



**IMPROVING THE SUSTAINABILITY-DRIVEN SUPPLIER SELECTION
PROCESS: A SINGLE-CASE STUDY OF A GLOBAL BUYING COMPANY**

Lappeenranta–Lahti University of Technology LUT

Bachelor's thesis

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Examiner: Junior Researcher, Axel Zehendner

ABSTRACT

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Improving the sustainability-driven supplier selection process: A single-case study of a global buying company

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Keywords: Sustainability, supplier selection process, sustainable supplier selection, supplier selection challenges, supplier selection improvement

Supplier selection is one of the most critical tasks of supply chain management since suppliers have a direct effect on company's overall sustainability, competitiveness, and customer satisfaction. The aim of this bachelor's thesis is to better understand how to improve sustainability-driven supplier selection process by illustrating the process of selecting suppliers, identifying related challenges, and solutions to overcome them. For this purpose, a case study is conducted that focuses on a globally operating company in the chemical industry.

The research was conducted as a single case study using qualitative methods. The primary data for the thesis was gathered from semi-structured interviews. In addition, secondary data was gathered from the case company's sustainability documents. The gathered data was analyzed using the content analysis method.

According to the research results, sustainability is mainly considered in the early stages of the supplier selection process. Prospective suppliers that do not meet the predefined minimum sustainability requirements will no longer be able to participate in the following stages of the process. However, it is highlighted that sustainability should not be just about the minimum effort but also about development in the long run. The challenges that the company faces in its supplier selection process function as a trigger for improvements. The supplier selection process can be improved by various actions, such as by more frequently monitoring the suppliers and educating the employees on sustainability.

TIIVISTELMÄ

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Kauppätieteet, Hankintojen johtaminen

Ester Heikkilä

Vastuullisen toimittajavalintaprosessin kehittäminen: Tapaustutkimus globaalisti ostavasta yrityksestä

Kauppätieteiden kandidaatintyö

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Toimittajavalinta on yksi toimitusketjun hallinnan kriittisimmistä tehtävistä, sillä toimittajilla on suora vaikutus yrityksen kokonaisvaltaiseen vastuullisuuteen, kilpailukykyyn ja asiakastyytyväisyyteen. Tämän kandidatuksen tavoitteena on ymmärtää paremmin, miten vastuullisuuteen perustuvaa toimittajavalintaprosessia voidaan parantaa havainnollistamalla toimittajien valintaprosessia, tunnistamalla siihen liittyvät haasteet ja ratkaisut. Tätä tarkoitusta varten tehdään tapaustutkimus, joka keskittyy maailmanlaajuisesti toimivaan kemianteollisuuden yritykseen.

Tutkimus toteutettiin tapaustutkimuksena laadullisilla menetelmillä. Tutkimuksen pääaineisto kerättiin puolistrukturoiduista haastatteluista. Lisäksi sekundääriaineistoa kerättiin kohdeyrityksen vastuullisuusasiakirjoista. Kerätyt tiedot analysoitiin sisällön analyysimenetelmällä.

Tutkimustulosten mukaan vastuullisuus huomioidaan pääasiassa toimittajavalintaprosessin alkuvaiheessa. Potentiaaliset toimittajat, jotka eivät täytä ennalta määriteltyjä vastuullisuuden vähimmäisvaatimuksia, eivät voi enää osallistua prosessin seuraaviin vaiheisiin. Kuitenkin on korostettava, että vastuullisuus ei ole vain vähimmäisponnistus vaan pitkän aikavälin kehittämistä. Haasteet, joita yritys kohtaa toimittajavalintaprosessissaan, toimivat ajureina parannuksille. Toimittajavalintaprosessia voidaan parantaa monin eri tavoin, kuten jatkuvalla toimittaja monitoroinnilla sekä työntekijöiden vastuullisuus kouluttamisella.

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1 Introduction

One of the most critical tasks of supply chain management is supplier selection (Rashidi, Noorizadeh, Kannan & Cullinane, 2020). Effective supplier selection process enables organizations to create value for their customers through competitive pricing, product quality, product variety, and delivery service (Tracey & Leng Tan, 2001). Therefore, supplier selection strategy impacts not only quality of the final product but also the company's competitiveness and customer satisfaction (Rashidi et al., 2020). According to research customer satisfaction and the final product's impact to the environment and society are strongly linked. Therefore, it is crucial for organizations to consider their customers' sustainability expectations. Companies that fail to meet these expectations cannot survive in the competitive market or avoid economic loss. Thus, companies must adjust their buying behavior to also consider sustainability aspects. (Yadavalli, Darbari, Bhayana, Jha, & Agarwal, 2019)

The pressure for organizations to take sustainability into account in their supplier selection process has increased in recent years (Rashidi et al., 2020). The demand for sustainability makes it impossible for organizations to tolerate any negligence in sustainability-related matters since these issues may harm their reputation (Hartmann & Moeller, 2014). Therefore, to avoid these reputational risks, it is crucial for organizations to manage their supplier sustainability risks. However, managing sustainability-related risks often requires significant financial resources. Thus, organizations should focus their risk managing practices to high-risk suppliers. As organizations are nowadays increasingly reliant on a global supply base, it creates an additional challenge for companies' sustainable supplier selection management. (Foerstl, Reuter, Hartmann & Blome, 2010)

Sustainability is a complex concept which can be defined in multiple ways. In this thesis sustainability is defined by using Elkington's triple bottom line concept. It divides sustainability into three dimensions; the economic, social, and environmental (Elkington, 1998). Supporters of the triple bottom line concept believe that in order to improve the financial bottom line in the long run, organizations should take social and environmental responsibility into account, instead of just focusing on short-term economic goals (Norman & MacDonald, 2004).

Selecting suppliers is a complex process in which numerous aspects must be considered. Traditionally research focus has been on the supplier evaluating process and the highlight has been on the economic criteria such as performance and delivery. Nowadays the focus is shifting towards achieving the triple bottom line. This means that the supplier selection process should take all three; economic, social, and environmental aspects into account. (Govindan, Khodaverdi & Jafarian, 2013) *“Sustainable supplier selection is 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”* (Rashidi et al., 2020, p. 3).

The environment that organizations nowadays face is dynamically changing (Foerstl et al., 2010). The demand for organizations to address sustainability issues is high, as business is often seen as accountable for many environmental problems (Humphreys, Wong & Chan, 2003). As mentioned earlier, with sustainable supplier selection strategy, organizations can improve their risk management and protect their reputation. According to research direct suppliers are not seen as the main cause for the most severe sustainability neglects. Instead, sub-suppliers often seem to be behind the major sustainability failures. Therefore, as the link between the purchaser and the upstream suppliers, first tier suppliers play a crucial role, as organizations are trying to enhance sustainability in their supplier selection process. This is because first tier suppliers ensure sustainability on lower-tier levels. (Wilhelm, Blome, Bhakoo & Paulraj, 2016)

Based on the above reasons, the topic of this thesis is improving the sustainability driven supplier selection process in a global company. The topic is now timelier than ever. Evaluating suppliers' price and quality used to be the main criteria. Thus, researchers have previously focused on evaluating those in their studies. Therefore, articles that consider sustainability matters when evaluating suppliers' performance are still rather limited. (Govindan et al., 2013) Consequently, there is a gap in existing research on how to improve the supplier selection process from the sustainability point of view. It is important to close this gap since the significance of sustainability aspects can no longer be dismissed in the field of supplier selection. The thesis is conducted as a qualitative single case study carried out using data of one globally operating case-company. In the thesis challenges faced in

supplier selection process are being seen as the trigger for improvement. Therefore, the thesis examines past literature on challenges in sustainability-driven supplier selection process. In addition, the research seeks to find out what are the challenges in the chosen case company.

