture has a significant impact on the creation of corporate sustainability, as well as on decision making in sustainable supply chain management. The literature identifies many factors that contribute to sustainable supply chain management, but also many barriers that pose challenges to the implementation of sustainable supply chain management (Giunipero et al. 2012; Koplin et al. 2007; Seuring & Muller, 2008). The research field of sustainable supply chain management includes research in sustainable procurement and sustainable supplier assessment and selection, as they are an integral part of sustainable supply chain management.

### 3 RESEARCH IMPLEMENTATION

#### 3.1 Qualitative case study research

In this research, qualitative case study approach is implemented. Qualitative research does not aim for statistical generalizations but aims to describe a phenomenon or event to understand a certain activity or to give a theoretically meaningful interpretation to a phenomenon (Tuomi & Sarajärvi, 2018, 74). As the aim of this study is to evaluate and develop a specific phenomenon in a limited context, it was decided to use qualitative research method.

In case study research, as the name suggests, one or more specific “cases” are examined, the definition, analysis, and solution of which is the main goal of the case study. The case can be for example a company, one of its business units or development projects. In any event, it is essential that the case under investigation is clearly defined and delimited from the rest of the content. (Eriksson & Koistinen, 2005, 4-5.) Case study research approach is usually undertaken when information is needed on a specific case, and when the research problem is of a holistic nature (Hirsjärvi & Hurme, 2008). Additionally, a case study approach is recommended, when the questions “what”, “how” and “why” are central and the research topic is a topical phenomenon (Eriksson & Koistinen, 2005, 4).

As is typical of a case study, this research focused on a particular case, i.e., the case company, whose performance in relation to the sustainable development in supplier assessment and selection process was examined and analyzed. The implementation of this qualitative case study research is structured as shown in below Figure 5.

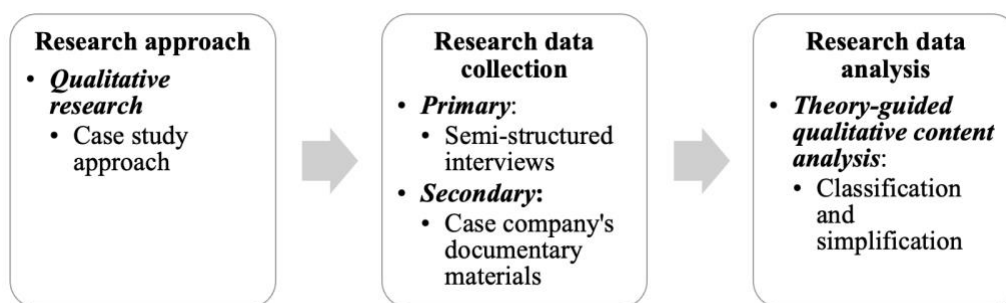


Figure 5: Research implementation structure

Semi-structured interviews were used as the research data collection method, from which the data will be used as primary empirical data for the research. The secondary empirical data used in this study are the case company's documents, website, and other relevant materials. Once most of the empirical data has been collected, the research data analysis begins, using theory-guided qualitative content analysis method. The data was analyzed by classifying it into different categories and by simplifying it into certain expressions. The different stages of the research implementation are described in more detail in the following subchapters.

### **3.2 Case company description**

This research is conducted as case study research in cooperation with a listed Finnish company in the energy and technology industry. The name of the case company under study is not disclosed in this study due to reasons of confidentiality. Energy and technology industry companies have an important role to play in building Finland's future and success. The energy sector is committed to ambitious climate targets, and as the energy transition progresses, the knowledge and competence to promote the use of technology is needed. Both industries are already at least partly active in international markets and are significant local employers in Finland. The energy sector directly employs 23 000 people, while technology companies employ around 338 000 people. (Energiateollisuus, 2023; Teknologiateollisuus, 2023.)

This case study research is conducted because of the case company's desire to develop the sustainability of its supplier assessment and selection process. The suppliers are expected to act in accordance with the same high ethical standards and business practices as the case company. The case company considers developing supplier assessment and selection process to be crucial, as supplier cooperation and management is seen as having a significant impact on the case company's sustainability goals and practices. The case company pursues carbon neutrality by 2030 covering its own operations (scope 1) as well as purchased energy (scope 2). Another important climate target relates to the product portfolio of the case company, which aims to have a product portfolio that is fully compatible with carbon-free fuels by 2030. In addition to climate and carbon neutrality related objectives, as part of the corporate sustainability goals, the case company aims for improvement of safety, diversity, and well-being, as well as being an active and responsible member of society.

To contribute to sustainable development, an active stakeholder engagement is seen as a vital aspect. The case company has identified suppliers to be one of the most important stakeholders in its operations, as they have an integral role in the total value chain for the case company's products and services. By selecting suppliers with high sustainability standards, the case company seeks to develop the efficiency of its supply chain. By greening its supply chain, the case company aims to reduce its external environmental and social impacts. Accordingly, the case company aims to assess and select the suppliers to which it can outsource its activities based on reliable sustainability criteria.

The purchasing professionals may face challenges and uncertainty in the decision making of a sustainable supplier if there are no clear guidelines or tools on suppliers' sustainability performance measurement and comparison. Thus, the case company finds it necessary and beneficial to evaluate and develop their sustainable supplier assessment and selection practices. The case company also sees that, in addition to the traditional criteria such as cost, quality and delivery terms, sustainability criteria must be prioritized to achieve the long-term sustainability objectives.

The sustainability of the current supplier assessment and selection process is evaluated from the perspective of the Facility Management & Services (FM) purchasing category. The FM category is a broad and complex sector which comprises workplace, facility, support services, property, corporate real estate, and infrastructure management (Ancarani & Capaldo, 2005, 233). The category engages in many activities that could have harmful impacts on environment, such as transport and production emissions, manufacturing materials, energy and water use, and waste generation due to different processes involved in the facility management. Instead, socially relevant factors include the well-being and rights of employees, information disclosure, and stakeholder involvement. It is therefore of paramount importance that the suppliers of such goods and services are also assessed from an environmental and social sustainability perspective.

### **3.3 Research data collection**

#### **3.3.1 Interviews**

According to Tuomi and Sarajärvi (2018, 62) the most common research data collection methods in qualitative research are interviews, surveys, observation, and information collected from various documents. The research data collection method is decided on the basis of the research problem to be investigated.

In this research, semi-structured interviews were used as a research data collection method, in addition to collecting the case company's own documentary materials. Interviews are a flexible way to collect research data because of their advantage in flexibility. For instance, the interviewer can repeat the question, correct a misunderstanding, clarify the wording of expressions, and talk with the interviewee. Also, an advantage of a semi-structured interview is that the questions can be specified and deepened in the interview based on the answers received. Rather than considering the interview as a quiz, the most important thing is to get as much information as possible about a certain issue. (Tuomi & Sarajärvi, 2018.)

The semi-structured interviews are based on certain key themes selected in advance and related clarifying questions (Tuomi & Sarajärvi, 2018). The interview themes in this study are as follows: First, background information is collected from the interviewees. Secondly, the interviewees' thoughts and experiences of environmental sustainability in the supplier assessment and selection process are explored, followed by the same information on social sustainability. Finally, the importance of the ethical corporate culture of the interviewees is explored. Basically, themes chosen in advance are based on the theoretical framework of the research, that is, what is already known about the phenomenon under study based on previous research (Tuomi & Sarajärvi, 2018). With the semi-structured interviews, the purpose was to find out how the purchasing professionals working with supplier assessment and selection in practice see the issues included in the process and what their experiences are. The aim was to understand what kind of gaps and areas for development there are currently in the supplier

assessment and selection process from the perspectives of environmental and social sustainability. Therefore, it was aimed to ask the same or comparable questions from different interviewees and to collect related information from different sources. The interview questions are presented in attachment 1.

According to Tuomi and Sarajärvi (2018) the selection and suitability of interviewees should be carefully considered. The research report must explain how the selection of the interviewees has been considered and how the selection fulfills the criterion of suitability for the purpose. According to Hirsjärvi and Hurme (2022), there is no single definition of how many interviewees a study should have, but the number of interviewees always depends on the purpose of the study. The simplest advice is that as many interviews should be conducted as necessary to get the information needed. In this study, interviews were conducted until the new interviewees no longer provided any substantially new information for the research topic. This phenomenon is known in research terms as saturation. (Hirsjärvi & Hurme, 2022.) The aim of the interviews is to get as much information as possible about the research topic, which is why such interviewees should be found who have a lot of experience and knowledge about the topic. In this study, the interviewees were selected by snowball and elite sampling.

In elite sampling, the persons who are expected to provide the most relevant information on the phenomenon under study are selected as informants (Hirsjärvi & Hurme, 2022). Thus, the interviews were initiated using an elite sampling approach, meaning that some of the interviewees were selected in advance according to the exact type of information desired at that moment. The purpose was to get the necessary number of people from various parts of the organization in such a way that the current situation in relation to sustainability of supplier assessment and selection measures can be mapped and covered as comprehensively as possible. The main target group of interviewees were the personnel who are responsible for the case company's procurement, as well as assessment, selection, and management of suppliers. Such people are, for example, strategic purchasers, category managers, their supervisors, and internal stakeholders. An internal stakeholder in this case is the person who has identified the need for a particular service or good and who is the owner of the procurement event. For example, an internal stakeholder identifies the need for a new supplier to provide services, such as office cleaning services, and sets the requirements for the service needed. Purchasing professionals will assist in the assessment and selection of a supplier that meets all requirements at a reasonable price. As a secondary target group of interviewees,

people who work in quality and sustainability management were selected for the interviews, as they can provide valuable insights into the development of supplier assessment and selection in terms of sustainability.

Once the first interviews had been conducted, the remaining interviewees were selected using snowball sampling. In snowball sampling, interviewees lead the interviewer to new informants, that could provide additional information to that already obtained (Hirsjärvi & Hurme, 2022). In this study, the snowball sampling method was used by asking the interviewees after the interviews if they had suggestions for new informants. Hence, some interviewees managed to lead the interviewer to a new source of information.

Before the interviews were conducted, the interviewees were approached via email, in which the topic and objective of the research were presented. After the interviewees agreed to an interview and the time was arranged, the interview themes and questions were sent to the interviewees in advance for familiarization. According to Tuomi and Sarajärvi (2018, 64) it is ethically justified and recommended that the interviewees get to know the questions, themes or at least the topic of the interview in advance. However, it is by no means essential always to give questions, themes, or a more detailed description of the research topic to the interviewees in advance. Knowing the themes, topic or question in advance may direct or limit the interviewee's thoughts before the interviews, and thus affect the content of the interviews in an undesirable way. (Puusa, Juuti & Aaltio, 2020.)

The aim of the interviews was to get answers from the interviewees based on their perceptions, which is why most questions were formulated in such a way that they can be answered based on the interviewees' own experiences and thoughts. Thus, due to the nature of the interview themes and questions, the questions were sent to the interviewees before the interviews which allowed the interviewees to prepare for the interview and reflect on the questions in advance. This facilitated discussion in the interview situations, as the interviewees became familiar with the themes and questions beforehand and were more prepared to answer questions and discuss the themes.

The type of questions and the way the questions were presented depended on the role of the interviewee. In interviews with those actively involved in supplier assessment and selection, the questions focused on their own experiences and perceptions on how the process of

sustainable supplier assessment and selection works in the case company and how it could be improved. Several illustrative cases emerged from the interviews, with interviewees describing the characteristics and challenges of the sustainable supplier assessment and selection process. In the interviews with those working in quality and sustainability management functions, questions focused more on the sustainability aspects of current state of supplier assessment and selection in general at the case company, and possible areas for development in this area.

The interviews mainly stayed on topic and did not stray outside the themes. When discussing sustainability and ethics in general, the interviewees based their thoughts and reflections on their experiences with the case company, and the answers thus related mainly to the case company's practices. Some interviewees had clearly thought about sustainability issues in supplier assessment and selection before and were familiar with the topic, while others had not thought about these issues as much. In particular, those interviewees who had not given much thought on sustainability issues in supplier assessment and selection beyond what was required, found it challenging to answer some of the questions. However, such situations were circumvented by approaching the question from a different angle.

The interviews were conducted during January, February, and March 2023 via Microsoft Teams, where the interviews were also recorded. The interviews were conducted in Finnish and English. The recordings were transcribed immediately after the interviews had taken place, and the transcripts were sent to the interviewees for review, giving the interviewees the opportunity to correct or clarify anything they said if necessary. This was to avoid situations where the transcriber had misheard or misunderstood something the interviewee had said. The recorded material was transcribed in a verbatim form, but some filler words were omitted, which were considered irrelevant for the substance. In addition, the interviewees' tones of voice were not taken into account during the transcription phase, as the primary aim was to focus on what the interviewees had said. Once the transcripts were approved by the interviewees, the data was ready for research data analysis.

Table 1: Interviewees, interview dates and duration of the interviews

Interviewee	Position	Date	Duration (h:m)	Transcribed pages
I1	Purchasing Professional	2.1.2023	00:36	15
			00:35	
I2	Internal Stakeholder	9.1.2023	00:46	9
I3	Sustainability & Quality Manager	13.1.2023	00:33	6
I4	Purchasing Professional	16.1.2023	00:39	8
I5	Internal Stakeholder	23.1.2023	00:47	11
I6	Purchasing Professional	6.2.2023	00:30	7
I7	Sustainability or Quality Manager	15.2.2023	01:04	13
I8	Sustainability or Quality Manager			
I9	Internal Stakeholder	2.3.2023	00:28	6
<b>In total</b>			<b>05:58</b>	<b>75</b>

In the above Table 1 the dates of the interviews, the duration of the interviews, and the number of pages transcribed are listed. The positions of the interviewees have been changed to a more generic form to protect the anonymity of the interviewees. Disclosing the exact titles or job descriptions of the interviewees is also not relevant to this study.

As shown in Table 1, a total of eight interviews were conducted, with a total of nine interviewees. All the interviewees were in managerial or specialist positions. Of the nine interviewees, three could be described as purchasing professionals, three as stakeholders and three worked in quality or sustainability management. The recorded interview material totaled

five hours and 58 minutes and the transcribed material 75 pages. The first interview (I1) was held in two parts, as there was not enough time to go through all the topics in the first session. The interview with the respondents I7 and I8 was held simultaneously.

Although this study focuses on the sustainable supplier assessment and selection process from the perspective of the Facility Management & Services purchasing category, it is worth mentioning that some of the interviewees based their thoughts and experiences on the practices of the case company in general. It is important to note that the purchasing professionals and internal stakeholders based their comments on their experience in assessing and selecting suppliers in the Facility Management & Services purchasing category, while the sustainability or quality managers expressed their views from the perspective of the case company generally. In addition, one interviewee from another purchasing category was selected as a reference among the purchasing professionals.

This report uses quotes taken from the interviews to present the findings, highlighting issues raised by the interviewees. Some of the interview quotes selected for the research report were edited by emitting extra filler words, but without changing the substance. As some of the interviews were conducted in Finnish, the references have been translated from Finnish into English as accurately as possible without compromising the content.

