THE ROLE OF SUSTAINABILITY IN BUSINESS-TO-BUSINESS PURCHASING DECISIONS

Lappeenranta–Lahti University of Technology LUT

Master of International Marketing Management

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Antti Kivari

Examiners: Professor Olli Kuivalainen

Associate Professor Joona Keränen

ABSTRACT

Lappeenranta–Lahti University of Technology LUT

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Antti Kivari

The role of sustainability in business-to-business purchasing decisions

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77 pages, 26 figures, 11 tables and 2 appendices

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Keywords: Sustainability, B2B marketing, B2B purchasing, Purchasing decision-making

The objective of this research is to study the role of sustainability in business-to-business purchasing decisions. The core research problem is the unknown potential of sustainability as value driver, non-defined importance of it and its unclear role in the decision-making.

The research is mixed method case study as sustainability is multifaceted phenomenon and it needs explanations on both the concepts and causality. Theoretical part of the research reviews current research and theoretical context based on academic literature related to B2B Marketing, B2B purchasing and purchase decision-making. Empirical part is built around case company and uses its 15 customer companies as sample to evidence and reflect on current research and theory.

The results of this research indicate, that both small and medium sized (SMEs) and multinational enterprises (MNEs) observe high importance in responsible business, price-sensitivity, and situational factors, like availability, on-time delivery, and customer service. Sustainability as decision-making criteria has mixed importance. SMEs perceive it less important and MNEs observe it very important. Both SMEs' and MNEs' sustainability agenda focus more on product use-phase, circularity, compliance and their customer benefits than materials selection and supply chain choices. The supply chain importance increases, when moving downstream in the value chain. Green price premium will not bring notable additional value for the companies. Customers indicate less than ten percent margin increase opportunity with sustainability features, but only with proven customer benefit and financial payback.

TIIVISTELMÄ

Lappeenrannan–Lahden teknillinen yliopisto LUT

LUT-kauppakorkeakoulu

Kansainvälisen markkinoinnin johtaminen

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Kestävän kehityksen rooli business-to-business hankintojen päätöksenteossa

Kauppatieteiden pro gradu -tutkielma

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Tämän pro gradu -tutkielman tavoitteena on tutkia kestävän kehityksen roolia yritysten hankintojen päätöksenteossa. Tutkielma analysoi mikä on kestävän kehityksen arvo ja tärkeys vaihdannan välineenä myynnin ja hankinnan välillä.

Koska kestävä kehitys on moniulotteinen ilmiö, tutkielman tutkimusmenetelmänä on käytetty yhdistettyä case -menetelmää, jotta käsitteet ja loogiset päätelmät on pystytty yhdistämään. Tutkielman teoriaosuus koostuu tieteellisten artikkelien kirjallisuuskatsauksesta ja teoreettisten käsitteiden; B2B-markkinointi, B2B-hankinta ja hankintojen päätöksenteko esittelemisestä. Empiirinen osuuteen on haastateltu case-yrityksen 15 yritysasiakasta kestävän kehityksen rooliin liittyen. Tutkielman johtopäätöksissä vertaillaan empiirisen osuuden tuloksia teoriaosuuden havaintoihin.

Tutkielman tulokset osoittavat, että sekä pienet ja keskisuuret yritykset (pk-yritykset) ja suuryritykset pitävät yleisesti kestävää kehitystä tärkeänä asiana, mutta korostavat hintakilpailua, saatavuutta ja asiakaspalvelua vielä enemmän. Kestävän kehityksen merkitys on pienemmille yrityksille vähäisempi, kun taas suuryritykset arvostavat sen korkeammalle päätöksenteossaan. Kestävän kehityksen osalta itse hyödykkeen käytön aikainen päästövaikutus, kierrätettävyys, vastuullisuus ja loppuasiakkaan hyödyt menevät hyödykkeen materiaali- ja toimitusketjuvalintojen edelle. Toimitusketjun vastuullisuuden merkitys kasvaa suuremmaksi, kun siirrytään arvoketjussa loppuasiakkaan suuntaan. Kestävä kehitys ei luo yrityksille merkittävää lisäarvoa myyntihinnoissa. Keskiarvoisesti B2B-asiakkaat hyväksyvät alle kymmenen prosentin katevaikutuksen, mutta sillä on oltava todistettavasti selkeä asiakashyöty ja taloudellisesti kannattava takaisinmaksuaika.

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Hyvinkää, 30th of August

Antti Kivari

ABBREVIATIONS

B2C	Business to Consumer market
B2B	Business to Business market
MNE	Multinational Enterprises
PSS	Product-Service System
SDL	Service Dominant Logic
SME	Small and Medium size Enterprises

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1 Introduction

Introduction chapter outlines the research plan and explains how the research plan is conducted. Background of the research explains the research phenomenon. Previous research introduces briefly main used theories and key findings from the literature. The research gap highlights why this research is needed. The key concepts are described first separately and then together in the research framework to explain what will be studied to answer to the research problem. Objective of the research explicates the research problem and research questions. Research methodology presents the logic, how research is conducted. Finally, structure of the study summarizes the constructs of the entire research.

1.1 Background of the research

This research aims to study the role of sustainability in business-to-business purchasing decisions. It discovers the concept by investigating current available literature and exploiting and explaining surrounding academic concepts: *sustainable B2B marketing*, *sustainable B2B purchasing*, and *the role of sustainability in B2B decision-making*. Finally, research verifies the literature and theories against the empirical evidence. The empirical part of the study is conducted by interviewing business-to-business companies about their purchasing decision criteria and the role of sustainability in it.

On one hand value proposition is fundament for companies to perform the business. Value proposition is unique commodity or function, what companies provide to customers in the form of revenue generation or cost optimization. Value is offered for customers through B2B marketing, where value-based selling plays vital role (Terho et al, 2017). Terho et al (2017) also emphasize, that companies seek value in their purchasing-decisions. Value in general can be commonly agreed, but there are many theories, attributes and circumstances explaining how final purchase-decision and perceived value is being constituted. Webster et al (1965) center the value around customer's problem recognition. Nyadzayo et al (2020) have discovered from previous literature, that purchase commitment is formed based on affective, calculative and relationship drivers. Luchs et al (2017) add on hedonian and utilitarian classification from the consumers side into the discussion.

On the other hand, climate change is one of the most important concerns globally. This is a consequence from the combination of unplanned population growth, natural resources over-consumption, unsustainable industrialization, and short-sighted lifestyle of consumers (Querreiro et al, 2022, Aquillani et al, 2017; Mariadoss et al, 2011). According to the World Bank, sixty percent of the earth's ecosystem has been overspent in the past 50 years, while natural resource consumption is still expected to rise to 170% of the Earth's resource capacity by 2040 (Mariadoss et al, 2011). It has become imperative for companies to apply corporate social responsibility and environmental awareness into the business and operations (Blome et al, 2014). Limited amount of academic research has addressed the role of sustainability in managerial practice and product development (Sharma et al, 2010) In B2B context unsustainable industrialization does not limit only to products manufacturing. It touches more and more services also (Kristensen et al, 2019). Over 200 countries have signed Paris-agreement, where they commit to the responsible production and consumption according to the United Nations' (UN) Sustainable Development Goal (SDG) # 12 (Van Riel et al, 2021). Recent research highlight, that it is not only regulatory environment, but also pro-environmental business strategy, that will lead to a competitive advantage and superior financial performance (Sharma et al, 2010). Therefore, sustainability is contemporary issue where interest is not limited only for consumer behavior and markets but has great responsibility and contribution opportunity for B2B companies. The role of sustainability as a part of B2B purchasing decision-making is rising and thus it is worthwhile to study further.

1.2 Previous research

Sustainability as value attribute is a large concept. Research approaches in marketing context have varied depending on selected theories. The most general theories have been resource-based theory (Khan et al, 2022; Sharma et al, 2010; Mariadoss et al, 2011; Mogre et al, 2017; Richey et al, 2014 and Terho et al 2017) behavioral theory (Ajzen, 2002; Casidy et al, 2018; Nyadzayo et al 2020; Sheth, 1973; Steg and Vlek, 2009 and Webster, 1965) and stakeholder theory (Bocken et al, 2013; Giunipero et al, 2012; Brozovic et al, 2020 and Porter and Kramer, 2011). Generally, sustainability has become more and more fundamental part of the exchange in decision-making (Richey et al, 2014).

