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Achieving supply chain sustainability and resilience through supplier experience development

Exploratory multi-case study

School of Management
Master's thesis in International Business Programme

Vaasa 2025

UNIVERSITY OF VAASA
School of Management
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Title of the Thesis: Achieving supply chain sustainability and resilience through supplier experience development : Exploratory multi-case study
Degree: Master of Science in International Business
Programme: International Business
Supervisor: Anisur Faroque
Year: 2025 **Pages:** 115

ABSTRACT:
The recent changes in the economic environment caused by COVID-19, the Ukraine war and sustainability issues have led to troubles in the global supply chains. These issues have alerted manufacturing organizations to pay more attention into supplier's role in achieving better level of sustainability and resilience in their supply chains. Similarly, Finnish manufacturing companies, like their global supply chain partners, must adapt to these challenges to remain competitive. This thesis investigates how supplier experience development can affect Finnish manufacturing companies' abilities to improve supply chain sustainability and resilience. Supplier experience is a relatively new topic among academics. However, it's presence can be seen in organizations daily operations. Scholars have also explored this concept within the literature on buyer-supplier relationships and supplier satisfaction. In addition to supplier experience this thesis' theoretical framework is built on sustainable supply chain management and supply chain resilience literature. The study is a multi-case study, where three Finnish manufacturing companies are interviewed. The findings are analysed by utilizing a thematic cross-case analysis, where differences and similarities among the case companies can be identified. Firstly, the study identifies common drivers and barriers for supply chain sustainability. Second, the study aims to find an understanding of collaboration's role in supply chain risk management. Lastly, this study aims to understand what affects suppliers' experience working with buyer companies and how those factors can be developed to provide better experiences. Based on the theoretical framework and the research findings of this thesis it can be concluded that supplier experience components can be intentionally developed to enable more positive experiences for suppliers, thereby strengthening trust, collaboration, and commitment to maintaining long-term relationships. Consequently, these factors have an impact on the organisation's ability to manage and develop supply chain sustainability and resilience. Managerial implications of this study indicate that it is important to understand what are the factors that affect suppliers' experiences. Even though the findings of this thesis show that suppliers value collaboration, particularly in the context of sustainable development, as well as factors such as availability, efficient communication, reliability, timely payment of invoices, and predictability, these factors are not universal but can vary for each supply chain partner. Furthermore, strategies to develop supplier experience can be also supply chain specific. However, based on the findings of this thesis Finnish manufacturing companies emphasize building strong, long-term relationships through consistent communication, feedback sessions, and collaborative efforts aimed at continuous improvement as efficient strategies to influence their suppliers' experiences. The findings of this study offer theoretical insights for academic research on supplier experience, especially its impact on sustainability and resilience as well as practical value for supply chain professionals seeking to understand the benefits of investing in supplier experience development.

KEYWORDS: Supply chain, sustainability, resilience, supplier experience, supplier satisfaction, buyer-supplier relationship

VAASAN YLIOPISTO
Johtamisen akateeminen yksikkö
Tekijä: Marianne Räsänen
Tutkielman nimi: Achieving supply chain sustainability and resilience through supplier experience development : Exploratory multi-case study
Tutkinto: Kauppatieteiden Maisteri
Oppiaine: International Business
Työn ohjaaja: Anisur Faroque
Valmistumisvuosi: 2025 **Sivumäärä:** 115

Tiivistelmä:
Viimeaikaiset taloudelliseen ympäristöön vaikuttaneet tapahtumat, kuten COVID-19-pandemia, Ukrainan sota ja vastuullisuushaasteet, ovat aiheuttaneet häiriöitä globaaleissa toimitusketjuissa. Nämä ongelmat ovat herättäneet organisaatiot kiinnittämään enemmän huomiota toimittajien rooliin toimitusketjujen vastuullisuuden ja resilienssin parantamisessa. Samoin suomalaiset valmistusyritykset ja heidän toimitusketjukumppaninsa joutuvat sopeutumaan näihin haasteisiin säilyttääkseen kilpailukykynsä. Tämä opinnäytetyö tarkastelee sitä, kuinka toimittajakokemuksen kehittäminen voi vaikuttaa suomalaisyritysten kykyyn parantaa toimitusketjunsa vastuullisuutta ja resilienssiä. Toimittajakokemus on suhteellisen uusi tutkimusaihe akateemisessa maailmassa. Sen läsnäolo on kuitenkin nähtävissä organisaatioiden päivittäisessä toiminnassa. Tutkijat ovat myös sivunneet tätä aihetta ostaja–toimittaja-suhteisiin ja toimittajatyytyväisyyteen keskittyvässä kirjallisuudessa. Tämän opinnäytetyön teoreettinen viitekehys perustuu toimittajakokemuksen lisäksi vastuullisen toimitusketjun hallintaa ja toimitusketjun resilienssiä käsittelevään kirjallisuuteen. Tutkimus toteutettiin monitapaustutkimuksena, joissa haastateltiin kolmea suomalaista valmistusyritystä. Tulokset analysoitiin hyödyntämällä temaattista poikkitapausanalyysiä, jonka avulla tunnistetaan tapausten välisiä eroja ja yhtäläisyyksiä. Tutkimuksen tarkoitus on selvittää toimitusketjujen vastuullisuuden yleisiä ajureita ja esteitä. Lisäksi se pyrkii ymmärtämään yhteistyön roolia toimitusketjujen riskienhallinnassa. Lopuksi tutkimuksessa tarkastellaan, mitkä tekijät vaikuttavat toimittajien kokemuksiin ostajaorganisaatioiden kanssa työskentelystä ja kuinka näitä tekijöitä voidaan kehittää parempien kokemusten saavuttamiseksi. Tämän opinnäytetyön tutkimustulosten perusteella voidaan todeta, että toimittajakokemuksen osa-alueita voidaan tietoisesti kehittää, jotta toimittajille voidaan tarjota myönteisempiä kokemuksia. Tämä puolestaan vahvistaa luottamusta, yhteistyötä ja sitoutumista pitkäaikaisiin ostaja-toimittaja-suhteisiin. Näillä tekijöillä on vaikutusta organisaation kykyyn hallita ja kehittää toimitusketjun kestävyyttä ja resilienssiä. Tutkimuksen käytännön johtopäätökset osoittavat, että on tärkeää ymmärtää, mitkä tekijät vaikuttavat toimittajien kokemuksiin. Vaikka tulokset osoittavat, että toimittajat arvostavat erityisesti kestävän kehityksen kontekstissa tapahtuvaa yhteistyötä sekä asioita kuten saavutettavuutta, tehokasta viestintää, luotettavuutta, laskujen oikea-aikaista maksamista ja ennakoitavuutta, nämä tekijät eivät ole universaaleja, vaan voivat vaihdella toimitusketjuittain. Lisäksi strategiat toimittajakokemuksen kehittämiseksi voivat olla toimitusketjukohtaisia. Tästä huolimatta tutkimuksen tulosten perusteella suomalaiset valmistusyritykset korostavat vahvojen, pitkäaikaisten suhteiden rakentamista johdonmukaisen viestinnän, palautekeskustelujen ja yhteisten jatkuvaan parantamiseen tähtäävien kehitystoimien avulla. Näitä seikkoja pidetään tehokkaina keinoina vaikuttaa toimittajakokemukseen. Tämän tutkimuksen tulokset tarjoavat teoreettista arvoa toimittajakokemusta koskevalle akateemiselle tutkimukselle, erityisesti sen vaikutuksista toimitusketjujen vastuullisuuteen ja resilienssiin. Tutkimus tarjoaa myös käytännön hyötyä toimitusketjun hallinnan ammattilaisille, jotka pyrkivät ymmärtämään toimittajakokemuksen kehittämiseen liittyviä hyötyjä.

Avainsanat: Toimitusketju, kestäväkehitys, resilienssi, toimittajakokemus, toimittajatyytyväisyys, alihankintasuhde

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1 Introduction

The recent changes in the economic environment caused by COVID-19, the Ukraine war, and sustainability issues have led to troubles in the global supply chains (Grum & Grum, 2023). Disruptive events like these seem to be becoming more frequent (López & Ishizaka, 2019, p. 496) and lead to growing costs, delayed delivery times, stock shortages, and unsatisfied customer demand (Blackhurst et al., 2005, p. 4068). Furthermore, the increasing globalization of organizations and their supply chains have led to more complex supply chains (Holgado & Niess, 2023, p. 1040). These complex and vigorous global supply chains require constant observation of possible risks and vulnerabilities and the ability to create strategies to deal with these challenges (Pettit et al., 2019, p. 56).

The complexity and geographical dispersion of supply chains and organizations' rising interest in sustainable supply chain management can cause further challenges and risks in achieving resilient global supply chains (Ngo et al., 2024). Sustainability-related risks of supply chains cover issues such as natural disasters, forced labour, bribery allegations, and non-compliance with sustainability laws (Giannakis & Papadopoulos, 2016). Sustainable supply chain management is essential to keep up with the fast development of sustainability regulations. Sustainability issues have moved from being rhetorical topics to being a mandatory part of any modern business (Venkataraman & Rajkumar, 2024).

Supply chain management is one of the key functions in organisations due to its relevance in long-term planning and presence in daily operations (Duong et al., 2023, p. 634). This highlights the importance of reliable supply chain partners during times of disruptions and sustainable development. Many firms do not only compete for customers anymore, but the competition over reliable, good-quality suppliers is increasing. Thus, providing a satisfactory supplier experience is essential for securing and sustaining access to skilled suppliers and their resources in this new competitive landscape (Vos et al., 2016).

Academics and professionals have recognized customer experience, employee experience, and user experience as key factors that offer a competitive advantage for organizations. Therefore, given the importance of supply chain operations to organizations, it follows that supplier experience should also hold significant value. Even though the concept of supplier experience is rarely mentioned in previous academic research, its value has been recognised in buyer-supplier relationship research as supplier satisfaction (Essig & Amann, 2009). Therefore, the theoretical background is mostly built on buyer-supplier relationship research.

Although supply chain sustainability and resilience are topics that have been researched extensively since the 2000s (Shishodia et al., 2023; Jia et al., 2019), the strategic role of supplier experience has not been fully explored. Supply chain management and supplier relationship management are critical to the organisation's performance (Parajogo et al., 2024), long-term strategic planning (Duong et al., 2023) and decision-making (Gu et al., 2024). These findings highlight the organizations' need to create good relationships with suppliers. Furthermore, it has been found that supplier satisfaction supports supply chain resilience as it allows establishing and managing access to critical suppliers and their resources (Vos et al., 2016). Additionally, Ateş and others (2019) found that the buyer-supplier relationship affects supply chain sustainability by the way it either encourages or discourages suppliers to participate in sustainable development. These findings from previous literature suggest that suppliers' experience of the buyer-supplier relationship has strategic value in improving supply chain sustainability and resilience. Thus, this study seeks to fill this research gap by offering a new perspective on supplier relationship management through supplier experience within the Finnish manufacturing industry.

1.1 Research question and objectives of the study

This paper examines how Finnish manufacturing companies improve supply chain sustainability and resilience through supplier experience development. As supply chain

management is one of the key functions in organisations (Duong et al., 2023, p. 634), it can be argued that it also greatly impacts organizations' performance. Furthermore, today's rapidly changing business environment, supply chain disruptions, regulatory pressures, and environmental concerns have made sustainability and resilience critical priorities for manufacturing companies. Finnish manufacturing companies, like their global supply chain partners, must adapt to these challenges to remain competitive.

Supplier experience is an emerging yet underexplored area that can have significant impacts on supply chain performance. Positive supplier experiences can lead to better trust, collaboration, and long-term success, which in turn enhance sustainability and resilience. Negative experiences, however, can lead to opposite results. Thus, the objectives of this study are to provide practical recommendations for companies to enhance supplier collaboration and promote sustainable growth. On an academic level, the study aims to contribute to the existing literature by establishing a connection between supplier experience and key supply chain factors, sustainability and resilience, both of which are important for the success of modern supply chains.

These objectives will be achieved by finding answers to the following research questions. The primary research question of this thesis is:

1. How do Finnish manufacturing companies improve sustainability and resilience through supplier experience development?

The secondary research questions are constructed to specify and help to understand the primary research question. The secondary research questions provide a possibility to investigate each subsection of the topic individually. These questions are as follows:

1.1 What are the key drivers and barriers for integrating supply chain sustainability?

1.2. How can supply chain collaboration enhance resilience?

1.3. How does supplier experience contribute to supply chain sustainability and resilience?

First, this study aims to understand the motivators and barriers Finnish manufacturing companies face when integrating sustainability practices into their global supply chains. Additionally, the study aims to help understand how supply chain collaboration enhances companies' supply chain resilience. The third step is to establish what is the role of supplier experience and how it contributes to enhancing supply chain sustainability and resilience. Furthermore, the research aims to present managerial implications that help companies to develop sustainable and resilient supply chain management that considers the effects of supplier experience.

1.2 Definitions of the main concepts

The topic of achieving sustainability and resilience through supplier experience development requires understanding the key definitions and concepts. In this chapter, the key definitions for supply chain resilience, sustainable supply chain management, and supplier experience are presented.

Supply chain resilience has been studied for the past 20 years (Shishodia et al., 2023, p. 880), and thus, researchers have formed multiple slightly different definitions for it. However, a review paper of literature on supply chain resilience (Kamalahmadi & Parast, 2016) found that the literature collectively understands supply chain resilience as the supply chains' ability to respond and overcome disturbances and disruptions. Furthermore, when it comes to supply chain resilience, the definitions often include the supply chains' ability to reduce disruptions, resist the spread of complications, preserve control over functions, and respond to and recover from the disruptions (Kamalahmadi & Parast, 2016, p. 121).

Disruptions and disturbances are described as rare, unforeseeable or foreseeable events that directly and negatively impact supply chain operations and stability (Dolgui et al., 2018; Barroso et al., 2008). Disruptions can be, for example machine or information system failures (Ivanov et al., 2010, p. 412), natural disasters (tsunamis and floods) (Shishodia et al., 2023, p. 880), geopolitical changes (Brexit and trade disputation between China and USA) (Roscoe et al., 2020, p. 1499) or global pandemics (COVID-19) (Handfield et al., 2020, p.1650).

Similar to supply chain resilience, sustainable supply chain management has been a trending topic among academics and organizations since the early 2000s (Jia et al., 2019, p. 44). Sustainable supply chain management can be defined as "the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development" (Seuring & Müller, 2008, p. 1700). The three dimensions of sustainable development mentioned in the definition are economic, social, and environmental. Sustainability in supply chains can mean developing clean technologies for product manufacturing, packaging and distribution and ensuring ethical social practices regarding safety, human rights, and equality for all employees within the supply chain (Baliga et al., 2020). By covering the environmental and social dimensions, it is possible to achieve sustainable supply chain performance and economic growth for the organisation.

The last key concept of this thesis is supplier experience, which describes a supplier's experience in working with a buyer company. In the supply chain management research area, the term supplier experience is rarely identified, as research focuses more on supplier satisfaction and buyer-supplier relationships. Essig and Amann (2009, p. 104) define supplier satisfaction as "a supplier's feeling of fairness with regard to buyer's incentives and supplier's contributions within an industrial buyer-seller relationship as relates to the supplier's need fulfilment". Supplier experience as a concept is not commonly recognized among academics. However, Rajala and others (2025) explain that supplier experience encompasses the entirety of the buyer-supplier relationship, thus going beyond

just satisfaction. According to Essig and Amann (2009), poor supplier experiences can result in lower-quality goods and supply issues. Conversely, Vos et al. (2016) highlight that positive supplier experiences provide buyers with a competitive advantage, as suppliers are more inclined to prioritize and view them as preferred customers.

1.3 Methodological choices

To examine this topic, fundamental and recent academic literature on supply chain sustainability and resilience and buyer-supplier relationships will be critically reviewed. The research part of this study will be conducted in the form of multiple case-study, where the data is collected from three Finnish, globally operating, manufacturing companies. The companies vary in size, specific industries, and levels of sustainability to gain a broad overview of the thesis topic.

Given the exploratory nature of the research question and the three secondary research questions, data collection will be conducted in the form of qualitative research. More specifically, in the form of semi-structured interviews. Semi-structured interviews include pre-set and open-ended questions to guide the conversation while allowing more in-depth questions and wider answers (Denny & Weckesser, 2020). The interviews cover the themes of motivators and barriers to supply chain sustainability, the role of collaboration in supply chain resilience, and the role of supplier experience in achieving supply chain sustainability and resilience.

The data from the interviews will first be presented individually, case by case. After this, a thematic cross-case analysis between all three case companies will be applied. Each theme of the study will be separately analysed, and the similarities and differences of the findings will be identified. Lastly, the findings will be concluded to establish answers to the research questions.

1.4 Structure of the study

In this chapter, the structure of this thesis is explained. This thesis is divided into six parts, which all support each other in finding answers to the research objectives. The thesis begins with an introduction to the topic, including the key definitions and concepts.

The second chapter is dedicated to the literature review. The first part of the literature review focuses on sustainable supply chain management, and it aims to find answers to the research question “What are the key drivers and barriers to integrating supply chain sustainability?”. The second part of the literature review focuses on understanding the theoretical background of supply chain resilience and the role of collaboration in supply chain risk management. The second part aims to find answers to the research question “How can supply chain collaboration enhance resilience? “. The last part of the literature review focuses on supplier experience and its role in affecting supply chain sustainability and resilience. It seeks answers to the following research question: “How does supplier experience contribute to supply chain sustainability and resilience?”.

After conducting a thorough literature review, the findings are analysed and connected to build a theoretical framework. This chapter aims to understand the relationship between supply chain resilience, sustainability, and supplier experience. After that, the methodology for the research part will be presented. The methodology chapter works as a foundation for the results chapter, where the results of the study are presented. This thesis ends with a cross-case analysis and a conclusion chapter. In these chapters, the key findings are presented and discussed. Furthermore, the conclusions chapter will cover the possible managerial implications and limitations of this study.

1.5 AI disclaimer

This thesis incorporates the assistance of AI for proofreading and clarity. Grammarly was used for proofreading, and the ChatGPT-4o model by OpenAI was utilized to enhance

clarity in some sentences. However, the author has reviewed and validated all content to ensure accuracy and originality. Furthermore, the author maintains full responsibility for the content and conclusions of this thesis.