### **3.3.2 The case company's documentary materials**

As secondary empirical source of this study, the case company's websites as well as other public materials were carefully reviewed and examined in order to gather comprehensive information on the case company's current supplier selection and assessment practices and requirements. In addition, discussions were organized with the case company as the research process progressed, with representatives sharing additional information and content useful to the research. The issues raised in these discussions were also used as part of the data collection for the empirical study. The purpose of examining these empirical materials was to gain a comprehensive picture of what environmental and social sustainability requirements are included in the supplier assessment and selection process.

The case company has defined mandatory requirements for suppliers to comply with high ethical standards. The suppliers are obliged to comply with the case company's Supplier Requirements Directive, Code of Conduct and Quality, Environmental, Health and Safety (QEHS) Policy. Online Questionnaire is used to collect information from suppliers. All the materials used as an empirical source are available on the case company's website and can therefore be accessed by anyone. The requirements and policies are described in more detail in Table 2 below.

Table 2: Summary of the documentary material

<b>Document</b>	<b>Number of pages</b>	<b>Description</b>
<i>Supplier Requirements Directive</i>	8	<i>The Supplier Requirements Directive</i> informs about the legal, ethical, environmental, and employee-related standards, and the expectations that the case company has for the suppliers.
<i>Online Questionnaire</i>	2	<i>Online Questionnaire</i> provides information about the suppliers' compliance to the case company's requirements in the area of compliance with relevant legislation, quality management, environmental management, occupational health and safety management, social accountability management, information security management, and business continuity.
<i>Code of Conduct</i>	3	The <i>Code of Conduct</i> provides guidance and common rules for employees on the case company's approach to responsible business practices.
<i>Quality, Environmental, Health and Safety Policy (QEHS)</i>	1	The purpose of the <i>Quality, Environmental, Health and Safety Policy</i> is to set principles for managing the environmental impacts of the case company's products and services.
<b>Total number of pages</b>	14	

### **Supplier Requirements Directive**

The Supplier Requirement Directive includes issues such as compliance, occupational health and safety, social issues, innovation and protection of proprietary information, quality, environment, security, business continuity planning and submitting the necessary information. Considering the scope of the study, this section will concentrate on the environmental and social sustainability. Issues related to restricted substances and materials are briefly covered because they are also recognized as an environmental issue, as well as occupational health and safety as in this study it is considered as part of the social perspective of sustainability.

The environmental sustainability section of the Supplier Requirements Directive covers mainly the application of an environmental management system and sharing information. The case company requires the supplier to have a third-party certified environmental management system, and the case company shall be immediately notified by the supplier if the company is placed on probation. At least, the supplier is expected to have an environmental management system complying with the latest editions of International standard ISO14001 or Eco-Management and Audit Scheme (EMAS). Non-frequently used project specific local subcontractors shall apply an environmental management system as well or have an implemented environmental plan for the specified supply.

According to the Supplier Requirement Directive, the supplier is expected to be prepared to handle any environmental emergency situations in its operations. In addition, the supplier is obliged to comply with the local environmental legislation regarding its products and services and provide evidence of compliance if necessary. The supplier must be able to provide information on any environmental impacts, such as packing material, emissions, and energy consumption, of its operations, products, or services as requested.

The suppliers are also obliged to comply with the substances and materials restrictions, meaning, that the supplier must certify that the supply does not contain asbestos or other hazardous material, substance, or radioactivity. Also, the supplier must ensure that the supply does not contain any “conflict minerals”, such as tin, tantalum, tungsten, or gold originated in conflict-affected or high-risk areas, including those from its own suppliers. All the substance, material and radioactivity related laws and regulations must be followed by the supplier, and the supplier must confirm compliance with CLP (Classification, Labelling and Packaging), REACH (Registration, Evaluation, Authorization and Restriction of Chemicals), and Black & Grey lists, for which the supplier must regularly check the updates.

The social dimension of the Supplier Requirements Directive includes issues such as respect for human rights, freedom from discrimination, freedom of association and collective bargaining, fair compensation, child labor and forced labor. The Supplier Requirements Directive obliges the supplier to respect the protection of human rights as recognized in the United Nation’s Universal Declaration on Human Rights, as well as foster equal opportunities and promote freedom from any kind of discrimination.

The supplier is expected to support the fundamental labor rights as recognized by the International Labour Organization (ILO) and allow the freedom of association and the right to collective bargaining. The supplier must ensure that the employment compensation meets at least the minimum required level by the law, and any unauthorized deductions from wages are not allowed. The Directive requires the suppliers to comply with the laws and regulations regarding child labor, and the supplier shall not engage in the use of forced labor of any kind. The age limit for employment relationships is 15 years, and for those countries covered by the development country exception of the ILO Convention 138, the age limit is 14 years. The minimum age for employment relationships, which may jeopardize the health, safety, or morals of young people, is 18 years.

### **Online Questionnaire**

The Online Questionnaire is used as a part of the supplier assessment process in the case company. The purpose of the Online Questionnaire is to provide the necessary information to determine the compatibility of a potential supplier with the Supplier Requirements presented in the previous section. The table in Appendix 2 includes all the areas and related questions that have been identified in this thesis as belonging within the scope of environmental or social sustainability. As in the rest of this report, the name of the case company in the table in Appendix 2 is replaced by “case company”. The questionnaire includes branching questions, meaning that the questionnaire will present additional questions or requests for attachments depending on the responses. All the environmental and social sustainability related questions are mandatory, and the questionnaire cannot be submitted before all the questions have been answered or provided with an attachment.

### **Code of Conduct**

As the suppliers are expected to implement the same high legal and ethical standards in their businesses as the case company, the suppliers are required to comply with the case company’s Code of Conduct practices. The case company’s Code of Conduct introduces policies and instructions with the regard of compliance with laws, openness, respect for human and labor rights, fair employment practices, occupational health and safety, conflict of interests, anti-corruption, environment, relationship with authorities and local communities, innovation and protection of proprietary information, accurate accounting, fair competition and dealing, anti-

fraud, implementation, reporting violations and sanctions. Table 3 describes the environmental and social sustainability related policies in more detail.

Table 3: The environmental and social sustainability practices in the Code of Conduct

<b>Sustainability dimension</b>	<b>Policy</b>	<b>Description</b>
<b>Environmental sustainability</b>	Environment	The case company strives to achieve sustainable development by developing environmentally advanced solutions for its customers, and by putting effort on raw material selection, processes, products, wastes, and emissions. The employees are obliged to comply with the environmental protection policies.
<b>Social sustainability</b>	Openness	The case company promotes openness and transparency when communicating with the stakeholders and encourages continuous stakeholder dialogue.
	Respect for human and labor rights	The case company respects the protection of human rights as recognized in the UN's Universal Declaration on Human Rights, and basic labor rights as recognized by the ILO. The case company does not accept the use of forced or child labor.
	Fair employment practices	The case company supports freedom from any kind of discrimination, harassment or bullying based on race, ethnic or national origin, color, gender, family status, sexual orientation, creed, disability, age, or political beliefs.
	Occupational health and safety	The case company strives to ensure the safety of its workplaces by applying high standards of occupational health and safety. The products and solutions are assured through dedicated development processes. The employees are expected to act in accordance with the safety instructions, and report if any shortcomings are recognized in them.

### **Quality, Environmental, Health and Safety Policy (QEHS)**

The case company has set QEHS related objectives and has committed to continually improve the QEHS performance. To reduce QEHS related risks, the case company strives to actively eliminate defects and hazards. The aim of the case company is to act as a responsible global member of society and communicate with its stakeholders to ensure that the QEHS practices are enforced and continuously improved. The QEHS policy is available on the case company's website.

As part of the QEHS policy, environmental protection, enhancing customer business, and contributing to a sustainable future is at the heart of the case company's activities. The case company's solutions and operations are compliant with regulations and other relevant requirements, and are therefore safe, reliable, efficient, and eco-friendly. The case company's

highest priority is to prevent occupational injuries and illnesses by ensuring well-being and safety at workplaces throughout the business operations. If the work conditions are unsafe or if quality is being compromised, the case company authorizes the work to be stopped.

### **3.4 Qualitative content analysis**

In this research, qualitative content analysis was used as a data analysis method. Qualitative content analysis is a basic analysis method that can be used in all traditions of qualitative research. Qualitative content analysis aims to obtain an explanation of a certain phenomenon in a condensed and general form without compromising its specific characteristics. (Tuomi & Sarajärvi, 2018.)

The aim of the data analysis was to examine the case company's current supplier assessment and selection process in the light of the theoretical framework of the research. Hence, a theory-guided content analysis method was used to identify challenges and development opportunities in terms of environmental and social sustainability. In a theory-guided content analysis the purpose is to first proceed based on the empirical material collected, but to bring in a theoretical framework as a reflection. In theory-guided analysis, theory serves as an aid, but the analysis is not solely based on the theory. (Tuomi & Sarajärvi, 2018.)

The data analysis in this study was structured in two parts, as typical of a theory-guided analysis method. First, the data was analyzed with a data-driven approach, after which the theoretical framework was incorporated into the analysis of the research data. (Tuomi & Sarajärvi, 2018.) It is common practice in qualitative research that the research data analyzing part starts in parallel with data collection, interpretation, and narrative reporting (Hirsjärvi & Hurme, 2022). The data analysis in this study started partly during the interviews and the transcription of the recordings.

The data collected through interviews is usually rich and extensive (Hirsjärvi & Hurme, 2022), which is why coding was first used to classify the data. Coding in qualitative research means structuring the data by creating codes to the content of the data. First, an initial coding framework is drawn up, according to which the data can be coded. During the coding process itself, the coding framework lives, changes and is completed. Thus, the first coding frame is

not a final all-encompassing coding. (Eskola & Suoranta, 1998.) The data analysis process consisted of three analysis rounds, and it proceeded as presented in Figure 6.

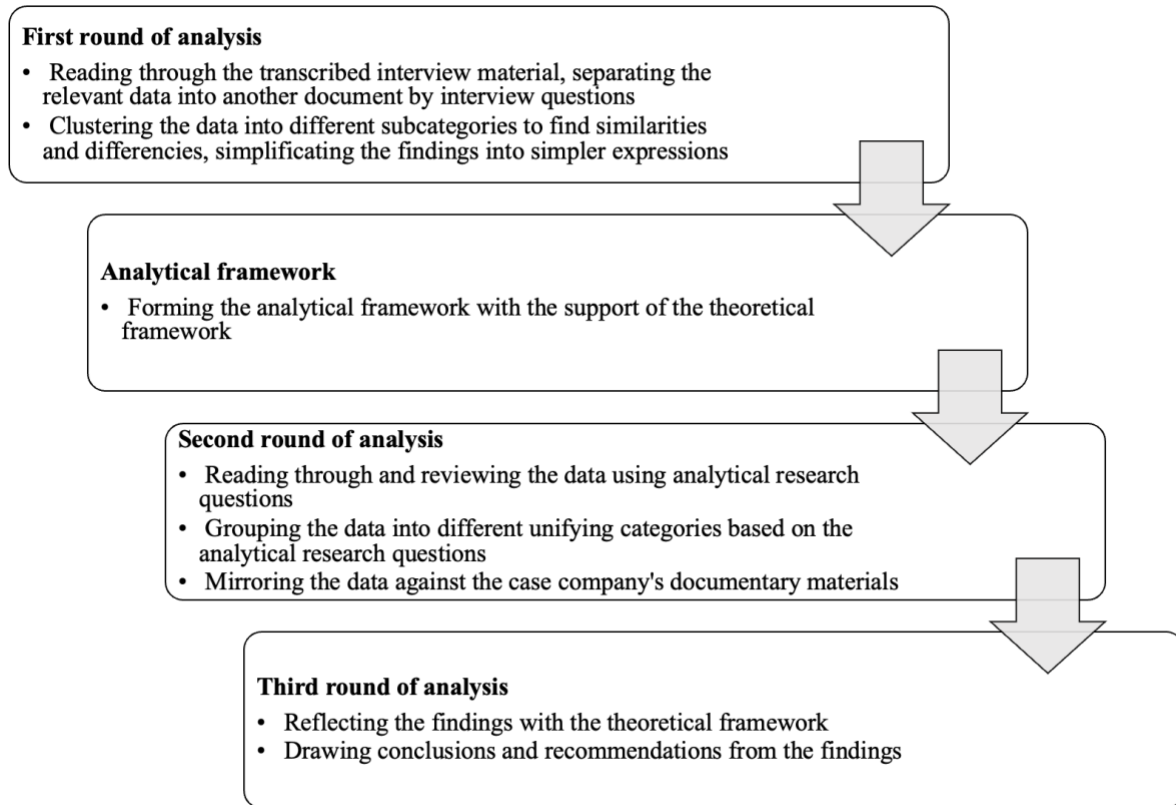


Figure 6: Empirical data analysis process

In the first round of analysis, the transcribed interview data was systematically read through and reviewed to determine what was relevant to the research and for answering the research questions. In qualitative research, there will always appear many interesting aspects in the research data. At this point, however, it is not needed to explore all the interesting topics in the research data, but rather to select a narrowly defined phenomenon (Tuomi & Sarajärvi, 2018). Those aspects in the data that were relevant to the research questions were separated from the rest of the data and sorted into another document by interview questions so, that the relevant parts from the interviews were listed under each question. The separately collected data was then clustered to find similarities and differences between the interviewees' responses. The similarities and differences in the responses were color-coded, and the findings were simplified into simpler expressions. The simplified expressions were used to form subcategories that grouped them together. After the first round of analysis, the analytical framework was formed (Table 4) with the support of the theoretical framework.

Table 4: Analytical framework

Main category	Subcategory	Analytical research questions
CURRENT STATE OF SUSTAINABLE SUPPLIER ASSESSMENT AND SELECTION	<p>Sustainability in supplier assessment and selection generally</p> <p>Sustainable supplier assessment and selection process</p> <p>Environmental sustainability criteria</p> <p>Social sustainability criteria</p>	<p>To what extent is sustainability generally considered in supplier assessment and selection?</p> <p>How is supplier sustainability assessed?</p> <p>Which environmental sustainability criteria have been considered in supplier assessment and selection?</p> <p>Which social sustainability criteria have been considered in supplier assessment and selection?</p>
GAPS AND SHORTCOMINGS	<p>Applicability of the assessment criteria</p> <p>Coverage of the assessment criteria</p> <p>Limited tools and guidelines</p>	<p>What are the gaps and shortcomings in the current sustainable supplier assessment and selection process?</p> <p>When and how do they occur?</p> <p>What causes them to occur?</p>
DEVELOPMENT OPPORTUNITIES	<p>Continuous development</p> <p>Development of tools and clear guidelines</p> <p>Supplier performance verification</p>	<p>What development opportunities are there to fill the gaps and shortcomings in the sustainable supplier assessment and selection process?</p> <p>What measures can be taken to fill the gaps and shortcomings?</p> <p>What do the measures include?</p>
ETHICAL ORGANIZATIONAL CULTURE	<p>Ethical organizational culture in the case company</p> <p>Influence on decision making</p> <p>The role of top management</p> <p>Cooperation and communication with internal stakeholders</p>	<p>What is the current level of the case company's ethical organizational culture?</p> <p>What kind of impact does ethical organizational culture have on the decision making?</p> <p>By which means could the ethical culture of the organization be enhanced?</p>

The analytical framework includes four combining main categories on the left side, which describe the elements involved in the development of sustainable supplier assessment and selection in the case company. The main categories are *current state of supplier assessment and selection*, *gaps and shortcomings*, *development opportunities*, and *ethical organizational culture*. The main categories were created as a result of a combination of theoretical framework and empirical data. The subcategories represent the elements that were identified from the semi-structured interviews in relation to the main categories. The purpose of the analytical research questions is to guide and concretize the analysis of the data. Subcategories and main categories are used to answer the research question (Tuomi & Sarajärvi, 2018).