Previous research on resource-based theory concludes, that sustainability is connected to environmentally friendly strategies, innovations, and marketing capabilities, which will lead to competitive advantage (Sharma et al, 2010; Mariadoss et al, 2011). Behavioral theory connects sustainability to subjective values and attitudes in interaction with the surrounding environment, which refers to brand image and situational factors in the buying process (Ajzen, 2002; Steg and Vlek 2009). According to past research on stakeholder theory highlight the broad role of sustainability in economic, environmental, and societal perspectives (Brozovic et al, 2020).

Research results about the sustainability's role in the purchasing context variates according to selected research approach. Several research highlight resources and capabilities' role in promoting green purchasing decisions. They refer to financial, innovation, manufacturing, and digitalization capabilities (Khan et al, 2022). Size of the company purchasing power (Min et al, 2001) and top management commitment has been concluded as very important enabler for green procurement initiatives (Blome et al, 2014 and Giunipero et al, 2021). Mogre et al, 2017 expands the importance of integrated business functions in sustainable and ethical purchasing (Mogre et al, 2017). Webster argues product quality, service and price being most effective in providing the most effective solution to customer company problems (Webster, 1965). Recently also Farizal et al (2019) has concluded, that quality, cost and service occupy top three ranks in purchasing decisions. Sheth concludes, that individual, product preferences and company preferences are forming the purchasing decision. Variation of purchasing decisions depend also on situational factors (Sheth, 1973).

Previous research has capsuled sustainability research according to academic fields; marketing and purchasing. There is no explicit research, which integrates fields together and which explains the importance of sustainability in purchasing decision-making between seller and buyer. Marketing field mostly focus their research on society-level or company-level sustainability impact. Purchasing field has few research (Celik et al, 2021; Farizal et al, 2019, Mohammed, 2020) that have studied the importance of environmental factors in purchasing compared to other decision attributes, but they do not specify, how sustainability can add value to the customers or what improvements companies can do to adopt better sustainability in their own marketing.

1.3 The definition of key concepts

There are three key concepts defined for this research. These key concepts have been constructed based on main theories used in the reviewed literature of this research.

Sustainable B2B marketing

Traditional business models tend to focus on creating, delivering and capturing economic value. This means that value is only measured by economical metrics. Societal and environmental values are left to the background and measuring does not have any reference to social and environmental impacts. In sustainable B2B marketing companies merge sustainability as value to their operations, products and services aiming to provide economic, social and environmental benefits to all stakeholders (Bocken et al, 2013; Brozovic et al, 2020; Kristensen at al, 2019). Therefore, traditional term; *marketing* has been connected to term *sustainability* and finally combined as a term of *sustainable B2B marketing*. Later in this research sustainable B2B marketing is used as interchangeable term to the definitions like green marketing and sustainable value-creation.

Sustainable B2B purchasing

The terms *green procurement*, *green supply chain management* and *sustainable procurement/purchasing* are used interchangeably to determine *sustainable B2B purchasing* practises. The theoretical definition of sustainable purchasing has been widen-up due to its growing demand and constantly changing environment (Blome et al 2014). Drumwright defines sustainable B2B purchasing as buying environment-friendly industrial products for manufacturing needs, which is mandatory for further supply chain steps to finally deliver environment-friendly products to consumers and help to reduce harm to natural environment at its source (Drumwright, 1994).

B2B purchasing decision-making and exchange

The *purchasing decision-making* process is multifaceted. The purchased commodities are different, the purchasing conditions vary, selection attributes are not standard between the customers and customer's decision-making personnel hierarchy is different between companies. (Webster, 1965). The *exchange* takes place at the point where value offered, and value perceived meet each other between the actors in the value chain (Ulaga, 2003).

1.4 Framework of the research

The focus of this research is to understand the role of sustainability in purchasing decision-making and especially in the moment where exchange emerges in selling (Kristensen et al, 2019; Porter and Kramer, 2011; Terho et al, 2012; Vargo and Lusch, 2004; Brozovic et al, 2020) and purchasing (Steward et al, 2019; Sheth, 1973; Webster, 1965; Nyadzyao et al, 2020; Steg and Vlek, 2009; and Drumright, 1994) process. The theoretical framework has been constructed by mapping the fundamental theories, concepts and their relationships. Theoretical framework is presented in figure 1.

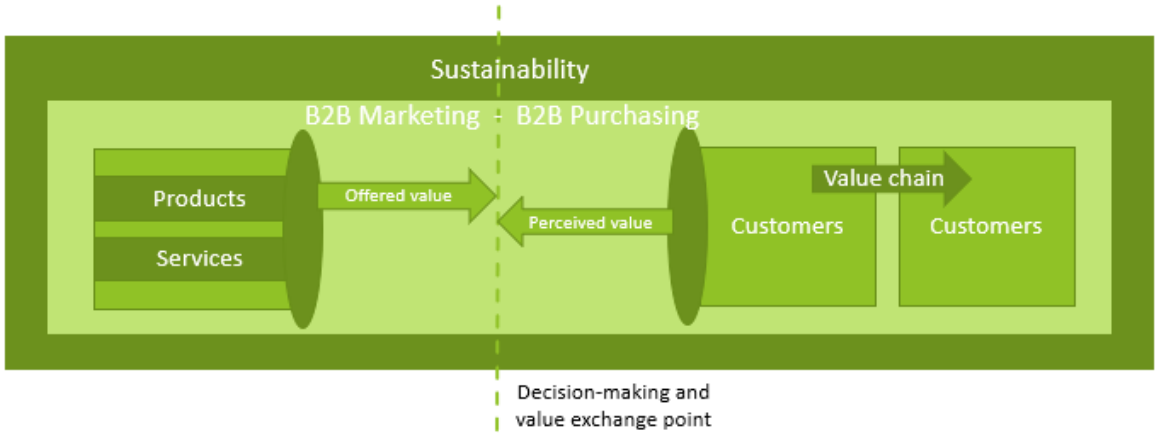

Figure 1. Framework of the research

The core of the theoretical framework is the intersection point of the B2B marketing and B2B purchasing. This point is called *the decision-making and exchange point*, where value offered, and value perceived meet each other between the actors in the value chain (Ulaga, 2003). Around the intersection point there are two sides: *B2B marketing* and *B2B purchasing*. In B2B marketing marketers generate the needs and capture the attention of customers and in B2B purchasing buyers assess products and services against the criteria of their needs. Sustainability as a phenomenon has recently started to impact to both fields B2B marketing and B2B purchasing. Therefore, it needs to be studied further, what value it brings to the decision-making.

1.5 Objective of the research and research questions

The objective of this research is to study the role of sustainability in business-to-business purchasing decisions. The core research problem is the unknown and untapped potential of sustainability as value driver, non-defined importance of it and its unclear role in the decision-making. To resolve the research problem three research questions have been set:

- Research Question (RQ): What is the importance of sustainability in purchasing decisions?
- Sub research question (SRQ1): How does sustainability add value to business-to-business customers?
- Sub research question (SRQ2): What are the improvements, that help customers to adopt sustainability in their marketing?

1.6 Research methodology

The research methodology is mixed-method case study as it combines literature insights from *sustainable B2B marketing*, *sustainable B2B purchasing* and *purchasing decision-making* together with empirical findings from both quantitative survey data and qualitative interview to explain logical conclusions about the sustainability phenomenon. The research approach is abductive, which combines the elements from both: inductive and deductive approaches. Inductive approach forms conclusions from theory and supports it with data, whereas deductive forms theory from collected data. The research progress in four main stages. The first stage, literature review and key theories and concepts' investigation, sets the foundation to understand the status of research and theoretical contribution of *sustainable B2B marketing*, *sustainable B2B purchasing*, and *the role of sustainability in B2B decision-making*. The second stage of the research collects the evidence with mixed case study method from B2B companies with semi-structured interview questionnaire, which is developed to support the empirical part of this research. The third stage analyses, verifies, and presents the results of empirical evidence collected. Final stage concludes and summarizes the results. The primary nature of this research is qualitative as the sustainability as phenomenon is multifaceted and observations need to be described more in details.

1.7 Structure of the study

This research study has three main sections: introduction part, theoretical part and empirical part. The introduction part is presented in chapter one. Chapter one is an introduction in general what this research is about, why research is necessary to conduct, what is the research problem, which theories and concepts are relevant for the topic, which scholars are related into it, what are the limitations of the topic. Finally, it explains the methodology, that will lead to the results of the research. The theoretical part is presented in the chapters two and three. Chapter two analyses the past and current research about the topic in the form of systematic literature review. Chapter three explains valid theoretical concepts; *sustainable B2B marketing*, *sustainable B2B purchasing*, and *the role of sustainability in B2B decision-making*. The empirical part is presented in chapters four and five. Chapter four contains the research methodology. First, it describes the chosen methodological approach. Secondly, it defines the case itself and the case company, whose customers have been used in interviews to test the validity of the research. choice of methodological approach and analysis methods. Thirdly, it explains the description of data collection, sample, and data analysis steps of the empirical research. Finally, credibility of the study is explained in the reliability and validity subchapter. Chapter five presents the research findings from sample interviews. The research findings have been clustered around the research questions to the following themes: role of the sustainability among other decision-making criteria, valued sustainability fields among customers and customers' customers, willingness to pay green premium and future trends of sustainability. Chapter six concludes the research by consolidating the findings from the empirical part and reflecting them to the theories that were presented in previous chapters. It provides answers to the research questions, discusses the limitations of the research and suggests the future research. The structure of the research study has been outlined to the figure 2.