2 Literature review

This chapter explores the theoretical foundations of supply chain sustainability, resilience, and supplier experience. It begins with an analysis of existing literature on supply chain sustainability, followed by a review of research on supply chain resilience. The chapter concludes with an examination of supplier experience literature and ties these findings together into a theoretical framework.

2.1 Supply Chain Sustainability

Research on sustainable supply chain management began in the early 2000s and started to significantly increase since 2008 (Touboulic & Walker, 2015). Academics have collected several literature reviews to understand the role of sustainability in supply chain management (Ansari & Kant, 2017; Ahi & Searcy, 2013; Martins & Pato, 2019; Touboulic & Walker, 2015). The research on the topic is essential for increasing sustainability and developing sustainable practices in companies, especially in the supply chain context.

2.1.1 Sustainable supply chain management

Sustainable supply chain management refers to completing the key goals of supply chains, which are the flow of materials, information and capital, while also participating in improving the process by taking into consideration the three dimensions of sustainability (Seuring & Müller, 2008, p. 1700). Sustainable supply chain management differs from traditional supply chain management by the way it treats the three dimensions of sustainability. Sustainable supply chain management considers all parts of the triple bottom line important, while traditional supply chain management mainly focuses on the economic aspect (Tatichhi et al., 2013).

Sustainable supply chain management has distinctive features that separate it from traditional supply chain management. Focusing on the triple bottom line perspective, the economic, social, and environmental issues become apparent at different stages of supply chains (Ahi & Searcy, 2015, p. 2893). Therefore, according to Seuring and Müller (2008, p. 1705), sustainable supply chain management must consider a wider range of issues and thus must have visibility to a longer part of the supply chain. The second distinctive feature is that sustainable supply chain management has a wider range of performance objectives (Seuring and Müller, 2008, p. 1705) as it must consider the economic, social, and environmental effects while simultaneously focusing on the supply chain performance. Lastly, there is an increased need for communication and cooperation within the supply chain and other partnering companies to ensure that sustainable practices are implemented throughout the chain (p. 1706).

Aligned with Seuring and Müller's (2008) idea of sustainable supply chain management, Carter and Rogers (2008) argued that sustainable supply chain management is based on a combination of the triple bottom line and four additional factors that complement the sustainability perspective. These factors are strategy, culture, risk management and transparency. Sustainability goals must be integrated into the organization's culture and overall strategy and aligned with a long-term vision with economic objectives and stakeholder satisfaction (Friz & Ruel, 2024). As sustainable supply chain management must answer to a wider range of issues, there is a need for risk management strategies that include long-term planning and preparation for supply chain disruptions. Finally, transparency refers to open communication and cooperation with stakeholders and suppliers.

2.1.2 Key theories

The triple-bottom-line theory is often utilized to study the sustainability side of supply chain management. Sustainable development has been defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987,

p. 41). The triple-bottom-line theory is built on this definition, while it further emphasizes the multidimensional nature of sustainable development (Heart & Milstein, 2003). Due to its multidimensional nature, it provides a thorough look into sustainability and enables the analysis of sustainable supply chains on a deeper level. The economic, social, and environmental dimensions of sustainability must all be considered when implementing sustainability practices in global supply chains (Ahi & Searcy, 2015).

Another central theoretical concept in the sustainable supply chain management research is the resource-based view. Barney (1991) presented the research-based view as a model that emphasizes organizations' ability to gain sustained competitive advantage by possessing resources that are valuable, rare, and imitable, while also supported with sufficient capabilities and skills. It is understood that a resource adds value if it increases customer willingness to pay or lowers costs, while rare resources help firms avoid competition and enable them to charge higher prices. Sustained advantage comes from resources that are hard to imitate and supported by complementary assets such as skilled workforce and processes within the organization (Christmann, 2000; Hart & Dowell, 2011). Even though the resource-based view provides a broad overlook of organizations' resources and the value they bring, the model has received criticism as it ignores the connection with the organization's natural environment (Hart & Dowell, 2011).

After realizing the importance that both internal and external factors have on an organization’s competitiveness, especially regarding the dependence on ecosystems and natural resources, it was argued that the model of resource-based view should be further developed. Thus, Heart (1995) presented a natural-recourse-based view that is composed of three intertwined strategies, which are preventing pollution, product stewardship, and sustainable development. This new theoretical approach allowed academics to research the relationship between financial performance and environmental impacts. Thus, it has been often utilized in sustainable supply chain development as well. Heart and Dowell (2011) investigated the theory after 15 years and found it still to be relevant today as companies try to address environmental, social, and economic sustainability

issues. Currently, the value is in developing strategies for improvement because simply reducing negative impacts is not enough.

2.1.3 Drivers

It is important to understand the drivers and barriers to implementing sustainable supply chain management strategies. It is important because understanding the reasons behind the decisions helps companies specify what strategies are needed. However, the drivers and barriers can always depend and vary on the supply chain in question (Ahi & Searcy, 2015, p. 2887). In research, the drivers for sustainable supply chain management are divided into two categories, which are internal and external drivers. Internal drivers include organizational values and characteristics, economic benefits, and organisational strategy. Examples of external drivers include regulation, market pressures, and societal pressures.

Figure 1. Drivers for supply chain sustainability based on Baliga and others (2020), Saeed and Kresten (2019), and Chaudhari and others (2020).

Internal drivers for sustainability are derived from employees' and organizations' values as well as organizations' resources and strategies. Organizational values are a strong motivator for sustainable supply chain management, and it is also referred to as a moral motivator (Baliga et al., 2020, p. 351). The moral obligation of organizations to act responsibly can come from within the organization, its customers, and other stakeholders such as supply chain partners (Mani et al., 2015, p. 2020 – 1022). In addition to moral

reasons, organizational culture can affect the implementation of sustainable supply chain management by the way the organization is interested in innovating more sustainable products and services, attracting sustainably conscious consumers and partners, creating and following the code of business conduct, and answering stakeholders' concerns of social sustainability issues (Saeed & Kresten, 2019, p. 15).

Organizations' sustainability initiatives driven by economic pressures or profits are known as instrumental motives (Baliga et al., 2020, p. 351). These motivators relating to resources and economic impacts can include drivers such as cost reductions, rewards and incentives, more efficient use of resources, and attracting human capital with better expertise (Chaudhari et al., 2020, p. 286; Saeed & Kresten, 2019, p. 16). For example, effective use of resources can lead to both cost savings and positive impacts on the environment (Shafique et al., 2017, p. 92), which are strong motivators for companies whether they are interested in sustainability or only economic performance. Chaudhari and others (2020) found that this type of cost performance is a stronger driver for sustainability compared to the initiatives and rewards provided to companies by different regulatory bodies. Therefore, participating in sustainable supply chain management can lead to more efficient use of resources and a better level of sustainability.

To successfully implement sustainability into a company's supply chain management strategy, the organization must ensure internal support and upper-level management's involvement in the cause (Saeed & Kresten, 2019, p. 15). Chaudhari and others (2020) found that the initiation of top management is the most effective driver in this category. They argue that a high level of management involvement and their understanding of sustainability issues aid in understanding the needs of other stakeholders, such as suppliers and other supply chain partners, and achieving the necessary funds to successfully integrate sustainability in supply chain management. Additionally, external drivers such as consumers, regulations or interest in acquiring different quality and sustainability certificates (ISO14001/SA8000) may influence organizations to implement sustainability

initiatives in their organizational and supply chain strategies (Saeed & Kresten, 2019, p. 14 – 19).

External drivers or institutional pressures, both used in the academic literature, refer to external forces such as customers, suppliers, competitors or regulations having an impact on the companies' participation in sustainability actions (Shafique et al., 2017, p. 93). For example, regulatory bodies, legislation authorities and political institutions all provide pressures and incentives for companies to include sustainability in daily operations and strategies (Shafique et al., 2017, p. 97; Ahi & Searcy, 2015, p. 2884). There are several requirements regarding companies' sustainability actions and reporting. For example, the European Union law (European Commission, 2023) requires all large and listed companies to report and disclose the sustainability risks and opportunities that have an impact on environmental or social issues. The task of following different regulations can be even more demanding for companies operating on a global level, as different countries and regions may follow different regulations (Saeed & Kersten, 2019, p. 1148). The non-compliance with environmental regulations can lead to fines and penalties, which can damage the company's reputation with different stakeholders (Ahi & Searcy, 2015, p. 2887). Thus, organizations must also ensure a good level of compliance from their suppliers as well.

In addition to regulatory drivers, market drivers have a great impact on the market environment where organizations operate (Chaudhari et al., 2020, p. 278) and when the market calls for sustainability, organizations are under pressure to follow. In Saeed and Kersten's (2019) research on drivers for supply chain sustainability, they identified a set of market factors that act as drivers. It was explained that competition and competitors put immense pressure on companies to improve their impact on the environment and community. Additionally, they emphasise that supplier participation in achieving sustainability goals is crucial. As a big part of organizations' emissions come from the supply chain, it is important to know the indirect pressure of it and its ability to engage suppliers and focal companies to participate in sustainability-improving innovation.

The third category of external drivers is societal pressures. Societal issues refer to the public and its ways and methods that aid in sharing awareness about sustainability issues (Chaudhari et al., 2020, p. 278). The growing interest in sustainability issues has led different NGOs, media outlets, consumers and other value-based groups to observe organizations and their environmental and social impacts more critically (Mani et al., 2015, p.1021 - 1022). According to KPMG's report on sustainably conscious consumers (2022), consumers are increasingly interested and concerned about organizations' CSR activities. they are no longer interested only in organizations internal operations, but due to increased visibility through technology, consumers pay more attention to the organization's supply chain as well. Participating in sustainable practices within supply chains improves a company's sustainable brand image and thus is more attractive to sustainably conscious consumers (Dubey et al., 2017, p. 1127).

2.1.4 Barriers

Although sustainability has become an increasingly important focus for global companies, and numerous drivers encourage its integration into global supply chains, some companies still struggle to implement it due to various barriers. Extensive research has been conducted on what are the barriers to sustainable supply chain management. For example, Seuring and Müller (2008), Govindan and others (2014) and Narayanan and others (2019) have listed barriers that organizations face when planning to develop their supply chains to include sustainable strategies. Govindan and others (2014) have identified five key categories of barriers, which are technology, outsourcing, finance, knowledge, involvement and support barriers. Mirroring Govindan and others' research to other academic research on barriers, it can be identified that technology, outsourcing, finance, and knowledge are commonly used categories. Other categories identified relate to the market environment, inter-organizational factors, and regulation. Therefore, this paper will focus on four key categories: technology, complex supply chains, finance, and knowledge.

Figure 2. Barriers to supply chain sustainability based on Govidan and others (2014), Seuring and Müller (2008), and Gonçalves and others (2024).

The first category of barriers is called technology barriers. These barriers include technological factors that create challenges for implementing sustainable strategies in supply chains. Govidan and others (2014) argue that argue that issues such as fear of failure, the lack of sufficient tools and substitute resources, in addition to an inexperienced workforce, can hinder organizations' motivation and ability to implement sustainable supply chain practices. Similarly, Gonçalves and others (2024) found that technological capabilities affect the level of adaptation of sustainable practices. They highlighted the lack of technology systems for communication as an additional technological barrier to implementing sustainability in supply chains.

However, technology can also be seen as an enabler for sustainable innovation as it aids in creating more efficient processes with automation, sharing and assessing sustainability-related information with IT systems, and creating digital platforms that enable standardised practices across the supply chains (Dao et al., 2011, p. 68 – 69). Thus, it can be argued that technology can work as an enabler for sustainability, but when the organization does not possess sufficient technological capabilities, it will create challenges for the sustainable development process.

The second category of barriers concerns outsourcing in complex supply chains. Issues that arise from the complexity of supply chains can relate to difficulties in

communication, differing views of sustainability between suppliers, and a lack of monitoring and rewarding systems for following sustainability practices (Govindan et al., 2014). Seuring and Müller (2008, p. 1704) highlight the challenges faced by focal companies and argue that globalization and the growing need for outsourcing lead to longer and more complex supply chains. This growing longitude and complexity of supply chains cause sustainable supply chain management to be more difficult and, therefore, require more effort and resources from the focal organization.

The third challenge for adapting sustainable supply chain practices concerns financial impacts. Although the use of sustainable practices, such as more efficient use of resources, can create significant cost savings (Shafique et al., 2017, p. 92), the initial expenses of implementation of the sustainable development process can be too high for some organizations (Narayanan et al., 2019). Thus, financial implications can also be viewed as barriers. Examples of these barriers include a lack of funds for developing sustainable production, expensive hazardous waste disposal systems, and high costs for the implementation of sustainable practices, innovation activities and maintenance (Gonçalves et al., 2024, p. 515). Aligning with the conflicting financial effects of implementing sustainability into supply chains, Carter and Rogers (2008) discussed the multidimensional view of sustainability. Economic performance is an important part of the triple bottom line. Although the initial costs can be high, when sustainability is implemented in the long-term strategy, it will lead to cost savings.

The last category is the lack of knowledge and awareness of sustainability within organizations. In Govindan and others' (2014) literature review on academic research about knowledge as a barrier to sustainability, it was found that a lack of knowledge within an organization or its industry hinders the implementation of sustainable strategies. For example, organizations might not understand or believe in the value of sustainable strategies. Additionally, industries or company professionals might not be aware of reverse logistics practices, green warehousing possibilities or the depth of legislation regarding sustainability. Furthermore, the inability to set specific sustainability goals and

inadequate strategic planning of supply chains can act as barriers (Gonçalves et al., 2024). Moreover, the top management's influence should not be forgotten. When top management is highly involved and knowledgeable, it will support the adaptation and development of sustainable practices and strategies in supply chains (Chaudhari et al., 2020).

2.2 Supply Chain Resilience

Supply chain resilience has been a relevant topic among academics for the past 20 years (Shishodia et al., 2023, p. 880). Recent disruptions like COVID-19 and the war in Ukraine, in addition to increasing globalization and sustainability concerns, have caused severe global challenges to supply chains, strengthening the interest in investigating the topic in this new time. The recent disruptions have also enhanced the need for strategies that aid companies in achieving a higher level of resilience in their supply chains.

Supply chains are wffective when the organization can produce and deliver goods to the right destinations in the correct quantities while considering the economic impacts (Christopher & Peck, 2004, p. 1). According to Ponis and Koronis (2012), to work effectively, supply chains must be designed proactively to have the ability to prepare and adapt to disruptive events and uphold structure and functionality post-disruptions. They also noted that the supply chain should favourably exceed the prior performance to gain a competitive advantage. Over the 20 years of research, academics have seen resilience mostly as risk management. However, similarly to Poni and Koronis (2012), the past decade of research has highlighted the competitive advantage provided by resilient supply chain strategies (Klibi et al., 2010).

Although supply chain resilience and sustainable supply chain management are mostly viewed as independent areas of research, the connectivity between these topics has begun to tighten. For example, in Silva and Ruel's (2022) article about sustainable purchasing and supply chain resilience, an integrative framework for supply chain sustainability and resilience was formed. The framework highlights how focusing on supplier selection, evaluation, and development can help organizations to build stronger, more reliable supplier relationships that also provide a better level of resilience dimensions, including flexibility, visibility, and adaptability. These sustainable supply chain practices help the supply chain recover from disruptions, improve collaboration, ensure security, and maintain financial strength, thereby creating a robust and sustainable supply network.

2.2.1 Resilience theory

Resilience theory examines how systems like supply chains can endure disturbances while maintaining their key operations and functions (Walker et al., 2004). As it is commonly said, no company is an island. The interconnectivity of today's global organizations and their widely spread supply chains are only as good as their weakest links. Thus, Christopher and Peck (2004) wanted to highlight the importance of building resilient supply chains that can protect the business from disruptions. Their article "Building the Resilient Supply Chain" created a strong base for the following research on supply chain resilience, and its key concepts remain relevant to this day.

Supply chain resilience is a widely researched topic with multiple dimensions that act as a backbone for many resilience frameworks. Depending on the author, the key dimensions vary. For example, Ponis and Koronis (2012) structured a framework for supply chain resilience dimensions in their literature review on supply chain resilience. The first element is agility, which includes flexibility and velocity. The second element is redundancy. The third dimension is collaboration, which also consists of the dimension of visibility. The fourth and last dimension covers the supply chain network and its physical and informational structure.

Similar to Ponis and Koronis' (2012) view on key characteristics of resilient supply chains, Holgado and Niess (2023) have researched resilient global supply chains. In their paper, it was explained that resilient supply chains have two categories that support each other, where agility is the flexible element and robustness acts as the proactive element. Each design approach has its own success factors. Flexibility and responsiveness are identified as key success factors for agility, whereas redundancy is the success factor for robustness. Additionally, they mention the importance of collaboration, information sharing, communication and velocity as factors in increasing supply chain resilience and cost-effectiveness.

2.2.2 Resilience dimensions

Based on the academic research on resilient supply chains, four key dimensions of resilience have been identified. These dimensions are agility, robustness, collaboration, and supply chain networks, illustrated in figure 3. Understanding the key dimensions of resilient global supply chains is important for developing strategies that help organizations build such resilient supply chains.

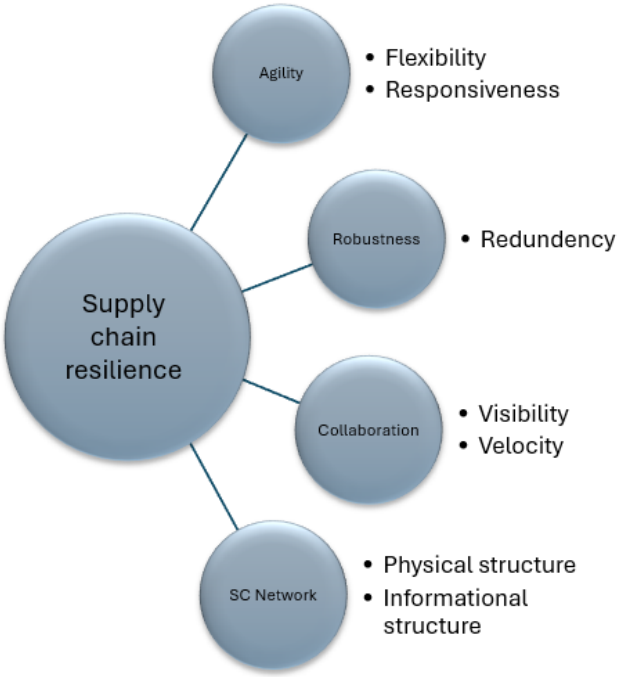

Figure 3. Resilience dimensions adapted from Ponis and Koronis' (2012) and Holgado and Niess (2023).