The aim of this thesis is to better understand how to improve sustainability-driven supplier selection process by illustrating the path of sustainable supplier selection process and by finding out the challenges an internationally operating company faces during the process and how these challenges could be met. In order to address the topic, the main research question is:

Q1: *How can the sustainability-driven supplier selection process be improved?*

The main research question is answered through three sub-research questions:

Q2: *What are the steps in the sustainable supplier selection process?*

Q3: *What are the challenges in the sustainability-driven supplier selection process?*

Q4: *How to respond to challenges in the sustainability-driven supplier selection process?*

To tackle the first sub-question, the thesis will divide the supplier selection process into parts. Once this is done, the aim of the second sub-question is to find out what challenges rise in different parts of the sustainability-driven supplier selection process. The last sub-question provides answers to how these challenges could be met. With these three questions combined, the thesis finally determines how to improve sustainability-driven supplier selection process.

The thesis consists of five chapters; introduction, theoretical background, methodology, findings, and conclusions. The introduction presents the research objective, research questions, and the structure of the thesis. The second chapter reviews the theoretical background of sustainability, the supplier selection process, and possible actions to improve it. The third and fourth chapters present the methodology and findings of the research. The last chapter summarizes the thesis, provides answers to the given research questions, and discusses of the findings in consideration of previous literature. In addition, the final chapter discusses the limitations of the research, and gives suggestions for further research.

2 Theoretical background

The theoretical framework of the thesis combines sustainability with the supplier selection process and focuses on the challenges that emerge and how to improve the supplier selection process. (Figure 1) This chapter will briefly define the theoretical background of sustainability and the supplier selection process. First this will be done by reviewing literature on sustainability. After this the chapter moves on to identifying the steps in the supplier selection process using different concepts that can be found in the existing literature. Thirdly the second chapter will review the literature on challenges related to sustainability in the supplier selection process. Lastly the chapter will view past research on improving the sustainable supplier selection process.

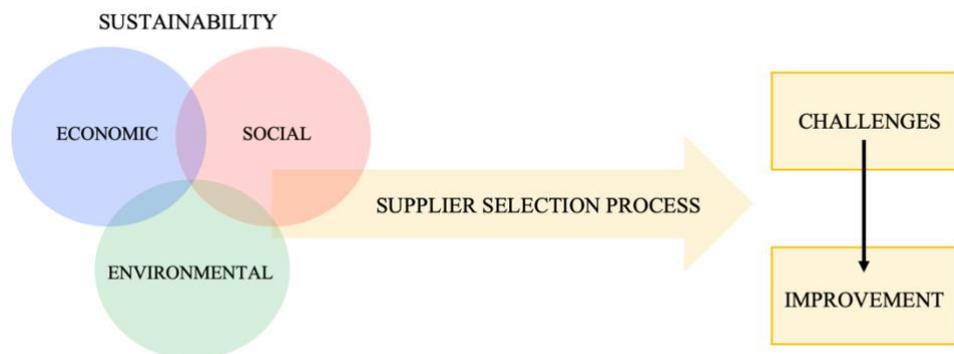


Figure 1: Theoretical framework of the thesis

2.1 Sustainability

Sustainability can be defined as “*development that meets the needs of the present without compromising the ability of future generations to meet their needs*”. In other words, organizations should balance the environmental impact of their economic activity to ensure basic human needs and non-renewable resources, now and in the future. Balancing environmental and economic preferences is a complex task in which organizations first need

to define present and future needs of their stakeholders and then these needs must be met using sustainable resources and technologies. (Carter & Rogers, 2008, p. 363)

Elkington (1998) divides sustainability in three dimensions; environmental, social, and economic. (Figure 2) Organizations should balance between these dimensions to achieve strategic goals. The triple bottom line concept suggests that long term economic benefits and competitive advantage are achieved by taking the environment and society into account. Success in one of the dimensions of sustainability does not necessarily ensure high performance in another dimension (Huq, Chowdhury & Klassen, 2016).

According to McKenzie (2004, 15) social sustainability can be defined as *“a positive condition marked by a strong sense of social cohesion, and equity of access to key services”*. These services include for example health, housing, and transport. Socially sustainable actions enhance equity between generations, political participation, safety, and education. These variables are measured for example with life expectancy, degree of female labour force, education levels, and by poverty rates (Slaper & Hall, 2011). For organizations, social sustainability is a way to improve health and wellbeing of not only its employees but also the welfare of its community. Socially non-sustainable actions, such as use of child labour, impact organization’s reputation negatively. Therefore, social sustainability is a powerful way for companies to avoid negative press. (Huq et al., 2016)

Sustainability from the environmental perspective includes variables such as the use of natural resources, waste, energy consumption, and air quality that can be measured for example with the use of fossil fuels and electricity consumption, and by the level of waste management. An organization’s environmental footprint is an account of its use of energy and other natural resources. Activities that make up the company’s footprint are design, production, and transportation. (Gimenez, Sierra & Rodon, 2012) Sustainable development must be integrated in the operations of organizations. Long term economic growth cannot be achieved if organizations ignore the limits set by nature. Extensive use of resources can be prevented through nature conservation. In other words, by enhancing sustainable development and nature conservation it is possible for current generations to fulfill their needs and consume nature resources without jeopardizing the same opportunity for future generations. (Buchholz, 1991)

Economic sustainability generates wealth. Organizations that enhance economic sustainability gain good economic results that benefit the whole society. (Shim, Lee, Moon & Song, 2021) Financial responsibility creates sustainable economic growth by improving the company's profitability in the long run and by reducing costs. Bribery, tax evasion, and price fixing accusations are supply chain risks that are related to economic sustainability. (Giannakis & Papadopoulos, 2016) Through sustainable economic actions it is possible to tackle poverty and avoid forms of unfair competition such as monopolies, since goods are being shared more fairly (Shim et al., 2021).

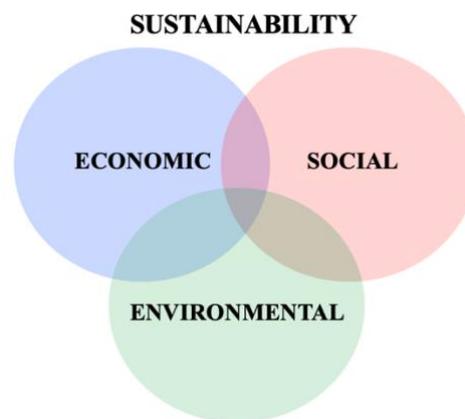


Figure 2: Triple bottom line

According to Bansal & Roth (2000) motives for organizations to consider sustainability in their actions are legislation, stakeholder pressures, economic opportunities, and ethical motives. Legislation has a deterrent effect; to avoid costly consequences of unethical activities laws ought to be obeyed. Stakeholders such as customers, suppliers, and investors demand organizations to consider ecological and social impact of their practices. Sustainability has positive effect on organization's economy since it helps to reduce costs and to improve the quality of the products or services. Lastly sustainability actions are being seen as the "right thing to do" and thus have ethical motives. Motives for sustainability actions are demonstrated in figure 3.