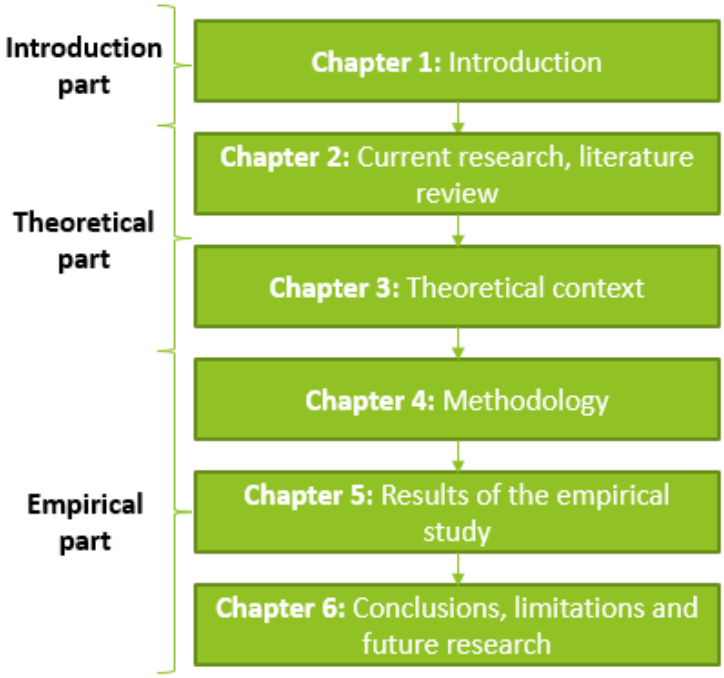

Figure 2. Structure of the research study

2 Current research of sustainability in B2B marketing and B2B purchasing

Current research and theory consists of three subchapters. Literature review chapter describes the process how review has been conducted. Current state of research has been constructed by describing the relevancy of the articles, popularity of the research in the recent years, explaining the used theories and their frequency among the sample articles. Finally, key findings describe the outcomes and contributions of the articles.

2.1 Literature review process

In general, a systematic literature review (SLR) is a type of review where multiple research studies are collected and analysed to answer research questions using an evidence-based methodology. The reviews cover the main content of the literature, frameworks, methods and key findings of the scholars, as well as how they have been explored the literature. (Gough et al, 2017.) Systematic literature review (SLR) is an explicit plan the researchers follow. It contains a detailed definition of the concept and search steps involved (Tranfield et al, 2003). This research is modified approach from Snyder's (2019) and Tranfield et al's (2003) systematic literature review process. The main modification to the process has been the manual inclusion of articles in the final step of the search process to improve the relevancy of the research. The main research process has consisted of three steps: search, exclusion and inclusions, and reporting as illustrated in Figure 3. The search phase formulates the research objective and keywords and executes the search. In the early beginning of the study the result of the key words has been wide. Therefore, prior to selecting keywords, a preliminary review of the topic was conducted, and keywords were considered according to their significancy to the topic. There has been performed combined runs in Scopus database and university's Primo search around *sustainable B2B marketing*, *sustainable B2B purchasing*, and *the role of sustainability in B2B decision-making* to narrow down the keywords for the topic. As a result of this process Scopus database search has encountered many irrelevant topics. After the pre-screening and exclusion of irrelevancies key words "*sustainability*", "*business-to-business*", "*green marketing*", "*purchasing decision*" started to bring relevancy for the research topic. Based on the best search, 287 search results were found by using a Scopus database. To further enhance the relevancy of the results, systematic exclusion process has been conducted to improve the search results.

Figure 3 shows the results from four rounds of exclusion. The first three rounds were conducted using Scopus Database's limits and exclude options. First round of exclusion has limited the focus to the business management, engineering, environmental and social sciences as the research focus is on business-to-business environment. To provide fresh and modern research outlook, second round included articles from five recent years, 2018-2023. To further enhance the final search result and maintain the focus of the study, the keywords assessment has been conducted on third round. This exclusion has limited the search result only to the articles, which keywords have matched to the topic of the research. In the final, fourth round, the 78 articles have been read and assessed. The irrelevant ones have been manually excluded after the reading phase. The main rationale for exclusion of articles has been either their non-relevancy for the research topic, they have been related to business-to-consumer (B2C) approach or they have had low JUFO (Julkaisufoorumi) Publication Forum rating. The Scopus search result has been complemented with selected articles from LUT Primo search to strengthen the academic foundation of the research. This addition has been done due to the contemporary nature of the research topic, cross-connecting research fields of marketing and purchasing and small number of relevant articles found from Scopus search. The literature review has finally incorporated 31 different peer reviewed and JUFO Publication Forum rated articles that have provided relevant evidence of the connection between sustainability in B2B marketing and B2B purchasing decision-making through systematically filtering of research results. The split of articles used from marketing and purchasing is presented in Table 1.

Articles	
Sustainability in B2B marketing	Sustainable B2B purchasing and decision-making
13	18

Table 1. Number of articles used about sustainability in B2B marketing and B2B purchasing

As a result, last phase the results are presented as descriptive data, data table and key findings. Key findings are presented in the chapter 2.3. The entire literature review source data summary can be found from Appendix 1.

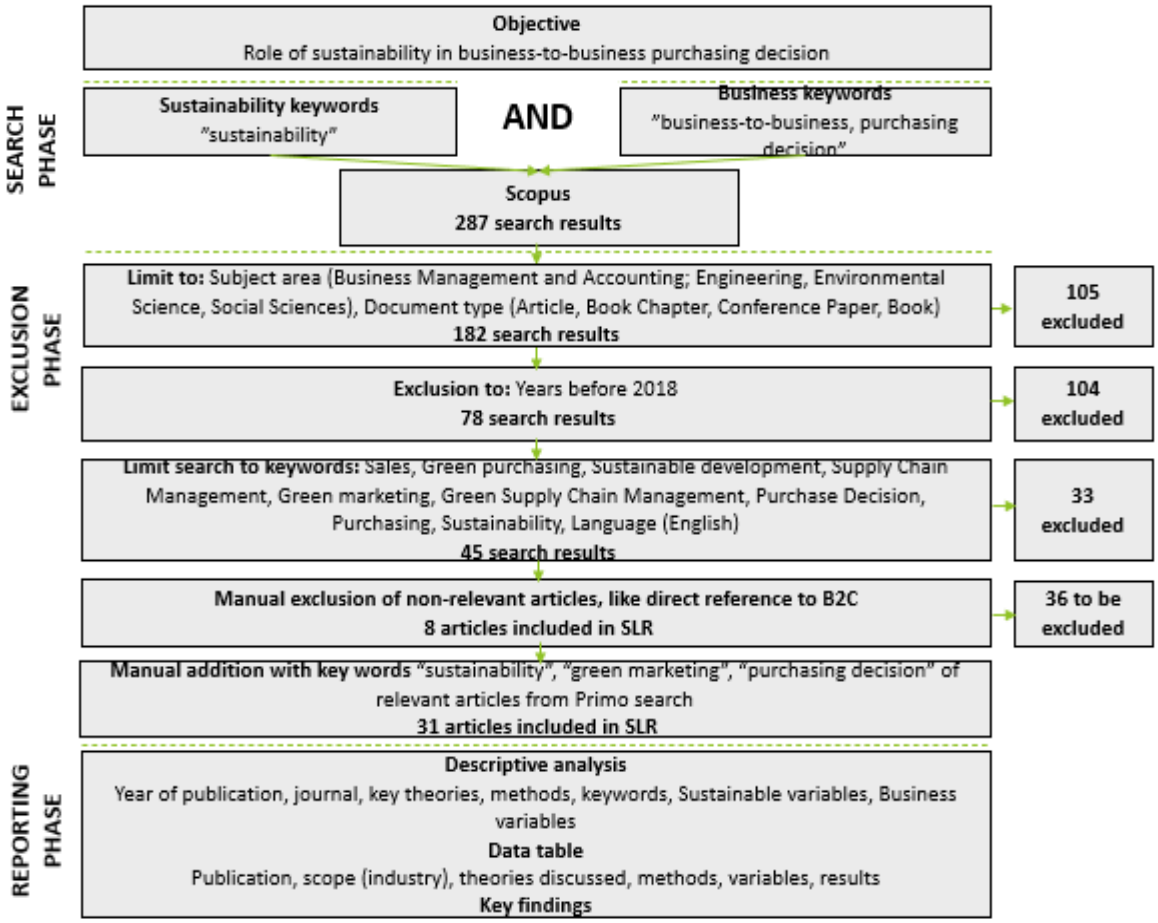

Figure 3. Systematic literature review process

2.2 Current state of research

This research reviews peer reviewed articles at the final publication stage to explain sustainability in B2B marketing, sustainable B2B purchasing and purchasing decision-making. This systematic literature review explains what has been studied research about the *sustainable B2B marketing*, *sustainable B2B purchasing*, and *the role of sustainability in purchasing decision-making.* It also explains if there are gaps in this field of study. The holistic answer has been constructed by describing the relevancy of the articles, popularity of the research in the recent years, analysing theories in scholars and summarizing their key findings.