In supply chain resilience research, agility has been described as responsiveness to change (Wieland & Wallenburg, 2013, p. 302). Khan and others (2009, p. 43) describe agility as the supply chain processes' ability to increase competitive advantage by strategically reacting to uncertainty in the market environment. In addition to its reactive nature, agility is also described by its rapidness and flexibility (Holgado & Niess, 2023, p. 1043). Thus, Wieland and Wallenburg (2012, p. 890) have defined agility as "the ability of a supply chain to rapidly respond to change by adapting its initial stable configuration".

Even though agility has been identified as an important dimension for supply chain resilience, which in turn improves organizations' performance (Shishodia et al., 2023, p. 895), Wieland and Wallenburg (2012) found that agility by itself does not directly improve organizations' performance. However, it has a significant role in increasing the supply chain's customer value. Thus, it is useful in managing customer-related supply chain risks.

Robustness is described as a proactive strategy that helps in anticipating and preparing for future uncertainties and possible changes in the economic environment (Klibi et al., 2010, p. 290). Durach and others (2015) researched the supply chain robustness and found that it is a process of avoiding, resisting and acting on shifts in the supply chain environment. They defined robustness as "the ability of a supply chain to resist or avoid change" (p. 123). Robustness is also affiliated with redundancy, which in the supply chain approach means preparing for future disruptions by, for example, building up a buffer stock or using multiple suppliers (Holgado & Niess, 2023). While agility is an important dimension for managing customer-related risks, robustness is a highly important and effective dimension for managing supplier-related risks (Wieland & Wallenburg, 2012, p. 898).

Collaboration is an important pillar in globally operating resilient supply chains (Kamalahmadi and Parast, 2016). Pettit and others (2013, p. 49) define collaboration as the "ability to work effectively with other entities for mutual benefit". They suggest that collaboration can include forecasting, postponement, communication, customer and product life cycle management, followed by risk sharing among partners. One of the priorities of building a resilient supply chain is to create a supply chain community that enables information exchange between the different nodes in that supply chain (Cristopher & Peck, 2004, p. 9). Collaboration leads to better visibility and increased velocity within the supply chain (Tukamuhabwa et al., 2015). Moreover, visibility and velocity aid in understanding the current supply chain environment as well as forecasting and preparing for future changes in that environment (Ponis & Koronis, 2012). Research shows

that global, complex supply chains require a higher level of collaboration to successfully manage risks (Bakshi & Kleindorfer, 2009).

Supply chain network (SCN) design is the last key dimension of resilient supply chains, and it comprises physical and informational supply chain structure. Disruptions affect supply chains on the network level (Kamalahmadi & Parast, 2016, p. 124). Vulnerability on a network level appears through environmental complexity, instability, turbulence, and shortage of resources (Durach et al., 2015, p. 130). These vulnerabilities must be considered when planning the physical structure of SCN. Related to the physical SCN design, Klibi and others (2010) argue that too often organizations focus on cost-effectiveness when designing their SCN structure. According to their study, a sustainable and resilient supply chain should focus on long-term value creation, including demand forecasting, financial planning, and sustainability. Similarly, SCN design should consider the informational structure, as the information exchange within the supply chain and across organizations impacts its dynamism and adaptability (Holgado & Niess, 2023).

2.2.3 Risks

Disruptions are inevitable in today's globally connected supply chains. Supply chain risks can be defined as the possibility of unexpected events that cause deviations from the initial objectives and reduce value-added activities at various levels (Kumar et al., 2010, p. 3717). These unexpected future environments result from random daily business factors such as issues in supply, demand, manufacturing, and distribution.

The risks that supply chains might face and should prepare for can be divided into two categories, which in turn can be divided into subcategories. The two main categories in this thesis are typical supply chain risks and sustainability-related risks, which are illustrated in figure 4 below. First, the typical supply chain risks are analysed. Previous research has identified risks related to different supply chain sectors, which are supply, operational, logistics and demand (Sreedevi & Saranga, 2017; Giannakis & Papadopoulos,

2016). These are the subcategories of typical supply chain risks. After that, the theoretical background on sustainability-related risks is presented.

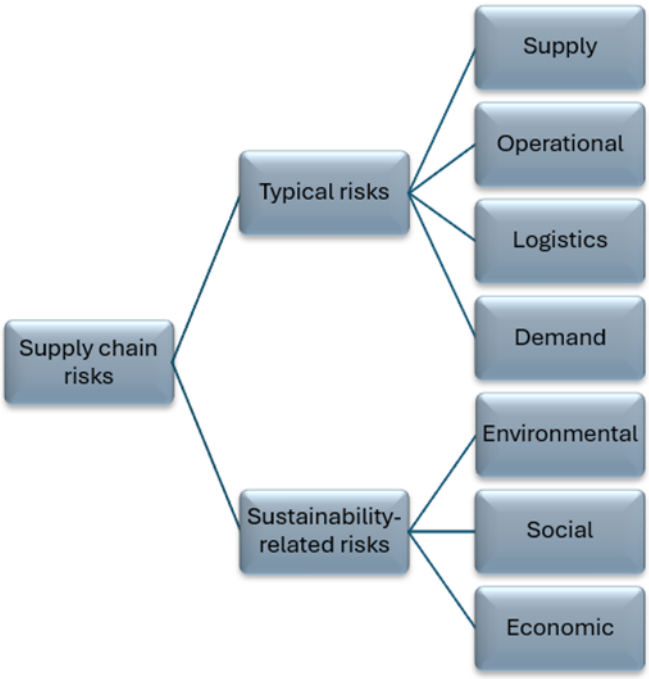

Figure 4. Supply chain risks based on Sreedevi & Saranga (2017), Giannakis and Papadopoulos (2016).

Supply-related risks refer to issues in the flow of goods in terms of quality, time, and quantity (Kumar et al., 2010, p. 3718), and in this case, the flow of goods to the supply chain organization. Wang and others (2018) researched possible disturbances and disturbance prevention. They found that most supply-related risks, such as poor quality of materials, incorrect quantities of goods, and the lack of raw materials, are caused due to technological problems, a lack of skilled workforce, or an inability to plan and schedule sufficiently. Issues on the supply side can cause risks in other supply chain phases, for example, in manufacturing.

Operational risks are internal to the supply chain organization and mostly refer to issues in manufacturing. Operational risks may include machinery breakdowns, insufficient production resources, and low factory productivity (Wang et al., 2018, p. 235). Additionally, Ouabouch and Paché (2014) have identified risks of disruption of production due to

local incidents (strike, fire, etc.), technical problems, and computer issues (viruses, software errors, etc.). They argue that these risks for technological, human, or logistics errors have an effect on the whole manufacturing infrastructure and can lead to losses in efficiency and achieving business objectives.

Delivery and logistics risks are composed of issues related to the timely delivery of quality goods according to a customer's order. Good logistical performance is achieved when there are no issues regarding the previously mentioned factors and customer satisfaction is ensured (Ouabouch & Paché, 2014, p. 328). According to Wang and others (2018, p. 235) environmental issues, negligent maintenance of delivery systems, short lead time and issues in scheduling are key causes of logistics risks. They argue that other potential risks may include technical issues in vehicles, limited transportation capacity, along with delivery times that are either too early or too late. These risks can lead to further issues in the whole supply chain and its product flow (Kumar et al., 2010, p. 3735).

Demand risk refers to potential disturbances that affect the flow of goods, information, or cash within the supply chain, especially focusing on the transaction between the focal company and the market (Christopher & Peck, 2004, p. 5). More specifically, demand risks may include inaccurate demand forecasting, inability to meet customer needs, changes in product design, and stock accumulation (Sreedevi & Saranga, 2017, p. 334; Xu et al., 2019, p. 859). Kumar and others (2010) have identified similar demand risks and argue that demand forecasting is one of the most difficult supply chain management tasks, and when done incorrectly, it can cause shortages and lower supply chain performance.

In addition to typical supply chain risks, today's increased global operations, information sharing, and growing interest in sustainable business conduct have led to an increasing number of sustainability-related supply chain risks. Whereas typical supply chain risks appear through disruptions and lead to issues in the material flow, sustainability-related risks are evaluated through stakeholder reactions and can lead to reputation damages

(Hoffman et al., 2014). Due to sustainability's three-phased nature, the sustainability-related supply chain risks are analysed from environmental, social, and financial perspectives. Furthermore, Giannakis and Papadopoulos (2016, p. 456) suggest that sustainability-related supply chain risks can be further divided into internal and external risks.

Environmental sustainability risks refer to issues that can cause negative environmental impacts due to a company's actions and supply chain operations. This type of external risks that can affect a supply chain's resilience can be natural disasters (e.g. tsunamis and tropical storms), scarcity of raw materials (e.g. water), and extreme weather conditions (e.g. heat waves and droughts) (Giannakis & Papadopoulos, 2016, p. 457). Organizations are also under the possibility of creating sustainability-related risks through internal operations. Internal environmental risks include pollution, insufficient waste disposal, environmental accidents, and extensive product and package waste (Reinerth et al., 2019; Ngo et al., 2024).

Social sustainability risks refer to unethical practices and other issues that can cause risks for supply chain resilience and social sustainability. Internally, organizations can be connected to child labour, low wages, unethical working conditions, discrimination and health and safety issues (Busse et al., 2017, p. 28). These risks can be created by the focal company or one of its supply chain partners. Risks caused by external issues include pandemics (e.g. COVID-19), social instability, political issues, and demographic challenges (e.g. aging population) (Giannakis & Papadopoulos, 2016, p. 457).

Lastly, economic sustainability risks relate to financial and governance-related factors. In their article "Supply chain sustainability: A risk management approach", Giannakis and Papadopoulos (2016) list external and internal economic risks that affect supply chain resilience and economic sustainability. They argue that boycotts, litigations, financial crises, and changes in energy prices can cause disturbances in global supply chains. Furthermore, they mention six internal company-caused risks, which are bribery, price fixing, dishonesty, antitrust claims, patent violations, and tax evasion. Similarly, Busse and

others (2017) have identified non-compliance with sustainability laws, transparency issues and unfair business and competition as risk factors for economic sustainability.

The consideration of sustainability-related risks on top of typical supply chain risks is important in today's globally connected business environments. There is a lot of practical evidence that suggests that organizations can face serious losses sourcing from ecological, social, and ethical issues within their supply chains (Hoffman et al., 2014). The losses are not only limited to reputation but can also include significant financial impacts.

2.2.4 Risk management through collaboration

To prepare and survive global supply chain disruptions, companies should develop effective risk management practices. Based on the literature on resilient supply chains and typical supply chain risks, two key perspectives on risk management can be identified. The first perspective is based on the views of Christopher and Peck (2004) and Ponis and Koronis' (2012) view of resilient supply chains. They argue that resilient supply chains must have agility, robustness, and collaboration with other supply chain partners and an effectively planned supply chain network structure. The other perspective on supply chain resilience and risk management can be viewed in Tang's (2006) article "Perspectives in supply chain risk management". According to this view, resilient supply chains require risk management strategies that take into consideration supply, demand, product, and information management. In both perspectives, the value of communication and collaboration among supply chain partners is highlighted.

Supply chain risk management theory and practices are often divided into three phases: pre-disruption, during disruption, and post-disruption (Shishodia et al., 2023). These phases are also referred to as the anticipation, resistance, and recovery & response phases (Kamalahmadi & Parast, 2016, p. 122). The strategies for specific supply chain functions such as supply, demand, product, logistics risk and network management are mostly focused on pre-disruption activities and preparation for a possible disruption. The

last essential element of supply chain risk management is collaboration and information sharing, which is valuable across all three phases. Sustainable supply chain management literature consistently highlights the critical need for stronger collaboration among supply chain partners to enhance both sustainability and resilience (Tang, 2006; Seuring & Müller, 2008; Chen et al., 2017).

Supply chain vulnerability appears on a network level (Durach et al., 2015, p. 130) and especially after COVID-19, the importance of paying attention to suppliers beyond the first tier was accentuated as the issues with second-tier suppliers can have serious effects on a focal company's production as well (Paul et al., 2023, p. 1178). Tang (2006, p. 454) argued that most supply network design models focus on costs and production optimization but often neglect the other supply chain risks. Instead, the article suggested considering the supply chain network configuration by establishing diverse supplier selection criteria that balance flexibility and effectiveness with operational risks. Similarly, Paul and others (2023, p. 1176) found that preparation for future disruptions should include risk management strategies such as supply chain mapping and building reconfigurable supply chains. Supply chain mapping provides better visibility to the entire supply chain and its partners, which enables identifying possible risks and disruptions as well as establishing proactive strategies to face them.

The rising global dispersal of supply chains has also led to a growing need for reliable, accurate, and verified information from different supply chain partners, but this type of visibility can be highly challenging to achieve (Boström et al., 2015). Visibility can be achieved through transparent information sharing with the aid of information technology (Silva & Ruel, 2022, p. 8). Implementing appropriate technological tools, data analytics, and optimisation tools can help supply chain managers make better-informed decisions regarding supply chain disruption identification and risk management (Paul et al., 2023, p. 1177 – 1178). In recent research on Industry 4.0 and supply chain digitalisation, the benefits of using emerging technologies like blockchain have been underlined. For example, Ivanov (2019) argued that the use of blockchains can improve communication,

enhance transparency, and build trust by providing unchangeable, real-time records that offer a clear and reliable view of all actions and processes within the supply chain. However, the adaptation of these tools requires a high level of expertise and thus can be difficult for some companies to achieve.

Supply chain risks have evolved from typical function-related risks to include sustainability-related risks as well. Thus, there is a need for risk management strategies that consider both economic performance in addition to environmental and social performance. From a resilience point of view, sustainable practices that go beyond compliance with regulations are valuable strategies as those can de-risk the supply chain (Paul et al., 2023, p. 1177). When a company operates responsibly, the sustainability-related risks caused by an organisation's internal operations are decreased. Other well-grounded strategies for sustainable, resilient sourcing are supplier selection, development, and evaluation (Silva & Ruel, 2022, p. 6). A supplier base that is diversified to multiple sustainably operating suppliers reduces reliance on a single supplier and distributes risk more evenly whereas developing and regularly evaluating suppliers ensures that they meet performance and sustainability standards as well as their ability to adapt to changing demands, strengthening the supply chain's overall reliability (Tang, 2006).

Collaborating and sharing information between supply chain partners enable risk-sharing and joint decision-making (Christopher & Peck, 2004), making it an important part of supply chain risk management. According to Grimm and others (2016, p. 1972), collaboration practices with suppliers such as workshops, training programs, and employee transfers can enhance the sustainability of the whole supply chain and thus also work as a risk management tactic against sustainability-related disruptions. Formal policies and agreements bind supply chain partners to share some obligations and responsibilities of risk management, but building a strong partnership through long-term collaboration fosters open information sharing that improves coordination, visibility, and responsiveness (Li et al., 2015, p. 85).

Although sustainable supply chain management and supply chain resilience research both highlight the importance of collaboration and especially information sharing, there are also risks related to sharing company-specific information. Tran and others (2016) have researched what companies see as the biggest threats concerning sharing information with their supply chain partners. According to their research, loss of proprietary information is seen as the biggest threat. Other threats include IT security issues, information leakage, poor data integrity and theft of intellectual property. Similar to Tran and others' (2016) research, Colicchia and others (2019) have also researched the risks related to information sharing with supply chain partners. They found that the literature on information sharing in supply chains emphasizes internal risks, such as information leakage, rather than external IT threats. Also, the growing risks associated with modern supply chain complexity and Industry 4.0 integration were emphasized due to the increased vulnerability to information leakage due to multi-layered supply chains and highly connected networks. To mitigate these risks, research suggests paying attention to developing long-term trusting supply chain relationships (Li et al., 2015, p. 91; Tran et al., 2016, p. 1119), which can be achieved by creating a positive supplier experience.

2.3 Supplier experience development

In recent years, organizations have been more interested in collaborating with their supply chain partners to develop their supply chains to be more efficient, flexible and sustainable (Nyaga et al., 2010, p. 101). The term supplier experience is still relatively rarely used in research, and it does not have a commonly recognised definition, which is why it is tightly connected to buyer-supplier relationships and supplier satisfaction. Supplier satisfaction has been defined as "a supplier's current state of mind about its relation with a buyer" (Börekçi et al., 2014, p. 811) and "a feeling of equity with the supply chain relationship no matter what power imbalances exists between the buyer-seller dyad" (Benton & Maloni, 2005, p. 2). In a recent study, Rajala and others (2025, p. 226) proposed that supplier experience differs from supplier satisfaction in the way it includes

the full range of interactions and perceptions throughout the buyer-supplier relationship, going beyond just satisfaction.

2.3.1 Buyer-supplier relationship

According to Nyaga and others' (2010) study regarding buyer-supplier collaborative relationships, trust and commitment between supply chain partners are achieved through joint effort in building the relationship. They found that even though the aim of these relationships is to benefit both parties, buyers and suppliers have slightly different views on the most important factors. The study showed that buyers tend to focus more on relationship outcomes such as satisfaction and performance, while suppliers find securing their position and investment through trust and commitment as the most important result. Daugherty and others (2006, p. 65) argue that by building a strong, trustful, long-term collaborative relationship with suppliers, the benefits can include improved visibility and decision-making, greater customer satisfaction and service levels, and cycle time reductions. However, achieving the acquired level of collaboration can be difficult due to challenges in selecting the right partners with aligned needs and capabilities and defining standards and goals.

Based on Nyaga and others' (2010) and Daugherty and others' (2006) work on buyer-supplier relationships, it can be concluded that collaborative relationships can lead to multiple benefits. However, the power imbalances shown by the differences in collaborative relationship goals speak to the buyers' role in creating a trustworthy environment by providing a good supplier experience. These findings, in addition to Shamsollahi and others' (2021) supporting study about buyer-supplier relationship dynamics, indicate that to ensure collaborative relationship continuity, there should be continuous development regarding trust, information sharing, and commitment to the continuity.