In the second round of analysis, the data was once again carefully read through, after which the data was reviewed with the support of the analytical research questions presented in the analytical framework. The findings were first formulated and structured into different unifying categories in accordance with the analytical research questions. Table below (5) gives an example of how classification and simplification of the research data was conducted, and how the analytical framework assisted in the analysis process. The current state of supplier assessment and selection, which is the first combining main category of the analytical framework, is used as an example in the table. The main category is followed by the subcategories that were coded in the second round of the research data analysis. Finally, the table gives examples of interview quotes that support the subcategories. At this stage, the case company's documentary materials were included in the analysis process and mirrored with the primary research data during the analysis.

Table 5: Example of classification and simplification of research data

Combining main category	Subcategory	Interview quote
Current state of supplier assessment and selection	Sustainability in supplier assessment and selection criteria generally	<i>Well, if reflected to what I just said, that the fundamental value is that at some level they (suppliers) have the basic requirements in order at least, it's (sustainability) not very high on the list. I must admit. – I5</i>
	Sustainable supplier assessment and selection process	<i>Let's put it this way, if we get involved in planning the tendering, that is, when the procurement is done in the right way, in principle, that we are involved with those key stakeholders in planning the tendering, then in big cases we try to make this kind of an evaluation table or template, on the basis of which we will then select the supplier. – I1</i>
	Environmental sustainability criteria	<i>Well, perhaps in recent years, the question of where the materials come from has grown a lot, for example – well, the FMS category is also broad – but if we take the example of furniture, where do the fabrics come from, where do the timber, or plastics or whatever is used, where do they come from? – I1</i>
	Social sustainability criteria	<i>...within this human rights area there are different angles, like the forced or child labor or then the compensation to understand that there is a fair pay, that people or suppliers don't restrict their employees to have a collective bargaining or that they have a possibility to build or join trade unions, so there are I think, a very long list within this human rights area, and naturally that's probably something also that we should continuously review that we have, we cover all the relevant aspects. – I3</i>

In the third and final round of analysis, the findings were reflected into the previous literature and research presented in the study's theoretical framework. As a result, 3 conclusions alongside recommendations were formed. The study's findings were based on the elements discovered through analytical research questions. The findings are further presented in Chapter 4, and the conclusions are presented in Chapter 5.

### 3.5 Special issues in research data collection and analysis

In accordance with the thesis publicity practices of the Tampere University, this master's thesis is published in the university's publication archive and is therefore accessible to

everyone. That is, the research is not done as confidential or otherwise encrypted. Since the research is conducted in cooperation with a case company, there are issues of confidentiality associated with material collection and analysis that need to be taken into account.

To protect the internal details of the case company, the name of the organization is not disclosed in the research report. Highly sensitive and confidential internal outputs are collected as separate appendices only for the use of the case company and are not included in the final report and are therefore not published. However, in order to guarantee the best possible final result of the research, the creation of such attachments was sought highly to be avoided. The actual thesis is written in such a way that it can be published in all respects.

## 4 FINDINGS

### 4.1 Current state of sustainable supplier assessment and selection

This subchapter discusses the current state of sustainable supplier assessment and selection in the case company. The current state of the process is first discussed by reflecting on sustainability in supplier assessment and selection process in general, followed by process description, and finally the use of environmental and social sustainability criteria in the assessment and selection process. This category and its content are described in Table 6.

Table 6: Current state of sustainable supplier assessment and selection

Subcategory	Content
Sustainability in supplier assessment and selection generally	The role and importance of sustainability Sustainability in relation to traditional criteria Added value through sustainable solutions
Sustainable supplier assessment and selection process	Process description The roles of the participants in the process Challenges in the current process
Environmental sustainability criteria	The environmental sustainability criteria used
Social sustainability criteria	The social sustainability criteria used

#### 4.1.1 Sustainability in supplier assessment and selection generally

In general, for the interviewees, sustainability in supplier assessment and selection means that the suppliers are committed to the same sustainability principles and standards as the case company. The suppliers are obliged to follow the case company's Supplier Requirements Directive, QEHS policy and the Code of Conduct that are presented in Chapter 3. The suppliers are assessed according to the case company's internal evaluation processes which also include the sustainability assessment. The sustainability criteria are mainly derived from the case company's Supplier Requirements Directive.

In addition, the case company's global agreements and terms and conditions contain requirements relating to environmental and social sustainability principles. For example, in service agreements, the agreement explicitly states that the supplier is responsible for proper occupational health and safety management. However, for the purposes of this study, the assessment process related to the supplier selection is the most relevant, so the content of agreements and terms will not be further analyzed.

The saw assessing a supplier's sustainability performance as an important part of risk management, in particular to ensure supply chain certainty and avoid associated risks. For example, if the supplier delivers materials that do not meet the company's quality requirements, the used material is wasted which in addition to the negative environmental impact also increases costs for the case company. In this context, the importance of choosing a reliable supplier was also mentioned, to be able to trust that the work will be completed as agreed and that the supplier's activities will not harm the case company's reputation. In addition, the risk of disruption was raised in relation to supply chain certainty, for example if a supplier does not act according to the case company's supplier sustainability requirements and violates human rights. Thus, sustainability in the supplier assessment and selection was generally seen as having an important role from a risk management perspective.

The interviewees agreed that sustainability is integrated into the case company's current supplier assessment and selection process to some extent. Whereas some interviewees felt that the level of considering sustainability is sufficient, some others believed that it could be further developed. Some interviewees felt that the current sustainability assessment criteria are relatively generic, and the required standards could therefore be higher. For example, hard data on environmental and social sustainability is barely collected from suppliers.

The interviews also revealed that it is only in recent years that more attention has been paid to sustainability in the supplier assessment and selection process. Especially, requirements and criteria related to environmental sustainability have been growing during the past year. One reason for this is the case company's decarbonization and other climate targets, in addition to which the environmental sustainability aspects seemed to be easier to measure and compare than the social sustainability issues. Overall, interviewees agreed that considering supplier's performance in terms of sustainability is an important part of supplier selection:

*There are so many things in sustainable development, the company's values, and ethics, and how they treat their employees and what kind of rules and agreements are behind them. So, the impact is quite big. – I2*

At this stage, however, it is worth mentioning that the selection of a particular supplier always requires that the fundamentals of sustainability are in place. That is, the supplier must meet the case company's fundamental supplier sustainability requirements as defined in the Supplier Requirements Directive. The social and environmental sustainability criteria are identified as critical indicators, meaning, that in case a supplier does not meet the case company's supplier environmental and social sustainability requirements, the assessment and selection process will not be proceeded with the supplier.

In supplier assessment and selection, traditional criteria such as cost, quality and delivery time are still the most dominant evaluation factors. Quality has become more important than cost and delivery time criteria in recent years, with more willingness to pay more for a high-quality service or goods. Additionally, interviewees had different views on the order of importance of the criteria. Some interviewees stated that sustainability issues in supplier assessment and selection process are taken into account right after the traditional criteria. Assuming that the fundamentals are in place, sustainability is not yet considered a very significant assessment criterion in supplier assessment and selection process in general:

*Well, I have not yet seen any of our contracts today that have specifically included sustainability in them. – I2*

That is, the sustainability of suppliers is not compared in the same way as with traditional criteria. In other words, no particular emphasis is necessarily given whether a supplier acts in accordance with the principles of sustainable development:

*Well, it (sustainability) is basically reviewed at the point when the supplier is approved. It is not necessarily considered any further at that point. – I6*

Although the case company has sustainability criteria for suppliers in place, they are applied with varying degrees of emphasis. The interviewees stated that in some cases sustainability

criteria may play a greater role than usual. The importance of sustainability factors in supplier assessment and selection depends to a great extent on the type of case and the type of service or product being purchased. Based on the interviews, it can be concluded that sustainability is more comprehensively considered in large and long-term contracts than in smaller and short-term contracts.

The cases where more emphasis was placed on sustainability criteria in supplier assessment and selection have been related to situations where more environmentally friendly decisions were desired to be made in the case company. For example, when it comes to installing solar panels on the roof or electric car charging points in the parking garage, naturally much more emphasis has been given for sustainability criteria than in conventional cases. In principle, the starting point for such tendering is to keep up with sustainable development.

However, it is seen as an advantage if a supplier is able to offer additional value through sustainable solutions. In such cases, it is often that the supplier has to offer sustainable solutions that also have a positive impact on the overall cost-effectiveness of the service being purchased. One interviewee told of a case where sustainability was an impactful factor in supplier selection because it had a positive impact on the development of the case company's own operations. The supplier offered to monitor the case company's energy consumption in different locations and suggest ways to save energy:

*This was something that was a plus, and it was purely a sustainability thing, [...] they helped us to develop our own operations, and it was great. It was a plus, which was certainly quite decisive in supplier selection. Another supplier did not have this to offer. – I5*

However, it should be noted that even in such cases, cost is usually the more dominant factor, and sustainability only has a value-adding role. If there is a conflict between sustainability and cost in tendering phase, the cost tends to usually override the sustainability factors:

*...If I go, for example, with a decision of this kind to get instructions from upstairs (top management), they will tell me to select the most cost-effective one. That (cost) is still the guiding factor. – I5*

Although generally no more emphasis is necessarily placed on sustainability in supplier assessment than the minimum fundamentals, suppliers themselves have been proactive in communicating their sustainability practices. Interestingly, it appeared that suppliers are taking the initiative to an increasing extent to provide information on their sustainable activities and solutions in relation to sustainable development. Some cases were mentioned where the suppliers offered sustainable solutions, which have also been more affordable than the current ones. The interviewees saw it is easier to select suppliers based on their sustainable solutions, while at the same time generating savings for the case company.

#### 4.1.2 Sustainable supplier assessment and selection process

Before being able to identify any potential gaps and shortcomings and related development opportunities, it was important to understand how the supplier assessment and selection process works in the case company. Thus, based on the interviews and case company's documentary materials, an understanding was formed of how supplier assessment and selection is carried out in Facility Management & Services (FM) category and who are the key people involved. Figure 7 below explains the case company's sourcing process in FM category and the participants in more detail.

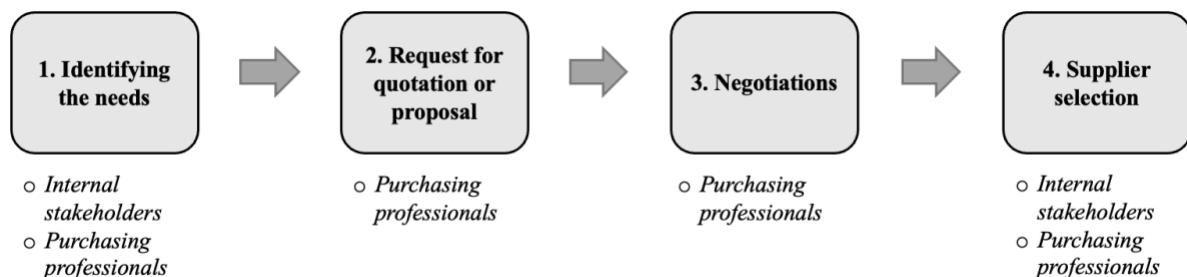


Figure 7: The case company's sourcing process in Facility Management & Services (FM) category

The supplier assessment and selection process in the case company for FM related purchases starts by identifying the needs and defining the scope for the case (1). In the first stage it is required that the participants are the internal stakeholders and the purchasing professionals from the procurement function and from the FM category. The need for a certain purchase

usually comes directly from the internal stakeholders, as they are the owners of the cases. The internal stakeholders identify the key requirements related to the services or goods needed. In the second stage (2) the potential suppliers are selected to request for quotation or proposal process, after which the negotiations (3) with the best candidates start. In steps 2 and 3, involvement of the internal stakeholders is not required, but in many cases recommended. The final stage (4) is the supplier selection and contracting work with selected suppliers, requiring the presence of both internal stakeholders and purchasing professionals.

When the supplier assessment and selection process is followed, at the request for quotation or proposal stage in large cases an assessment template is created covering the topics on which the supplier selection will be based upon. However, as there is no separate model for assessing and comparing suppliers' sustainability performance, the purchasing professionals and internal stakeholders in some cases assess the suppliers' sustainability based on their own knowledge and experience:

*...it's so case by case, and then we try to take certain things into account in our own cases and the same way other purchasers try in their own cases to take certain things into account, and then just discuss among ourselves what could be good here, but it's just kind of going back and forth within the team... – I1*

However, the supplier assessment and selection process is not always followed as described above, and the purchasing professionals are not always involved in every phase. Internal stakeholders conduct supplier assessments and selections quite often independently, without involving purchasing professionals in the process. This is also a question of resources, as one interviewee said that the procurement department might not have the resources to be involved in every small case as there are so many. It is also easier and more accessible for supplier to use the shortcut by contacting the internal stakeholder directly:

*If the supplier is smart enough not to go through procurement but to contact the stakeholder directly, it is so much easier to get inside the case company as a supplier. – I1*

Most of the cases are initiated by an internal stakeholder, who identifies and determines the needs and specifications for the purchased service or goods. In addition, the decision to

choose a supplier is ultimately the responsibility of the internal stakeholder. In cases where the purchasing professionals are not involved in the supplier assessment and selection process, they try to find out afterwards on what basis the supplier has been selected:

*Usually we ask the basic questions, how was the supplier chosen? Has it been put out to tender? Has there been a procurement person involved in negotiating or agreeing on anything? We ask these questions. We can't really do anything more at that stage. – I1*

The problem in such cases is that the purchasing professionals are only informed when the supplier has already been selected. That is, the supplier is assessed after it has been decided to start the cooperation, in which case the assessment takes place at the same time the supplier account is opened in the case company's systems. Interviews also revealed that it is quite common for suppliers to be assessed and opened in the systems only after the service or product has been purchased and the invoice has been received, in which cases the suppliers are assessed in a hurry and not in a deliberate way. It was also mentioned that when the supplier assessment and selection process is not followed accordingly, less attention is paid to sustainability criteria, but the suppliers are rather selected based on traditional criteria.