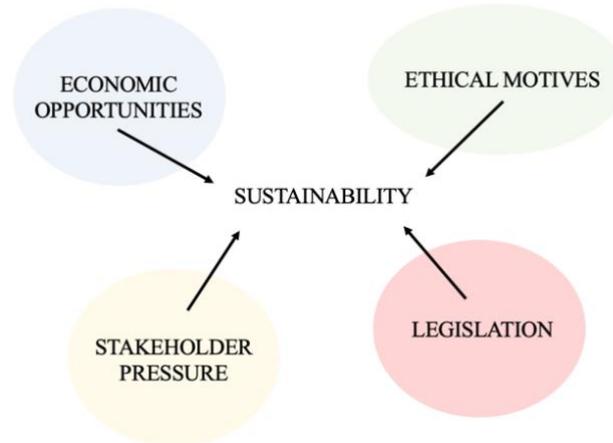


Figure 3: Motives for sustainability

Another way to define sustainability is through long term risk management since sustainable business practices reduce risks related to e.g., pollution and waste. Sustainability as a risk management tool is a fight against climate change and biodiversity loss. To lower the risk for costly regulations, organizations ought to be proactive in their sustainability actions. Low sustainability performance may even lead to legal actions that can be costly and harmful to the company's reputation. Supplier base management is a one way of lowering the risks related to sustainability. For example, a supplier's geographic location indicates the risks involved. (Carter et al., 2008) Amfori BSCI divides geographical areas according to the country risk classification. Classification is based on six dimensions of World Governance Indicators. These dimensions consider for example control of corruption and political stability. (Amfori BSCI, 2021) These factors need to be acknowledged in the supplier selection proses.

2.2 Supplier selection process

Supplier selection process can be seen as a multicriteria decision making problem (Schramm, Cabral & Schramm, 2020). The aim of supplier selection process is to select the most suitable supplier based on the criteria predefined by the purchaser. It has been said that supplier selection is one of the most important functions of supply management. In many industries

the significance of supplier selection is highlighted as purchasing requires a great deal of assets such as time, and money. (Wetzstein, Hartmann, Benton & Hohenstein, 2016)

According to Beil (2010) the supplier selection process can be divided into five major steps. The first one of these steps is identifying potential suppliers. To choose the potential suppliers the purchaser identifies not only the existing suppliers but also seeks new suppliers which are often crucial for the successful competition that the company faces in the global economy. Prospective suppliers go through a qualification screening process which includes e.g., financial, capability and quality check-ups. The suppliers who pass this screening process create a supply base for the purchaser. This base is important for the purchaser since it may save the company's resources in the future. The second step is to formally request information, quote, or a proposal from the suppliers, depending on the situation. If the intention is to gain information about the alternatives that meet the company's needs, the buyer usually requests for information. Proposal is requested when the company knows the marketplace but has a set of requirements for performance that need to be fulfilled. Quote is requested when the specifications for the product or service are exact. The third step is to set the contract terms that can be divided into payment and non-payment terms. These terms will determine both the suppliers' and the buyers' responsibilities, in other words, how the supplier should execute its obligations and how the purchaser is to pay for it. Next up is the fourth step, negotiation. Negotiations may be approached as a zero-sum situation, or the focus can be on finding solutions that benefit the both (win-win situation). The fifth step is to evaluate the suppliers, contract the best one(s) and monitor the chosen supplier(s). By monitoring the supplier, the purchaser can be sure of the quality received and gain important information that can be used in the future.

According to another, similar study, supplier selection process may also be seen to have six steps, the main difference being that the first step is to identify the need and the specifications. Once there is a need, the second step is to formulate the criteria. The third step is to call for tenders and the fourth is qualification. The fifth step is to make the final selection of supplier or suppliers and the last step is to evaluate the supplier's performance. After the evaluation has been done, it is important to give feedback to improve the selection process in the long run. Both negative and positive feedback of the supplier may help procurement in the future. (Igarashi, de Boer and Fet, 2013)

Adding sustainability into supplier selection process makes the multicriteria decision making problem even more complex (Schramm et al. 2020). However, it is inevitable for organizations to gain competitive advantage (Rashidi et al. 2020). Organizations cannot achieve maximum level of sustainability without considering supplier selection as a key element in it (Luthra, Govindan, Kannan, Mangla, & Garg, 2017).

When selecting suppliers in addition to economic matters, social, ethical, and environmental issues need to be considered to answer new consumer preferences. In addition, as mentioned earlier, there is an increasing number of laws and regulations that push organizations to improve their supplier selection processes to consider sustainability issues. The risks for losing one's reputation is higher as the media are keen on exposing firms whose suppliers are neglecting human rights and damaging the environment. (Guarnier & Trojan, 2019)

When evaluating suppliers, multiple criteria need to be considered to choose the best one for the task at hand. Govindan et al. (2013) divided these criteria using the triple bottom line concept into economic, environmental, and social sustainability. In economic view, the criteria are costs, delivery reliability, quality, and technology capability. Environmental sustainability criteria are production pollution, resource consumption, eco design and environmental management system e.g., ISO 14000 certification. Social sustainability can be measured using internal and external criteria such as health and safety. Another example of social measures is discrimination and diversity. To make sure that the supplier is suitable and meets the criteria, the purchasing organization may want to ask suppliers to sign their code of conduct or audit the supplier for any non-compliances. If the supplier does not meet the social and environmental requirements, the supplier should be given the chance to improve. (Winter & Lasch, 2016)

According to Winter et al. (2016) sustainability criteria in most organizations are being seen as a part of pre-qualification of supplier selection process. In other words, on many occasions environmental and social criteria are not part of the final supplier selection. Instead, the final discussions is based on the traditional criteria such as price, quality, and delivery. Sustainability criteria are mostly used to "knock out" the suppliers that fail to meet even the minimum requirements. Therefore, the chosen supplier might not be the one that scores the highest in sustainability matters but the one who meets the minimum requirement of sustainability with the best price, quality, and fastest delivery time.

Figure 4 combines some of the main concepts regarding sustainability driven supplier selection that have been presented earlier in this thesis. As mentioned, and demonstrated in the figure 4 the main motives for sustainability actions are laws, regulations, consumer preferences and risk management. These motives guide organizations in the early stages of the supplier selection as they identify needs and specifications of the purchase. As mentioned in the thesis and shown in the figure when formulating criteria for the purchase, sustainability aspects ought to be considered from economic, social, and environmental point of view. As organizations call for tenders, sustainability claims of the possible supplier get confirmed using codes of conduct, audits, and certifications. In the next step sustainability criteria are used to “knock out” suppliers who cannot meet the minimum requirements. After that price, quality, and delivery criteria are evaluated to make the final selection. Finally, according to Beil’s model presented in chapter 2.2 the selected suppliers should be monitored and evaluated based on their performance and feedback ought to be given to improve the selection in the future. This will be further demonstrated in the chapter 2.4.