A positive supplier experience leads to increased supplier commitment, which is shown as better supplier performance (Rossi & Anttila, 2024, p. 30). To provide an improved

supplier experience, the buying organization must focus on relationship management and development. The management of interorganizational business relationships has been an important topic for practitioners and researchers since the 1990s (Pitsis et al., 2004, p. 48). One of the most influential research articles on the topic is Adler's "Market, hierarchy, and trust: The Knowledge Economy and the Future of Capitalism" (2001). Even though the paper is more general in nature and does not specifically focus on buyer-supplier relationship management, it applies to it as well.

Adler (2001) argues that managing interorganizational relationships requires balancing market, hierarchy, and trust. Markets provide clarity through contracts, while hierarchies ensure coordination and control. However, trust is an essential factor for fostering open knowledge-sharing and collaboration. Trust is explained to reduce risks like opportunism and support flexible, innovative partnerships, which makes it an important addition to traditional governance mechanisms. As positive supplier experience is the result of trust, performance, and continuity of the collaborative relationship, different stages of the relationship should be considered when managing the relationship. Similarly, in their study, Shamsollahi and others (2021) emphasize the importance of relationship learning and adaptability, which suggests that the development of trust and the appropriate balance between market and hierarchical controls are not static concepts. It is an ongoing process that is affected by different external and internal factors.

Supplier experience is essentially a supplier's experience of the relationship with a buyer company. According to Rossi & Anttila (2024, p.31), a positive supplier experience can be reached through a win-win mentality in both transactional and relational relationships. Furthermore, it is explained that good transactional relationships can be achieved by developing market and hierarchy governance tactics such as contractual agreements, pricing, and mutual sustainability compliance. Additionally, trust governance enabled by information sharing, mutual commitment, and goal alignment can help to achieve good relationships.

2.3.2 Factors affecting supplier experience

Recent disruptions in the global supply chain environment call for a higher priority on developing and maintaining a positive supplier experience with critical suppliers (Hudnurkar et al., 2024). The research on the topic of influencing a supplier's evaluation of its customers began in the 2010s and has received consistent attention since (Hüttinger et al., 2012). Developing supplier experience requires understanding the expectations of both buyers and suppliers.

From the buyers' perspective, the expectations for the relationship are to achieve the key goals of supply chains, which are the flow of materials, information, and capital, while also participating in improving the process by taking into consideration the three dimensions of sustainability (Seuring & Müller, 2008, p. 1700). On the other hand, suppliers often expect to secure their place as a "preferred supplier" and participate in shared decision-making, innovation, and risk management (Nyaga et al., 2010, p. 110 – 111). Stjernström and Bengtsson (2004, p. 145) studied the supplier perspective of buyer-supplier relationships. They found the biggest reasons for unsatisfactory collaboration to be price reduction demands, vague customer expectations, unequal dependence, and restricted collaboration with competitors. These are all found to be hindering trust, technological development, and cost reduction opportunities in the relationship.

To gain a higher level of supply chain sustainability and resilience through supplier experience, it is also important to understand what factors positively affect the experience. In addition to the more theoretical factors of market, hierarchy and trust that are affecting buyer-supplier relationships and supplier experience, research has identified five more practical categories that affect supplier satisfaction. These categories are operational excellence, payment practices, communication, collaboration, and technology (Hüttinger et al., 2012; Ganguly & Roy, 2021).

Operative excellence is included in the most influential factors affecting supplier experience (Hüttinger et al., 2014). Operative excellence means providing an effective working environment and practices. For example, Ganguly and Roy (2021, p. 251) explained that suppliers value clear process guidelines, timeliness, and feasible delivery agreements, in addition to clear and transparent purchasing processes. Furthermore, the authors highlighted that strict adherence to the communicated policies and processes leads to improved supplier experience as the suppliers are left feeling secure about the purchasing process. Moreover, operative excellence translates to efficient payment practices as well. Research has found that timely payments, flexible payment terms, and overall fair payment policies lead to more satisfied suppliers (Meena & Sarmah, 2012, p. 1239).

In addition to operative efficiency, suppliers value smooth cooperation regarding communication, managing different conflicts, solving issues, and sharing information (Hüttinger et al., 2012, p. 1201). The buyer organization's willingness to communicate openly, provide transparent information, and resolve conflicts collaboratively improves supplier experience and efficient buyer-supplier interactions (Essig & Amann, 2009, p. 105). In this aspect, purchasers and other professionals, who are in direct daily contact with the suppliers, play an important role in maintaining this relationship. Thus, Ganguly and Roy (2021) suggest that communication with supplier representatives should be conducted through personal contacts, and the tone of conversations should remain empathetic.

The last category of supplier experience development is related to technology, and it is twofold. Firstly, research finds that the buyer company's technical experience is seen as an important factor for supplier experience (Essig & Amann, 2009, p. 105). Based on an extensive literature review, Hüttinger and others (2014) found that the buyer company's technical competence in R&D and the possibilities given for supplier development act as a driver for improved supplier experience. The findings are similar to Hudnurkar and others' (2024) findings on the role of the buyer's technical competencies and the ability to create a collaborative relationship where there is a possibility of growth for the supplier. Other findings on technology's impacts on supplier experience relate to operational

efficiency. Suppliers value technological advancements, for example, e-procurement systems that reduce costs, exposure to new tools, security of electric information transfer, and IT systems in supply chain applications (Ganguly and Roy, 2021, p. 254). Therefore, improving technological capabilities can lead to more efficient supplier collaboration.

Based on the theoretical contributions made in existing literature on buyer-supplier relationships and supplier satisfaction, the following connections to supplier experience can be made. Supplier experience is affected by the relationship between supplier and buyer companies. Due to the underlying power imbalances, the buyer company often has the responsibility to manage and develop the relationship to enable positive experiences for both parties, leading to mutual satisfaction and performance (Daugherty et al., 2006; Nyaga et al., 2010). Thus, to develop supplier experience, relationship management capabilities are needed.

In figure 5 below, the main factors affecting supplier experience are illustrated. As found by Adler (2001), interorganizational relationship management requires assessing three key elements of market, hierarchy, and trust. Furthermore, previous research has highlighted the importance that practical operations such as operational efficiency, timely and accurate payment practices, sufficient communication, in addition to collaboration and technology have on supplier satisfaction (Hüttinger et al., 2012; Ganguly & Roy, 2021). By focusing on developing these factors, buyer companies can positively affect supplier experience.

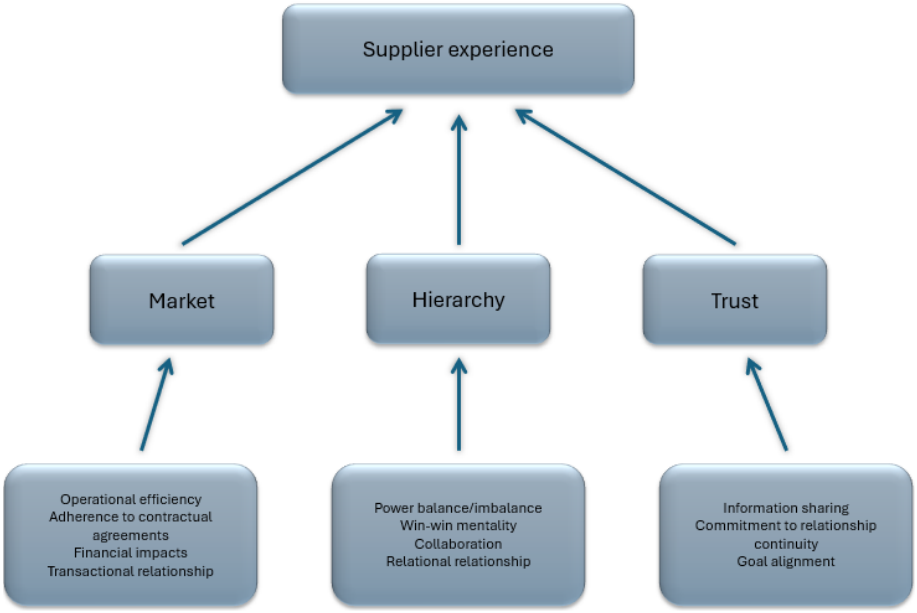

Figure 5. Elements affecting supplier experience based on Adler (2001), Hüttinger and others (2012), and Ganguly and Roy (2021).

2.3.3 Benefits of supplier experience

Supplier experience can have both positive and negative effects, depending on whether it is positive or negative. When examining the theoretical background on supplier experience and supply chain sustainability and resilience, three shared elements can be identified: trust, collaboration, and relationship continuity. These three elements can be found in supplier experience development as the three governance mechanisms are trust-based, hierarchical, and market-driven. Trust-based governance is built on open communication and mutual commitment between the supplier and buyer to strengthen these relationships. Hierarchical governance enables structured and collaborative partnerships, while market-driven governance ensures transactional relationship continuity. This chapter examines how positive supplier experience, strengthened by trust, collaboration, and relationship continuity, enhances supply chain sustainability and resilience.

When suppliers have positive experiences working with a buyer company, it enables the relationship to build trust. Trust is also essential for building a resilient and sustainable supply chain. Trust enhances open communication and information sharing, enabling better identification and reduction of risks (Nyaga et al., 2010). This type of transparency is necessary for addressing different sustainability challenges, such as reducing carbon emissions or ensuring ethical sourcing. Furthermore, research has emphasized the effect that trust has on long-term partnerships. For example, Schoenherr and others (2015) and Gulati and Nickerson (2008) have concluded that trust facilitates coordination, enhances confidence in the partner's behaviour, and helps in resolving short-term imbalances when driving for long-term benefits. Furthermore, Gulati and Nickerson (2008) argue that trust reduces the need for formal governance mechanisms by increasing positive expectations and confidence within the relationship, which leads to a better level of flexibility.

In addition to improving trust, good supplier experiences provide more opportunities for collaboration, which is proven to impact resilience and sustainability initiatives (Tang, 2006; Seuring & Müller, 2008; Chen et al., 2017). Collaborative relationships enable better ability to solve mutual problems, shared resource use, and innovation, such as co-developing green technologies (Christopher & Peck, 2004; Nyaga et al., 2010, p. 104 – 105). Furthermore, studies show that collaboration improves coordination, visibility, and responsiveness (Li et al., 2015, p. 85), which enhances the supply chains' ability to adapt to market changes and external disruptions as partners are able to pool resources and workforce expertise to create new flexible solutions (Kusi-Sarpong et al., 2019). Thus, collaboration helps to align sustainability goals, leading to the creation of a supply chain that is both adaptive and environmentally responsible.

Lastly, positive supplier experiences support commitment to relationship continuity, leading to strong, long-term relationships that are important for creating resilient and sustainable supply chains. Suppliers with positive supplier experience, achieved by long-term partnerships, often give the buyer a "preferred customer" status (Vos et al., 2016,

p. 4621). This means that these suppliers are more likely to prioritize their partner buyers during disruptions, ensuring reliable and timely deliveries, which leads to enhanced resilience. Furthermore, strong, long-term relationships that are based on a win-win mentality and trust enable the parties to participate in the social exchange paradigm. This paradigm does not rely on formal agreements but on feelings of personal obligation, where one party does a favour with the expectation of a future return (Börekçi et al., 2014, p. 812).

Commitment to continuity can further support resilience and sustainability as longer relationships with known suppliers can reduce supplier turnover, which can minimize operational and sustainability-related risks by maintaining consistent quality and sustainability compliance (Rossi & Anttila, 2024). However, even though long-term collaborative relationships have been found to have positive effects regarding resilience, research has also emphasized the importance of not only relying on a few suppliers. Diversifying the supplier base reduces reliance on a single supplier and distributes risk more evenly, which is why the concept of backup suppliers is also suggested by academics and professionals (Tang, 2006).

2.4 Theoretical framework

Building on existing literature on supply chain sustainability, supply chain resilience, and buyer-supplier relationships, connections have emerged. Trust, collaboration, and commitment to continuity are the shared pillars that connect sustainable supply chain management, supply chain resilience, and supplier experience. Supplier experience can be seen as a foundation that shapes trust, collaboration, and relationship continuity between buyers and suppliers. These three factors further influence the sustainability and resilience of the buyer's supply chain.

First, trust encourages open and transparent communication between buyers and suppliers (Nyaga et al., 2010). This can lead to openly shared information and data regarding,

for example, resource usage, environmental impacts, and ethical practices, leading to improved sustainability operations. Furthermore, a strong level of trust enables risk sharing between the supplier and buyer. When trust is on a good level, suppliers might feel more comfortable alerting buyers of possible risks, leading to enhanced resilience.

Collaboration between companies and suppliers helps create shared sustainability goals (Grimm et al., 2016), like reducing carbon footprints or sourcing renewable materials. During disruptions, these relationships allow for quicker recovery through mutual support and shared resources (Li et al., 2015). Additionally, companies can help suppliers by providing awareness and resources to meet sustainability and resilience standards, benefiting both sides.

Lastly, commitment to long-term relationships ensures stability and strengthens relationships by offering predictability and security (Shamsollahi et al., 2021). Suppliers can confidently invest in sustainable technologies or processes, knowing they have reliable partnerships. When commitment is mutual, all parties are more likely to align their objectives toward achieving both sustainability and resilience, creating a unified effort across the supply chain.

In the figure 6 below, the theoretical framework for this thesis is presented. Supplier experience is formed between the promises made by the buyer and the expectations of suppliers. It is affected by relationship governance mechanisms that cover subjects of market, hierarchy and trust, in addition to practical operational factors such as operational efficiency, financial impacts, collaboration and communication abilities, in addition to the utilization of digital technologies. By the development of these issues, organizations are able to provide better experiences for their suppliers, which can lead to increased trust, collaboration and continuity in the relationships, which provide further benefits for the supply chain sustainability and resilience.

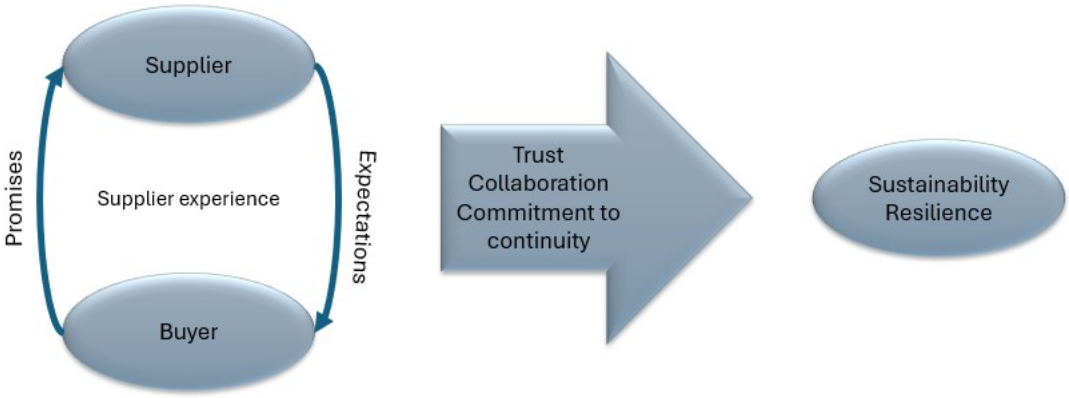

Figure 6. Theoretical framework of this thesis.

3 Methodology

This section presents the methodology of this thesis. The methodology includes explaining the research design, data collection methods, and analysis of the collected data. Furthermore, the ethical research practices as well as the validity and reliability of the collected data will be described.

3.1 Research philosophy

Understanding basic philosophical concepts and ideas in research is essential for designing a study that fulfils its objectives and determining how knowledge about the research topic can be effectively acquired (Eriksson & Kovalainen, 2016). Moreover, research philosophy shapes the authors' assumptions about the world, guiding the research strategy and methods based on views on knowledge and its development (Saunders et al., 2007). Therefore, research philosophy can be viewed as the foundation on which the research itself is built.

There are numerous ways to conduct business research, and the philosophies used can vary based on the authors and topics. This thesis follows interpretative philosophy. According to Eriksson and Kovalainen (2016), interpretivism focuses on understanding how individuals and groups make sense of social events and settings through subjective and shared meanings. Furthermore, it assumes that reality is socially constructed and can only be understood through interpretations of language, experiences, and social interactions. Interpretative philosophy suits the nature of this thesis, as the purpose is to understand how organizations view the topic of supplier experience and its effects on their unique business situations regarding sustainability and resilience. Thus, this view is well suited for the qualitative research methods used in this thesis.

3.2 Research design

Business and management research aims to provide findings, knowledge, and understanding of a topic and address practical problems that might have further societal implications (Saunders et al., 2007, p. 6). The purpose of this thesis is to find out how Finnish manufacturing companies use supplier experience development as a tool to achieve a better level of supply chain sustainability and resilience. Being in the field of business management, this thesis will also aim to provide an understanding of the topic, in addition to providing managerial practical implications.

Qualitative research is about achieving a better understanding of the topic and making interpretations, whereas quantitative research is conducted to find explanations, test hypotheses, and provide statistical analysis (Eriksson & Kovalainen, 2016). The research question "How do Finnish manufacturing companies improve sustainability and resilience through supplier experience development?" is qualitative by nature as it seeks to explore relationships and interpret patterns of similarities and differences. Although sustainable supply chain management, supply chain resilience, and supplier satisfaction are separately well-researched concepts, the interconnectedness of these three from the perspective of supplier experience development is rarely mentioned. Therefore, a qualitative research method in the form of interviews was chosen as the research method.

A case study can be defined as an empirical research method that investigates a phenomenon within a real-life context, where multiple sources of information are used to understand the reasoning behind a case rather than to establish causal explanations (Erikson & Kovalainen, 2015, p. 131). In this thesis, three companies act as separate cases, which leads to obtaining information about the topic from multiple sources. A case study is a valuable approach as it allows the research to present complex and difficult business issues in a practical, relatable, engaging, personal, and straightforward way (Erikson & Kovalainen, 2015, p. 131).