Among 31 final articles, 12 has reached the Publication Forum's highest level 3 classification and 8 has reached second highest level 2 classification. The Levels 2 and 3 are awarded to a limited number of academic journals, conferences and book publishers of the highest level relevancy and contribution and the impact to the academic field has been

judged by the Expert Panels (Julkaisufoorumi, 2022). All journals are presented in Figure 4. The rest of the articles have rated level 1 and three research papers have no markings. which is indicative of a channel under evaluation, but without a rating.

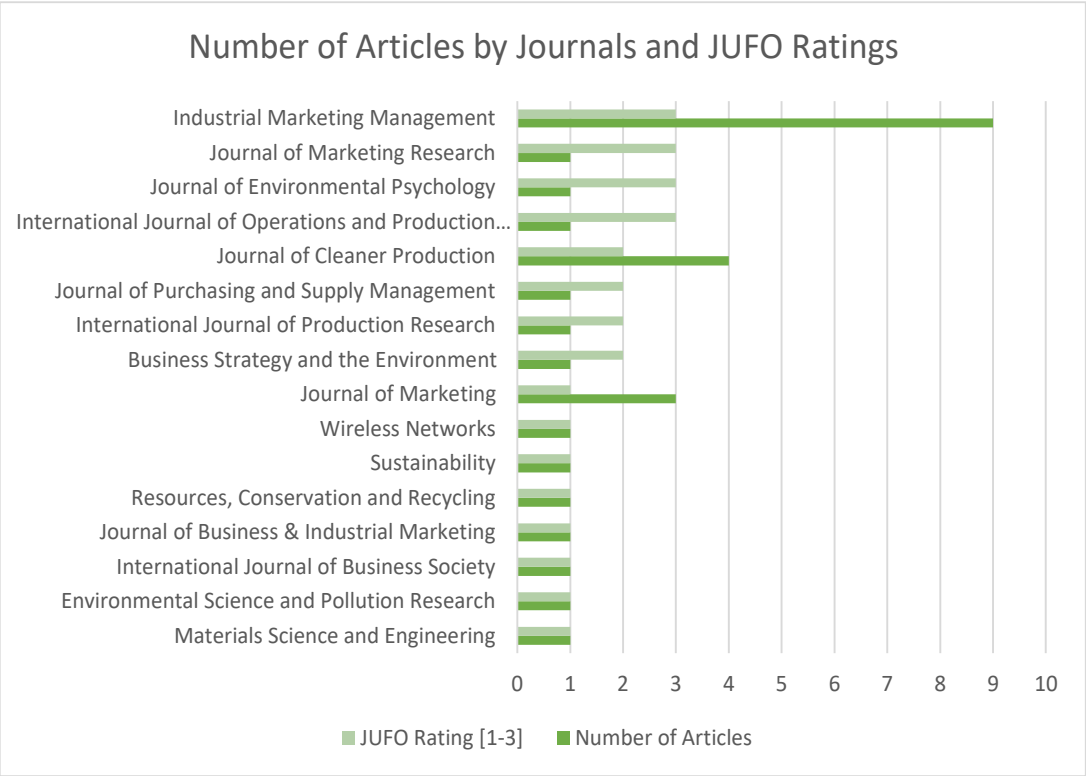

Figure 4. Number of Articles by Journals and JUFO Ratings

Regardless of the fact, that this research studies the recent contemporary changes around sustainability's role as value driver in B2B context. It is worthwhile to note, that the purpose of sustainability has been existing already past decades. Giunipero et al (2012) have combined the evolvement of sustainability in their literature review as presented in figure 5.

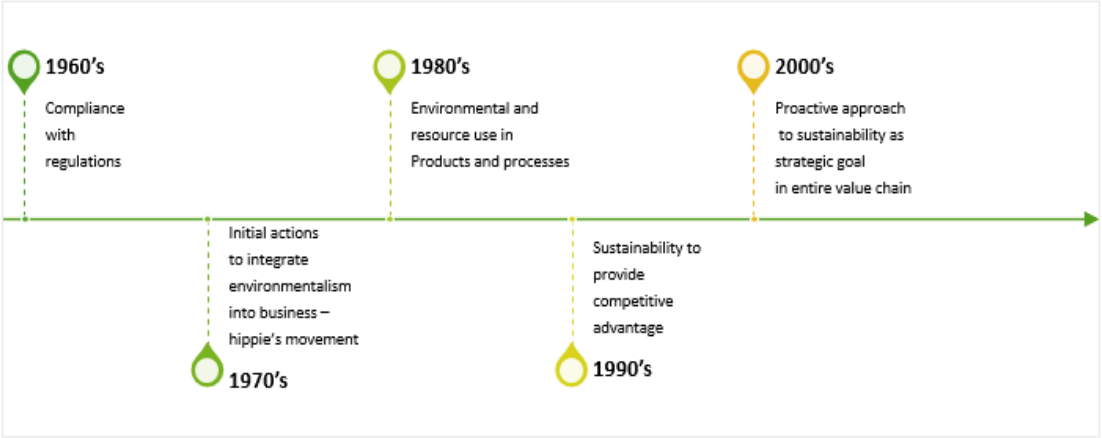

Figure 5. The evolution of sustainability in academic literature (Giunipero et al, 2012)

In 1960's and 1970's sustainability has been observed more of environmentalism to comply with regulations to protect the environment from disasters (Giunipero et al, 2012). Brundtland's report defines sustainable philosophy in 1987 as follows. It must meet the society's needs without compromising the ability of the future generations to meet their own needs (Brundland, 1987). This combines the economic, social and environmental needs together (Bocken et al, 2013). Sharma et al defines sustainability as intersection of financial and environmental goals addressing both corporate goals and climate change (Sharma et al, 2010). Even beyond 1980s sustainable development has been included under the concept of social responsibility and especially in B2C context sustainability has been studied even more. (Haws et al, 2014; Drumwright, 1994). As it can be seen from the sample article set in Figure 6, there is clear trend pattern in the distribution of articles by year of publication. The research in sustainability has increased and most of the relevant articles have been published during past two decades.