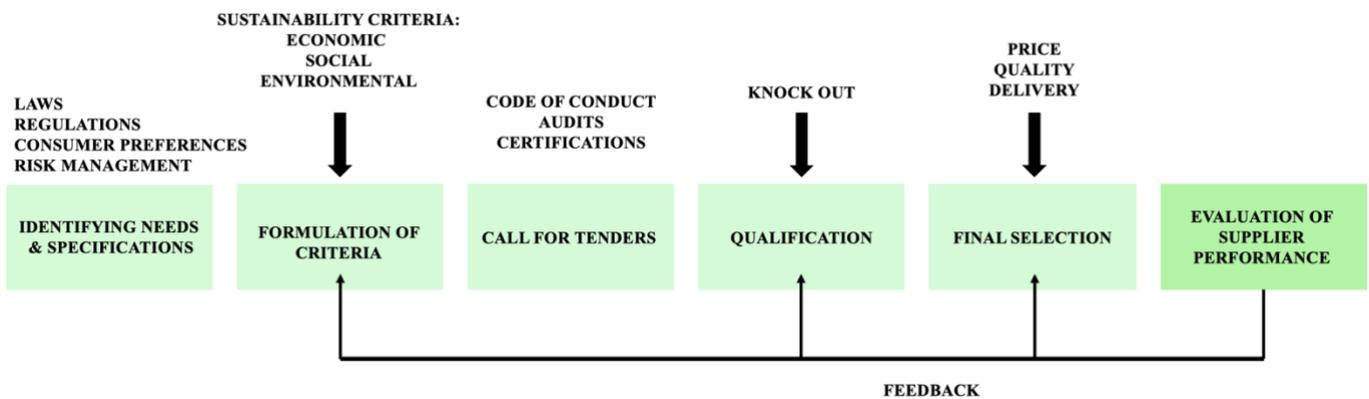


Figure 4: Sustainable supplier selection

2.3 Challenges in the sustainability-driven supplier selection process

Organizations face several challenges when trying to enhance sustainability in their supplier selection. The term “sustainability” itself is complex and has various definitions. Consequently, it can be misunderstood. Organizations that fail to understand the issue, struggle to enhance sustainability actions in their supplier selection. Some organizations even see sustainability as a threat. As a result, they are unwilling to change their traditional procedures. (de Paiva Duarte, 2015) Hence, suppliers who do not understand the importance of the matter create a challenge for the purchasing organization since, as mentioned earlier, it is impossible to act fully sustainably if the suppliers of the company do not share their sustainable values.

Since sustainable supplier selection is a multi-criteria decision-making process, the decision-makers face a lot of uncertainty. Uncertainty increases when there is a lack of time, expertise, or data. The information that the decisionmaker has can be imprecise and incomplete. The decisionmaker may lack the expertise to make such multi criteria decisions or they might feel uncomfortable making big decision in a short period of time. (Wu, Lin & Barnes, 2021) In addition, there is a lack of laws and regulations for sustainability practices, which makes it hard for organizations to demand actions from their suppliers who might lack knowledge of the matter or who might be poorly committed to improving sustainability since they simply do not care enough (Álvarez Jaramillo, Zartha Sossa & Orozco Mendoza, 2019).

Some of the most common challenges faced by organizations enhancing sustainability are the lack of resources, high cost of implementing, and the lack of expertise (Álvarez Jaramillo, 2019). Therefore, it can be said that it is impossible for suppliers try to improve sustainability in their processes if there are no resources such as money and expertise.

2.4 Improving the sustainable supplier selection process

The use of analytical tools may help organizations in multi-criteria decision-making, such as the supplier selection decisions. Methods like *The analytic network process* (ANP), *Techniques for Order Preferences by Similarity to Ideal Solution* (TOPSIS) and *Decision-making Trial and Evaluation Laboratory* (DEMATEL) help organizations to implement sustainability in their supplier selection. In addition, models like *Interval-valued Pythagorean Fuzzy Set Theory* (IVPFST) help procurement to deal with the uncertainty in sustainable supplier selection. (Wu et al., 2021)

According to research, another way to improve supplier selection process is to integrate more social sustainability aspects into the selection process. Production disruptions can be reduced by highlighting the importance of suppliers' social sustainability when selecting suppliers. It also has a positive effect on reputation risk management and on the safety of the production. (Wu et al., 2021)

Collaboration with suppliers is a powerful tool to improve and monitor supplier sustainability. In collaborative partnership it is possible to develop joint innovations that improve the sustainability of both parties. In addition, cooperation makes it possible for the purchaser to share its sustainability knowledge through training programs targeted at their suppliers. (Hajmohammad & Vachon, 2016)

After the most suitable supplier has been selected, it is important to monitor and evaluate the supplier. This phase is important since it can function as a trigger for the supplier selection process improvements. In other words, supplier evaluation enables a continuous and successful improvement of the process. Whereas in the qualification part of the supplier selection process purchasers often evaluates the suppliers based on minimum requirements, the development of the process seeks higher requirements. These higher requirements are not only the foundation for the improvements but also for the actions that these improvements require. (Zimmer, Fröhling & Schultmann, 2016)

2.4.1 Measures for improving the sustainable supplier selection process

Code of conduct is a “*written statement of principle or policy serving as the expression of a commitment to particular enterprise conduct*”. These guidelines and standards seek to enhance ethical behavior by improving the social and environmental performance of the company. Organizations are not only held accountable for their own practices but also for actions that their suppliers take. Therefore, organizations may also have a separate code of conduct for their suppliers. Supplier code of conduct helps organizations to manage and monitor their suppliers by ensuring that their practices are ethically, socially, and environmentally responsible. It is extremely helpful for international organizations trying to tackle supplier issues such as use of child labour, dissent working hours, the health and safety of employees. When it comes to building sustainable image, supplier code of conduct is a useful tool for organizations since it also reduces the risk for reputational damage. (Jedynak, 2018)

For organizations, one way to demonstrate their sustainability actions to purchasers is through standards. These standards illustrate that the company’s sustainability actions meet certain criteria. The standards not only lower the reputational risks companies face but also differentiate them from other organizations since they are proved to practice in a best way. (Fombrun, 2005) Independent third parties typically verify that companies meet the requirements of the standards. ISOs are internationally well-known standards. ISO standards demonstrate for example the best practices of making a product or managing a process. ISO has various standards that illustrate the level of sustainability in organizations. One of them is ISO 26000 which demonstrates that the company practices in a socially responsible manner. (ISO, 2022) One of the best-known ratings for global supply chains is EcoVadis. It rates businesses based on their environmental, social, and ethical sustainability actions. (EcoVadis, 2022)

Another way to ensure supplier sustainability is environmental and social auditing. Auditing can be done by the company itself or the company can use the help of third parties. Auditing not only economic activities but also environmental and social activities help organizations to make sure that the supplier will not harm their reputation. In other words, by auditing organizations can be sure that the suppliers are sustainable not only in ink and in written statements but also in practice. (Watson & MacKay, 2003)

3 Methodology

This chapter will firstly present the case selection and description. After that the chapter explains how the data for the thesis was collected. In addition, the interviewees and the case company are being introduced. Thirdly this chapter will go through the methods used in the data analysis. Lastly this chapter will address the quality criteria by addressing the reliability and validity of this thesis.

3.1 Case selection and description

The research of this thesis was conducted as a single case study using qualitative methods. Instead of numbers, qualitative research uses text as empirical material. The aim of qualitative case-study is to better understand a specific phenomenon in its real-world context. Even though it does not look for generalizations the results of one specific research might be useful to understand the bigger picture. It is typical for qualitative research to use interviews and documents for data collection. (Tietoarkisto, 2022) The case study method is especially suitable for supply chain and supply chain management research since it allows the field to be observed directly. Thus, several stages of supply chains can be approached using the case study method. (Kähkönen, 2014) For these reasons this thesis was conducted as a qualitative single case study.

The case company of this thesis is a globally operating chemical industry company. The company's purpose, vision and values are strongly linked with sustainability. The company has plants all over the world and thousands of employees. The case company has more than 10 000 suppliers and the purchase volumes are large, which highlights the significance of supplier selection as purchasing requires a great number of assets.

3.2 Data collection

The primary data for the thesis was gathered from semi-structured interviews. In addition, secondary data was gathered from the case company's sustainability reports, codes of conduct and sustainability guidelines.