Some purchasing professionals were skeptical about whether the case company's own ethical values and policies are that well known within the internal stakeholders, and whether their decisions in supplier assessment and selection are based on them. In one interview, an internal stakeholder said that they have not used the Online Questionnaire to collect information from suppliers, nor have they explicitly used the Supplier Requirements Directive to support their decision making. Another interviewee stated that if procurement is not involved in the supplier assessment and selection process, it is not possible to ensure that the Code of Conduct and other ethical principles are considered in the same way:

*But in those cases where we don't even get involved in the selection, it's very difficult to know whether our - for example, code of conduct or sourcing policy - has had any impact. Probably not. – I1*

### 4.1.3 Environmental sustainability criteria

The main environmental sustainability criteria raised during the interviews were environmental management systems and waste management. The application of an environmental management system is included in the Supplier Requirements Directive. Other environmental sustainability criteria emerged from the interviews were solutions related to energy savings, substances and chemicals, and the value chain and origin of materials.

Although there is a growing effort to consider environmental sustainability in supplier assessment and selection, there are differences in how environmental sustainability criteria are considered. Application of the criteria depends on the case and the participants in the supplier assessment and selection process. One interviewee mentioned that they have found it effective to ask if a supplier has a sustainability plan in place, which is also seen as an incentive for stakeholders to consider sustainability issues when assessing suppliers:

*I have noticed that it is effective, where you also learn a lot, that you ask if the supplier has a sustainability plan or an environmental plan. And when you receive them, you get to read quite a lot. And for those who have nothing of such kind, it makes one wonder that haven't you thought about these things at all? –*

I1

Awareness regarding the origin of materials has increased in recent years in supplier assessment and selection, mainly since the suppliers themselves have started to place more emphasis on it when providing information about their products and services. In relation to furniture, the supplier may be asked where the fabrics, timber, plastic, or other material used in the product come from and how they are produced. Logistics have been considered in the selection of the furniture supplier to the extent that the furniture is not transported over long distances, thus aiming to focus on domestic origin. The suppliers may be requested to clarify the type of factory environment in which the products are produced. Although attention to the origin of materials has increased, and the proper supply chain of materials is seen as a contributing factor in supplier assessment, it does not yet carry significant weight in supplier selection.

In the assessment of substances and chemicals, consideration has been given to whether the chemicals have the Nordic Swan Ecolabel, the official Nordic ecolabel. It is designed to ensure that products meet certain ecological standards and are good environmental choices (Joutsenmerkki, 2023). The assessment also considers the environmental impact of substances, such as cleaning products, when released into nature. The questions of waste management are mainly related to the ways and practices it takes place, for example, how much waste is incinerated, how the waste is sorted, and what is the waste recycling rate. Suppliers' waste management issues are mainly assessed through environmental management systems and therefore do not necessarily receive any deeper attention.

The Supplier Requirements Directive states that the case company promotes application by the supplier of a certified environmental management system, e.g., ISO 14001 or a similar non-certified environmental management system but which meets the same requirements. If a supplier does not have an environmental management system, the supplier shall provide a clear schedule to apply for the certification. If a supplier has no environmental management system in place and has no intention of implementing one and there is a clear risk of not complying with the local environmental requirements, the supplier is considered not compliant.

If a supplier has an environmental management system, they usually provide a copy of the certificate, but it is not separately asked for by the case company. The extent to which copies of certificates are reviewed by the case company and whether the environmental management systems are brought up in the supplier assessment is highly variable. While some interviewees emphasized that they have asked suppliers to provide copies of certificates and reviewed their validity, others said that they have not specifically considered them in supplier assessment and selection. It is most likely that when the procurement is not involved in the supplier assessment and selection, the certificates do not carry that much weight in the process.

#### **4.1.4 Social sustainability criteria**

The discussions about social sustainability criteria concentrated mostly on health and safety, and human rights topics. The most discussed topics of human rights were forced or child labor, fair compensation, freedom for collective bargaining and right to build or join trade

unions. The discussions regarding health and safety focused on safe working environment, safety equipment, occupational health care and social sustainability management systems. Criteria from both elements are included in the Supplier Requirements Directive and are therefore mandatory for suppliers to comply with.

Other social sustainability criteria emerged from the interviews were to examine the employee turnover, meaning, the period of the employees' career length in the company. If the turnover of employees is high, it is usually taken as a sign that employee satisfaction and working conditions could be improved. For example, if the case company hears something negative about a supplier's working conditions, this is likely to influence the choice of a supplier, because low employee satisfaction affects the supplier's performance. That is, a supplier's social sustainability performance is often also assessed based on hearsay and reputation:

*A lot of times you go by rumor, or by hearing what has happened, or what kind of reputation the supplier has and so on. [...] If nothing bad has been heard, then it can be assumed that we are on a sustainable basis. – I4*

On the construction side, there are legislations that prescribe proper monitoring of employees' working hours. Therefore, the case company requires its contractors to comply with the working time regulations, for example by manually tracking hours worked or by using a time clocking system. In this way, the case company ensures that the contractor does not use undeclared labor and complies with the case company's requirements in that area.

The Supplier Requirements Directive states that the case company promotes application by the supplier of a certified health and safety management system, e.g., OHSAS 18001, ISO 45001, or a similar non-certified health and safety management system but which meets the same requirements. If a supplier does not have a health and safety management system, the supplier shall provide a clear schedule to apply for the certification. If a supplier has no health and safety management system and has no intention to implement one, or the working environments are dangerous with high risks of serious hazards, the supplier is considered as not compliant. Similarly, the supplier is seen as compliant if the supplier has a certified social accountability management system, e.g., SA8000, or otherwise complies with the case company's social sustainability requirements.

As with the environmental management systems, there was some variability in verification of the social accountability and health and safety certificates, with a minority of interviewees saying that they are reviewing the certificates. In addition, the supplier may be asked to provide a company policy, which indicates the supplier's principles of social sustainability. Although, suppliers are required to follow appropriate health and safety policies, neither are the related documents explicitly reviewed by the case company:

*...I don't remember that we would have ever reviewed what kind of safety instructions the supplier has, for example. – I5*

As with environmental sustainability, suppliers are expected to comply with the case company's social sustainability requirements as presented in the Supplier Requirements Directive. However, if the requirements are met, they are not necessarily reviewed at in any greater depth, and there is no comparison between suppliers based on social sustainability criteria. Suppliers are generally not selected based on social sustainability principles:

*I have never seen anything like that we would have chosen a supplier and the critical factor would have been something like how they treat their employees in a positive sense, and that it would have put them ahead of the others. – I5*

*This is really difficult, because such things are not often discussed. For example, how you have handled personnel matters in the company and so on. – I4*

From the purchasing professionals' and stakeholders' point of view, the current social sustainability criteria are generally at a sufficient level for the FM category. The main reason for this was that on the service side, suppliers in FM category are mainly located in Finland and provide expert services locally to the case company. One interviewee argued that the work of a service provided is usually something they can see and control for themselves:

*And then, of course, there is the fact that the service is produced in our facilities. You can see it every day, and not that it's in another country, and then the end result is delivered to us. – I2*

As real estate business is mainly a local activity and the service providers come from near, one interviewee mentioned that they have not come across a supplier who brings their employees from outside Finland. Therefore, some interviewees felt that social sustainability criteria, such as the use of child labor, do not feature prominently in the supplier assessment and selection. Another reason given was that the suppliers used in FM category are large Finnish companies with good reputation, and they are monitored from many other sources:

*I don't remember anything like this that we would even have to check (the sustainability criteria), because our suppliers are all relatively big, if not leading Finnish companies. So maybe that guarantees something, I don't know, of course these things can come to light. – I2*

## 4.2 Gaps and shortcomings

After mapping the current status of the sustainable supplier assessment and selection process, the weaknesses of the process were identified. This subchapter discusses the gaps and shortcomings in sustainable supplier assessment and selection process in the case company. The identified gaps and shortcomings in the current sustainable supplier assessment and selection are related to the applicability and coverage of the assessment criteria as well as the limited tools and guidelines. This category and its contents are described in Table 7.

Table 7: Gaps and shortcomings

Subcategory	Content
Applicability of the assessment criteria	Flexibility of the criteria Applicability by type of supplier Comparability of supplier sustainability
Coverage of the assessment criteria	Sustainability criteria in relation to traditional criteria Environmental sustainability criteria Social sustainability criteria
Limited tools and guidelines	Uncertainty in decision making Lack of consistency and comparability Benefits of guidance generation

#### 4.2.1 Applicability of the assessment criteria

A clear challenge identified during the interviews was the applicability and flexibility of the current supplier sustainability assessment criteria. The current sustainability criteria are applied to all new and current suppliers in the case company on the same scale, regardless of the company size, country, or the sector in which they operate. This puts some supplier groups, especially smaller suppliers, at a disadvantage. Smaller suppliers have limited resources and expertise to make sustainable changes, such as environmental plans or carbon accounting, compared to larger suppliers. Therefore, it was considered difficult to compare the environmental and social sustainability factors of suppliers of different company sizes and from different industries and locations:

*That is, you are asking for an extensive sustainability report or a plan, or an environmental plan from a small supplier whose service doesn't even have much of a burden on the environment, just because you must ask. It doesn't really make sense. – I1*

Interviewees especially found it difficult to assess environmental sustainability issues in some cases, as a large proportion of the FM category suppliers are service providers. It was therefore not considered relevant to assess service providers in the same way as goods suppliers, as services do not usually have the same level of environmental impact. It was mentioned that the current sustainability assessment criteria need more flexibility. For example, different environmental and social sustainability criteria could be prioritized and weighted differently depending on the supplier's industry, country, or company size. Therefore, it was desired that the assessment criteria would be adjustable for different industries:

*But then again, when talking about consulting services, you cannot look at carbon neutrality, so then it's more about the way they work and what kind of organizational structure it is, or their own internal values. – I1*

*The rating is designed for factory and production related work. And for office and service work, it is not necessarily that suitable, because different things are emphasized in there. Yes, they (suppliers) are asked whether they have a waste*

*management certificate or other environmental management system, but if they are working roughly on a waste zero principle, that they are working on a computer and no particular waste is generated... So, of course, it's an important issue, but I don't know if it's necessarily the most important. – I6*

Social sustainability elements such as health and safety at work and human rights were more prominent for service suppliers. However, challenges in applying the social sustainability criteria were also recognized. For example, the suppliers are required to clarify whether they have appropriate employee safety equipment. While this type of topic is vital in a factory or a construction environment, it is not equally applicable to service work done in office premises. Of course, working in an office environment also has its own safety risks which should be taken into account in terms of safety at work. However, in office premises, the emphasis is on different types of safe working environment related aspects, rather than on safety equipment. Also, the criterion related to work equipment may be interpreted in different ways, as the type of safety equipment is not explicitly defined in the assessment criterion.

Thus, the use of environmental and social sustainability criteria should be more applicable considering the industry, location, and company size of the supplier. In addition, the assessment criteria could be more dependent on the type of supplier and purchase, as the relevance of certain sustainability topics varies between them:

*...We have now started to identify the suppliers with the highest emission intensity, and sure for them it's then the most relevant that they also have these climate targets in place whereas when we talk about service suppliers, maybe the CO2 emission, well consultancy companies that are also our suppliers where this emissions topic is maybe not so relevant, so I believe that also needs always needs a little bit of a flexibility. – I3*

Discussions also highlighted differences between suppliers in different countries, as the importance of environmental and social sustainability issues varies from country to country. Also, cultural and national differences pose challenges when comparing suppliers on a global scale. The supplier assessment criteria and process should be adapted to the type of supplier, and there is also a need to understand where the supplier is located and what the associated

risk may be. For example, in some regions, human dignity may not be at a high enough level to warrant the same safety conditions as in Finland.

#### 4.2.2 Coverage of the assessment criteria

As described earlier in this Chapter, traditional criteria such as cost, quality, and delivery terms, have a much more important role than sustainability when it comes to supplier assessment and selection. Another major challenge identified in the interviews was balancing the weight between sustainability and traditional criteria. At the outset, in conventional cases, supplier assessment and selection decisions are mainly based on traditional criteria. Consequently, the interviewees did not identify any situations where sustainability had been a criterion that went beyond the cost of a good or service being purchased:

*I have not yet seen or come across many such decisions where we would have chosen the more expensive (supplier) because they are better for the environment, for example, their production works better in terms of environmental sustainability, than someone else. – I5*

However, one interviewee saw that the case company's 2030 carbon neutrality target was an important indicator to justify sustainable supplier selection decisions. For example, as the case company leases or buys new premises, environmental sustainability aspects are increasingly taken into account to achieve the case company's carbon neutrality targets. The challenge here, however, is again to understand what the weighting between sustainability and cost is, and how it should be determined and measured:

*...If I have a service that costs 100 thousand euros a year, and then there are 110, 120, 130, 140 and 150. So, at what point is the weighting of sustainable development so high that I would take the most expensive one? But I don't know if it's always really a question of money, does it (sustainability) always bring more costs? – I2*

The case company is not accountable for the environmental or social sustainability of the subcontractor's work or operations, and the performance of the suppliers' subcontractors is

not therefore considered in the current supplier assessment. In this context, concerns were raised as to whether the outcome of the supplier assessment is always accurate if the subcontractor's performance cannot be considered in the supplier assessment and selection:

*...The assessment is not done for the subcontractors, but only for the contract partner. And that does not give a true picture, because it may be that it is the subcontractors who produce the service, basically only the invoicing and management goes through the contract partner. Then nothing, not sustainability or quality or anything else, necessarily meets our requirements. – I1*

The current supplier assessment questions in the Online Questionnaire were described as generic, as they hardly ask the supplier for hard data information. In practice, the only questions for which hard data can be obtained are related to the environmental, health and safety, and social accountability management systems. Also, the supplier is asked to provide information on how long the supplier's company has operated without any fatal injuries. However, this type of approach was considered to be a bit rigid, and it is not equally suitable for, for example, small service providers. The reason given for this was that employees of smaller service providers are presumably less exposed to fatal injuries. Otherwise, there is very little requirement for clear, numerical, and comparable data from suppliers:

*For example, there are no questions about, say, injury frequencies or something like that, and also on the environmental side, there are no questions about emissions or energy consumption or any numerical data like that. – I7*

The Supplier Requirements Directive states that the supplier shall be able to provide information of the environmental impact regarding its operations, products, and services, including packing materials, emissions, energy consumption as requested or specified by the case company. In other words, the Directive states that these aspects can be asked from suppliers by the case company, but it is not included in the supplier assessment process nor in the Online Questionnaire. Interviewees reflected on the reasons for not collecting hard data from suppliers on their environmental and social performance and sustainability:

*It could be that the reason is that it is thought to be too much work for suppliers. It would be interesting to know what the reasoning is, whether it is too*

*burdensome for us, for example, it may be that because we have so many different products, we think that they cannot compare these environmental data with each other. Or what is the reason? It would be interesting to know. – I7*

It was argued that small suppliers may not have the resources to put in place systems to monitor and calculate their environmental or social impacts. This, in turn, may not necessarily be given weight in supplier assessment and selection, because if a supplier is able to deliver high quality goods at a reasonable price, sustainability factors may no longer be an issue. If it is not possible to collect concrete data from all suppliers of their environmental and social sustainability performance, it will not be possible to compare these aspects between suppliers:

*Well, it may be that that's the practical reason, that if you think that more than half of them may not be able to provide the data, then what? What does the data do if only less than half of the suppliers have it? – I7*

As mentioned earlier, interviewees generally considered the current sustainable assessment criteria to be sufficient for their purchasing category. However, a few criteria emerged from the interviews, which the interviewees felt were important to add to the assessment criteria or to strengthen their emphasis further. On environmental sustainability, respondents expressed a desire for more guidance and consistency in the assessment criteria and approach. In addition, a more systematic screening of all suppliers was considered important:

*I would say that it would be good if we could list these environmental criteria a bit more systematically before we select new contractors next time... – I9*

*Well, we've been talking about whether we can make into our Real Estate policy this kind of decision that all premises – or whenever we make a choice of premises – so all the sites should be certified [...]. But we've been thinking about whether we as a company have enough money to make a decision like this. Because almost all certified properties are quite new, which means that they are usually more expensive [...]. So, it always adds up to the money. But a small decision like this would be quite guiding. – I2*

One interviewee pointed out the importance of a strong organization of a contractor and a systematic approach to the work. The interviewee argued that if the case company is able to select a well-organized contractor to carry out the work, the interest in environmental issues is likely to be higher. As a lot of waste is generated on construction sites, enough time should be left for waste management and sorting in a planned way.