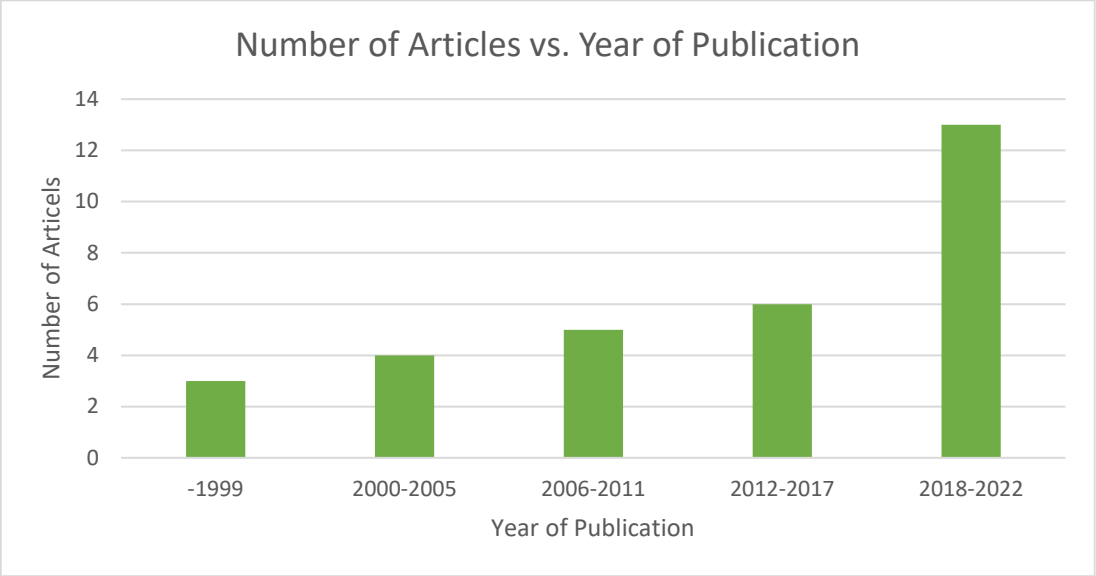

Figure 6. Number of Articles vs. Year of Publication

The articles represent collection of marketing and purchasing publications as according to framework of this research they relate to exchange between the value chain actors. Sustainability has been discussed and researched in many different perspectives. To understand better the contribution of the phenomenon, the concept value and its purpose needs to be included into the research. The combination of key concepts value, marketing and purchasing around sustainability brings 75 distinctive keywords because of author-defined keyword analysis. The most frequently used keywords were sustainable purchasing (n=8), sustainable value (n=7), supplier selection (n=5) and decision-making (n=5).

Therefore, it can be concluded, that exchange is in the intersection of marketing and purchasing.

Sustainability as value-driver is multifaceted. This is because of several theoretical approaches associated in the academic research as presented in figure 7. Correspondingly different theoretical approaches might affect how sustainability value and impact is interpreted in the research.

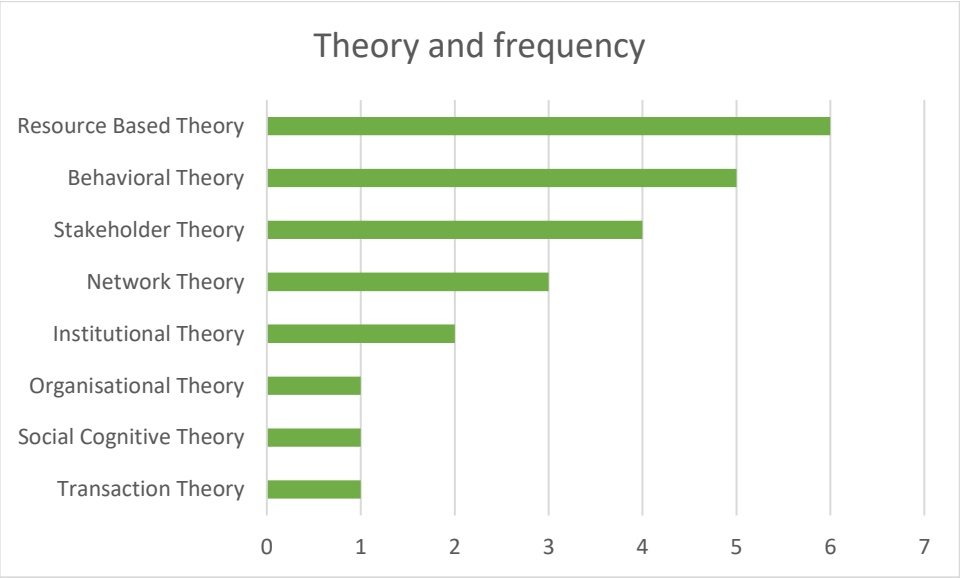

Figure 7. Frequency of theories used

This research compares these differences by defining the main theories, that scholars have been using in their research. The most used theories have been resource-based view (n=6), behavioral theory (n=5) and stakeholder theory (n=4). In eight studies, the theory was not clearly specified. According to *resource-based view,* companies improve their competitive position best by exploiting the internal resources and capabilities. This enables companies to achieve competitive advantage which will improve both its efficiency and effectiveness. In resource-based view, company needs to constantly identify core competencies, maintain and develop them to be able to retain the sustainable competitive advantage. (Barney J, 1991) In the marketing perspective Sharma et al and Richey et al argue that environmentally conscious and ecologically friendly strategies lead to competitive advantage (Sharma et al, 2010; Richey et al, 2014). In practise knowledge-based processes may support the development of more advanced environmental management processes. This will lead to innovation opportunities in a firm's path to sustainability (Sharma et al, 2010). Mariadoss et al also highlight the role of marketing capabilities and innovation as firms' competency to develop more sustainable products and services as foundation of competitive advantage (Mariadoss et a, 2011). Correspondingly, in purchasing context Khan et al conclude that

green purchasing processes and competencies contributes positively on economic and environmental performance (Khan et al, 2021).

The *behavioral theory* refers to subjective norms of thoughts, beliefs, values, attitudes, and behavioral controls in interaction with the surrounding environment (Ajzen, 2002). Sheth includes into behavioral factors moral and normative controls, affects, habits, contextual factors and perceived costs and benefits (Sheth, 1973). The sustainability value perspective turns upside down compared to resource-based view. Four out of five articles define behavioral theory relevant in purchasing perspective and one in marketing. In marketing perspective Casidy et al put emphasis on brand perceptions as value driver (Casidy et al, 2018). Therefore, sustainable brands make impact in purchase decision-making. In purchasing perspective Nyadzayo et al, Sheth, Steg and Vlek and Webster connect buying process, situational factors, functional preferences, individual and company preferences to the purchase engagement and pro-environmental behaviour. (Nyadzayo et al, 2020; Sheth, 1973; Steg and Vlek 2009; Webster, 1965)

Stakeholder theory widens the perspective beyond the focal firms and defines the value generation as broader concept of network and relationships with customers, suppliers, employees, investors, communities, and others who have stake in the society. The core of the theory explains that firms are creating value not only to customers but to all stakeholders. (Freeman R.E, 1984). In the marketing perspective Brozovic et al conclude, that goal of the company is to understand the value flows and their development with actors from economic, environmental and societal perspectives (Brozovic et al, 2020). Porter and Kramer use the concept of shared value as policy and operating practice that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates. Shared value creation focuses on identifying and expanding the connections between societal and economic progress. There are three keyways that companies can create shared value opportunities: by reconceiving products and markets, by redefining productivity in the value chain and by enabling local societal cluster development (Porter and Kramer, 2011). In purchasing perspective Blome et al has found, that market performance has positive influence on green purchasing, but financial performance was not persuasive with green procurement (Blome et al, 2014). Giunipero et al conclude many benefits for the company and its societal networks from green procurement including increased customer demand, regulatory compliance and financial performance. At the same time Giunipero et al reminds of many barriers for green purchasing; misalignment with strategic goals, lack of top management attention, dispersed standards and cost of sustainability (Giunipero et al, 2012).

2.3 Key findings from the literature

Key findings are clustered according to the presented framework into three separate clusters: Sustainability in B2B marketing, Sustainable B2B purchasing and B2B purchasing decision making. The purpose of the clustering is to observe concepts and attributes according to the theoretical framework and key concepts.

2.3.1 Sustainability in B2B Marketing

Scholars have concluded various perspectives about the sustainability as value driver. The observations have been collected to table 1. There is generally wide acceptance, that value should not only include economical aspects, but also ecological and societal aspects (Brozovic et al, 2020). Kristensen reminds, that the view is sometimes too narrow to focus only for customer value creation (Kristensen et al, 2019), even though its role should not be undermined. Porter and Kramer introduce this as shared value creation, which focuses on identifying and expanding the connections between societal and economic progress. There are three keyways that companies can create shared value opportunities: by reconceiving products and markets, by redefining productivity in the value chain and by enabling local cluster development, (Porter and Kramer, 2011). This development in the sustainability arena is supported with Vargo's and Lusch's observation, that focus has shifted from tangible assets to intangible access-based value services. Instead of exchanging physical goods, the exchange is a process of knowledge and information (Vargo and Lusch, 2004). Therefore, sustainability benefits from digitalization as it reduces the carbon footprint. In practise various type of services and expertise can be offered remotely.

Ulaga specifies traditional value attributes like product quality, delivery, time-to-market, product cost, but also highlights the role of service support, know-how and personal interaction. According to Ulaga's main finding, value is in relationships (Ulaga, 2003). Ulaga did not specify sustainability as value attribute. Aquilani's brings up sustainability into the agenda and explains it to be co-created in integrative framework with stakeholders (Aquilani et al, 2018). Bocken et al observe, that business model innovation is a key to delivering future sustainability. It is implemented by embedding sustainability into the core purpose of the firm and its network of stakeholders. The ultimate goal is to understand value flows in service ecosystems by incorporating sustainability into the value (Bocken et al, 2013).