Case studies can be divided into two categories: intensive and extensive case study research. According to Erikson and Kovalainen (2015, p. 136), intensive case study research focuses on understanding a case from within, emphasizing cultural meanings and the perspectives of those involved. On the contrary, extensive case study research uses multiple cases to identify similarities and test or develop theories, with less focus on the case details. Thus, a form of extensive case study research is utilized for this thesis.

The multiple case study approach allows researchers to recognise common patterns across different cases and connect them to the theoretical background by utilizing tools such as observations, interviews, archives, and questionnaires (Eisenhardt, 1989). Therefore, the multiple case study approach was selected to seek answers to the research question of this thesis. Moreover, to achieve a deep understanding of the topic, the research will be conducted in the form of semi-structured interviews. Semi-structured interviews include pre-set and open-ended questions to guide the conversation while allowing more in-depth follow-up questions and wider answers (Denny & Weckesser, 2022). Semi-structured interviews are useful for exploratory studies to understand relationships between different variables (Saunders, 2007, p. 314). Thus, it is a suitable tool for this study, where the aim is to understand the relationship between supplier experience development and supply chain sustainability and resilience.

3.3 Data collection

This thesis studies three different companies and their views on how supplier experience development affects supply chain sustainability and resilience. The practices and views of each company can be seen as different cases. The selected case companies differ in size, industry, and the extent to which they integrate sustainability into their supply chains. Thus, the cases provide broader knowledge on the views and practices of Finnish manufacturing companies. The study could have also been conducted as a single case study while incorporating different supplier cases. However, this study aims to provide an overview of the topic while maintaining a managerial buyer company point of view.

The case companies were selected according to three criteria. First, the company must be a Finnish company operating in the manufacturing industry. The more specific fields of manufacturing vary. Second, the company must have a global or international supply chain. Lastly, the company must be interested in improving its sustainability and resilience. Furthermore, due to the exploratory nature of this study, the companies selected were of different sizes. This enables a broader overview of how Finnish manufacturing companies improve their sustainability and resilience using supplier experience development as a tool.

Research can be conducted by collecting primary or secondary data. This study relies on primary data collected by the researcher. Furthermore, secondary data is used in the case descriptions. In business research, case data can be collected from multiple sources, although the most commonly used method for primary data is in-depth interviews (Erikson & Kovalainen, 2015, p. 139). In like fashion, this research collects primary data through interviews with experts in sustainability and supply chain management. Secondary data used in this study is collected from the companies' official webpages and includes sustainability reports of the case companies, in addition to a webinar produced by one of the case companies.

The data collection method was a qualitative semi-structured interview. This was selected to allow in-depth answers and provide answers to the exploratory research question. The interview was divided into five sections: background, theme 1, theme 2, theme 3, and conclusion. The three specific themes were sustainability, resilience, and supplier experience, and each theme aimed at providing answers to the secondary research questions. This categorization made the interview more structured and allowed more specific and in-depth answers to the questions. It also clarified both the topic and the structure of the interview to the participants.

The time allocated for each interview was 45 minutes. Interviews were conducted as Microsoft Teams meetings and were recorded and transcribed as agreed with the participants beforehand. Online meetings were chosen to accommodate interviewees' busy schedules and overcome geographical barriers, making scheduling more convenient. Moreover, the online environment enabled the recording of the answers for later analysis.

The interviews were conducted as one-to-one and one-to-two. For company A, there was one participant, whereas companies B and C included two participants. This choice was made in agreement with the participants to ensure access to the most accurate and relevant knowledge within each company. Furthermore, it was mutually agreed that the interviewees' or the case companies' names would not be mentioned in the final report of the research.

3.4 Data analysis

According to Erikson & Kovalainen (2015, p. 142), analysing case study data always begins with analysing each case separately. Case-specific analysis is followed by cross-case analysis, where the differences and similarities between the selected cases are identified and analysed. Furthermore, the findings, including patterns of similarity or contrasts of differences, are compared to the theoretical background of the topic.

The process of analysing qualitative data happens when collecting the data as well as after, meaning that the interactive nature of data collection and analysis allows the researcher to identify specific themes, patterns and relationships already during the data collection phase (Saunders et al., 2008, p. 484). As described in the data collection section, the interviews were recorded and transcribed using the Teams application. It was a useful tool to transform verbal audio to writing, allowing better analysis and identification of certain themes. Furthermore, this enabled the easier creation of a summary of the findings of each case.

According to Erikson and Kovalainen (2015, p. 142), case study analyses can be structured in chronological or thematic order. Chronological order means structuring based on time, events, or actors, whereas thematic structure follows themes, issues, or problems. In this study, the analysis and case description are structured thematically, following the themes of sustainability, resilience, and supplier experience, which were also used in structuring the interviews. Thematic assembling of data was chosen because it focuses on building a case description from the data itself, rather than starting with existing theories. This approach allows for the identification of emerging themes and patterns.

3.5 Reliability and validity

Reliability stands for whether the used data collection methods lead to consistent findings (Saunders et al., 2008, p. 149). This means that if conducted again in different scenarios and by different researchers, similar results would be reached. If the findings remain similar, the used methods can be viewed as reliable, but if not, the research is not reliable. The most significant threats to research reliability are subject or participant error and bias, as well as observer error and bias.

The reliability of this research can be difficult to measure as it is based on qualitative methods. However, to avoid subject and participant error in this study, all of the interviews were conducted in the same way. All participants received the interview themes and questions beforehand to ensure a common understanding of the topic. Furthermore, subject and participant bias were considered when acquiring background information from the participants, including their role in the company and how they view and address the themes of the interview in their companies. This allowed an understanding of the perspectives of each participant. Although all interviewees were experts in either sustainability or supply chain management, there is always a possibility of different biases and varying perspectives on the subject.

Reliability issues can also originate from the observer's side. Keeping up with the structure and timing, as well as keeping the wording of questions the same during the interviews, can help avoid observer error (Saunders et al., 2008, p. 149 – 150). Observer bias can also be difficult to manage. To avoid observer bias, the researcher of this thesis aimed to be objective. Furthermore, as the interview was semi-structured, it allowed the participants to explain their answers in more detail, leaving less space for the observer's interpretations.

In addition to reliability, the quality of research is measured by its validity, which means being able to prove that the research methods can be used to provide answers to the set research questions (Saunders et al., 2008). The most significant threats to validity, according to Saunders and others (2008, p. 150 – 151), are history, testing, instrumentation, mortality, maturation, and ambiguity about causal direction. These factors include, for example, issues in using previous theory, accessing data, data processing methods, and generalisation of the research results.

In this study, validity is ensured by creating a thorough, critically analysed theoretical framework. The use of existing recent literature and key theoretical concepts of the topic of this thesis provides a strong foundation to which the results of the research can be compared. Moreover, relevant research questions and methods were used to investigate the cases. The methodological choices have been argued and explained. The cross-case analysis further increases the validity of this study. However, the small sample size of Finnish manufacturing companies used in this research affects the external validity of this study due to limited generalisability.

3.6 Research ethics

Research ethics should be considered when planning the research. According to Saunders and others (2007, p. 178), in business research, ethical concerns appear when the

researcher seeks to access organizations and individuals to gain, analyse and report the acquired data. Moreover, it is explained that research ethics reflect the researcher's behavioural appropriateness towards the research participants as well as how the research is formulated. This includes considering the design of the research as well as accessing, collecting, analysing, and reporting data in an ethical manner.

This research was conducted ethically. Firstly, in the initial stage of formulating this study, the researcher has committed to conducting a quality study that is based on existing knowledge. Second, when contacting the possible participants, the researcher provided information about the study's topic and highlighted the voluntary nature of participation. Furthermore, it was agreed with all interviewees that the study will be performed anonymously, meaning that neither the company's name nor the interviewees' names will be used. Thirdly, before the interview began, consent to record was requested, and the interviewee was reminded that the collected data would remain confidential and be used only for this study.

During the interview, the researcher behaved appropriately while creating a secure environment to answer the interview questions. Moreover, the researcher remained objective and avoided asking leading questions or comments. After the interviews, the collected data were analysed confidentially, and the participants' responses were reported accurately. Furthermore, after the completion of this research, the recorded written and verbal data are deleted to ensure that the data is solely used for this study.

4 Findings

In this chapter, the findings from all case company interviews are presented. Furthermore, all three cases are presented and analysed individually.

4.1 Introduction to case companies

Three case companies were chosen for this study. All three companies belong to the manufacturing industry and are forerunners in their specific sectors. To fit this study's exploratory nature, the companies were chosen to be of different sizes and at different stages in their sustainability journey. In the following table 1, the company and interviewees are presented. The company-specific information is from 2023.

Table 1. Case Company information.

Case Company	Employees	Turnover (MEUR)	Company is a supplier and a buyer	Interviewees
A	> 17 000	> 6 000	x	Sustainability manager
B	> 400	> 60	x	Supply chain manager & Sustainability manager
C	> 80	> 20	x	Sales logistics specialist & Purchasing trainee

4.2 Company A

Company A is a Finnish manufacturing company that offers innovative, sustainable technology and services. The company operates in over 70 countries and has more than 200 locations all over the world. Similarly, their supplier base is large and globally dispersed.

Sustainability is tightly integrated into Company A's strategy. The company is especially focused on decarbonization but has also paid attention to improving its social and economic impacts. The company aims to support its industry in decarbonization by investing in sustainable technologies while striving for carbon-neutral operations and a carbon-free product portfolio by 2030. The company is also committed to safety and ensuring a healthy workplace through high standards and safety initiatives. Furthermore, with its global operations, the company upholds common values and ethical principles to ensure responsible business conduct, especially in challenging regions. It promotes diversity, equal opportunities, and high ethical standards in daily operations.

To explore the impact of supplier experience development on sustainability and resilience at Company A, an interview was conducted with a sustainability manager from the company.

4.2.1 Sustainability

Research on sustainable supply chain management advises organizations to integrate sustainability into their strategy and culture (Friz & Ruel, 2024). Company A has followed this ideology as the company is now focusing on providing sustainable solutions for its customers. The interviewee of company A explained that previously, the company's focus had been on reducing plastics and emissions of its own operations. However, currently, the company is more focused on improving its supply chain sustainability, focusing on the scope 3 emissions.

Sustainable supply chain management research explains that drivers for increasing sustainability within supply chains can be internal or external. Based on the interview, company A has been mostly affected by internal drivers for sustainability. The sustainability manager explained that the company aims to be a “green company”. The company is committed to innovating and providing sustainable solutions for its customers and thereby extending sustainable development to the whole industry as well.

The interviewee emphasized the role of the supply chain and suppliers in enabling this sustainable development process. It was explained that both, especially larger-sized customers and suppliers, have become increasingly interested in sustainability and value the same commitment from their own customers and suppliers. This has been one of the additional drivers for company A. Additionally, regulation, for example, relating to emissions reporting requirements, was mentioned as a significant external driver for integrating sustainability into the company’s supply chain.

In contrast to the drivers for sustainability, there are also challenges that hinder the smooth integration of sustainability into supply chains. When asked about the challenges, company A identified the following:

> *“Sometimes, we have discussions about costs. If we have certain sustainability targets or requirements for suppliers or internally, who is going to pay them?”*

Costs still play an important role when it comes to making changes. The interviewee explained that discussions on developing sustainable practices with suppliers are often more effective when approached from the perspective that reducing waste also lowers costs. During the interview, it was also found that although the company is interested in developing sustainable practices with its suppliers, due to the global dispersion and differing sizes of suppliers, it highly depends on the supplier whether or not they are knowledgeable or interested in this type of collaboration. Small suppliers might not have the

resources, while large suppliers might have issues in the ability to change their widely used operations for just one customer.

Company A believes that collaboration is an important aspect when integrating sustainability into supply chains. The company has encountered many successes in developing sustainable practices with suppliers. As an example, they mentioned implementing a new way of working where the supplier is replacing plastic packaging with paper. The interviewee explained that the supplier was so pleased with this new, more sustainable approach that they started to implement it with all their customers. It was also found that even though company A is highly involved in collaborating to improve sustainability, for most of their suppliers, it is their first time participating in this type of development of sustainable practices. The sustainability manager of company A expressed the following:

> *“We have some sustainability-related requirements for our suppliers, such as delivery instructions, where we have added a quite big chapter related to sustainability. So that is in place, but most of the things we do are partnerships with suppliers. We go to suppliers, or they come to us, saying, "OK, we need support," or "We want to collaborate with you.”*

The interviewee explained that collaborative actions often originate from communication about an issue that needs to be solved. With its extensive experience in developing sustainable practices, the company actively supports its suppliers in implementing corrective and preventative measures to enhance sustainability. When discussing about collaborative actions towards a sustainable supply chain, the interviewee provided the following recommendation:

"We have many success stories together with our suppliers through collaboration. I think, especially in sustainability, it's very important to be open, respectful to each other, and to address the issues we have and how to solve them together."

Although the company has been a part of many success stories, some challenges were inevitable. As an example, the interviewee mentioned a large supplier company. However, despite its size, this supplier is not a major provider for Company A. Therefore, Company A has limited influence and fewer opportunities to collaborate with this supplier on sustainability-related changes. Large companies often cannot make exceptions to their ways of operating, especially when it would be for just one customer. Furthermore, integrating the new, more sustainable practices for all customers could prove to be difficult and costly.

Company A's sustainability target is to improve the sustainability of its supply chain, especially by reducing emissions. To assess progress toward its goals, the company must establish measurable criteria and effective evaluation methods. The interviewee explained that the company has different methods in place to assess the level of improvement, however, the interviewee was unable to elaborate on what these tools are. It was further explained that some tools are used to measure the scope 3 emissions, as the company's goal is to reduce supply chain-originated emissions by 25% by 2030. Another goal regarding supply chain sustainability is to reduce the use of plastics. However, measuring this progress is challenging, though the interviewee noted that some monitoring systems are in place. Even if the company has assessment tools in place, the interviewee highlights the suppliers' role in providing accurate data for them.

4.2.2 Resilience

Supply chain risks are unavoidable disruptions that impact all supply chains, hindering goals and reducing efficiency (Kumar et al., 2010, p. 3717). According to Company A's

interview, the greatest risks affecting their supply chain resilience include quality issues, complexity of the products and the supplied parts, as well as the global dispersion of suppliers and subsidiaries. It was explained that unnoticed quality issues in supplied goods reaching customers can damage the company's reputation. Moreover, the complexity of provided products can lead to further issues in quality, not to mention the risks related to finding reliable suppliers. The interviewee also mentioned that a recent supply chain risk is related to the changing global political environment, for example, in the USA and the issues caused by the pandemic:

> *"For example, the availability of raw materials for our components could be one of the risks. We saw this during COVID, and it remains a big risk for us. It is important to stay informed about this."*

According to the interviewee from Company A, collaboration is important for identifying and mitigating risks. However, they noted that suppliers are often reluctant to share specific reasons behind supply issues. Communication with suppliers regarding changes in delivery schedules or changes in manufacturing is needed to avoid issues in the long run. As an example of communication's role in mitigating supply chain risks, the interviewee outlined the following:

> *"There were significant changes in the company I visited last year, it was a major supplier that was replacing many machines. Since they produce all our spare parts, this could impact operations and affect our suppliers' on-time delivery to us. That could have quite a big impact also on our customers."*

The interviewee highlighted the importance of communication in supply chain risk management. However, they also noted that communication from the suppliers' side is sometimes quite vague, leading to issues between Company A and its customers,

particularly when it comes to delays. It was further explained that while communication about issues occurs, the full extent of the problem may only become clear after some time.

If issues with suppliers arise, the company has prepared risk management strategies to address and resolve them. For example, they have more than one supplier available to provide the needed parts, and they are located in different areas to avoid further issues caused by the location.

Ultimately, company A views that collaboration with suppliers enhances resilience. They highlight especially the importance of communicating about possible risks. However, according to the interviewee, suppliers do not seem too interested in collaborative risk management, especially when it comes to information sharing. Nevertheless, the company has a large supplier base, and the interest in joint risk mitigation can vary depending on the supplier.

4.2.3 Supplier experience

At company A, collaboration with suppliers regarding sustainable development is not only a key factor in incorporating sustainability into their supply chain but also a foundational element for a positive supplier experience. Similar to academic research (Tang, 2006; Seuring & Müller, 2008; Chen et al., 2017), company A believes that promoting collaboration can simultaneously improve the supplier experience, sustainability and resilience. The interviewee explained: "*I believe it is all about creating awareness and openly sharing information with each other*". Based on the interview, Company A believes that the key factors influencing their suppliers' experience include effective collaboration on sustainability, building relationships beyond transactions, being a reliable customer, and maintaining strong communication.

Building a strong relationship with suppliers influences the level of their experience. The interviewee from Company A described that, to strengthen and develop their buyer-supplier relationships, they conduct visits to both their own facilities and those of their suppliers. By inviting suppliers to visit, Company A can showcase its production process and explain the reasons behind specific requirements, such as technical or sustainability-related requests. It is also mentioned that supply development engineers are often in contact with suppliers and visit their premises. This enables further collaboration and mutual development of products and processes, which also affects the suppliers' experience. The interviewee expressed the following: "*So, we need to do it together, and my approach at least is that I don't see our suppliers really as a supplier, but really as a partner* ".

In supplier experience management at Company A, beyond maintaining and strengthening relationships, they also promote open communication about the cooperation experience. The interview revealed that Company A conducts regular supplier questionnaires on various topics, along with town hall-style Teams meetings where both parties share their experiences and cooperation results.