Issues related to climate change are still very low in the supplier assessment, however, they are being increasingly discussed. As climate change is an increasingly important issue for the case company, it is an area where the supplier assessment and selection process can be developed. It was desired to incorporate the climate and decarbonization topics even more strongly into the current supplier assessment process:

*I definitely would now consider how this climate topic, decarbonization, climate targets could be more integral part, well of the requirements and also the expectations that we have and then also of the assessments, that we really understand what kind of targets, climate targets suppliers have in place, if they already started to look into possibilities to reduce CO2 emissions. – I3*

It was pointed out that climate change and carbon neutrality related targets are not only important for the case company, but also for suppliers. It brings with it new regulations and obligations that suppliers must also comply with. Some interviewees stressed the importance of assessing and monitoring the supplier compliance with these regulations:

*...Also take this into a consideration then when we select the supplier and maybe have a comparison in numbers available, how well they are performing in this area and especially if they are interested to reduce CO2 emissions in a supply chain that have a possibility, maybe select a supplier that have a smaller carbon footprint compared to others. – I3*

The majority of those interviewed felt that, given the importance of human rights and other aspects of social sustainability, more attention should be paid to social sustainability criteria in the assessment and selection of suppliers. Depending on the location of the supplier, human rights topic is an area where more attention should be paid to the supplier's ways of operating.

One interviewee pointed out that more attention could be especially paid to employee rights in supplier assessment and selection. When assessing and discussing with a supplier, it should be better reviewed whether the supplier's employees are treated properly within the supplier's company. This includes ensuring that employees are included in a proper working life and therefore have access to all legal benefits, compensation, and other employee rights.

As with environmental sustainability, there is very little assessment of suppliers based on hard data on the social sustainability part. Interviews raised the possibility of using safety indicators such as lost time incident frequency (LTIF) or total recordable incident frequency (TRIFF) to measure the extent to which safety at work is being achieved at the supplier. Such indicators would also make it easier to measure and compare the social sustainability performance of suppliers against each other. On the other hand, one interviewee saw one challenge in measuring supplier safety at work when a supplier produces several different products or services. In this case, for example, accidents at work at the supplier's premises may not be related to the manufacture of the products purchased by the case company:

*...If the injuries happen in different types of work, is that something that should be taken into account when we choose a supplier? If there are never any accidents in the things that are produced for us. – I7*

Other challenges were also raised in this regard in the interviews, mainly related to the reliability of data provided by the suppliers. It was pointed out that there is a risk that the supplier would provide false information and the accuracy of the information cannot be confirmed since the case company does not carry out on-site sustainability audits:

*...these child labor and forced labor things, they are now quite clear that whether you had child labor or not, you answer "no" to this question. But then again, the numerical would bring slightly more accurate data. – I7*

#### **4.2.3 Limited tools and guidelines**

The interviews revealed that the limited tools and guidelines on comparing suppliers' sustainability performance has created uncertainty in the decision making. Some interviewees

said that they have found it difficult to compare sustainability principles between suppliers because there is no specific guidance on how to do it. Depending on the case, the weighting of relevant environmental and social sustainability criteria is under purchasing professionals' and stakeholders' responsibility and based on their interpretation. Generally, consideration of sustainability issues in supplier assessment and selection seems to be still in the dark, which is why not more focus and effort has usually been given than required.

It appeared in the interviews that suppliers are currently assessed by discussing and asking them about their sustainability principles and practices. This means, however, that there is no common approach for assessing the suppliers, but sustainability is assessed according to the interpretation of the one making the assessment. Therefore, there is no consistency or comparability in the information collection and assessment:

*...you start for example by asking for the company policy, which also covers the employee's benefits and the employer's responsibilities that have been agreed, and then you start to discuss them further, and then you continue the discussion and get the full picture of the issues... – I1*

The development of a specific guideline or policy on sustainable supplier assessment was seen to have significant benefits and positive impacts on the decision making of purchasing professionals and other stakeholders when assessing and selecting suppliers. Interviewees therefore saw a definite benefit in having a common alignment to sustainable supplier assessment and selection:

*...We don't have any tool at the moment that allows us to directly compare these different (sustainability) points between suppliers. And it would perhaps be something that could, in a way, guide us to the fact that it would be an essential part of decision making if we had one. – I5*

*...It would certainly make it easier in the future to have this kind of pre-existing list of what opportunities there are to ask. – I1*

On the other hand, the interviews also highlighted again the fact that the assessment process and related criteria and templates shall not be too predefined and inflexible. There is a

downside to an overly black and white process, as it may be perceived by the purchasing professionals and stakeholders as too impractical and difficult to implement, when it is intended to provide support and assistance to sustainable supplier assessment process:

*That's the downside of having a process that in a case like this, without taking into account the industry, the size, the spend of the supplier, you're forced to do it in a certain way. So, it can turn this sustainability issue into negative while it should be positive, which really is useful to us and that we understand that the important suppliers then meet certain requirement... – I1*

An overly limited process also complicates the ability of those doing the supplier assessment to make their own judgements in the situation, as it would not give much room to think independently. As one interviewee pointed out, one purpose of the current supplier assessment process is also to give some space for personal reflection and responsibility to the one making the assessment:

*The one idea of the whole survey is that the one who is making the assessment would wake up to think the possible shortcomings or issues that the supplier might be doing wrong. In that sense, it (criterion) is quite comprehensive. – I5*

### **4.3 Development opportunities**

Having identified the gaps and shortcomings in the sustainable supplier assessment and selection process, the next step was to identify potential opportunities for improvement. This subchapter discusses the development opportunities in sustainable supplier assessment and selection in the case company. The identified development opportunities in the current sustainable supplier assessment and selection process are related to continuous improvement, development of tools and clear guidelines, and supplier performance verification. This category and its contents are described in Table 8.

Table 8: Development opportunities

Subcategory	Content
Continuous development	Updating the process and practices Follow up with the regulatory development
Development of tools and clear guidelines	Internal carbon pricing Supplier Code of Conduct Supplier dialogue and training
Supplier performance verification	On-site sustainability audits Supplier development engineer role

### 4.3.1 Continuous development

Generally, it was considered a good practice to put effort on continuous development of the supplier sustainability assessment practices and understand whether some topics need to be revised or new ones included in the process. It is important to understand how well the sustainability topics are covered in the current process, whether the most relevant questions are asked from the suppliers and whether something should be changed. One of the suggestions raised during the interviews was to conduct a benchmarking analysis with other organizations, particularly those with advanced sustainability practices:

*...From the continuous development point of view, I think it would be useful then to review and maybe also do some benchmarking with other companies and especially companies that might be forerunners in these areas and identify things that we have not maybe yet considered could be included as well. – I3*

Continuous development also contains continuous compliance follow-up with the regulatory development related to environmental and social sustainability issues, such as developments related to chemicals and conflict minerals, or developments related to human rights such as forced labor. For example, one interviewee pointed out that there is stricter guidance coming from the European Union on how to make human rights due diligence and human rights assessment. As there is continuously new legislation and possible changes in current ones related to sustainability area, it is essential to closely follow the development of legislation in certain countries and incorporate them into the supplier assessment by updating the supplier sustainability requirements accordingly.

### 4.3.2 Development of tools and clear guidelines

The interviewees agreed that the current supplier sustainability assessment criteria and guidance should be clarified to allow a more thorough comparison of suppliers' sustainability performance. Developing tools and clear guidelines for comparing supplier sustainability would bring objectivity to the process, allowing sustainability factors to be better integrated into decision making. Also, the employees do not necessarily have the type of resources and understanding that would allow them to make comparisons on the sustainability of suppliers independently based on their personal judgement or analysis.

One feature of tools and clear guidelines was the desire to be able to directly compare the sustainability performance of supplier with each other. As the assessment of supplier sustainability is hardly based on hard data, the current sustainable supplier assessment criteria and practices do not allow for the comparison of suppliers based on their environmental and social sustainability practices. Therefore, some interviewees raised the desire to be able to rank the suppliers based on concrete data of their environmental and social sustainability performance and give preference to those who have sustainability issues under control:

*...if we could get some kind of standard that would provide us with a clear point of comparison, how we can compare the suppliers, put them in the same table regarding these matters. – I5*

A standardized comparison would help the purchasing professionals and internal stakeholders to better apply and understand the sustainability criteria. Data can be collected either from an external source or from the suppliers themselves, for example through artificial intelligence or other automation. In any case, the most important thing would be that there would be a clearly comparable scoring system for supplier sustainability comparison.

One key solution for making sustainability a more tangible and visible factor in supplier assessment and selection was the pricing of environmental and social impacts. In one interview the possibility of starting to calculate and compare carbon footprint between

suppliers was discussed. One suggestion to do this was to have an internal carbon price as an incentive for the case company to reduce its emissions and carbon footprint:

*...internal carbon price would be a really handy tool in my opinion, so that it could be directly taken into account in the fact that, okay, we are more willing to pay that much to save such and such amounts of tons of carbon dioxide. – I7*

In the context of logistics, the importance of putting a price on the emissions generated by the transportation of goods was also highlighted. Carbon pricing of logistical emissions was considered to have an important part in reducing the environmental impact of transportation activities. This would also avoid situations where goods are transported by air or sea from a distant destination and give preference to locally available goods wherever possible:

*...If we order nuts from Korea to the Netherlands [...], and include that somehow in the calculation, so that we can get to the carbon footprint calculation even at the level of an estimate. [...] If we put a value of 50 € / per tonne on carbon, we are willing to pay that much more to take it from Belgium to the Netherlands. And even if it costs a euro more per ten bundles, we are ready for it because it saves a lot of carbon footprint especially because of the transportation. – I7*

In principle, pricing social sustainability factors seemed more complicated and difficult than pricing environmental sustainability factors. While the implementation of the LTIF and TRIFF safety indicators presented in Chapter 4.2.2 provides concrete and comparable data for the supplier assessment, their pricing is much more complex. For example, injuries can take many forms, such as mild, severe, temporary, or permanent. That is, their pricing is much more complex than, for example, a ton of carbon dioxide. In any case, the pricing of environmental and social sustainability impacts was seen as an effective tool for supplier assessment:

*...If it were possible to convert everything into euros in the end and then compare and make decisions on that basis, then it would be easy in a way, you wouldn't always have to think about each case separately. – I7*

In addition, it was seen important to communicate to suppliers what the case company's practices, targets, and desires are towards sustainability. It is crucial to make sure that suppliers understand and are fully aware of the case company's commitments and expectations for its suppliers in terms of sustainability. In particular, suppliers should be informed that the case company is doing business according to the Code of Conduct and that the suppliers are expected to comply with that as well.

To achieve this, a transparent and effective dialogue between the case company and the supplier as well as continuous supplier development practices are needed. Different possibilities were discussed during the interviews in relation to supplier cooperation and dialogue on sustainability principles. The interviewees considered it important that the case company is willing to cooperate with the suppliers, and to support them in implementing or improving sustainability practices.

One theme in the interviews was the provision of training opportunities for suppliers to better support them on their path towards more sustainable practices. As part of supplier development, it was suggested to provide e-learning courses, training days, or other additional guidance for suppliers. This is to make sure that the suppliers are fully aware what kind of contribution is expected from them in relation to sustainability practices:

*I believe in the requirements we can be rather short, but then we need to make sure that they understand what we mean. – I3*

Additionally, suppliers could be asked more specific questions about their compliance with the environmental and social sustainability principles and based on their responses, provide further support and guidance to improve their practices. In addition, the interviews raised the possibility of a help line type approach, which would provide an accessible way for the supplier to ask for help and support to improve their sustainability. In one interview it was also suggested to introduce a whistle-blowing channel for the suppliers' employees, where they can anonymously report unethical behavior or actions by the supplier.