According to Mariadoss, innovations are at core to leverage the sustainability. Sustainable technical innovations will introduce more sustainable products and services without compromising quality, price or performance in the market. Sustainable technical innovation will deliver high level of emotional and functional values, while same time minimizing resource use and environmental impacts (Mariadoss et al, 2011). Casidy et al believe also in importance of emotional values, but not at the expense of functionality. (Casidy et al, 2018). Maxwell et al emphasize the importance of the complete lifecycle thinking to identify, assess and implement the options for optimising sustainability in product and/or services (Maxwell et al, 2023). Sharma et al bring in company's internal value chain aspect and functions. Sustainability in value creation takes place not only on customer demand side. Marketing can make it also to manufacturing, operations and the supply chain. Marketing has critical role in aiding firm's objectives for environmental sustainability (Sharma et al, 2010). Richey et al conclude, that green initiatives effect positively on firm performance and role of top management is critical in promoting it (Richey et al, 2014).

Authors	Title	Year	Perspective	Frameworks	Key words	Key findings
Aquilani B., Silvestri C., Loppolo G., Ruggieri A.	The challenging transition to bio-economies: Towards a new framework integrating corporate sustainability and value co-creation	2018	Marketing	Integrative framework	Bio-economy, Sustainability, Sustainability Oriented Theory of the Firm, Value co-creation	Sustainainability is co-created in integrative framework with stakeholders
Bocken N., Short S., Rana P., Evans S.	A value mapping tool for sustainable business modelling	2013	Marketing	Value-mapping	Business model, Sustainability, Business model innovation, Sustainable business model, Sustainable value, Value creation	Business model innovation is a key to delivering future sustainability. Embedding sustainability into the core purpose of the firm and its network of stakeholders.
Brozovic D., Auria A.D., Tregua M.	Value Creation and Sustainability: Lessons from leading firms	2020	Marketing	Integrative framework	Sustainability, Value creation, Service dominant logic, Institutions, Actors	Pay attention to environmental and societal development, actors, not only economical. Ultimate goal being to understand value flows in service ecosystems incorporating sustainability.
Casidy, R., Nyadzayo, M. W., Mohan, M., Brown, B.	The relative influence of functional versus imagery beliefs on brand sensitivity in B2B professional services.	2018	Marketing	Brand preference - Operational competence	Brand sensitivity, Operational competence, Service brands, B2B branding, Professional service firms, Small and medium-sized enterprises	Importance of imagery beliefs but not at the expense of functionality. Fundamental functional belief.
Kristensen, H.S., Remmen A.	A framework for sustainable value propositions in product-service	2019	Marketing	Sustainable value proposition framework	Product-service system, Sustainable value proposition, Value creation, Circular economy, Learning environment	Tendency to too narrow focus for value creation, often only customer
Mariadoss B.J., Tansuhaj P.S., Nouri N.	Marketing capabilities and innovation-based strategies for environmental sustainability - An exploratory investigation of B2B firms	2011	Marketing	Firm marketing capabilities driving sustainable consumption	Marketing capabilities, Innovation, Sustainability, B2B firms	Sustainable technical innovation as driver for bring more sustainable products and services without compromising quality, price or performance in the market. Sustainable technical innovation is to deliver high levels of emotional and functional values, while minimizing resource use and environmental impacts.
Maxwell D., Van der Vorst R.	Developing sustainable products and services	2003	Marketing	Sustainable product and services	Sustainable products and services; Sustainability; Eco-design; Environmental management; Life cycle approach; Product service systems	Importance of the complete lifecycle thinking to identify, assess and implement the options for optimising sustainability in product and/or services
Porter, M.E., Kramer, M.R.	Creating shared value	2011	Marketing	Shared value	Economical needs, societal needs	Shared value creation focuses on identifying and expanding the connections between societal and economic progress. There are three key ways that companies can create shared value opportunities: by reconceiving products and markets, by redefining productivity in the value chain and by enabling local cluster development
Richey, R. G., Musgrove, C. F., Gillison, S. T., Gabler, C. B.	The effects of environmental focus and program timing on green marketing performance and the moderating role of resource commitment.	2014	Marketing	Resource based view	Green marketing, Resource commitment, Program timing, Performance	Green initiatives effects on firm performance, Importance in top management attention
Sharma A., Gopalkrishan R.I., Mehrotra A., Krishnan R.	Sustainability and business-to-business marketing: A framework and implications	2010	Marketing	Sustainable market	Sustainability, Green marketing, Recycling, Build-to-order, Repair, Reverse logistics	Sustainability value creation not only on demand side, but marketing can make it to manufacturing, operations and the supply chain. Marketing having critical role of in aiding firm's objectives for environmental sustainability.
Terho H., Eggert A., Ulaga W., Haas A., Böhm E.	Selling Value in Business Markets: Individual and Organizational Factors for Turning the Idea into Action	2017	Marketing	Motivation–opportunity–ability framework	Business-to-business marketing, Customer value, Sales, Value-based selling	Value-based selling differs from customer orientation and adaptive selling. Highlighting individuals ability to connect with other people in his or her own organization, leverage their expertise and skills, and align everyone around the customer value creation is critical. Did not specify sustainability as value.
Ulaga, W.	Capturing value creation in business relationships: A customer perspective.	2003	Marketing	Relationship value drivers	Buyer – seller relationships; Customer value; Relationship value	Value is in relationships, Product quality, delivery, time-to-market, product cost, service support, know-how, personal interaction. Did not speficy sustainability.
Vargo, S.L., Lusch, R.F.	Evolving to a new dominant logic for marketing	2004	Marketing	Service-Dominant Logic	Services, Relationships, Value, Resource management, Network management	The focus has shifted from tangibles to intangibles. Instead of exchancing physical goods, the exchange is process. The exchance of knowledge and information.

Table 2. List of frameworks, keywords and key findings from sustainability in B2B marketing

2.3.2 Sustainability in B2B Purchasing

Purchasing context offers the mirror side of the created value. It helps to understand the value perceived from various perspectives. The observations have been collected to table 2. Alfat et al, Blome et, Khan et al, Min et al, Giunipero et al and Mogre et al focus their research to green supply chain management and purchasing. Altaf et al explain meaningful relationships between green supply chain dimensions and the organization's performance. According to their research green purchasing shows to be the most important variable (Altaf et al, 2020). Blome et al conclude, that market performance has positive influence on green procurement, but financial performance was not persuasive in promoting green procurement. Top management commitment is even more important in practising green procurement initiatives than market or financial performance measures (Blome et al, 2014). Khan et al discover, that green capabilities such as financial, innovation, manufacturing and digitalization capabilities have significant positive effect on green procurement (Khan et al, 2022).

Min et al add highlight the size of the company purchasing power in pro-environmental efforts. Buying firms with large volumes are more involved in green purchasing and firms are taking serious effort to environmental regulations by applying green practicalities. According to Min et al high cost of environmental programs are also preventing the green purchasing (Min et al, 2001). Giunipero et al distinguish the benefits and barriers of green purchasing drivers. They conclude that strong top management attention, supportive regulatory environment, enhanced competitive advantage, increased opportunities to financial benefits and trending customer demand will drive to higher sustainability decisions in sustainable purchasing. Correspondingly barriers to higher sustainability are driven by lack of top management attention, lack of regulation, misaligned strategic goals, cost of building sustainability and economic conditions (Giunipero et al, 2012). Similarly, as Sharma et al in marketing context Mogre et al, 2017 highlight the importance of integrated business functions in sustainable and ethical purchasing - like marketing, supply chains and purchasing (Mogre et al, 2017).