A question about the relationship between supplier experience and sustainability caused mixed opinions. Initially, the interviewee stated that suppliers' experiences working with them do not directly impact the company's sustainability efforts, as these are primarily driven by the company's internal strategy. However, the interviewee contemplated that while it may not have a significant impact, there is still an indirect influence. After further reflection, it was concluded that a good relationship with suppliers does support both the sustainability and resilience of the supply chain, though in an indirect way. The sustainability manager explained:

> *"Between us and our suppliers, it's a big effort to keep that relationship on a good level. So we are still focusing a lot on speed and especially the price of the components, but sometimes that's not the most important one from my point of view. "*

According to the interviewee, although there is a moderately questionable relationship between supplier experience and sustainability, there is a strong relationship between supplier experience and resilience. Based on the interview, financial impacts remain the most significant factor in enhancing supplier experience, leading to greater resilience. It was explained that if company A has unfavourable prices while another customer has better prices, this could significantly impact the availability of materials to company A. Additionally, another factor is the reliability of information provided to the supplier regarding production forecasting and plans to order. The interviewee provided the following example:

> *"Sometimes, we tell suppliers that we expect a growth of 10–20%, and then the supplier thinks, oh, this is great, and we are going to do good business with this company. And suddenly, the growth is not there. So maybe they did already some investments and all these kinds of things. So, this could also have quite a big impact on the relationship in the future. Next time, the supplier might say that we prefer to send it first to another customer instead of you."*

In conclusion, the interview highlighted Company A's goal of not only being sustainable themselves but also influencing their suppliers' mindset through collaboration and leading by example. It was also concluded that a supplier's experience holds value by the way it can improve the collaboration initiatives and thus increase sustainability and reduce risks in the supply chain. However, the relationship between supplier experience and resilience was evaluated to be stronger than the relationship between supplier experience and sustainability. Lastly, the interviewee envisioned that, in the future, digital technologies will play a more central role in managing and enhancing supplier relationships and experiences. These tools will expedite collaboration efforts, such as the development of sustainability practices.

4.3 Company B

Company B is a Finnish manufacturing company operating in the technology industry. It has global sales and deliveries extending to over fifty countries. The company has sites in Europe, Asia, and the USA. Furthermore, the company has a diverse and globally dispersed supplier base.

Company B has been interested in improving its sustainability for a while, but the company is still in the early steps of integrating sustainability into its supply chain. The company has set sustainability goals for each sustainability function: environmental, social, and economic. Efforts include reducing waste and energy consumption, promoting diversity and employee well-being, and incorporating circular economy solutions. By utilizing recycled materials and improving product recyclability, the company aims to enhance its overall sustainability.

From company B, there were two interviewees whose roles were supply chain manager and sustainability manager. Both participants explained that they are involved in supply chain management and in the process of improving its sustainability.

4.3.1 Sustainability

Baliga and others (2020) explained that drivers for sustainable supply chain management can include moral and instrumental motives. Based on the interview, company B's motivators for integrating sustainability into their supply chain rely more on instrumental motives compared to moral motivators. According to the sustainability manager, the constantly developing regulations, together with customer pressure, are one of the most significant external drivers for improving sustainability for the company. The regulation changes not only affect the sustainability strategies of organizations but can also be seen

in daily operations. In addition to these external forces, the interviewees highlighted the ability to manage risks and achieve a better competitive advantage as internal drivers.

Globalization and increased outsourcing have led to organizations having a globally dispersed and complex supplier base, making integrating sustainability more challenging (Seuring & Müller, 2008, p. 1704). The interviewees of company B identified global dispersion and suppliers' knowledge about sustainability as the key challenges of successfully integrating sustainability into their supply chain:

> *"As our company operates on a global level, there are areas where the regulation is at very different points… Some suppliers haven't necessarily even heard of the term sustainability."*

Moreover, the interviewees identified the availability of resources as an additional challenge. Both the company's internal resources for obtaining essential information about suppliers' sustainability and the suppliers' resources for integrating and advancing sustainable practices impact the supply chain's overall sustainability. Furthermore, it was explained that not only can the information availability be challenging, but also the validity of that information can be difficult to ensure. The interviewees highlighted the role of trust in these types of situations.

Even though suppliers might have a different understanding of sustainability, company B sees collaboration as an important factor for improvement. The interviewees explained that if suppliers are found to be lacking in the preferred level of sustainability, the company is open to discussing and collaborating to make improvements on both sides. The sustainability manager discussed the role of collaboration as follows:

> *"The development of responsibility shouldn't simply mean ending collaboration with someone while they continue their practices as before. Instead, a more*

reasonable approach is to have a conversation and ask: Have you considered doing this differently, or have you thought about alternative approaches?"

Furthermore, Company B shared practical ways of collaborating to improve sustainability. For example, establishing sustainable delivery methods and agreeing on larger, less frequent shipments, such as delivering once a week instead of multiple times, are effective ways to reduce the carbon footprint. However, sustainable supply chain management must consider all three aspects of sustainability. Thus, Company B emphasizes that while improving environmentally friendly methods is important, the economic aspect cannot be overlooked, and still, at times, it may take priority over environmental considerations.

4.3.2 Resilience

According to Walker and others (2004), resilience theory focuses on how systems such as supply chains can tolerate risks. Part of managing future disruptions is risk identification. Company B identified the volatility of global markets, availability of materials, and environmental disasters as possible risks to its supply chain. They further explained that these risks can be prepared for by maintaining a diverse and globally dispersed supplier base along with a strong reputation among suppliers. In addition to these risks, the interviewees highlighted the challenges supply chains face due to the recent pandemic and shifts in the political landscape.

When asked about the role of collaboration with suppliers in risk identification and mitigation, Company B evaluated the role to be significant. A practical example of the importance was:

"For example, by them providing a buffer stock for us, it often helps us in situations of scarcity. This way, we have a sort of buffer stock with the supplier, and similarly, they may have raw materials reserved specifically for us."

Additionally, Company B emphasized the importance of communication. As an example, it was mentioned that in the case that the production of a specific product is coming to an end, the supplier will notify of the last purchase date and the final order deadline, allowing the company to prepare for the change in its internal production. Ultimately, collaboration with suppliers provides a good overview of the whole supply chain, making preparation for disturbances easier.

4.3.3 Supplier experience

Company B emphasized the importance of collaboration in improving and maintaining supply chain sustainability and resilience and found it to be a foundational element for a good supplier experience as well. In Company B, supplier experience is viewed as something that happens in the background through communication and collaboration with the suppliers. It is not a specific concept that is included in the supply chain management strategy, however, the company representatives explained that supplier experience management happens during day-to-day work. The supply chain manager explained that:

> *"We aim to be a trustworthy customer that ensures timely payment of invoices and keeps its promises. If we place an order or make an agreement, we follow through on it."*

Supplier experience is highly connected to buyer-supplier relationship research, and according to Nyaga and others (2010), these collaborative relationships between suppliers and buyers are achieved through joint effort from both parties. Company B has reached a similar conclusion. It was explained that company B conducts regular evaluations of their suppliers, where things relating especially to sustainability and resilience are evaluated. Although the company does not gather feedback from their suppliers, these

evaluation discussions enable hearing the supplier's view in addition to mutually beginning to scout ways to improve the whole supply process and its sustainability together. It was further explained that continuous partnerships with known suppliers are better compared to moving to a new, unknown supplier. Thus, commitment to the relationship continuity and collaboration to improve the supplier's performance is a better option for the company.

In addition to collaboration, communication, commitment and trust, the interviewees wanted to highlight how it is important to be predictable. As Company B wishes predictability from their customers, similarly, their suppliers expect the same from them. This is apparent especially when companies start integrating sustainability into their supply chains. The sustainability manager explained that as a company, they ensure stability for their suppliers, avoiding sudden major changes so they can plan their production accordingly. Furthermore, it was said that the same applies to sustainable development, meaning that they shouldn't come as sudden demands. The sustainability manager provided the following example:

> *"One of our customers provided us with a roadmap, giving us two years to adapt to certain changes with the expectation that we would comply. They informed that in two years, they wish that we could meet these requirements, in three to five years, the expectation becomes stronger, and by seven years, it will likely be a firm requirement."*

In conclusion, Company B views supplier experience as an important factor that affects the ability to improve supply chain sustainability and risk management. As practical examples, they mentioned that if suppliers have positive experiences with the buyer company, they are more inclined to participate in developing more sustainable practices. Furthermore, an example from the resilience point of view is the "preferred customer" view also researched by Vos and others (2016). The supply chain manager explained that

during times of material scarcity, suppliers might be happier to provide material to those customers with whom they have a good relationship and who are known for keeping their promises regarding orders and paying bills on time.

4.4 Company C

Company C is a Finnish manufacturing company that produces high-quality products and services for almost all of the world's major industries. Manufacturing has been kept domestic, however, most of the products and services are exported to the Nordics, Europe, China and the Americas. The company operates as a key supplier to numerous Finnish and international businesses while efficiently managing its own global supply chains.

While being the smallest of the case companies based on size, company C has been able to successfully integrate sustainability into its production and operations. The company has integrated sustainability as part of its strategy, including all three aspects of it. The company is committed to sustainable growth with respect for nature, providing high-quality and intelligent product and service solutions while also taking care of human rights and stakeholders. Furthermore, the company has achieved carbon neutrality in its scope 1 and scope 2 emissions. The next step for the company is to focus on scope 3 emissions that originate from its supply chain. The company has already started to think about integrating more sustainable practices into its supply chain, however, they are still at the beginning of that journey.

From company C, a sales logistics specialist and a purchasing trainee participated in the interview. The sales logistics specialist is highly experienced in developing sustainable practices in the company, while they were also able to provide insights into their supply chain operations, together with the purchasing trainee.

4.4.1 Sustainability

Company C has been interested in sustainability for a while and has conducted several actions to improve its sustainability, however, these sustainable improvements haven't quite reached the supply chain level yet, for which there can be many reasons. Ahi & Searcy (2015, p. 2887) emphasize that the drivers and barriers are company specific. The interviewee from company C explained that the most significant drivers for integrating sustainability are the company's internal determination and customer requirements and guidelines.

As barriers, the interviewee mentioned time and the fact that people tend to stick to familiar ways of doing things. Time is a challenge for smaller companies, as employees must balance their daily tasks with the need to explore and develop more sustainable ways of working. Conducting research and acquiring the necessary knowledge takes time, which can be difficult to allocate. Another issue that was revealed during the interview is the difficulty of finding suppliers with more sustainable alternatives. As an example, the interviewee mentioned their efforts to source alternative packaging materials to replace plastic. Initially, they were told that no suitable alternatives existed, making the search particularly challenging. However, after extensive effort, they successfully found a paper- and cellulose-based solution. The sales logistics specialist explained:

> *"In a way, you have to put in more effort to find sustainable solutions, so it's a question of whether you're willing to do that. But that effort is usually a one-time thing, and after that, it works smoothly."*

In addition to time, set ways of working, and challenges in sustainable sourcing, the interviewees mention that not all suppliers are interested in improving their sustainability. Attitudes toward sustainability still vary from positive to negative, and knowledge of sustainability issues differs widely, especially among suppliers outside Europe. The sales logistics specialist emphasises that they are unable to make significant changes by

themselves. Without collaboration, integrating sustainability into the supply chain becomes difficult. According to the interviewee, they have noticed that developing more sustainable practices requires a lot of time, effort, scheduling, and cooperation with the collaborating party. When describing the role of collaboration in developing sustainable ways of working, the interviewee states that: "*To be successful, active participation from both sides is needed*".

The company has also noted that many smaller customers and suppliers still view the high initial costs as a barrier to participating in sustainable development. The interviewee described the situation as follows:

> *"Not everyone is ready for this, as I mentioned. We also approach it by first engaging with those who already have this [sustainable development] on their agenda, because initiating change in a company that hasn't yet recognized its importance can be quite demanding. However, many companies do have this on their agenda, but a key barrier is whether they see this process as an opportunity to enhance efficiency and drive cost-effective change, which is now possible, or if they prefer to implement it with minimal effort just to get it done."*

Even though there are challenges in integrating sustainability into supply chains, Company C is committed to sustainable improvement. The company has especially shifted their focus on supplier selection. The company believes that it is easier to develop supply chain sustainability when the suppliers share similar values, especially when it comes to sustainability. The company has also invested in a digital platform that facilitates the collection of suppliers' sustainability data. However, it still requires effort from suppliers to provide the necessary information. The interview led to a perception that achieving supply chain sustainability is often more challenging than ensuring the sustainability of company-owned operations.

4.4.2 Resilience

An adequate informational supply chain structure is one of the key dimensions of resilient supply chains. According to Holgado & Neiss (2023), the level of information flow affects the supply chain's dynamism and adaptability. Similarly, company C sees open communication as an important factor for risk mitigation.

According to the company C interviewees, the most considerable risks affecting supply chains include a lack of information, especially regarding big changes, delivery issues, packing issues, and changes in delivery schedules. The interviewees explained that, similarly to sustainability issues, resilience requires active communication and collaboration. For example, if significant changes are planned in a supplier's production, delivery, or other processes, it is important to communicate these to the customer in advance. Thus, allowing the customers to prepare for the changes. Furthermore, there are multiple risks involved in the delivery of goods. Firstly, the interviewee expressed the importance of good and sustainable packaging, as insufficient packaging can lead to breakage and product quality issues. Second, changes in delivery schedules can create challenges for suppliers, customers, and their clients. However, effective communication can help mitigate these issues.

In addition to risks originating from operational supply chain issues, Company C has also recognized sustainability factors that affect the resilience of its supply chain. For example, the company has collaborated with both their suppliers and customers to decrease carbon emissions that originate from delivery processes. Instead of shipping or receiving goods daily, the company has set scheduled delivery days each week. Additionally, they have focused on enhancing the sustainability and resilience of their flow of goods. For example, Company C has asked suppliers to use sustainable packaging, as goods from this supplier are sent directly to their customer, who also requires sustainable actions

from Company C. This allows Company C to maintain its sustainable practices while encouraging others to do the same. The company representative described:

> *"Active inquiry, awareness-raising, and providing information to suppliers are important. They may already have more responsible practices in place, but if they are unaware of our requirements, they might not implement them for us."*

Company C views collaboration with suppliers as an important aspect of supply chain risk mitigation. The company representative emphasizes the role of frequent communication in understanding what possible risks and strategies for risk identification and mitigation could be. The interviewee explains that collaboration aids especially with strategic planning, which enables the development of cost-effective ways of working.

4.4.3 Supplier experience

Recent disruptions like COVID-19 and the Ukraine war have challenged global supply chains, leading to an increasing need to maintain good relationships with suppliers by providing a positive supplier experience (Hudnurkar et al., 2024). Company C identifies the key factors influencing supplier experience as effective communication, availability, collaborative improvement, building relationships beyond transactions, and trust. It was explained that a smooth flow of information between the buyer and suppliers helps build strong relationships. This, in turn, builds trust and improves the suppliers' experience in working with the buyer.

Company C is interested in improving supplier relationship management alongside the sustainability of its supply chain. According to the interview, the company has implemented a supplier relationship management platform designed to improve information flow between buyers and suppliers. This platform enables smoother communication with a particular focus on features for providing and collecting sustainability-related data.

Although the company itself is committed to improving sustainability by setting targets for scope 3 emissions, the required changes to processes and supplier requirements might not be appreciated among all suppliers. Some suppliers can demand excessive reasoning for why Company C requires certain things concerning sustainability. These differences in values can also affect the supplier experience as explained by the interviewee:

> *"Some suppliers may even see it as an unpleasant demand when we require them to make certain sustainability-related changes. – – It is surprising how difficult it is to get suppliers on board. So, I can see that we might not always be perceived as the most agreeable party in this process."*

Company C has recognized the concept of a "preferred customer" in both its roles, as a customer and as a supplier. The interviewee mentions having over 40 years of collaborative relationships with some suppliers, which puts them in a stronger position compared to other customers. Moreover, the interviewee said that as a supplier, they also have a class division from A to C for their customers. This means that in a case of having to regulate the use of materials or production, customers in class A are the priority.

Although the interview highlights the importance of communication and relationships in shaping the supplier experience, the interviewee explains that, in this case, it is the financial aspect that determines which customers are considered more important than others. It was explained that the supplier chooses who they want to sell their goods to. However, it is typically the customer who makes the largest purchases who receives the best service.

In conclusion, Company C sees sustainability as a driving force in today's business environment. The company especially highlights the importance of communicating with

suppliers to identify areas for development. The company also sees supplier experience as an opportunity to drive sustainable development and enhance resilience. However, the company has noticed that although relationship management is important in up-holding positive supplier experience, at the end of the day, financial impacts remain the most influential factor. It is emphasized that while collaboration is important, it is not always easy: "*A lot of time and discussions are needed to establish common goals with all suppliers*".

5 Cross-case analysis

In this chapter, the findings are discussed and analyzed. The findings are analyzed with a cross-case analysis method, where the similarities and differences between each case are compared. The cross-case comparison is conducted thematically.

5.1 Drivers and barriers to supply chain sustainability

Supply chain sustainability has been an actively researched topic since the 2000s and since then it has increasingly gained attention from professionals and organizations (Touboulic & Walker, 2015). Even though companies are increasingly interested in integrating sustainability into their operations, supply chains tend to remain the last focus for sustainable development due to the variety of challenges that companies can face. Sustainable supply chain management can prove to be more difficult compared to traditional supply chain management because it must address a wider range of issues including ensuring the flow of materials, information, and capital, while also considering the triple-bottom-line of sustainability (Seuring & Müller, 2008, p. 1700; Tatichhi et al., 2013). However, regardless of the complexity, organizations are motivated to increase supply chain sustainability due to various company-specific reasons.

5.1.1 Drivers

The findings of this thesis articulate that each company has their own initial reasons for improving its supply chain sustainability. However, there are also common patterns that drive companies towards sustainability. The following table 2 presents the findings from each individual case company and highlights the common patterns that surfaced. In the table, the drivers mentioned by the case company are marked with X.

Table 2. Findings of sustainability drivers.

Drivers	Company A	Company B	Company C
Commitment to sustainability	X		X
Competitive advantage		X	
Customer requirement	X	X	X
Products	X		
Regulation	X	X	
Risk management		X	
Strategy	X		
Supplier requirement	X		

The findings from the interviews with case companies provided a list of drivers that the interviewees have identified as factors that drive their companies towards more sustainable supply chains. Customer requirement for sustainable practices was identified as a significant driver by all three companies. Similarly, Shafique and others (2017, p. 93) have identified customer pressure as an external force that pressures organizations to implement more sustainable practices. Based on the interviews, customers, especially those of larger size, have been requiring sustainability from the case companies. Thus, a certain level of sustainability is often required from their suppliers as well. This finding has also been made in previous research. For example, Saeed and Kersten (2019, p. 13) argued that companies often start the implementation of sustainability initiatives such as manufacturing more sustainable products to meet their customers' needs. This requires the supplier company to forward the sustainability requests to their own suppliers as well.