It was emphasized that the interaction between the case company and the supplier should be mutual to make the supply chain as sustainable and low-risk as possible. The supplier may also suggest solutions to the case company that would help the supplier to improve in their

sustainably practices. An example given in one interview was the recycling of packaging materials, where usable packaging materials could be reused instead of throwing away and replacing them with new ones. Similarly, suppliers can be encouraged to package goods in such a way that the same packaging materials can be used for onward dispatch:

*...It is, however, a supply chain, there are many different stages, many different levels where the component comes from, which is then delivered here to the factory. So, it is the whole chain that should work well, in accordance with sustainable development, so that it is basically a low-risk supply chain. – I8*

Another concrete solution would be to implement a Supplier Code of Conduct which in fact has been used by many large Finnish companies for some time. The Supplier Code of Conduct would contain all the ethical principles that the case company requires the supplier to commit and comply with. A document like Supplier Code of Conduct also helps to communicate clearly to the supplier what kind of environmental and social sustainability principles the supplier is expected to follow by the case company:

*I think a document like a supplier code of conduct could be a useful tool here because, well, it's a very strong communication also to the supplier that they understand how we work. – I3*

The purpose of the Supplier Code of Conduct is to make sure that the supplier is committed to the same sustainability principles and standards as the case company. The commitment to comply with the principles in the Supplier Code of Conduct would be confirmed by the supplier signing the document. However, as the case company requires suppliers to comply with the case company's own Code of Conduct, the necessity of a separate Supplier Code of Conduct was also questioned. On the other hand, the case company's own Code of Conduct may be perceived as applying only to the company's internal practices, although the contracts and the case company's Code of Conduct itself state that suppliers are obliged to act in accordance with its practices. A separate Code of Conduct addressed to suppliers can therefore indicate to suppliers that it applies specifically to them:

*Perhaps it's that when it says "supplier", then maybe suppliers find it easier to understand that hey, this is now concerning us in particular. – I7*

As supplier risks related to environmental and social sustainability vary between countries, the interviewees also highlighted the need to take this into account when collecting and assessing information from suppliers. For example, the Online Questionnaire could be developed so that it would target survey views to suppliers based on the country in which they operate. Country-specific risks could be based, for example, on risk maps and analyses carried out by human rights organizations or similar actors:

*It could be divided by regions. There could be 5 regions, so that it could be categorized in different ways, different levels of surveys, and then it would be distributed to the suppliers by different countries. – I8*

A broader set of questions should be drawn up for suppliers in high-risk countries than for suppliers in lower-risk countries. A key theme was human rights considerations, and one interviewee suggested that a broader set of social sustainability criteria could be tailored by some regions, highlighting the child labor and other human rights requirements that a supplier must meet. On the other hand, for suppliers operating in Finland, for example, ensuring human rights compliance were seen as less essential, as in Finland it is assumed that suppliers operate in accordance with Finnish legislation. Of course, this means that suppliers in some areas will be required to make more effort to provide information on the implementation of sustainability practices, but it can be justified for risk management reasons:

*But if we assume that there in the area of weaker government and weaker legislative control the risks are greater in principle, so a more detailed study can also be seen as justified but still without being able to talk about unfair preference in any way. – I7*

### **4.3.3 Supplier performance verification**

After the suppliers have committed to the expected environmental and social sustainability standards, and the case company has communicated to the supplier what their expectations are, the next step is to confirm how the suppliers are currently working. The case company is currently verifying the information through assessment surveys and certificates. In particular,

certified management systems were seen as an effective way to assess the sustainability of the supplier, as they are issued by a third party that has verified that the supplier complies with the certified standards. However, some interviewees pointed out that this may not be enough, as meeting the minimum standards of certified management systems is not in itself sufficient to guarantee sustainable practices. Thus, the interviews revealed that more reliable and stronger approaches for verifying supplier information are needed.

It was suggested that on-site audits could be conducted as part of the supplier assessment and selection process. Currently, the case company does not carry out sustainability audits. The suppliers' compliance with the case company's sustainability requirements are reviewed as part of the basic on-site audits. However, the basic on-site audits are not carried out in supplier selection phase, except in very rare cases.

*I mentioned briefly these on-site audits, so okay, it's one thing to have the requirements, but then maybe for the suppliers located in higher risk areas, there could be this more in-depth assessment to make sure that this is also followed, based on the requirements to make sure that then they really also work accordingly. – I3*

However, it was pointed out that due to the case company's extensive supplier base, it is understandably not possible to audit every supplier due to resource reasons. The introduction of on-site sustainability audits should be considered at least for critical and higher risk suppliers to see whether they are engaging with sustainability management practices and help the case company to better understand if there are any gaps or shortcomings. Such practice is also considered crucial for risk assessment, as it helps the case company to better understand the risks related to the suppliers' sustainability performance.

Based on the on-site audits there might be findings in which the supplier can develop its sustainability practices. Then it is important to have the commitment from the supplier that they are willing to improve and create an action plan. The case company shall then think how they can help the supplier to develop related to sustainability topics and support them to develop their sustainability management practices and targets.

One solution raised in the interviews would be to have a supplier development engineer role for indirect procurement activities, as it is not currently in place. The supplier development engineer's main task is to assist in the supplier selection, qualification, monitoring, and development. The supplier development engineer would also have the competence and knowledge to make justified decisions about when on-site sustainability audits should be carried out and what kind of issues are needed to assess about the supplier.

#### 4.4 Ethical organizational culture

In this subchapter, the contribution of ethical organizational culture on decision making in supplier assessment and selection process is examined and analyzed. The ethical organizational culture of the case company is first discussed, followed by how it influences decision making, and what is the role of top management and cooperation and communication with internal stakeholders. This category and its contents are described in Table 9.

Table 9: Ethical organizational culture

Subcategory	Content
Ethical organizational culture in the case company	Code of Conduct and other ethical principles Values and norms
Influence on decision making	The impact in decision making Values that influence decision making
The role of top management	Guidance and example given by top management Balance between sustainability and profitability Encouragement on sustainable decision making
Cooperation and communication with the internal stakeholders	Strengthening communication Following the supplies assessment and selection process

##### 4.4.1 Ethical organizational culture in the case company

The interviews discussed ethical organization culture in the case company mainly in the context of sustainable supplier assessment and selection, but a minority described its impact on ethical decision making in general. An ethical organizational culture was seen as being built by adhering to and following the case company's ethical values and standards. For most

of the interviewees, especially the Code of Conduct and compliance with it is an important part of an ethical organizational culture. The Code of Conduct aims to define the case company's values on a global level and to guide day-to-day work, providing an explanation of how the case company wants to operate in terms of ethics and that employees are expected to work in a similar way.

Interviewees also considered other guidelines and policies by the case company to be important for achieving an ethical organizational culture. Some interviewees also argued that written guidelines alone are not enough to create an ethical organizational culture, but that these principles need to be integrated into everyday practices.

*I think it's consistency and making sure that the decision-makers and people in the company feel that they are doing the right thing. It must be there in the culture. We know that certain practices, when they feel right, are also right. I don't believe that a very precise 50-page set of instructions will build it up, but that it will come from a consistent approach that has been implemented over a long period of time. Usually, it means that it must be long-term. - I5*

For the most part, interviewees felt that the case company's current ethical organizational culture is on a high level. In general, interviewees believed that the decisions are made in good faith and on ethical grounds. Interviewees described ethics and fairness as important values in the case company, and the importance of these values is emphasized and incorporated into the case company's practices and decisions. For interviewees, ethics mainly meant adhering to the principles of the case company, and most interviewees referred to the case company's Code of Conduct in this context. The interviews also highlighted other ethical aspects, such as non-discrimination and equal treatment of everyone inside and outside the organization, regardless of gender, sexual orientation, or ethnic background.

According to the interviewees, the case company is conscious of multiculturalism and diversity in its operations and aims to respect all parties in the work community in decisions and solutions, regardless of gender, age, and ethnic background. Also, one interviewee said that in addition to his own efforts to take ethical practices into account in his decision making, they also trust their colleagues and the work community to act and make decisions according to ethical principles:

*...I trust my colleagues and the work community, that if something suspicious comes to light, those suppliers will be removed from our list. – I9*

The interviewees also discussed ways that the case company informs their employees about case company's expectations regarding ethical principles, for example through different trainings. Some interviewees felt that internal communication on the principles of sustainable development and related behavioral expectations is clearly defined:

*So, probably what we have I would say are very well defined and trainings available for our employees. So, how to do business, what is our code of conduct, being aware of this and then when we work with our suppliers, follow the same way of working and probably another having an expectation that suppliers work in the same way. – I3*

*...I think it's very clearly communicated to us employees from the (case company's) management how to proceed in such a case. – I9*

#### **4.4.2 Influence on decision making**

All interviewees agreed that ethical organizational culture has a significant impact on decision making in supplier assessment and selection process. The case company has been strongly promoting sustainability and ethical values and has also consistently encouraged adherence to them. This has given the case company's employees freedom to make decisions at a lower level in the organization hierarchy. One interviewee summed up that an ethical organizational culture is the primary thing to rely on when making decisions:

*That's where the backbone of decision making comes from, and you know how to act. – I6*

In this respect, the interviews revealed that the case company's ethical organizational culture currently supports ethical decision making in the supplier assessment and selection process.

One interviewee said that they felt that the case company's ethical organizational culture had guided them to make justified decisions in supplier selection:

*...In that sense it supports my decision making. So far, at least in the supplier selection, I can still stand by the decisions that have been made, and that is the most important thing, that the decisions have been made in a justified way. – I5*

At this stage also, the importance of the case company's Code of Conduct and its impact on decision making came up repeatedly during the interviews. The case company obliges its employees to act in accordance with the Code of Conduct, and thus it has a remarkable role in all internal decision making in the company. One interviewee emphasized that especially in Finland the purchasing professionals strive for objectivity in their decision making in supplier assessment and selection. The decisions of purchasing professionals in Finland are not influenced if, for example, the case company has worked with the supplier for a long time or that it is otherwise a familiar company but the recommendations for selecting a supplier are purely based on tender information:

*...I can say that our own code of conduct does have an impact on our actions and our input in the decision making process. In other words, in Finland, the SPs are very strongly proud of the fact that we are objective. – I1*

The interviews show that the values of equality and fairness are important to the case company and are a visible part of its internal operations. Thus, these values also strongly guide decision making in supplier assessment and selection. Interviewees told that they strive for equal treatment of suppliers in all decision making, regardless of their country, culture, or other ethnic background factors:

*...It is certainly very positive for a social diversity. For example, there is no ethnic discrimination of any kind, so certainly it will have an effect, because we are already in an environment where such things are not known. – I4*

*...Maybe it prepares us, or makes it normal for us, that people come from different countries and different cultures. And then the service providers can also be from different places, from different cultures. – I2*

Although the case company encourages sustainable practices and ethical decision making, the final responsibility for ethical behavior is ultimately left to the individual:

*(The case company) gives guidelines, and then it's more about the people who implement them, and what their motivation is to emphasize the importance of those things. - I4*

*...because that's up to these individuals to understand, or how well they are aware of these things and how seriously they take these things into account. – I1*

#### **4.4.3 The role of top management**

A key theme that emerged from the interviews was the role of top management in fostering an ethical organizational culture. In general, interviewees felt that the guidance and example of top management has a significant influence in building and maintaining an ethical organizational culture. Although the ethical organizational culture was considered to be at a good level in the case company, interviewees hoped that sustainability discourses would be brought more to the practical level, so that it could be better integrated into decision making:

*Well, it all comes down to our leaders. It's their example that's really important. I'm now thinking about this 2030 goal, that our own operations should be carbon neutral, it's an enormous effort and it won't become free. It requires a lot of investments and a lot of difficult decisions. It costs money. So perhaps it should be stricter or more determined, or there should be more guidelines, rather than just speeches at the top level, because there are a lot of them. – I2*

*It's a kind of constant battle against windmills, that we talk about how sustainable development is now on our agenda, but we leave unsaid the "but" after the comma; economic issues take precedence. – I5*

Stronger guidance was desired from top managers on the balance that should be maintained between sustainability and profitability. As has been shown in the previous sections of

Chapter 4, interviewees felt that there was a lack of clarity with the emphasis between cost and sustainability, and they also wished for more support from the top management to balance the economic and sustainability factors:

*And I think it's a balancing act in general between ethics and then this kind of company profitability. And they should be balanced... – I5*

Indeed, interviewees wanted more encouragement to base decisions on ethical principles and sustainability factors when selecting a supplier, rather than on price and profitability alone. Some interviewees referred to the traditional value creation model, where the primary objective of a company is to make profit for shareholders. However, a stronger balance between profitability and sustainability issues was desired in this regard:

*We are now living more and more in a world where a company is only driven by economic values. [...] I think it's the wrong direction, it may be that people will at some stage take shortcuts because it's better for the company's performance if we don't follow these and these things. – I5*

*Perhaps I wish that the environmental issues could somehow be brought up more in the selection of suppliers and in all other activities, so that money would not be as central as it is... – I7*

*But somehow maybe a little more freedom of action, so that employees in different roles could choose the environmentally friendly option, even if it is not the cheapest. – I7*

#### **4.4.4 Cooperation and communication with the internal stakeholders**

A challenge in creating an ethical organizational culture was poor communication between the purchasing professionals and internal stakeholders. Internal stakeholders identify the need and define the requirements for a particular service or good to be purchased, while purchasing professionals provide support during the supplier assessment and selection process to ensure that requirements are met at a reasonable price. As pointed out earlier, the supplier assessment

and selection process does not always proceed accordingly, which results in weaker communication between the participants. To this end, some interviewees emphasized the importance of following the supplier assessment and selection process.

The purchasing professionals expressed that cooperation and communication with internal stakeholders could be strengthened and improved. The purchasing professionals considered it important to keep the stakeholders informed about how procurement should be performed, as it is still not known by everyone. In order to make ethical decisions when selecting suppliers, the supplier assessment and selection process should be properly followed. One interviewee pointed out that it would take time and other resources to improve the ways of working and integrate it into the case company's culture:

*The problem is that the in-house culture, it takes time to change it, and we would also need resources within procurement, so that we could keep repeating that this is not the way to do things. – I1*

On the other hand, awareness of the process also raised the challenge that not all internal stakeholders are involved in supplier assessment and selection process very often. One interviewee raised the question of whether all stakeholders even should be required to be thoroughly familiar with the process:

*...Not all stakeholders do procurement all the time, they do it maybe once a year or less often, so can you oblige them always to remember how our procurement process or procurement policy goes? [...] From the procurement perspective it would be nice if everyone would remember how it goes, so you don't always have to clarify and explain why things are done in a certain way. – I6*

## **4.5 Summary of the findings**

Subchapter 4.1 provides the answer to the first sub-question of this research: *What is the current state of sustainable supplier assessment and selection process in the case company?*

The findings of the study show that sustainability has been integrated into the assessment and selection process of the case company's suppliers, and that the consideration of sustainability

criteria has increased in recent years. Subchapters 4.2 and 4.3 complement the answer to the first research sub-question by identifying the gaps and shortcomings of the current supplier assessment and selection process and the opportunities for improvement.

Several shortcomings and areas for improvement in the sustainable supplier assessment and selection process were identified. The main challenge in the supplier assessment and selection process was the limited tools and guidelines on comparing suppliers' sustainability performance, which caused uncertainty in decision making among interviewees. Another challenge identified was the limited flexibility and applicability of the assessment criteria to all suppliers, regardless of industry, company size and country of operation. The third challenge was the comprehensiveness of the sustainability criteria in relation to the traditional criteria, where interviewees still identified clear areas for further development to clarify and strengthen the sustainability criteria.

In response to these challenges and areas for development, the need for continuous improvement was identified, also by following legislative developments. For the development of clear guidelines and tools, interviewees suggested, among other things, introducing a common framework for sustainable supplier assessment and selection and implementing carbon pricing activities. In addition, interviewees hoped to have clearer guidelines on how to assess and compare suppliers' sustainability factors with each other. The third area for improvement was the verification of supplier performance, as it was discovered from the interviews that the case company currently relies mainly on the information provided by the supplier about its operations in terms of sustainability. The case company carries out audits at suppliers' sites, where compliance with sustainability requirements is verified alongside other requirements. However, due to the large extent of the supplier base, the case company is not conducting on-site audits for all suppliers at selection phase. Additionally, the case company does not currently carry out separate sustainability focused on-site audits.

Subchapter 4.4 answers the second sub-question of this research: *What impact does an ethical organizational culture have on decision making in sustainable supplier assessment and selection process?* The findings showed that ethical organizational culture has a significant impact on decision making in sustainable supplier assessment and selection process. The impact of an ethical organizational culture on sustainable supplier assessment and selection, as well as related gaps and opportunities for improvement, are summarized in Figure 8.