In semi-structured interviews, even though the questions are prepared in advance, interviewees can answer them freely and without certain form. The order in which the questions are asked may vary between interviewees. Additional questions can freely emerge during the interviews. Consequently, semi-structured interviews provide both structure and flexibility. (Tietoarkisto, 2022) Interviews for this thesis (appendix 1) consisted of 15 questions which were divided in to four topic sections. The first theme is background, the second supplier selection process, the third challenges in supplier selection, and finally, improvement. Interviewees were selected from different positions to ensure various perspectives and deeper understanding.

The interview questions were sent via email to the interviewees beforehand. The first interview was conducted face-to-face and lasted approximately 40 minutes. The second interview was executed on Teams and took 30 minutes. The third interviewee sent the answers via email. In this thesis the interviewees and the case company are kept anonymous. Therefore, the interviewees are named A, B, and C.

Interviewee A has over twenty years of experience working in procurement, sixteen of which in the case company. Interviewee A works as a category manager for the case company. Interviewee B has been working for the case company for around seven years. B oversees the responsibility aspect of the case company's supply management process. Interviewee C has approximately one and half a year of experience working with the case company. C works as a supplier enablement specialist and is a member of the case company's global procurement team.

Secondary data for the thesis was gathered from the case company's sustainability reports, codes of conduct and internal sustainability guidelines to gain better understanding about the topic and to verify the data from the interviews.

3.3 Data analysis

The data gathered from the interviews and secondary material were analyzed using the content analysis method since it can be used to analyze both written and spoken interviews. The method focuses on understanding what the data tells not how it tells it. Therefore, when analyzing the interviews, the focus is on what the interviewee is saying about the topic at hand, instead of how it is being said. The aim of the content analysis is to find and name codes to provide a written description about the topic of the research. The intention is to find both similarities and differences between the data pieces. In other words, content analysis is a systematic coding of data that pursues to discover the same points or codes from the interviews. The best result will be achieved by analyzing the data over and over again. (Tuomi & Sarajärvi, 2009, p.103-107)

The first step was to form categories. The categories shaped out easily since the interview was structured to have three specific topic sections: supplier selection process, challenges, and improvement. After this the interview data was reduced by cutting off all irrelevant information. The third step was to find similarities and differences in the same topic sections between the interviews. After the coding was done, the aim was to draw conclusions of the target of interest. These conclusions eventually answer the research question.

3.4 Quality criteria

Valid research results are truthful and correct. The validity of the research can be improved both internally and externally. Internal validity is an establishment of cause-and-effect relationships and external validity refers to “*the extrapolation of particular research findings beyond the immediate form of inquiry to the general*”. Whereas internal validity can be increased by e.g., displaying figures and illustrations in the data analysis phase, external validity can be increased through e.g., comparing the evidence with existing literature. (Riege, 2003. p.81) Thus, the results of this thesis will be compared with previous literature in the final chapter of the thesis.

Reliable research consists of coherent and non-biased results. To achieve credibility, the researcher must take their own assumptions into account and practice self-monitoring. There are many ways in which the reliability of the research can be improved. For example, using semi-structured interviews improves the reliability of the research. (Riege, 2003) In this thesis anonymous semi-structured interviews are being used to improve reliability.

To improve both the validity and reliability of a research, various sources of evidence should be gathered (Kähkönen, 2014). In this thesis this is established by using both multiple interviews and secondary data documents. In addition, primary and secondary data are being triangulated to increase the validity of this thesis.

4 Findings

This chapter will go through the findings of the content analysis. In addition to the primary data interviews, secondary data documents are used to gain a more comprehensive understanding of the topic. First the chapter will review the supplier selection process in the case company. Secondly the chapter looks into the challenges that the company faces during its sustainability-driven supplier selection process. Lastly the chapter provides answers on how these challenges could be met and how the supplier selection could be further improved. Citations are used to justify the interpretations made of the interviews.

4.1 Sustainable supplier selection process in the case company

In the case company, supplier selection contributes to achieving strategic goals. The supplier selection process is driven by the case company's sustainability strategy and vision. According to interviewee C one strategic goal of the case company is to be the best company in its market and, to achieve this position, the products need to maintain high quality which requires high quality suppliers. Also according to interviewee A, the selected suppliers have a direct and essential impact on achieving strategic goals.

In the case company the supplier selection process does not always follow the same pattern, meaning that the flow of the supplier selection varies and there is no one right way to execute it. In the case company, the supplier selection process is always dependent on the procurement category strategy. However, it is possible to identify certain steps from the case company's supplier selection process regardless of the category. The case company's supplier selection process is demonstrated in figure 5 and explained in this chapter.

According to the interviews, the supplier selection process begins with *identifying the need and specifications* for that specific item or service dependent on the procurement strategy for its category (e.g., direct, indirect, energy, capex). The second step is to *formulate the criteria*. The criteria are also dependent on the procurement category strategy. Even though the criteria vary between the categories, it is common for all to seek for suppliers whose

products have the best total cost of ownership (TCO) for the case company. In addition, the supplier must always fulfill the category specific sustainability and compliance requirements.

After the need has been identified and the criteria have been formulated, the third step is to perform *market research to identify possible suppliers* who meet the need and the criteria. These suppliers can be both existing and new ones. However, since the case company presently has a wide and active supplier network (more than 10 000 suppliers in total) the aim is to mainly use the existing suppliers. In this phase of the supplier selection process willingness to sign the supplier code of conduct is one criterion for the perspective suppliers.

The case company's supplier code of conduct consists of nine requirements. These include social, environmental, and economic sustainability requirements for the suppliers. The requirements for social sustainability consider human rights such as fair and equal treatment, decent pay and working hours. The supplier code of conduct also has social requirements considering the health and safety of the employees. Requirements for economic sustainability call for transparency. The suppliers' business operations must be both ethical and legal. The environmental aspects of the supplier code of conduct entail multiple requirements for waste management, consumption of raw materials and energy. The case company also requires its suppliers to have a proper documentation of environmental aspects. The target of this documentation should be the improvement of environmental efficiency. The case company is currently introducing its supplier code of conduct to be mandatory for all suppliers. In 2021 there were still relatively many suppliers who had not signed the case company's supplier code of conduct. In the new model suppliers who do not sign the conduct cannot make an offer.

If necessary, the case company will next *run a tender for the prospective suppliers*. The case company may also select the best supplier without this step. This might be the case, for instance if there is a superior supplier who has made a positive impression in the past. If not, then prospective suppliers go through *the qualification process* based on their offers. In most cases quality, cost, performance, and reliability of delivery are the criteria that count the most when making *the final selection*. After the best possible supplier has been selected, it is time for *negotiations*. It is also common for the case company to request the product or service for *testing for a period of time* since it provides an opportunity to see if the product or service meets the defined criteria. If the testing period proves successful, the next step is

to *finalize the contract*. The last step is to *evaluate and monitor* the chosen supplier. This step consists of supplier development and possible audits.