Surprisingly, customer requirement was the only diver that all three case companies shared. However, while customer pressure was identified as a significant driver by all three companies, both companies A and B mentioned that regulation is another significant force. Previous research has also supported the role of legislation in increasing the sustainable development of business in general. Different local and global regulation

bodies provide incentives and pressures to implement sustainability in companies' daily activities, including supply chain practises (Shafique et al., 2017, p. 97; Ahi & Searcy, 2015, p. 2884). Companies are pressured to stay up to date on sustainability regulations since non-compliance can lead to financial and reputational harm (Ahi & Searcy, 2015, p. 2887). Although only case companies A and B identified regulation as a key driver of sustainability, all companies emphasized the importance of collecting sustainability data from their supply chain and suppliers to comply with legislation and support their sustainability initiatives.

The second driver shared by two case companies is the company's internal commitment to becoming more sustainable. Both case companies A and C share the ideal of becoming a "green company". Company A has identified itself as a company that provides sustainable solutions for its customers, while company C has already successfully decreased the carbon footprint of their own operations to a minimum. According to Baliga and others (2020, p. 351), organizational values are strong motivators for increasing sustainability in supply chains. Research has found that moral motivators and organizational culture affect the company's interest in manufacturing more sustainable products and creating partnerships with other sustainably conscious organizations (Saeed & Kresten, 2019, p. 15). Similarly, value-based motivators are leading companies A and C to extend sustainability initiatives from their own operations to the whole supply chain.

In addition to these three commonly shared drivers, the companies also mentioned company-specific drivers that the other case companies did not identify. Company A, which has the most experience in sustainable development, mentioned that its company-specific drivers relate not only to building a sustainable company strategy and product portfolio but also to meeting the sustainability objectives of both its customers and suppliers. Company B's company-specific drivers are being able to anticipate and manage sustainability-related risks and gain a competitive advantage over their less sustainable competitors. In contrast to companies A and B's variety of reasons to become more sustainable,

company C's motivation mainly relies on the company's internal commitment to the goal of creating a sustainable supply chain to complement their other sustainable operations.

The theoretical background created for this study listed similar drivers. However, the research on drivers for sustainable supply chains identified additional drivers that none of the case companies mentioned. For example, none of the case companies discussed financial impacts and different societal factors as drivers. Previous research claims that some companies see sustainability as a door to gaining positive economic impacts such as cost reductions, rewards and incentives, more efficient use of resources, and attracting human capital with better expertise (Chaudhari et al., 2020, p. 286; Saeed & Kresten, 2019, p. 16). Therefore, some companies consider economic impacts as a driver for improved sustainability. Furthermore, the research indicates that societal pressures, such as media scrutiny and critical reviews from NGOs, influence organizations to integrate sustainability into their operations (Mani et al., 2015, p. 1021 – 1022). However, these perspectives were not brought up during the discussions with the interviewees in this study.

5.1.2 Barriers

The research for this thesis revealed that while companies are motivated to improve supply chain sustainability, they must first overcome multiple barriers to achieve it. Table 3 below lists the barriers identified from the interviews, with an "X" indicating their applicability to the case company. Similarly to the identification of drivers for sustainability, the barriers also highly vary based on the company in question. Consistent with previous research, this study also identified similar barriers encountered by the case companies.

Table 3. Findings of barriers to sustainability.

Barriers	Company A	Company B	Company C
Availability of information from suppliers		X	
Availability of internal resources		X	
Availability of suppliers' resources	X	X	
Change resistance			X
Internal knowledge of sustainability			X
Suppliers' global disparison	X	X	
Suppliers' interest towards sustainability	X	X	X
Suppliers' knowledge of sustainability	X	X	X
Sustainable sourcing issues			X
Time			X

The findings of this thesis indicate that smaller companies identify more challenges compared to larger-sized companies when it comes to integrating sustainability into supply chains. This was discovered during the interviews, where the smaller companies, B and C, identified and discussed six different barriers, while the largest company, A, identified only four. Academics have also noted that organizational characteristics influence a company's ability to implement sustainability. For example, Saeed and Kersten (2019) argue that an organization's ability to implement sustainability initiatives is influenced by factors such as its size, industry sector, position in the supply chain, geographical location, degree of internationalization, and current sustainability performance. As the companies chosen for this study are highly different from each other, the differences in the number of barriers can be explained by the unique organizational characteristics.

Table 3 shows that all case companies have identified similar challenges when integrating sustainability into their supply chains. For example, as seen in the table, all three case companies argued that the suppliers' knowledge and interest in sustainability issues

affect the case company's ability to improve supply chain sustainability. The case company interviews revealed that, in many instances, suppliers are unaware of the concept of sustainability or the reasons behind the case company's efforts to become more sustainable when discussing sustainability issues. Similarly, Govindan and others (2014) identified a lack of knowledge as a major barrier to supply chain sustainability due to suppliers' unawareness of the environmental benefits, regulations, and the importance of adopting green practices. Moreover, all case companies highlighted their responsibility to raise awareness of sustainability issues among their suppliers and stressed the importance of collaboration to overcome this knowledge barrier.

The next commonly identified barriers are related to resource availability. Two of the three case companies explained that their ability to collaborate with suppliers on creating a more sustainable supply chain is hindered by the limited resources that suppliers can allocate for sustainability improvements in their production. Additionally, company B identified the availability of internal financial resources as a barrier to sustainable development. Furthermore, company C identified limited time resources as a factor that makes developing sustainable practices challenging.

These findings on resource barriers follow the previous literature on the topic, where financial aspects are found to hinder sustainable development due to the high initial investment and low returns in implementing sustainable practices (Govindan et al., 2014, p. 558 – 559). Furthermore, time and human capital can also be viewed as resources that not all focal companies or suppliers can allocate for sustainable development. The development and adaptation of sustainability initiatives and systems require knowledgeable human capital and time, resources that not all companies, especially smaller ones, have. However, it cannot be concluded that larger companies are ultimately in a better position to make sustainable changes. For example, the interview with company A highlighted the issues that larger companies face when making more sustainable changes to their operations. It was found that large companies are less flexible in making changes,

as it is often impractical to make exceptions for just one customer, and extending the change to all customers can be very expensive.

Research has also identified the complexity of global supply chains as a barrier to sustainable supply chain development. Globalization and the increasing demand for outsourcing have resulted in longer and more complex supply chains, which cause challenges for buyer companies in managing sustainable supply chains due to the need for greater effort and resources (Seuring & Müller, 2008, p. 1704). Similar findings were made from the interviews in this thesis. Companies A and B recognized that the global complexity of their supply chains can cause issues when trying to implement sustainable practices. For example, company B specified that regulations regarding sustainability in different locations can be very different, which can lead to sustainability issues and differing views on the importance of it.

Lastly, the research of this thesis found additional company-specific barriers that were not shared between the case companies. Company C identified change resistance and issues in sustainable sourcing as additional barriers to sustainability. The company representative explained that people tend to stick to the common and already known ways of working, which hinders the development of sustainable ways of working. Furthermore, the difficulty of finding sustainable alternatives for outsourced goods creates more challenges in improving supply chain sustainability. Additionally, company B mentioned the issues in information flow with suppliers as a cause for challenges. Difficulties in sustainable sourcing and issues in sustainability-related information flow have been noticed in previous research as well (Govindan et al., 2014; Seuring & Müller, 2008). However, previous research on barriers has not focused as specifically on the internal attitudes of the focal company's employees, especially in comparison to studies on drivers, which emphasize the effects of positive attitudes.

The theoretical framework for barriers to sustainability integration was built around four key barrier groups identified in the existing literature. These categories were the

complexity of supply chains, financial impacts, knowledge and technology. The findings of this thesis revealed similarities with all categories except for the technology barriers. None of the interviewees saw technology as a barrier to integrating sustainability into their supply chains. Previous literature shows that a lack of technological capabilities can hinder the adaptation of sustainable practices (Gonçalves et al., 2024). However, since the case companies in this study primarily operate in the technology sector, it is likely that they have not encountered issues with technological capabilities. Instead, technological capabilities can be seen as enablers for sustainable improvements as they enable more efficient processes with automation, sharing and assessing sustainability-related information with IT systems, and creating digital platforms that enable standardized practices across the supply chains (Dao et al., 2011, p. 68 – 69).

5.2 The role of collaboration in resilient supply chains

The second secondary research question of this study was designed to explore the role of collaboration in enhancing resilience. The findings from interviews with all case companies have been listed in table 4 below. The responses were analyzed based on three themes: identified supply chain risks, risk management strategies, and the role of collaboration in enhancing supply chain resilience.

Table 4. Findings of resilience.

Resilience	Company A	Company B	Company C
Risks	Quality issues Complex products and supplied goods Reputation Reliability of suppliers Political landscape Pandemics Availability of materials	Volatility of global markets Availability of materials Environmental disasters Pandemics Political landscape	Lack of information about changes Delivery issues Quality issues Packaging issues Scheduling issues (delivery) Unsustainable ways of working
Risk management	Communication about changes and issues with suppliers Backup suppliers Globally diversified supplier base	Backup suppliers Globally diversified supplier base Strong supplier relationships Buffer stock Effective communication	Active communication Raising awareness of sustainability issues Collaboration to find sustainable and effective ways of working
View on collaboration's role on supply chain risk management	Collaboration is important, especially communication. However, suppliers are often reluctant to share information.	Collaboration is a key factor in risk management. Collaborative risk management with suppliers is symbiotic and benefits both parties.	Collaboration is important for risk management. Active communication between buyers and suppliers helps with risk identification.

5.2.1 Supply chain risks

Academic research on resilient supply chains has applied resilience theory to explore how systems, such as supply chains, can tolerate and adapt to risks while maintaining their core functions of ensuring the smooth flow of materials, information, and capital (Walker et al., 2004). This implies that the ability to recognize and manage risks is one of the core capabilities of resilient supply chains. Furthermore, with the growing focus on sustainable supply chain management, supply chains are no longer only impacted by traditional risks. The range of risks has also expanded to include sustainability-related issues.

The case companies identified multiple risks that affect their supply chains. Based on the interviewees' responses, several common risks were identified, alongside some unique challenges. Regarding the typical supply-related risks the most common ones highlighted by existing literature include poor quality of materials, incorrect quantities of goods, and the lack of raw materials (Wang et al., 2018). Similarly, Companies A and B identified fluctuating material availability and market volatility as major risks, which became

especially evident during COVID-19 and the start of the war in Ukraine. Pandemics and shifts in political environments remain plausible risks for the future.

According to Kumar and others (2010, p. 3723), the quality of the outsourced materials is a risk factor generally associated with the suppliers. Similarly, Companies A and C identified the quality of supplied goods as a major risk. They argued that supplier-provided materials with low quality could lead to further quality issues in their internal production, particularly when dealing with complex technology. Moreover, if these issues extend to end customers, they could cause reputational and financial damage to the focal company. However, quality issues are not always the result of faulty production by the supplier as they can also appear during the delivery process.

The case company interviews also highlighted risks associated with delivery challenges and communication issues. In supply chain risk management research, delivery and logistics risks have been found to include environmental issues, negligent maintenance of delivery systems, short lead time and issues in scheduling (Wang et al., 2018). Similarly, Company C emphasized that disruptions in delivery and packaging can impact not only the buyer company's production and business but also create issues in their customers' projects, ultimately affecting the entire supply chain. Companies A and B did not express significant concern about delivery-related risks, as they were not specifically mentioned. However, it can be acknowledged that delivery processes have an important role in ensuring material availability. Additionally, all three companies highlighted the importance of communication in identifying these risks. Companies A and C specifically emphasized the need for accurate and reliable information from their suppliers to avoid risks originating from information gaps, whether it is about the availability of materials, production changes or delivery.

While typical supply chain risks cause disruptions in material flow, sustainability-related risks are assessed through stakeholder reactions and can result in reputational damage (Hoffman et al., 2014). Company C recognized unsustainable work practices as a risk to

their supply chain resilience, while Company B identified environmental disasters causing disruptions to theirs. Company C and B's views on sustainability-related risks mostly relate to the issues that eighter affect or are affected by delivery processes. In an interview with Company C, they explained that their global delivery and outsourcing operations are a major source of emissions in their supply chain. To address this, they have started implementing sustainable changes, such as reducing plastic packaging and limiting delivery days to a few per week for both customers and suppliers. In contrast, Company B sees external sustainability issues such as environmental disasters as a risk to their delivery systems. With globally dispersed suppliers using various delivery methods, their supply chain can be disrupted by storms, heavy rains, or fires.

Based on the results of this study, supply chains are affected by a set of unique risks. While there are some commonly shared issues that most supply chain managers must consider, certain risks are perceived as more critical by some organizations than by others. For example, Company C prioritizes delivery-related risks, while Companies A and B consider global supply chain issues more critical. Additionally, companies B and C are more concerned about sustainability-related supply chain risks compared to company A. However, these differences may be affected by the organizational characteristics, level of sustainability, and the interviewees' positions.

5.2.2 Collaboration and risk management

Resilient supply chains' risk management approaches can be attribute-focused such as Ponis and Koronis (2012) view or function-focused which is described by Tang (2006). However, both views emphasise the importance of communication and collaboration between supply chain partners. The previous literature on supply chain resilience has also identified three phases of risk management, which are risk anticipation (pre-disruption), resistance (during disruption), and recovery and response (post-disruption) phases (Shishodia et al., 2023; Kamalahmadi & Parast, 2016). Collaboration and communication

are evident in all three phases and thus can be considered foundational elements for supply chain risk management.

Consistent with the existing literature, the case companies in this study identified both typical and sustainability-related risks and disruptions affecting supply chain resilience. The case companies also expressed strategies on how to address these possible risks. For example, all three case companies emphasised the importance of communication in risk identification and mitigation. It was explained that active and effective communication with suppliers about changes in the supply process is essential for preparation and risk prevention. Similarly, academics in the field of supply chain resilience have recognized the increasing importance of visibility, which can be achieved by transparently sharing accurate and reliable information (Boström, et al., 2015; Silva & Ruel, 2022), leading to better-informed decision-making regarding risks (Paul et al., 2023).

Supply chain vulnerability to risks happens on a network level (Durach et al., 2015, p. 130). Thus, companies A and B highlighted the importance of having a globally diverse supplier base. Similarly, to the findings in previous research, Companies A and B have recognized the importance of maintaining a diverse supplier base, ideally consisting of multiple sustainably operating organizations. This approach reduces reliance on a single supplier and helps distribute risks more evenly (Tang, 2006). Therefore, it is valuable to build collaborative relationships with more than one supplier to ensure the continuous availability of materials from multiple suppliers.

Lastly, all three interviews also highlighted the importance of collaborating with suppliers. Based on the interview and Li and others' (2015) findings, building strong, reliable relationships with suppliers through collaboration creates a solid foundation for open communication, buffer stock availability, and sustainable improvements. According to Grimm and others (2016, p. 1972), there are multiple ways to support collaborative relationships with suppliers, including workshops, training programs, and employee transfers. Similarly, Company A has recognized the value of these collaborative actions. In the

interview, it was explained that the company regularly arranges reciprocal visits with suppliers, and its engineers often visit suppliers to participate in joint product development. Company C in turn believes in collaboration with suppliers to develop mutual sustainable improvements, while Company B trusts in the risk management opportunities that arise from these collaborations by building trust between both parties.

The overall takeaway from the case company interviews is that collaboration with suppliers plays a crucial role in effective risk management. It was explained that arranging suitable collaboration methods can sometimes be challenging, and there is often a reluctance to openly share information, particularly regarding issues on the supplier's side. Thus, by building good relationships based on mutual benefits and trust, the companies enable more open communication with the suppliers, leading to better risk management capabilities.

5.3 Supplier experience development

The last secondary research question focuses on understanding the role of supplier experience and how supplier experience development can enhance an organization's supply chain sustainability and resilience. In table 5 below, the findings for this research question are illustrated. The findings are analyzed by two themes. The first theme aims to understand what the key elements that affect supplier experience are. The second theme explores ways to develop supplier experience.

Table 5. Findings of supplier experience.

Supplier Experience	Company A	Company B	Company C
Key elements affecting supplier experience	Collaboration Ability to improve sustainability Reliability Communication Financial aspects	Reliability Paying invoices on time Providing feedback Communication Commitment Predictability	Effective communication Availability Collaborative improvement Relationships beyond transactions Reliability Trust
Supplier experience development strategies	Company visits Supplier visits Evaluation sessions Consistent communication Relationship beyond transactions	Feedback sessions Collaboration towards improvement Making strategies/guides for suppliers about future changes	Implementing supplier relationship management tools to improve operational practices and information flow

5.3.1 Key elements

Organizations are increasingly interested in building collaborative relationships with suppliers to increase supply chain productivity, flexibility, and sustainability (Nyaga et al., 2010, p. 101). Moreover, recent global disruptions have highlighted the importance of upholding good relationships with critical suppliers (Hudnurkar et al., 2024). Thus, organizations should focus on developing their supplier's experience to ensure a resilient and sustainable supply chain performance. The term "supplier experience" is still relatively unfamiliar in both academic research and industry practices. However, academic research explores similar concepts through studies on buyer-supplier relationships and supplier satisfaction, while professionals deal with the topic in their daily work.

Academic research has found that the most effective factors for supplier experience include operational excellence, payment practices, communication, collaboration, and technology (Hüttinger et al., 2012; Ganguly & Roy, 2021). The findings of this study are mainly aligned with the previous academic research. For example, Hüttinger and others (2014) argued operational excellence to be one of the most influential factors for supplier satisfaction. This means that suppliers value effective working methods and strict adherence to agreed terms of contracts (Ganguly & Roy, 2021, p. 251). Consistent with this finding, all three case companies in this study described reliability to be a key element affecting their suppliers' experience. All case companies emphasized the importance of keeping promises, whether related to placing orders, providing forecasts for future material needs, or adhering to agreed payment terms.

In addition to operational efficiency, previous research has found that suppliers consider smooth cooperation regarding communication, conflict management, problem resolution, and sharing information as important factors impacting their experience (Hüttinger et al., 2012, p. 1201). Similarly, all companies A, B and C explained that communication abilities are important for their suppliers. For example, Company C explained that their suppliers value having company contacts easily available, and as suppliers, they appreciate the same level of accessibility from their customers. Furthermore, Companies A and

B have found that their suppliers value open communication and mutual feedback, which helps both parties improve their collaborative efforts. These findings align with the previous literature, where it is found that a buyer company's willingness to communicate openly improves supplier experience and buyer-supplier interactions (Essig & Amann, 2009, p. 105).