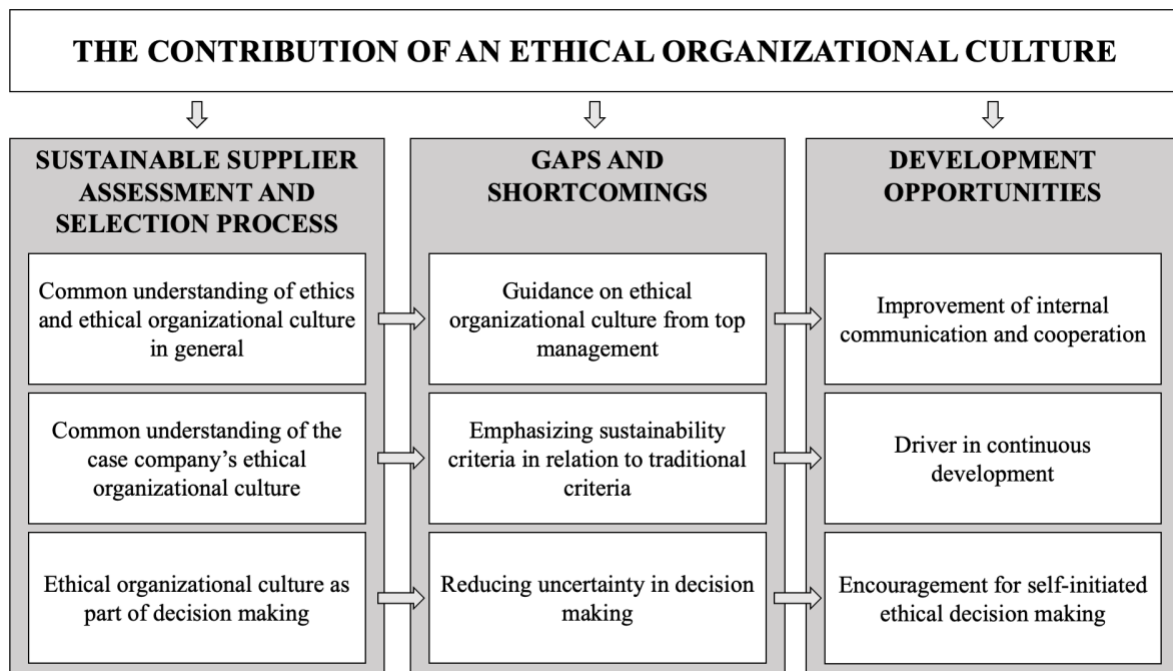


Figure 8: The contribution of an ethical organizational culture to sustainable supplier assessment and selection process, gaps and shortcomings and development opportunities

The first section of Figure 8 from the left shows the elements that, based on the interviews, have been found to have the greatest contribution on building and developing an ethical organizational culture in the case company. In the section of gaps and shortcomings, the three most significant shortcomings that emerged from the interviews as obstacles to the development of an ethical organizational culture in the case company are listed. In the section on development opportunities, three main opportunities for development have been identified that could best contribute to the development of an ethical organizational culture in the case company.

Figure 8 also illustrates how these elements interact with each other. For example, in sustainable supplier assessment and selection, a common understanding of ethics and ethical organizational culture in general contributes to an ethical organizational culture. A perceived gap in this respect is that there is limited guidance from top management on ethical organizational culture. Improving internal communication and cooperation was identified as an opportunity for development which also contributes to an ethical organizational culture.

Although ethics is a broad and varied concept, interviewees generally shared a common understanding of its meaning and significance. All interviewees were familiar with the concept and had no difficulty in defining an ethical organizational culture. Although the interviewees felt that the ethical organizational culture was high in the case company, they hoped for more guidance on ethical decision making, especially from top management. More leadership was expected from top management to set an example in terms of sustainability practices, and to bring the sustainability debate to a practical level.

Interviewees found it challenging to compare suppliers' sustainability performance without separate tools or guidance for such purpose, and the interviewees experienced uncertainty in decision making due to limited tools and guidelines. Additionally, some interviewees were not familiar with sustainable supplier assessment guidelines. Moreover, the importance of ethical organizational culture was also highlighted here, as ethical organizational culture was seen to be a supportive factor in ethical decision making. An ethical organizational culture would therefore support decision making by encouraging internal stakeholders and purchasing professionals to make ethical decisions on their own initiative.

Ethical organizational culture was discovered to serve as a driver in continuous development of sustainable supplier assessment and selection processes and practices. When an organization has a strong ethical culture, development activities are also likely to be based on ethical grounds. The findings show that investing in communication and cooperation between purchasing professionals and internal stakeholders contributes significantly to ethical decision making but establishing this level of communication in the culture seemed challenging. In addition, interviewees hoped for more encouragement and guidance from top management on ethical decision making, and guidance on how to balance sustainability and cost in supplier assessment and selection decisions.

## 5 CONCLUSIONS

### 5.1 Theoretical and practical contributions

This subchapter presents the theoretical and practical contributions of the study. Based on the findings of the empirical study and the theoretical framework, conclusions were drawn to justify the theoretical and practical significance of the study. The main theoretical and practical contributions are presented in Table 10 and further described in the next subchapters.

Table 10: Theoretical and practical contributions of the study

	<b>Sustainable supplier assessment and selection</b>	<b>Ethical organizational culture</b>	<b>Sustainable procurement</b>
<b>Theoretical contributions</b>	<i>A sustainable supplier assessment and selection process can be enhanced through continuous improvement of tools, clear guidelines, and compliance development.</i>	<i>An ethical organizational culture can significantly support decision making in sustainable supplier assessment and selection process.</i>	<i>Sustainable procurement can be defined as a process by which organizations meet their needs for goods and services in a way that provides value for money while minimizing harm to the environment and society.</i>
<b>Practical contributions</b>	<i>Develop appropriate tools and clear guidelines on suppliers' sustainability comparison.</i>	<i>Embed an ethical organizational culture to enable ethical decision making.</i>	<i>Define and commit to a collective definition of what constitutes sustainable procurement.</i>

#### 5.1.1 Theoretical contributions

The main objective of this study was to examine the current state of the case company's current sustainable supplier assessment and selection process and to identify gaps and development opportunities. In addition, the aim was to investigate the contribution of an ethical organizational culture to decision making in supplier assessment and selection. To build up the background and knowledge on these topics, a literature review was first conducted on sustainable supply chain management, sustainable procurement, and ethical organizational culture research areas. The literature review examined sustainable supplier assessment and selection, and the impact of ethical organizational culture on decision making

in the context of sustainable supply chain management. Finally, the literature review was used to form a theoretical framework on the key connections and differences between the themes.

The need for further empirical research at the interface of sustainable supplier assessment and selection has been identified in recent literature (e.g., Dai & Blackhurst, 2011). In particular, there has been little research on social sustainability issues in both sustainable supply chain management and procurement (Seuring & Muller, 2008), and in sustainable supplier assessment and selection research area. (Song et al. 2017.) This study responds to the need by examining the elements and development opportunities of environmentally and socially sustainable supplier assessment and selection from the perspective of an energy and technology company. Also, as the previous literature has mainly focused on ethical sustainability perception from an individual's point of view (Huhtala et al. 2015), this study has examined how ethical values are shared within the case company's organization.

The empirical study examined the current state of sustainable supplier assessment and selection in the case company, related gaps, shortcomings and areas for improvement, and the role of an ethical organizational culture in decision making. Three conclusions were drawn based on the main findings of the empirical study in relation to previous research literature:

***Conclusion 1: A sustainable supplier assessment and selection process can be enhanced through continuous improvement of tools, clear guidelines, and compliance development.***

The key takeaway of the first conclusion of this study is that sustainable supplier assessment can be made more effective by investing in tools, guidelines, and compliance development. The purpose of tools and clear guidelines is to increase the understanding of those involved in procurement of how to compare and weight suppliers' sustainability factors against each other and against traditional criteria.

The findings show that the main challenge of the sustainable supplier assessment and selection can be balancing sustainability criteria with traditional criteria. This is supported by the research by Igarashi et al. (2012), Krause et al. (2009) and Fallahpour et al. (2017), as they discovered that finding the appropriate sustainable supplier assessment and selection criteria without compromising the profitability of a purchase was seen challenging. Also, they discovered that weighing between the traditional and sustainability criteria is often unclear.

The empirical study findings and previous literature conclude that the main traditional criteria for supplier selection are cost, quality, and delivery time (Goebel et al. 2012; Luthra et al. 2017; Rosenzweig & Roth, 2004). Furthermore, it is supported by both empirical study findings and previous literature that considering sustainability criteria among traditional criteria in supplier assessment and selection brings additional value and competitive advantage (Fallahpour et al. 2017; Gurel et al. 2015).

Additionally, as sustainability regulations and mechanisms continue to evolve, organizations need to continuously follow up with the latest legislative updates and update their processes accordingly. In particular, the European Union has actively promoted sustainability legislation (Elinkeinoelämän keskusliitto, 2022) and extended some of the new regulations to cover not only companies' own activities but also their supply chains. As previous research has identified sustainable supplier assessment and selection as a crucial factor in building sustainable supply chains (Gurel et al. 2015), organizations need to put more effort on developing their sustainable supplier assessment and selection practices.

***Conclusion 2: An ethical organizational culture can significantly support decision making in sustainable supplier assessment and selection process.***

The second conclusion reinforces the notion, prominent in the research literature, of the central role of ethical organizational culture in decision making (e.g., Goebel et al. 2012). The findings show that maintaining an ethical organizational culture is even necessary to make ethical decisions within an organization. It can be concluded from the findings that an ethical organizational culture is not something that can be built only by definition of principles and guidance, but it is based on long-term interaction between the organizations' and individuals' own values. This finding is aligned with that of Igarashi (2013) stating that a mutual understanding of "green" in the context of sustainable procurement is needed to be developed to align sustainable supplier selection with an organization's strategy. This also supports the findings discovered by Gimenez and Tachizawa (2012) who stated that it is not enough to only requiring purchasing professionals to act according to the ethical principles, but the ethical culture should be rooted in the environment from the beginning.

The findings show that top management in particular has a crucial role to play in fostering an ethical organizational culture. Both the empirical study and previous literature (Gimenez &

Tachizawa, 2012; Goebel et al. 2012; Kaptein, 2008; Huhtala, 2013) emphasizes that the ethical behavior of top management has an influence on the decision making of employees. In the context of sustainable supplier assessment and selection, the findings show that more encouragement and support is desired to make sustainable and ethical decisions when assessing and selecting suppliers.

Whereas Huhtala et al. (2015) recognized the lack in considering whether the perceptions of ethical values and norms are shared within the organization, this study extends the perspective of perception of ethical values and norms from individual level to an organizational level. Additionally, this study addresses the level of contribution that ethical organizational culture has on decision making in sustainable supplier assessment and selection. This fills a research gap identified by Etse et al. (2022), stating that there is a scarcity of literature on the connection between perceptions of sustainable procurement and related organizational practices. This study provides new insights from an ethical organizational culture perspective for decision making in sustainable supplier assessment and selection as part of sustainable procurement practices.

***Conclusion 3: Sustainable procurement can be defined as a process by which organizations meet their needs for goods and services in a way that provides value for money while minimizing harm to the environment and society.***

The third conclusion is formed to meet the need for redefining the concept of sustainable procurement with the support of previous research. Thus, by combining the widely recognized UK's Department for Environment (DEFRA, 2006, 10) definition of sustainable procurement with UN Brundtland Commission's definition of sustainable development (1987, 8), this study proposes, in line with the theoretical framework the following definition of sustainable procurement:

*Sustainable procurement is a process by which organizations meet their needs for goods and services in a way that provides value for money while minimizing harm to the environment and society. Sustainable procurement can be practiced in the assessment and selection of suppliers by defining appropriate criteria and conditions that contribute to the focal company's sustainable development strategy and objectives and which suppliers must respect in all their activities.*

*Sustainable procurement involves identifying, assessing, and selecting suppliers on the basis of their environmental and social performance.*

This definition suggests that sustainable procurement starts by defining appropriate sustainability criteria and identifying suppliers based on their environmental and social performance and practices. In other words, sustainable procurement involves engaging suppliers towards sustainable practices, in addition to purchasing goods in a way that minimizes environmental and social damage. The definition thus broadens the perspective of meeting the needs for goods and services in a sustainable way (DEFRA, 2006, 10), by emphasizing the importance of supplier assessment and selection as part of a sustainable procurement process.

Several definitions of sustainable procurement can be found in previous literature. However, common to all definitions is that what makes procurement sustainable is the integration of environmental and social sustainability considerations into the process, in addition to the traditional economic benefits. (Miemczyk et al. 2012; Schneider & Wallenburg, 2012). The findings from the empirical study support this view in that sustainable supplier assessment and selection as part of the procurement process should emphasize environmental and social sustainability aspects in addition to traditional criteria.

Similar elements to the challenges of implementing sustainable procurement were found in the literature as well as in the findings of the empirical study. The challenges within sustainable procurement implementation are usually related to lack of capabilities, expertise, and other resources. Implementation of sustainable procurement is also hampered by the fact that the performance of purchasing professionals is still measured mainly by the traditional means of financial profitability (Goebel et al. 2012). Furthermore, complementing the view of Schneider and Wallenburg (2012) that some organizations do not recognize sustainable procurement as an integral part of corporate sustainability, this study suggests that sustainable procurement is not a separate voluntary process, but an integral part of corporate sustainability that needs to be implemented systematically.

### 5.1.2 Practical contributions

The findings and conclusions presented in this study respond to the case company's practical need for more understanding of ways to integrate sustainability into supplier assessment and selection process. The challenges and development opportunities identified of the case company's sustainable supplier assessment and selection process in this study can help the case company to promote its ethical culture and sustainable supply chain management.

However, the above conclusions can also serve as practical guidelines for other organizations wishing to improve the sustainability of their supply chain operations with the support of an ethical organizational culture. Based on these conclusions, the following recommendations are proposed to the case company.

The first practical recommendation is about developing appropriate tools and clear guidelines for suppliers' sustainability performance comparison, the importance of which was emphasized during the interviews. There is a need for guidance on how to compare suppliers' sustainability performance against each other, considering the background factors of the supplier, and to rank suppliers according to how sustainability is implemented in their operations. There should be means to assess suppliers' sustainability factors against each other, thus facilitating the preference of suppliers in terms of sustainability factors. Thus, this study proposes to implement a clearly comparable scoring system to compare the suppliers' sustainability performance. A further related issue is that those involved in supplier assessment and selection should be better informed about how sustainability factors should be weighted in relation to traditional criteria, as this was found to create the most uncertainty and unambiguity among interviewees.

The empirical findings of this thesis show that the adoption of numerical and so-called hard data in the collection of supplier information is encouraged. The empirical findings of this work have suggested, among other things, the introduction of LTIF and TRIFF indicators in the collection of supplier information. In addition, the criteria could be complemented by requiring more detailed information on emissions and carbon footprint from the supplier. In addition, the development of an internal carbon price is seen as useful for the calculation of logistic emissions.