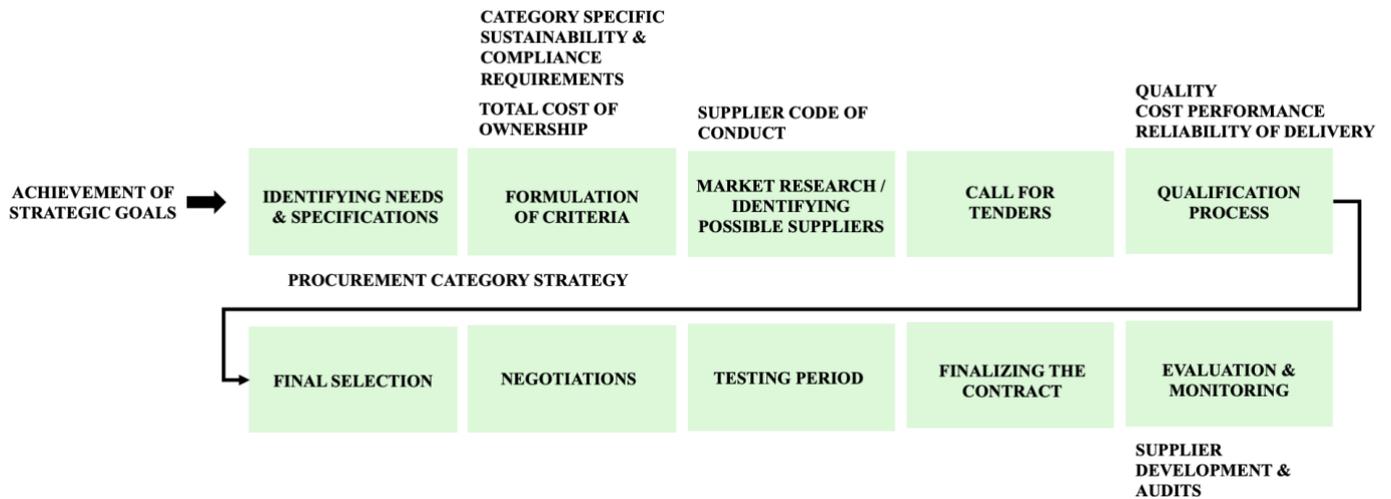


Figure 5: Supplier selection process in the case company

Based on the previously defined supplier selection process, it can be said that in the case company sustainability is being considered from an early stage of the process. According to interviewee A, the case company always predefines its sustainability requirements for its suppliers. This helps the company to ensure supplier sustainability from the very beginning of the process. Suppliers who do not meet the requirements cannot be considered. As the supplier selection process advances, suppliers are asked to sign certain sustainability documents before the negotiations and testing can begin. Interviewee C also states that sustainability is being considered from the early stages of supplier selection process. However, C also points out that sustainability is also considered in the following stages of the process especially in the evaluation and monitoring stages. The case company highlights the importance of improvement. Sustainability development is executed in cooperation with the suppliers. The case company requires its suppliers to have the same sustainability standards as the case company itself has and is willing to help its suppliers to achieve them.

According to interviewee C, environmental, social, and economic sustainability are all considered in the supplier selection process.

“Definitely, par excellence. ESG-aspects are taken into account nowadays much more closely and effort is made to consider all environmental, social and economic sustainability in all supplier selections.”

-Interviewee C

This is also stated in the case company’s sustainability report. Where it says that to secure the company’s long-term prosperity and health, sourcing should be done in the most cost-efficient way. This can be seen as economic sustainability. In addition, it is stated that the case company not only expects its suppliers to uphold high standards for socially and environmentally responsible business practices but also that the suppliers ought to work towards similar sustainability targets as the case company. However, interviewee B points out that there is still work to be done. According to interviewee B, the case company is currently still improving their supplier selection process to consider all the dimensions of sustainability more comprehensively. Currently economic sustainability is the easiest to assess.

According to the interviewees, compared to the past, the case company at present pays more attention to sustainability aspects in the supplier selection process. C even states that sustainability has become one of the most important aspects in the supplier selection process. According to both B and A sustainability is being considered more systematically. However, B mentions that the process as a whole still lacks systematicity. Interviewee A sees that the biggest change has happened in the supplier selection criteria. Suppliers must be able to prove their sustainability and compliance claims through certifications and standards.

The case company is currently in a process of developing some of its practices considering the supplier selection process. It is currently relocating some of its procurement functions onto an electronic platform called the SAP Ariba. SAP Ariba is a supplier management platform that helps organizations to improve supply chain visibility and to lower their supplier risks by enhancing resiliency against supply chain disruptions. In the future the main

parts of the case company's supplier selection process will be managed through SAP Ariba platform. There is not much new in the process itself. However, the purpose of SAP Ariba is to make the selection process more systematic by gathering all the functions to one platform. The workflow of SAP Ariba makes the supplier sustainability management easier since it is impossible to advance in the selection without the defined sustainability checkups.

4.2 Challenges in the supplier selection process in the case company

According to the interviewees, the case company faces challenges in their supplier selection process. However, as mentioned in the previous chapter, sustainability criteria of the supplier selection process are considered right from the very first. Consequently, also challenges related to sustainability usually emerge in the early stages of the process. As a result, according to the interviewee A, the case company has been able to avoid any major challenges in the following stages. Interviewee A highlights the importance of anticipation when trying to manage supplier sustainability.

Challenges that the interviewees disclosed were versatile. All the challenges mentioned are listed at the end of this chapter in figure 6. The case company faces challenges in all the dimensions of sustainability. In most cases *the lack of required sustainability documents* or unwillingness to sign the case company's sustainability contracts is the barrier that emerges in the early stages, making it impossible for case company to even consider the supplier in question. Thus, the unsuitable suppliers cannot proceed in the process. Other challenges that the interviewees named were mostly related to dimensions of social and environmental sustainability. Interviewee B names *change management* as a challenge. There are *differences in the level of sustainability knowhow*. Educating the case company's employee's so that their knowhow on sustainability is on the same level would help to improve the sustainability of the supplier selection process.

According to interviewee C, even though the number of helpful and reliable reports is rising, the case company still faces challenges when trying to *verify the sustainability documents* that the suppliers provide. The quality of documentation varies between global suppliers. For example, geographical and geopolitical factors influence the level of sustainability in the

supplier companies. Interviewee A also sees the verification of the sustainability reports as a challenge.

“The selection is in many cases based on the documents and certificates provided by the supplier. In practice it is difficult to validate the claims without proper on-site auditing. However, it is challenging to audit every single supplier.”

-Interviewee A

The fact that most of the suppliers are well-known and the procurement relationships are long, lowers the risks for challenges and therefore, it is not necessary to audit all of them.

One challenge that comes from the sustainability aspect of the supplier selection is *the slowness of the process*. According to interviewee A this is a challenge especially when the need for new a supplier is *urgent and there is a lack of time*. Also, interviewee C mentions that sometimes when there is a rush to complete supplier selection, the case company may end up choosing the “wrong” supplier.

“Too often a sudden need is noticed, and therefore the selected supplier is not necessarily the best possible option, considering different criteria, but the one that can deliver the fastest.”

- Interviewee C

The case company has a global supply base. According to the interviewees this sometimes creates additional challenges when making sustainability-driven supplier selection decisions. According to interviewee B it highlights the importance of standards. On the other hand, interviewee C notes that a global supply base creates both disadvantages and advantages. As an example of advantages B mentions that global purchasing enables the case company to have a large base of possible suppliers. In addition to that, good global reputation of the case company provides an opportunity to choose the best possible suppliers that the market has to offer. As an example of disadvantage B mentions the increasing

difficulty to monitor the suppliers compared to only nationally operating companies. However, according to interviewee A, sustainability aspects are well known globally in large organizations but sometimes the challenges emerge when buying from small local suppliers who have not yet invested in sustainability. Small local companies might also decline requests to sign certain sustainability contracts that bind them to be accountable. In addition, since these purchases are mostly minor once, the sustainability paperwork might take them an unreasonable amount of time to be completed. Also large organizations might be *unwilling to sign the case company's supplier code of conduct*. In these cases, usually they offer their own code of conduct instead.



Figure 6: Challenges in the case company's supplier selection process

4.3 Improving the supplier selection process in the case company

When asked what is good about the supplier selection process at present, interviewee C mentions the support from senior management, since all the sustainability aspects of the supplier selection process are linked with the company's new strategy and vision. This way the supplier selection process also helps the case company to achieve its sustainability goals.