Companies A and C also highlighted the element of collaboration. It was explained that both companies have received positive feedback from their suppliers regarding their collaborative efforts, particularly regarding sustainable improvements. The theoretical background of this study has also highlighted the role of collaboration in providing a positive supplier experience (Essig & Amann, 2009; Hüttinger et al., 2012). Company B did not find collaboration abilities to be significantly affecting their suppliers' experience. However, the company representatives wanted to point out that their buyer-supplier relationships are impacted by Company B's ability to show commitment to the relationship and achievement of mutual benefits. Similarly, Company C and A believe in building relationships that go beyond transactional interactions.

The last category of factors relates to technology. Research shows that suppliers' ability to participate in technological development and technology's impacts on operational efficiency can affect supplier experience (Hudnurkar et al., 2024; Ganguly & Roy, 2021). This finding was not specifically addressed in this study. Collaborative capabilities were found to influence supplier experience, though this was discussed primarily from the perspective of sustainable development. Company C mentioned that they have implemented an online platform to enhance their buyer-supplier relationship management. However, this action has not yet been found to impact their supplier experience.

Although operational efficiency, payment practices, communication, collaboration, and technological factors may affect supplier experience, based on the interviews of this study, financial aspects remain the most influential factor. It was argued that not only does paying invoices on time affect the relationship between buyers and suppliers, but

the customers who buy the most and have the greatest financial impact on the supplier are usually the most valued partners. Since all case companies act as both suppliers and buyers, they explained that, as suppliers, they consider their largest customers the most important and most likely the same goes for their suppliers as well.

5.3.2 Supplier experience development

Based on interviews with the case companies, reliability, communication, collaboration and financial factors are found to be the key elements impacting supplier experience. Similarly, Rajala and others (2025) found that supplier experience is a combination of communication, relational practices, technology, and the use of power. Thus, to enhance supplier experience, companies should implement strategies that strengthen these key elements.

The case companies of this study provided strategic suggestions for strengthening buyer-supplier relationships and supplier experience. The findings show that Companies A and B have focused more on strategies that improve relational practices, while Company C's suggestions are focused on improving operational practices. Based on company C's interview, they believe that supplier experience can be developed by the implementation of technological tools that aid in improving operational practices and information flow along the supply chain. The implementation of IT tools allows improved communication and automation of certain processes, releasing more time for collaborative initiatives, such as sustainability efforts. This concept of increasing the use of technological tools to improve operational and relational efficiency is also considered by previous literature (Ganguly and Roy, 2021). However, in this study, Company C was the only one to mention it as a strategy for supplier experience development.

Companies A and B focused more on strategies for improving relational practices, including communication and relationship management. Company A explained that they develop supplier experience through company and supplier visits, regular evaluation

sessions, consistent communication, and building relationships that extend beyond transactions. Company B explained that they develop supplier experience through feedback sessions, collaborative efforts toward improvement, and creating strategic guidelines to help suppliers adapt to future changes. While both companies prioritize communication and collaboration, Company A places more emphasis on direct interaction, whereas Company B focuses on structured guidance and future-oriented planning.

As the results show, each case company has a slightly different approach to supplier experience development. The varying ideas might be sourced from the fact that each supply chain is unique and is composed of multiple different buyer-supplier relationships. Although the case companies have identified common factors influencing supplier experience and have implemented strategies to enhance them, their relationships with individual suppliers vary. This means that strategies that improve one supplier's experience might negatively affect another's. This became evident during the interview with Company C, where it was noted that while some suppliers appreciate the company's commitment to collaborating on a more sustainable supply chain, others perceive it as negative pressure. Therefore, supplier experience development requires deep knowledge of the different relationships within the supply chain, which can be gained through active communication.

5.4 Supplier experience's role in supply chain sustainability and resilience

The primary research question of this study is "How do Finnish manufacturing companies improve sustainability and resilience through supplier experience development?". The interviewees in this study were asked to analyse the role of supplier experience in sustainability and resilience, as well as how they use it to enhance supply chain sustainability and resilience. The following table 6 showcases the findings from each interview.

Table 6. Findings of the connection of supplier experience, SC sustainability and resilience.

Supplier Experience	Company A	Company B	Company C
Supplier experience's role on sustainability	Supplier experience has an indirect effect on sustainability as sustainability is mostly initiated within the company and its strategy.	Supplier experience affects sustainability initiatives. It is easier to start developing sustainability with a reliable partner.	Providing good experience improves relationships, which leads to increasing opportunities to improve sustainability Too strict sustainability guidelines might negatively affect supplier experience
Supplier experience's role on resilience	Supplier experience affects resilience. For example, by becoming a preferred customer.	Supplier experience affects resilience. For example, by the ability to become a preferred customer and to gain information from suppliers to prepare for possible risks	Supplier experience and resilience have a strong relationship. Positive supplier experience can lead to preferred customer status

Regarding the supplier experience's role in achieving supply chain sustainability, the case companies had inconsistent perspectives. Company A does not think that supplier experience significantly affects the supply chain sustainability. It was explained that the company believes that sustainability is mostly initiated by the company's internal motives and actions, meaning that suppliers' experience does not directly affect the initiatives for sustainable development in supply chains. However, the company representative evaluated that there can be an indirect influence as supplier experience affects the cooperation between the companies, and cooperation is a cornerstone to building a more sustainable supply chain.

In contrast to Company A's view on supplier experience's role in supply chain sustainability, Companies B and C consider supplier experience to strongly influence supply chain sustainability initiatives. Company B explained that when a buyer-supplier relationship is built on trust, reliability and commitment, it creates a positive supplier experience, which enables better collaboration efforts towards more sustainable practices. Moreover, Company C has observed that positive experiences improve relationships, which leads to an increasing number of opportunities to improve sustainability. However, they also noted that strict sustainability guidelines might negatively affect supplier experience, decreasing the ability to improve sustainability.

The supplier experience's role in supply chain resilience generated more aligned views compared to the sustainability perspective. The case companies viewed that communication is the key element in both improving supply chain resilience and supplier experience, as it enables better risk identification and preparation in addition to improving relationships. Furthermore, all three case companies viewed that supplier experience has a significant role in supply chain resilience. All case companies considered that by providing a positive supplier experience, the company can achieve the "preferred customer" status, which highly impacts their ability to be more resilient in times of disturbances. However, it was also emphasized that along with positive supplier experience, financial impacts remain a strong factor in customer evaluation.

When comparing the findings of this research to existing literature, patterns of similarity can be noticed. Based on the theoretical framework of this study, which was built on existing research, it was concluded that supplier experience is formed by the elements of communication, relational practices, technology, and the use of power (Rajala et al., 2025). Furthermore, research indicates that supplier experience is shaped by interactions and relationships with buyers, making effective relationship management a key consideration for supplier experience development. Therefore, the success factors of relationship trust, collaboration and commitment to continuity (Nyaga et al., 2010; Shamsollahi et al., 2021) are valid when improving supplier experience.

By combining the findings of this study and previous research, the following connections can be made. Firstly, improving communication capabilities by making it more open and active builds greater trust. Secondly, developing relational practices strengthens buyer-supplier relationships and enhances collaboration, leading to long-term relationship continuity. Third, the management of power dynamics enables better connections and collaboration between buyers and suppliers, leading to enhanced reliability. Lastly, the use of technological tools facilitates and supports these processes.

The effects that supplier experience development has on supply chain sustainability and resilience have not been researched before. The findings of this research suggest that even when sustainability drivers are internally initiated and the company is committed to sustainable development, suppliers and their experiences can still have both positive and negative impacts. Positive experiences regarding trust, communication, collaboration, continuity and reliability accommodate more opportunities and collaboration partners for sustainable development. However, negative experiences can hinder the adoption of sustainability. If suppliers lack trust or the benefits of sustainability are not effectively communicated, they are less likely to make the necessary changes, as financial concerns remain the top priority. Similarly, developing supplier experience elements enhances resilience. Open communication helps identify risks early, collaboration enables joint risk management, and building a long-term, trust-based relationship strengthens reliability. This positions the company as a preferred customer during times of material scarcity.

6 Conclusions

The purpose of this thesis is to investigate how Finnish manufacturing companies utilize and develop supplier experience to achieve supply chain sustainability and resilience. The topic was researched by a multi-case study where three Finnish manufacturing companies were interviewed. The primary research question, “How do Finnish manufacturing companies improve sustainability and resilience through supplier experience development?” was investigated by finding answers to three secondary research questions. These secondary research questions aimed to offer insights into the key drivers and barriers to supply chain sustainability integration, how Finnish manufacturing companies view the role of collaboration in enhancing supply chain resilience, and how supplier experience contributes to supply chain sustainability and resilience.

The findings of this research indicate that the key drivers for integrating sustainability into supply chains include customer and supplier requirements, regulation, competitive advantage, risk management, and the company’s internal motivation to include sustainability into the company’s strategy. The findings particularly highlighted the external drivers that originate from customers and regulatory bodies. The external drivers for sustainability have also been noted by previous research. For example, Shafique and others (2017, p. 93) argued that external drivers such as customers and legislation bodies both provide pressures and incentives for organizations to increase their sustainability initiatives.

The key barriers identified in this study include suppliers’ knowledge and ability to provide resources for sustainable development, the company’s internal knowledge and resource availability, suppliers’ global dispersion, change resistance, issues in information flow within the supply chain, and sustainable sourcing challenges. These findings are aligned with the previous literature on the topic, which had identified complexity of supply chains, financial issues, knowledge issues, and technological capacity as the most significant barriers for implementing sustainable supply chain management (Gonçalves et al., 2024; Govindan et al., 2014; Narayanan et al., 2019).

As previous literature has emphasized, the drivers and barriers for sustainability are company-specific and can highly vary between companies (Ahi & Searcy, 2015, p. 2887). This finding was also evident among the case companies in this thesis. Company C primarily relied on internal motivation to drive sustainability efforts, while Company B was mainly influenced by external factors. On the other hand, Company A identified a mix of internal and external drivers. Similarly, this study also revealed the importance of company context in identifying barriers. Based on the findings, smaller companies have more barriers and fewer drivers for integrating sustainability into supply chains compared to larger-sized and more experienced companies.

According to Saeed and Kersten (2019), an organization's ability to integrate sustainability can be influenced by multiple factors. In this study, the biggest differences between the case companies were size, sustainability experience, and industry sector, which can all affect the results. However, the degree of internationalization, geographical location and position in the supply chain, also mentioned by Saeed and Kersten (2019), can further influence the ability, but should have less impact due to the case companies being more similar in these aspects.

This study also investigated the role of collaboration in enhancing resilience, as it is also a key element of supplier experience. Based on the findings of this study, collaboration enhances supply chain resilience by strengthening trust, improving communication, and fostering long-term relationships with suppliers. Moreover, these dynamics enable better coordination, quicker response to disruptions, and a more adaptable and robust supply chain. These findings align with the current academic research, where resilient supply chains are described to be agile, robust, and well-connected (Ponis & Koronis, 2012; Holgado & Niess, 2023).

The last secondary level research question was created to provide an understanding of how supplier experience contributes to supply chain sustainability and resilience. Based

on the findings of this research, it can be argued that supplier experience can affect both supply chain sustainability and resilience. However, the impacts of supplier experience are mostly viewed as indirect, especially when it comes to sustainability, whereas there seems to be a stronger connection between supplier experience and resilience. This study showed that depending on suppliers' experiences, the effect can be both positive and negative. Based on the conducted research, in addition to the previous literature on supplier satisfaction and buyer-supplier relationships, it can be concluded that positive supplier experience contributes to improving supply chain sustainability and resilience by promoting trust, collaboration, and long-term commitment. These positive experiences further strengthen relationships, enhance coordination, and support more resilient and sustainable supply chain practices.

Evidence from the case companies interviewed in this study suggests that supplier experience can be enhanced through the use of various strategies. The supplier experience development is highly connected to interorganizational relationship management in the context of supply chain partners. The findings of this thesis show that by focusing development efforts on the factors influencing supplier experience, organizations can strengthen their relationships with suppliers, leading to more collaborative opportunities to enhance supply chain sustainability and resilience.

According to the results of this thesis, to provide a better supplier experience, Finnish manufacturing companies prioritize the development of operational efficiency, communication and collaboration capabilities, mutual performance evaluation, future-oriented guidance, and long-term relationship building beyond transactional interactions. These practices enhance supply chain sustainability and resilience by strengthening supplier relationships, facilitating information sharing, and enabling joint problem-solving. They also create more opportunities for sustainable initiatives and enable the courage to commit to long-term sustainability goals.

6.1 Theoretical contribution

This study contributes to the existing theory by providing a deeper understanding of the supplier experience and its impact on enhancing supply chain sustainability and resilience. Supplier experience is a relatively new concept that holds equal value with concepts such as customer experience and employee experience. Although the topic is recognised among professionals and has been investigated through research on supplier satisfaction and buyer-supplier relationships by academics, as its own concept, it remains relatively unexplored.

Rajala and others (2025) built a model for supplier experience. They argue that supplier experience is built by the components of communication, the use of technology, relational practices, and the use of power. This study identified similar elements. However, in this study, the effects of supplier experience were further investigated in the context of supply chain sustainability and resilience. The findings suggest that supplier experience components can be intentionally developed to enable more positive experiences for suppliers, thereby strengthening trust, collaboration, and commitment to maintaining long-term relationships. Consequently, these factors have an impact on the organisation's ability to manage and develop supply chain sustainability and resilience.

6.2 Managerial implications

The managerial implications of this study relate to how organizations can affect their suppliers' experiences through supplier experience development. The multi-case study offered insights into the elements that influence suppliers' experiences and how Finnish manufacturing companies develop strategies to improve these factors. For supply chain managers, it is important to identify the factors that suppliers value in order to deliver a positive experience. Academics have found that most suppliers value operational excellence, sufficient payment practices, efficient communication, collaboration capabilities, and the use of technology in achieving these (Hüttinger et al., 2012; Ganguly & Roy,

2021). Similarly, the findings of this study showed that suppliers value collaboration, particularly in the context of sustainable development, as well as factors such as availability, efficient communication, reliability, timely payment of invoices, and predictability.

Once an organization commits to sustainable supply chain management and understands the elements that suppliers value in the relationship, the next step is to consider how to influence and enhance the experiences related to these factors. The strategies to develop supplier experiences emphasize building strong, long-term relationships through consistent communication, feedback sessions, and collaborative efforts aimed at continuous improvement. Additionally, the strategies mentioned in the study involve providing clear guidance on future changes and using tools like supplier relationship management systems to optimize operational practices and information flow. However, the valued elements and recommended strategies are not universal, as each interorganizational relationship possesses its own unique characteristics. Additionally, managers should understand the personal role of purchasers in maintaining relationships with suppliers (Ganguly & Roy, 2021).

6.3 Limitations and suggestions for future studies

It is important to acknowledge that certain limitations apply to this study. Firstly, even though this study was conducted as a multi-case study to allow a broader understanding of the topic, only three case companies were included. Thus, the findings are more limited compared to studies with larger sample sizes. Furthermore, although certain criteria, such as company size, highlighted differences between the case companies, there are still characteristics that limit the generalizability of this study. For instance, all the companies operate within similar industries and are based in Finland. Moreover, this study was conducted from a global perspective, meaning that all case companies have both global sales and supply channels. Thus, the results could be different when companies are only operating on a local level.

This specific point in time can be viewed as another limiting factor. Sustainability remains a relatively recent area of focus for many organizations, which means the findings of this study may differ from those of future research as both sustainability and supplier experience continue to evolve. Similarly, even though supply chain sustainability and resilience are highly researched topics, supplier experience is not. Therefore, while the academic research on the topic increases, a deeper understanding of its effects will be formed.

The qualitative interviews utilized in this study can cause additional limitations. Although the semi-structured and qualitative nature of the approach allows for more detailed explanations of responses and minimizes the interviewer's influence, certain factors may still affect the results. For example, the interviewees' roles may influence their perspectives when responding to interview questions, and the interviewer must ensure that the answers are presented clearly.

Expanding on these limitations, future studies could explore the topic more broadly by including case companies from a global perspective or by focusing on a different specific geographical context. Another suggestion is that the topic could be researched from the suppliers' point of view. This study examined the supplier experience development's effects on sustainability and resilience from the buyer company's perspective. Lastly, a more specific focus on either sustainability or resilience could provide deeper analysis.

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Appendices

Appendix 1. Interview questionnaire

Interview questions:

Section 1: Background

- Interviewee's role in the company and how they are involved in supply chain management.
- How does the company define and view supply chain sustainability and resilience?
- How do you value/prioritise sustainability and resilience in supply chain management?
- How do you currently approach supplier experience in your company?

Section 2: Key drivers and barriers for integrating supply chain sustainability

- What internal and external factors drive your company to integrate sustainability into your supply chain?
- Could you elaborate on any challenges or obstacles you have encountered in trying to integrate sustainability into the supply chain?
- How do you collaborate with your suppliers to promote sustainable practices? What challenges or successes have you faced in this collaboration?
- How do you measure and monitor the sustainability practices of your suppliers?

Section 3: Enhancing resilience through supply chain collaboration

- What are the most significant issues (risks) that can challenge your supply chain resilience (operational and sustainability-related)?
- How do your suppliers contribute to or support your company's resilience strategies?
- What role does supply chain collaboration play in identifying and mitigating risks?
- Can you provide examples of how collaborating with suppliers has helped improve resilience in your supply chain?

Section 4: Supplier experience and its impact on sustainability & resilience

- What do you consider to be the key elements that influence supplier experience within your supply chain?

- What strategies or practices has your company implemented to manage supplier engagement and collaboration?
- How does your company gather and respond to feedback from suppliers regarding their experience working with you?
- In what ways does supplier experience influence your company's efforts to achieve sustainability and resilience goals?
- What challenges or opportunities have you encountered in managing supplier experience, and how have they affected supply chain operations?

Section 5: Conclusion

- How do you see the relationship between supplier experience development and supply chain sustainability?
- In your view, what are the key benefits or challenges of supplier experience in enhancing supply chain resilience?
- What trends or innovations do you foresee shaping supplier experience development in the future?