Authors	Title	Year	Perspective	Frameworks	Key words	Key findings
Altaf B., Ali S.S., Weber G.-W.,	Modeling the relationship between organizational performance and green supply chain practices using canonical correlation analysis	2020	Purchasing	Green supply chain practise	Green supply chain, Sustainability, Environmental performance, Economic performance	Meaningful relationships between green supply chain dimensions and the organization's performance. Green purchasing is the most important variable
Blome, C., Hollos, D., Paulraj, A.	Green procurement and green supplier development: Antecedents and effects on supplier performance.	2014	Purchasing	Green supplier development	Green procurement, Green supplier development, Financial performance, Market performance, Supplier performance	Market performance was found to have positive influence on green procurement; financial performance was not persuasive in promoting green procurement.Top management commitment is even more important in practising green procurement initiatives than market or financial performance measures.
Celik E., Yucesan M., Gul M.,	Green supplier selection for textile industry: a case study using BWM-TODIM integration under interval type-2 fuzzy sets	2021	Purchasing	Green supplier evaluation	Green supplier selection	Quality determined as most important purchasing criterion. Environmental impact determined as fourth most important.
Drumwright, M. E.	Socially responsible organizational buying: Environmental concern as a noneconomic buying criterion.	1994	Purchasing	Socially responsible buying	Organisational buying, social responsibility	Organisational policy makers (Entrepreneurs) are important influencers
Farizal R., Dewi D, Gabriel S.	Supplier evaluation and order allocation using fuzzy analytical hierarchy process and augmented epsilon constraint methods	2019	Purchasing	Green supplier evaluation	Green supplier selection	This is evidenced by the position of quality criteria, price/cost and delivery that occupy the top three ranks. But, green competence/environmental management performance criteria has no weight value.
Giunipero, L. C., Hooker, R. E., Denslow, D.	Purchasing and supply management sustainability: Drivers and barriers.	2012	Purchasing	SCM Sustainability	Sustainability, Green, Environment, Corporate social responsibility, Purchasing/supply management, Supply chain management	Benefits: Top management, Government regulations, Financial benefits, Competitive advantage, ISO certification and Customer demand. Barriers: Lack of Top mgmt attention, Lack of standards, Misalignment with strategic goals, Cost of sustainability and economic conditions). Emphasis on Top management attention
Khan S.A.R., Yu Z., Umar M., Tanveer M.,	Green capabilities and green purchasing practices: A strategy striving towards sustainable operations	2022	Purchasing	Green purchasing practicalities	Green capabilities, green purchasing practices, sustainability, triple bottom line	The results illustrated that green capabilites such as financial, innovation, manufacturing and digitalization capabilities have significant positive effect on green procurement.
Lo H.-W., Liou J.J.H., Wang H.-S., Tsai Y.-S.,	An integrated model for solving problems in green supplier selection and order allocation	2018	Purchasing	Green supplier evaluation	Green supplier selection, Procurement strategy	Green purchasing is an issue of perception and subjectivity in the decision-making to be avoided.
Min, H., Galle, W. P.	Green purchasing practices of US firms.	2001	Purchasing	-	Green Issues, Purchasing	Buying firms with large volumes are involved in green purchasing, Firms taking serious effort to environmental regulations apply green practicalities, Cost-saving opportunities leading to waste reductions. High-cost of environmental programs preventing the green purchasing.
Menon R.R, Ravi V	Using AHP-TOPSIS methodologies in the selection of sustainable suppliers	2022	Purchasing	Supplier selection in a Sustainable Supply Chain	Sustainable supply chain, sustainable supplier	Economic, environment, social and ethical dimensions are four selection dimensions. The results indicate that economic factors still dominate. Importance of ethics and compliance has increased.
Mogre, R., Lindgreen, A., Hingley, M.	Tracing the evolution of purchasing research: Future trends and directions for purchasing practices.	2017	Purchasing	Marketing, supply chain management, purchasing	Marketing, Decision making, Supply chain management, Purchasing strategy	Importance of integrated business functions in sustainable and ethical purchasing - like marketing, supply chains and purchasing
Mohammed A.,	Towards 'gresilient' supply chain management: A quantitative study	2020	Purchasing	Gresilient supply chain	Green and resilient, Supply chain, Supplier selection, Purchasing, DEMATEL, VIKOR,MCDM	Resilience highest importance criteria, cost&quality&availability then green least important
Nyadzayo, M. W., Casidy, R., Thaichon, P.	B2B purchase engagement: Examining the key drivers and outcomes in professional services.	2020	Purchasing	Purchase engagement	Services selling, B2B, Purchase engagement, Dependence, Professional service firms, Small-medium enterprises	Customization and loyalty, personalization selling services as most important drivers
Sheth, J. N.	A model of industrial buyer behavi	1973	Purchasing	Industrial buyer behavior	Buying process, decision-making	Individual, product preferences and company preferences forming the purchasing decision. Varying based on situational factors
Steg, L., and Vlek, C.	Encouraging pro-environmental be	2009	Purchasing	Industrial buyer behavior	Environmental behaviour, Value	Actual behavior is key deciding factor, environmental behavior needs more study and attention, motivational factors to be incorporated. Adaptation to environmental policies is important.
Steward, M. D., Narus, J. A., Roehm, M.	From transactions to journeys and	2019	Purchasing	Process evolution	Business-to-business decision-m	Buying process has been evoluotionary: First transactions, then situations, influences, responses, relationships, networks and finally journeys
Webster, F. E., Jr.	Modeling the industrial buying pro	1965	Purchasing	Process view	Buying process, decision-making	Product quality, service, and price which provides the most effective solution to customer company problems, variation in process = various problems, buying authority, search process
Yu X., Tao Y., Wang D., Yang M.M.,	Disengaging pro-environmental val	2022	Purchasing	Experience and situational impact to pro-environmental values	Green buying, Sustainability, Pr	B2B purchasing managers disengage their pro-environmental values in B2B green buying decisions when they have little purchasing experience and perceive the business environment as highly competitive.

Table 3. List of frameworks, keywords and key findings from sustainability in B2B purchasing

2.3.3 B2B Purchasing decision-making

To get more granular insight to the exchange in purchasing process, Farizal et al, Steward et al, Sheth, Webster, Nyadzyao et al, Menon et al, Steg and Vlek and Drumright provide their view about the supplier selection process, where the *exchange* takes place. Steward et al define buying process as evolutionary from the past decades. First there has been transactional purchasing. Then it has developed to situations, influences, responses. Further in recent two decades, purchasing has evolved to relationships, networks and finally to customer and purchasing journeys (Steward et al, 2019). This is supported by research since early 60's and 70's by both Webster and Sheth. Webster argues product quality, service and price being most effective in providing the most effective solution to customer company problems. Recently also Farizal et al (2019) has concluded, that quality, cost and service occupy top three ranks. Variation in the supplier selection process is impacted by various problems, the authority of buyer and effectiveness of search process (Webster, 1965). Sheth concludes, that individual, product preferences and company preferences are forming the purchasing decision. Varying also based on situational factors (Sheth, 1973).

The view has expanded as the buying process has evolved. Steg and Vlek bring in the decision-maker's behavioural preferences. They explain that actual behaviour is key motivational factor for individual decision-maker. They still observe that environmental decision-making impact needs to be more studied, but admit at the same time, that adaptation to environmental policies is important (Steg and Vlek 2009). Drumwright introduces the organisational policy makers, entrepreneurial employees, who are important influencers for the company's sustainability (Drumwright, 1994). Lo et al note, that green purchasing is an issue of perception and the subjectivity in the decision-making must be avoided (Lo et al, 2018).

There are also studies, where sustainability is not mentioned as the most important value-driver. Nyadzyao et al approach purchasing from behavioural aspects and conclude, that customisation, loyalty and personalized selling in purchasing process make the greatest effort (Nyadzyao et al, 2020). Mohammed launches concept called "gresilience", which combines the resilient supply chain with green purchasing. Their measures proof the 1. cost, 2. quality, 3. availability and 4. green values as the order of importance criteria in the decision-making (Mohammed, 2020). Menon et al's (2022) results are in line with Mohammed. Their results indicate that economic factors still dominate. Importance of ethics and compliance has increased. Celik et al research outcome is, that quality is determined as most important purchasing criteria. Environmental impact is determined as fourth most

important after cost and supply chain risk (Celik et al, 2021). According to Yu et al, 2022 purchasing managers neglect the sustainability if business environment is competitive (Yu et al, 2022).

3 Theoretical context

Theoretical context of the research has been developed to outline both sides of the exchange. It links theoretical perspectives to the research problem and explains important concepts and their relationships. Theoretical context includes three subchapters: *sustainability in B2B marketing*, *sustainable B2B purchasing*, and *the role of sustainability in B2B decision-making*.

3.1 Sustainable B2B marketing

The definition and content of sustainability varies in the literature as observed in chapter 2.3 This research excludes the hierarchical relationships of these concepts but clarifies the sustainability's role as offered value for the customer. Therefore, traditional term; *marketing* has been connected to term *sustainability* and finally combined as a term sustainable *B2B marketing*. Later in this research sustainable B2B marketing is used as interchangeable term to the definitions like *green marketing* and *sustainable value-creation*.