“Since our company's vision is to be the most sustainable partner on the market, this means that the company's top management supports responsible procurement.”

-Interviewee C

Interviewee C also sees good in the development of the requirements considering sustainability, regardless of the size or the purchasing category of the supplier. All suppliers are expected to meet the sustainability requirements. Interviewee A mentions that the sustainability-driven supplier selection process ensures quality purchases. In addition, it helps the case company to manage its supplier risks since sustainably operating suppliers are less likely to cause harm. Interviewee B also points out that the deployment of SAP Ariba has been a step to the right direction.

According to the interviewees the case company is currently in many ways already addressing the challenges related to the selection of suppliers. All the improvements are mentioned, and their targets listed at the end of this chapter in figure 7. Interviewee A once again highlights the importance of *anticipation*. Interviewee C mentions that currently the case company is tackling sustainability challenges with the help of international regulations and standards that ensure not only the bare minimum but also a better level of sustainable practices from their suppliers. Also, interviewee B notes that the case company uses for example EcoVadis ratings and ESG standards to help the procurement process to choose suppliers who meet the case company's sustainability requirements.

According to the interviewees the supplier selection process still needs developing. Interviewee C believes that the supplier selection process should *focus on the existing “preferred” suppliers* who have made a positive impression in the past. The “preferred” suppliers meet the case company’s sustainability criteria. By focusing on these suppliers, the case company could lighten its supplier base. According to interviewee C this would enhance sustainability, ensure good quality and improve the security of deliveries. Interviewee A sees that the case company’s *procurement specifications should be further improved*, i.e., that the products that the case company is purchasing ought to have better specifications. This way the supplier selection process could be sped up. As mentioned, the sustainability aspects of the process take a lot of time, better specifications could balance the situation.

When asked what else could be done to improve supplier selection, interviewee A states that it is important to keep the sustainability policy up to date. *Requirements, criteria, and documentation on sustainability need to be further improved and updated continually and systematically* since the field of sustainability is dynamically evolving. Interviewee A also hopes to see *more internationally binding requirements and standards* in the future. In A’s opinion international operators such as the European Union should be more precise and stricter in its requirements for sustainability actions. Interviewee A would also recommend that the case company use more resources on *educating not only the employees inside the organization but also the relevant stakeholders*. Better understanding on sustainability would further improve the sustainability-driven supplier selection. To ensure economic sustainability, interviewee A suggests that the case company would *monitor its suppliers more frequently*. Currently the suppliers need to demonstrate their economic sustainability in the early steps of supplier selection, however this is mostly a onetime thing and to ensure economic sustainability or even improve it in the future the case company could check at least the key long-term suppliers more often.

Interviewee C notes that the implementation of *the electronic platform SAP Ariba* will play a key role in improving the supplier selection process in the future. It will help the case company to ensure that its suppliers meet the required sustainability criteria. It will also work as a platform for supplier development. As mentioned earlier, the case company wants to see their suppliers improve their sustainability level and does not expect perfection right from the start but highlights the importance of continuous developing. In general, the platform will enhance the case company’s supplier selection process in the long run. In the

following 5-10 years interviewees see that the supplier selection process of the case company will develop to be more reliant on electronic systems.

“The process is taken more into the electronic form, and it is done, for example, through different platforms.”

-Interviewee A

Interviewee C believes that digitalization and new electronic tools will make sustainable supplier selection easier.

The interviewees strongly believe that the importance of sustainability aspects of the supplier selection will increase. In addition, interviewee A believes that there will be more strict international requirements that change the existing sustainability criteria and that monitoring of the suppliers will be more systematic. A especially believes in growing numbers of regulations on environmental sustainability. Interviewee B highlights the importance of third-party actors in the future. These *third-party service providers* such as the EcoVadis ratings will enhance sustainability by making the selection measures more transparent, reliable, and objective.

IMPROVEMENT	IN ORDER TO
ANTICIPATION	LOWER THE RISK FOR CHALLENGES IN THE FUTURE
MORE FOCUS ON THE EXISTING “PREFERRED” SUPPLIERS	ENHANCE SUSTAINABILITY, ENSURE GOOD QUALITY & IMPROVE THE SECURITY OF DELIVERIES
IMPROVEMENT OF THE PROCUREMENT SPECIFICATIONS	SPEED UP THE PROCESS
CONTINUOUS AND SYSTEMATIC IMPROVEMENT OF REQUIREMENTS & CRITERIA / UPDATING	KEEP UP WITH THE FIELD OF SUSTAINABILITY WHICH IS DYNAMICALLY CHANGING
MORE INTERNATIONAL REGULATIONS & STANDARDS	ENSURE CREDIBILITY & RELIABILITY
EDUCATING EMPLOYEES INSIDE THE ORGANIZATION & RELEVANT STAKEHOLDERS	UNDERSTAND SUSTAINABILITY FURTHER / IMPROVE THE SUSTAINABILITY-DRIVEN SUPPLIER SELECTION
MORE FREQUENT MONITORING OF SUPPLIERS	ENSURE ECONOMIC SUSTAINABILITY OR EVEN IMPROVE IT IN THE LONG RUN
ELECTRONIC PLATFORMS (SAP ARIBA)	ENSURE THAT SUPPLIERS MEET THE REQUIRED SUSTAINABILITY CRITERIA + EASIER +DEVELOPMENT
THIRD-PARTY SERVICE PROVIDERS (ECOVADIS RATINGS)	MAKE SUSTAINABLE SUPPLIER SELECTION EASIER + VERIFICATION

Figure 7: Suggested improvements and their targets

5 Conclusions

The aim of this thesis was to better understand how to improve the sustainability-driven supplier selection process by illustrating the path of sustainable supplier selection process and by finding out the challenges an internationally operating company faces during the process and how these challenges could be met. This chapter will first answer the three sub questions and after that address the main research question. The findings of the thesis will also be discussed and compared to previous literature. Then the thesis will assess the limitations of this research and offer ideas for further research.

5.1 Answers to research questions

Q2: *What are the steps in the sustainable supplier selection process?*

The steps of the case company's sustainability-driven supplier selection process are demonstrated in figure 5. The case company's supplier selection is always driven by the achievement of strategic goals. In other words, all purchases serve some strategic target. The process varies according to the specific procurement category strategy. However, it was possible to identify certain steps that were common with most of the category strategies. In total, 10 steps were identified. The supplier selection begins with a need for some product or service and ends with evaluating and monitoring of the selected supplier.

Especially the early stages of the case company's supplier selection process consider sustainability aspects. However, sustainability is visible in most steps of the process and plays a key role in supplier development. The aim of the process is to consider all dimensions of sustainability, but at present, the economic sustainability of the supplier is the easiest to assess.

The process is now more reliant on electronic platforms and systems than it has been in the past and the significance of these electronic tools is still rising. The case company is currently investing in new electronic platforms that will further improve the sustainability of the process by making it easier to collect sustainability data from the suppliers.

The supplier selection process of the company mainly follows the same pattern as the one presented earlier in the literature review (Igarashi et al., 2013). However, it is more based on the category strategies, which makes it more precise. In addition, the field in which the case company operates causes the process have components (e.g., testing period) that were not mentioned in the models presented in the literature review. The process is also more heavily reliant on electronic platforms than mentioned in the reviewed literature.