From the perspective of more effective environmental and social sustainability risk management, this study proposes a more targeted collection and assessment of information from suppliers. For example, the collection of information could be targeted by supplier industry, country, purchasing category or company size. In this way, a range of sustainability criteria and issues would be focused on those areas where the risks are higher. In any case, the findings of this study implicate that it should be possible to assess the background information of suppliers, considering their industry, country, and company size, as there is variety in suppliers' sustainability performance based on these factors.

As a second recommendation, this study proposes a more effective embedding of ethical decision making in the organizational culture. A special feature of an ethical organizational culture is that individuals have a shared understanding of why and on what basis decisions are made. Thus, an ethical organizational culture is not something that can be learned in a day or internalized by simply having to read ethical principles but must be embedded in the roots of an organization's culture and practices. This finding largely supports what Goebel et al. (2012) observed in their study on building and maintaining an ethical organizational culture. As part of enhancing an ethical organizational culture, a definition of sustainable procurement would support ethical decision making of individuals in supplier assessment and selection. Previously in the theoretical contributions, this study proposes a definition of sustainable procurement based on the theoretical framework of this study.

Although the findings of the empirical study show that the ethical organizational culture is at a high level in the case company, more encouragement from top management on ethical decision making was desired. It was often unclear among the interviewees to what extent sustainability factors can be emphasized over profitability. Thus, this work suggests clarifying this policy in the case company's supplier assessment and selection practices.

As building and nurturing a strong ethical organizational culture is a challenging process and requires strong leadership and careful planning (Nelson et al. 2020), this study recommends an even stronger commitment by the case company's top management to invest in and maintain an ethical culture within the organization. As stated by Nelson et al. (2020), it is recommended to assess the overall organizational culture on a regular basis to identify the current issues and gaps within the culture. This study presents the CEV model developed by

Kaptein (2008) which can be used to assess and measure the current state of ethical organizational culture of the case company.

## 5.2 Research assessment

According to Puusa et al. (2020), the best research practices involve evaluating the researcher's own choices, knowing the rules that govern the research and adopting reliability criteria. Eriksson & Kovalainen (2008) added that research should be evaluated continuously throughout the research process, not only at the final stages. Thus, reliability assessment, which refers to the independence of findings from irrelevant and occasional factors, is considered as a good research practice in all studies. Reliability assessment of qualitative research takes different forms at various stages of the research process. The selection of the phenomenon to be studied and the research problems are based at least partly on the motivation and personal views of the researcher. (Puusa et al. 2020.)

The research topic was chosen based on the case company's strategic targets and my own interest. I considered the research topic to be interesting because it provides more insights into the different dimensions of sustainable supply chain management and allows to have a better understanding of the phenomenon also in the context of sustainable transition in organizations (e.g., Eriksson & Koistinen, 2005). The research area of this study, sustainable supply chain management and in particular sustainable supplier assessment and selection, is currently a very topical and widely researched phenomenon, but there is a growing need for further empirical research. In practical terms, the study is of interest foremost to the case company of the study, but possibly also to other companies in the same industries.

The main concepts for assessing the reliability of qualitative research are *validity* and *reliability* (Eriksson & Kovalainen, 2008; Puusa et al. 2020). In addition, Eriksson & Kovalainen (2008) discuss *generalizability* as a third concept in the evaluation of qualitative research. The *reliability* assessment asks whether the selected measures reliably investigate the research phenomenon in such a way that the measurement situation, the measurer, and occasional factors do not influence the findings. *Validity* is used to assess whether the research phenomenon is measured accurately without preconceptions and whether the phenomenon being studied is the one intended to be studied. (Puusa et al. 2020.)

*Generalizability* refers to whether the findings of research can be extended to a wider context and whether the selection of the research case is well argued and justified (Eriksson & Kovalainen, 2008).

However, it should be noted that the concepts of validity and reliability are not, as such, suitable as criteria for the reliability of qualitative research. It is also often argued that it is difficult or even impossible to assess the reliability of qualitative research. Instead, the reliability of the research is built and shaped by the description of the research process itself, the justification of the choices and the analysis. The clearer, more descriptive, and more specific the various stages of the research process are described, the better the reliability can be assessed. (Puusa et al. 2020)

Consequently, the reliability of qualitative research must be understood beyond the concepts of reliability and validity (Puusa et al. 2020). According to Puusa et al. (2020) reflections on the reliability of qualitative research can be summarized by three concepts: *credibility*, *reliability*, and *ethics*. If one of these aspects fails, the research loses its reliability. *Credibility* refers to the extent to which the findings of a study are generally accepted as reliable and whether the research data have been collected properly and analyzed carefully. The credibility of the findings is also linked to the fact that the research report must convince the reader of the accuracy of the interpretations it describes. *Reliability* means that the researcher convinces the reader, with credible arguments, that sound and appropriate approaches and methods have been chosen and used to solve the research problem and carry out the research. Thus, the researcher must describe the progress of the research as it has taken place. (Puusa et al. 2020.)

*Ethics* means that the researcher has followed ethical principles throughout the research. From an ethical point of view, research must not at any point jeopardize their lives nor cause any harm to those involved in the research. Another important ethical research practice is that its findings should not serve only the interests of a small interest group or offend some group in the organization. (Puusa et al. 2020.) To ensure the ethicality of the research, both the name of the case company and the names of the interviewees were not disclosed, and they were kept anonymous in the research report. In addition, the report does not reveal the interviewees' job descriptions or other identifying factors in order to maintain their anonymity.

The credibility and reliability of this research were ensured by justifying the decisions made in the study in terms of research methods and procedures, and by describing the entire research process including all its stages in an accurate and comprehensive way. Puusa et al. (2020) also stated that the researcher's own assumptions and preconceptions during the research process must not influence the findings of the research. At the beginning of the research process, the researcher has some prior understanding of the topic, which is usually based on personal knowledge and experience. Especially in case study research conducted in cooperation with a case company, the researcher has personal knowledge and preconceptions about the case company and its functioning. (Puusa et al. 2020.)

When starting the research process, I was already familiar with the case company and had some prior expectations of the case company's activities in relation to the research topic. During the research process, I was actively in contact with representatives of the case company and the discussions also contributed to the framing of the research problem. Representatives of the case company read and commented on the findings before final publication. The aim was to ensure that the findings did not inadvertently reveal internal information or other similar business information of importance to the case company.

However, I do not feel that my previous knowledge about the case company influenced the findings of the study. On the other hand, according to Puusa et al. (2020), a connection with the research context can be beneficial in the sense that the context and the so-called language of the organization are familiar to the researcher, which can, for example, have a positive impact on the construction and conduct of interviews. I feel that my experience and prior knowledge with the case company was beneficial, as I was familiar with some of the procedures and concepts within the supply management and procurement practices. This also made it easier to guide the interviews, as both parties had a mutual understanding of the case company's internal terminology and concepts.

Interviews were a suitable data collection method for this study, given the multidimensional nature of the research topic. The semi-structured interviews as a research data collection method allowed for rich discussions with the interviewees, during which it was possible to ask more specific questions (Tuomi & Sarajärvi, 2018). What is crucial for reliable and high-quality research is not the number of interviews per se, but the quality of the information obtained from the interviews and the logic behind the decisions taken to select the

interviewees (Eriksson & Kovalainen, 2008). The interview data collection continued until the last interviews no longer provided any significant additional or different information. The interview data was found to be of high quality and sufficient when the data started to repeat itself, in other words, when it started to become saturated (Hirsjärvi & Hurme, 2022). Sharing the interview themes and questions with the interviewees beforehand proved to be an effective method, as the interviewees were better prepared to answer the questions. However, as sustainability is a broad concept and can be understood in many ways, some interviewees asked for clarification on what sustainability means in this study. Thus, sharing the concept of sustainability with interviewees in advance would have brought clarity to some of the interviews from the beginning. However, this did not affect the findings of the interviews, as a common understanding of the definition of sustainability became clearer to the interviewees as the interviews progressed.

### **5.3 Further research proposals**

As stated earlier in this study, sustainable supplier assessment and selection is a complex and multidimensional process. This study has provided one perspective on the development of sustainable supplier assessment and selection process. Sustainable supply chain management, and in particular sustainable supplier assessment and selection, has been studied for some time, but there is still much to be explored at the interface of the research area.

In this research area, it would be interesting to explore sustainable supplier assessment and selection in industries other than energy and technology. In addition, the case company can use this work as a basis for evaluating sustainable supplier assessment and selection in other purchasing categories. Thus, as a further research proposal, this work also presents a study of supplier assessment and selection in other purchasing categories of the case company. Furthermore, as this work has only looked at the development of sustainable supplier assessment and selection from an environmental and social sustainability perspective, it would be interesting to examine the development of supplier assessment and selection from an economic sustainable perspective.

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## APPENDICES

### Appendix 1: Interview form

#### Interview form

##### Background information

*The purpose of this section is to gather basic background information about the interviewee.*

1. Name
2. Position
3. Brief job description
4. Duration of the employment relationship

##### Supplier assessment and selection

*The purpose of this section is to introduce the interviewee to the topic, and to find out what role the interviewee has in the organisation's supplier assessment and selection process. Additionally, the aim is to find out the interviewee's views and thoughts on sustainability in supplier assessment and selection generally.*

5. In what ways and how often are you involved in supplier assessment and selection process?
6. What does sustainability in supplier assessment and selection process mean to you?
7. To what extent is sustainability generally considered in the current supplier assessment and selection process?
8. To what extent does sustainability influence your decision making in supplier selection, compared to traditional assessment criteria? (e.g., cost, quality, flexibility)

##### Environmental sustainability

*The purpose of this section is to find out to what extent environmental sustainability is considered in the organisation's current supplier assessment and selection process, and what interviewee's views and experiences are in this regard.*

9. What aspects of environmental sustainability have been included in the supplier assessment and selection process?
10. To what extent are e.g., environmental commitment and management system, emissions & pollution control, climate change, energy consumption, and water & waste control included in the current supplier assessment and selection process?
11. Which environmental sustainability criteria do you think work well? Why?
12. Which environmental sustainability criteria do you think are not working? Why?
13. Are these aspects of environmental sustainability comprehensive enough, or are some necessary criteria missing from the supplier assessment and selection process?
14. Which aspects of environmental sustainability should be still included in the current supplier assessment process?

## **Social sustainability**

*The purpose of this section is to find out to what extent social sustainability is considered in the organisation's current supplier assessment and selection process, and what interviewee's views and experiences are in this regard.*

15. What aspects of social sustainability have been included in the supplier assessment and selection process?
16. To what extent are e.g., occupational health & safety system, employee rights, child & forced labour, and transparency included in the current supplier assessment and selection process?
17. Which social sustainability criteria do you think work well? Why?
18. Which social sustainability criteria do you think are not working? Why?
19. Are these aspects of social sustainability comprehensive enough, or are some necessary criteria missing from the supplier assessment and selection process?
20. Which aspects of social sustainability should be still included in the current supplier assessment process?

## **Ethical organizational culture**

*The purpose of this section is to explore the interviewee's experience of the organization's ethical culture and its impact on their decision making in the supplier assessment and selection process. Ethics and culture are broad issues and people tend to understand the meanings of them in quite different ways, which is why it is important to make sure that we are talking about the same thing.*

21. What does ethics in company culture mean to you?
22. Does it support your decision making in supplier assessment and selection process? How?
23. Which ethical principles most influence your decision making when selecting a sustainable supplier?
24. What kind of culture could be more supportive to help you make more sustainable decisions in supplier assessment and selection process?

## Appendix 2: Environmental and social sustainability related questions of the Online Questionnaire

Environmental management	Occupational health and safety management	Social accountability management
<p>5.1. Do you have a certified environmental management system (e.g., ISO 14001)?</p> <p>5.1.1. Provide the expiry date of the environmental management system certificate.</p> <p>5.1.2. Have you decided to develop and certify an environmental management system?</p> <p>5.1.3. Do you have procedures and measures to manage the following aspects?</p> <ul style="list-style-type: none"> <li>• Waste</li> <li>• Hazardous waste</li> <li>• Energy consumption</li> <li>• Air emissions</li> <li>• Water consumption</li> <li>• Effluent (liquid waste/wastewater)</li> <li>• Emergency situations</li> </ul> <p>5.2. Are you reporting your packing materials on an annual basis?</p> <p>5.3. Do you have evidence on proven performance improvements within environmental management?</p> <p>5.3.1. Describe your performance improvements within the environmental management.</p> <p>5.4. Are you aware of case company's objectives in</p>	<p>6.1. Do you have a certified health and safety management system (e.g., OHSAS 18001, ISO 45001)?</p> <p>6.1.1. Provide the expiry date of the health and safety management system certificate.</p> <p>6.1.2. Have you decided to develop and certify a health and safety management system?</p> <p>6.1.3. Do you have an occupational health and safety programme?</p> <p>6.1.4. Do you have a process/system for reporting occupational injuries and near miss/hazard observations?</p> <p>6.1.5. Do you provide appropriate personal protective equipment (PPE) for your employees?</p> <p>6.2. How long has your company operated without any fatal injuries? Over the past...</p> <p>6.3. Are or will your employees be working at case company premises, or at case company's customers premises or worksites?</p>	<p>7.1. Do you have a Code of Conduct or Code of Ethics in place in your company?</p> <p>7.1.1. Does your Code of Conduct or Ethics include a statement according to which your company is committed to carry out all its activities in compliance with all applicable laws?</p> <p>7.1.2. Do you monitor that the Code of Conduct is complied by the stakeholders related to it?</p> <p>7.1.3. Do you have policies which support the Code of Conduct?</p> <p>7.2. Do you have a certified social accountability management system (e.g., SA 8000)?</p> <p>7.2.0. Provide the expiry date of the social accountability management system certificate.</p> <p>7.2.1. Do you have your own social accountability management system or are you planning to develop one?</p> <p>7.2.2. Do you have a training program in place for employees on ethical business conduct?</p> <p>7.3. Do you have requirements for your</p>

<p>environmental management and able to support them?</p>	<p>6.3.1. Do you commit to comply with requirements stated in the case company Contractor EHS requirements when working at case company premises or at case company's customers premises or worksites?</p> <p>6.4. Do you have evidence on proven performance improvements in occupational health and safety management?</p> <p>6.4.1. Describe your performance improvements within health and safety management.</p>	<p>suppliers regarding ethical business conduct and sustainability?</p> <p>7.4. Do you commit to comply with case company's supplier requirements for Human rights?</p> <p>7.5. Do you commit to comply with case company's supplier requirements for: No child labor?</p> <p>7.6. Do you commit to comply with case company's supplier requirements for: No forced labor?</p> <p>7.7. Do you commit to comply with case company's supplier requirements for: Anti-corruption and anti-bribery?</p> <p>7.8. As you answered 'No' in at least one of the above 4 questions related to case company Supplier requirements, do you have an action plan available for that area / those areas?</p>
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