Q3: *What are the challenges in the sustainability-driven supplier selection process?*

The challenges that arose from the interviews are listed in figure 6. The case company has been able to avoid any major challenges regarding sustainability since, as mentioned, the process includes sustainability aspects from the very beginning. Some of the challenges are related to the suppliers e.g., the lack of documentation or unwillingness to sign the supplier code of conduct. On the other hand, many challenges are related to issues inside the case company and the process itself e.g., change management, differences in the level of sustainability knowhow, and the slowness of the process. Many of the challenges mentioned worsen when the need for the new supplier is urgent.

Interviewees saw both advantages and disadvantages in the case company's global supplier base. It provides the opportunity to choose the best of the best suppliers but also makes it harder to verify and monitor their sustainability.

The challenges that the interviewees named are in line with the challenges that the previous literature suggests. For example, the challenges related to the lack of laws and time were mentioned both in the previous literature and interviews. However, there were also new points of view, such as the difficulties that the case company faces when suppliers refuse to sign their supplier code of conduct. In accordance with the literature review, interviewee A mentions that the case company faces challenges when trying to manage their supply chain

sustainability comprehensively, since it is sometimes hard or even impossible to ensure the sustainability of the sub-suppliers.

Q4: *How to respond to challenges in the sustainability-driven supplier selection process?*

Before the interviewees were asked to name improvement suggestions for the case company's supplier selection process, the positive features of the process and the improvements already made were assessed. Investments to electronic platforms were seen as a step to right direction. In addition, support from the top management was seen as a positive feature. According to previous research, top management support is important and seen as a key factor in project success (Young & Jordan, 2008).

The suggestions for improvements and their targets are listed in figure 7. Some of the improvements are in the hands of the case company e.g., employee and stakeholder education, the improvement of specifications and anticipation. However, some of the hoped improvements are reliant on third parties. For example, the interviewees wish to see more international regulations and standards to make it clearer what is expected of the organizations in terms of fight against climate change and other sustainability issues.

The suggestions that the interviewees made to improve the supplier selection process have similarities and differences with the literature reviewed previously in this thesis. Both the interviewees and the literature mention monitoring, evaluation, auditing, and collaboration as a tool to improve the process. However, unlike the literature, the interviewees mention the focus on existing suppliers, electronic platforms, third party screenings, and anticipation. The fact that the interviewees are aware of the specific challenges that the case company faces during its supplier selection process makes it possible for them to point out these improvement suggestions. Since, as mentioned earlier, it is often the challenges that are seen as the driving force for improvements.

Q1: *How can the sustainability-driven supplier selection process be improved?*

Now that the sub-questions have been answered, the main research question can be assessed. The approach for the improvement suggestions is problem solving. The challenges that the case company faces are seen as the problem and the improvements as solutions. Figure 8 demonstrates where these improvements should take place in the process.

Differences in the level of sustainability knowhow and change management were seen as challenges. To tackle these issues, the thesis suggests that the employees and relevant stakeholders should be offered the chance to further educate themselves on sustainability matters. Understanding the importance of the matter could help employees see why sustainability is being highlighted in the process. In other words, they would understand why they do what they do. In addition, it could generate ideas on how the process could be further improved. Open dialog between the management and the employees plays a key role in this. This improvement affects the process indirectly in all the stages in the process.

Anticipation, the improvement of the procurement specifications, focus on existing suppliers, and the use of electronic platforms (such as the SAP Ariba) can be seen as solutions to the current slowness of the process. Anticipation saves time in the long run since it lowers the risk for challenges. By anticipating the future, the risk for urgent needs would decline. Anticipation takes place before any of the steps. Specifications make it clear what is expected of the suppliers. This would help suppliers make their offers. Better specifications would positively affect the first step of the process. Focusing on existing suppliers speeds up the process in the market research phase since the suppliers have already presented their sustainability documentation and signed the supplier code of conduct. Focusing on existing suppliers would reduce the number of suppliers. Previous research supports this improvement suggestion since it has a positive effect on performance and cost reductions (Wu, Shunk, Blackhurst & Appalla, 2007). The use of electronic platforms is also supported by previous research since Tanner, Wölfle, Schubert & Quade (2008) in their research similarly state that electronic tools offer faster flow of the process, efficiency, decentralization, and increased transparency. Consequently, it has a positive effect on the process as a whole.

International regulations and standards would ensure the credibility and reliability of the sustainability documentations that the suppliers offer. The lack of sustainability documentation would no longer be an issue. It would also make it clearer what is expected of organizations doing business that requires natural resources and thus make it easier for them to formulate the criteria for the suppliers in the second stage of the process. However, this improvement is not in the case company's hands.

The thesis suggests that the case company use more third-party service providers to verify supplier sustainability. Third-party service providers save the case company's time and other resources by objectively verifying the sustainability claims of the supplier during the qualification process.

The thesis recommends that the chosen suppliers ought to be monitored more frequently to ensure sustainability in the long run. Continuous, and systematic improvement of the process is also recommended since the field of sustainability is constantly changing and evolving. Long-term sustainability cannot be achieved overnight. This recommendation is supported by the research made by Zimmer et al. (2016) which suggests that, to improve supplier sustainability, continuous monitor is crucial since it is a trigger for development.



Figure 8: The suggested improvements for the different stages of the supplier selection process

5.2 Limitations

Even though the thesis managed to answer the research questions, it has its limitations. The results of this research reflect the situation in one selected case company. In addition, they are industry specific. For these reasons the results cannot be fully generalized. However, the insights generated can still be useful for other international companies. The fact that the thesis was executed, and the results were analysed by only one person makes it possible that the analysis contains biases that limit the thesis. Another limitation is the small number of interviews. By gathering a greater number of interviews, the results would not be limited to reflect the opinions of just a few people.

5.3 Further research

Supplier selection is one of the most critical tasks of supply chain management since suppliers have a direct effect on the company's competitiveness and customer satisfaction. In addition, supplier selection has a major impact on the company's overall sustainability, which can be seen as a growing trend since the demand for organizations to address sustainability is high. Consequently, by improving supplier selection, organizations may improve their competitiveness, customer satisfaction and comprehensive sustainability. For this reason, it is important to further study the subject. By better understanding the ways in which the process could be improved, companies could take action that would help them to enhance sustainability. Thus, future research could focus on developing improvement suggestions. Since the industry specific results of this research reflect the situation in one selected case company and thus cannot be fully generalized, another study on a similar company could be conducted to verify the result or, to further study the issue, a multiple case study could be conducted. In addition, as this thesis suggests, the importance of electronic tools for procurement is rising, it would be interesting to study how they affect the future of procurement and supplier selection.

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Appendix 1. Interview structure

Background info:

- What is your role in the company and what are your main responsibilities?
- How many years of experience do you have in this field and working with the company?

Supplier selection process:

- What are the steps of supplier selection process in your company? Could you, please, briefly describe what these steps consist of?
- How does supplier selection contribute to achieving strategic goals?
- In which stage and how is sustainability considered in the supplier selection process?
- Are environmental, social, and economic sustainability all considered in the supplier selection process?
- How has the supplier selection process developed in recent years? Compared to the past, does the company at present pay more attention to sustainability aspects of the supplier selection process?

Challenges:

- Are there challenges related to sustainability in the company's supplier selection process?
- What are the biggest challenges in evaluating the different sustainability dimension (economic, social, environmental)? Are some sustainability dimensions more difficult to evaluate than others?
- At which stages do the challenges related to sustainability appear in the supplier selection process?
- The company you work for has a global supply base. Does this create additional challenges when making sustainability-driven supplier selection decisions?

Improving:

- What is good about the supplier selection process now?
- Which stage of the supplier selection process needs most developing?
- How is the company trying to address the challenges related to the selection of suppliers? What else could be done to improve supplier selection decisions?
- How do you see the supplier selection process will develop in the following 5–10 years?