According to Terho et al and Vargo and Lusch value is the fundament in B2B marketing. B2B customers are not seeking products or services themselves, but solutions, which either contribute to the increase of sales revenue or generate cost reductions (Terho et al, 2012; Vargo and Lusch, 2004). Traditional business models tend to focus on creating, delivering and capturing economic value. This means that value is only measured by economical metrics. Societal and environmental values are left to the background and measuring does not have any reference to social and environmental impacts. The idea of including social and environmental objectives is not new and many companies are applying the triple bottom line (Elkington, 1997) in business model (Querreiro et al, 2022). In sustainable B2B marketing companies merge sustainability as value to their operations, products and services aiming to provide economic, social and environmental benefits to all stakeholders (Bocken et al, 2013; Brozovic et al, 2020; Kristensen at al, 2019). Kristensen has defined sustainable B2B marketing as a product-service systems (PSS), which is highlighted as a

concept having potential to contribute to the societal transition towards circular economy and sustainability. PSS is a system, which constitutes both tangible products and intangible services together forming a solution, which is fulfilling customers' needs (Kristensen at al, 2019). Kristensen et al sustainability attributes are presented in figure 9.

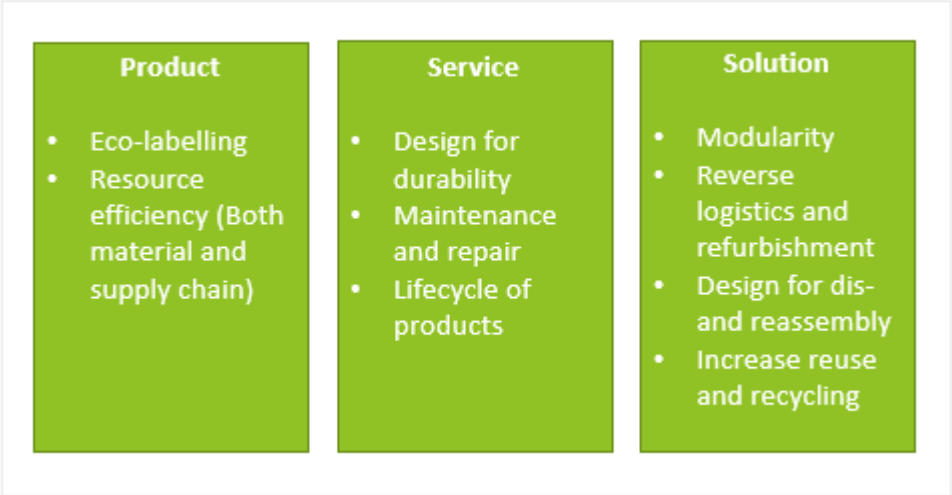

Figure 9. Sustainability attributes of products, services and solutions (Kristensen et al, 2019)

Brozovic et al incorporate sustainability value creation to the service-dominant logic (SDL), where there is a role for stakeholders to address the sustainability issues involving resource integration, service exchange, institutional arrangements and service ecosystems in relationships and partnerships (Brozovic et al, 2020). Aquilani et al conclude, that sustainable innovations are key factors to companies' success. They enable cleaner and safer production and consumption (Aquillani et al, 2017). Bocken et al highlight the significancy of sustainable business models and innovation in delivering broader range of value. According to them sustainable B2B marketing provides competitive advantage for the company and at the same time contributes to sustainable development (Bocken et al, 2013). Terho et al emphasize the role of sales competencies in translating the supplier's value proposition to customer's particular business need and demonstrating the value in-use potential. (Terho et al, 2012).

3.2 Sustainable B2B purchasing

The terms *green procurement*, *green supply chain management* and *sustainable procurement/purchasing* are used interchangeably to determine sustainable B2B purchasing practises. The theoretical definition sustainable purchasing has been widen-up due to its growing demand and constantly changing environment (Blome et al 2014). Drumwright defines sustainable B2B purchasing as buying environment-friendly industrial products for manufacturing needs, which is mandatory for further supply chain steps to finally deliver environment-friendly products to customers and help to reduce harm to natural environment at its source (Drumwright, 1994). Altaf et al expand it to cover both products and services (Altaf et al, 2020). According to Blome et al, the trigger for sustainable purchasing has become from stakeholders engaging in green practices, mainly from regulative environment and competition. Main green driving forces are investments to *(1) environmental technologies and competencies and (2) emission preventive actions* (Blome et al, 2014) This can be achieved with eco-friendly design of products and services thru their lifecycle, optimizing the supply chain and reverse logistics and increase of remanufacturing opportunities (Blome et al, 2014; Sharma et al, 2010; Mogre et al, 2017). Webster defines B2B purchasing triggers according to figure 10.

Figure 10. B2B purchasing triggers (Webster, 1965)

Despite the green movements made in manufacturing processes and logistics, companies have just recently started get engaged to sustainable B2B purchasing, which spans over the entire value chain (Blome et al, 2014; Altaf et al, 2020; Mohammed, 2020). Altaf et al and Khan et al conclude that sustainable B2B purchasing has a key role in entire supply chain activities and is becoming key strategy for firms to improve companies' profitability

and brand image (Altaf el al, 2020; Khan et al, 2022). Blome et al emphasize further the companies' role to develop collaboratively their suppliers towards the green practices. Lo et al, discover the monetary importance of sustainability in purchasing, as manufacturing firms typically spend approximately 60%-70% of their total income on purchasing raw materials, components, and services (Lo et al, 2018). The recent development in macro-economic picture; pandemic, geopolitical changes and logistics disturbances has brought supply chain resilience to the picture together with sustainability in purchasing (Mohammed, 2020). Mogre et al recommend research to focus on integrating sustainable strategies together. Companies' overall sustainability strategies should be in line and connected to company business and supply chain strategies. Therefore, research on sustainable purchasing needs to be more interdisciplinary, marked by collaborations between business academics and environmental scientists (Mogre et al, 2017).

3.3 Sustainability in B2B purchasing decision-making and exchange

The role of sustainability as customer value is interconnected with other purchasing decision-making attributes. The exchange is a combination of all attributes in the event of final decision. Therefore, this subchapter explains firstly the theory of purchasing decision-making and the theory of exchange. Finally, sustainability activities from entire lifecycle perspective are combined to illustrate the value and criteria they bring to the decision-making.

3.3.1 B2B purchasing decision-making

The decision-making process as a theoretical process is a systematic process flow, but in practise it is multifaceted. The purchased commodities are different, the purchasing conditions vary (see chapter 2.3.2), selection attributes are not standard between the customers and customer's decision-making personnel hierarchy is different between companies. (Webster, 1965). Van Weele has split the decision-making process into stages in supplier selection process. The process is presented in figure 11.

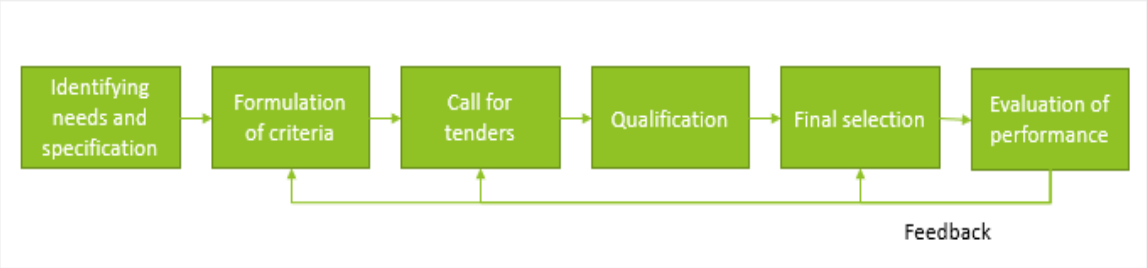

Figure 11. Supplier selection process, (Van Weele A.J, 2010)

This research will focus on final selection stage according to the research question, what is the role of sustainability in B2B customers buying decisions. This research has been able combine six different decision elements, which have been mentioned in the literature review source data. The purpose of the decision elements clustering is to clarify the decision attributes, that constitutes the final decision. These decision elements are used later on in the empirical part of the research.

(1) Imaginary attributes cover the intangible perceptions, like brand image and reputation (Nyadzyao et al, 2020). *(2) Performance* attributes focus only on utilitarian functionality of the commodity (Menon et al, 2022; Celik et al, 2021; Casidy et al, 2018; Mariadoss et al, 2011; Webster 1965). *(3) Timing* includes the situational factors from when and where the needed commodity is available, like on-time delivery (Yu et al, 2020; Sheth, 1973). *(4) Behavioral* elements deal with subjective beliefs, values, attitudes before, during and at the decision-making (Steward et al, 2019; Stek and Vlek, 2009; Ulaga 2003). *(5) Regulatory* elements take care of the compliance with regulations (Mogre et al, 2017; Giunipero et al 2012). *(6) Financials* are calculative elements to form monetary impact of the decision (Menon et al, 2022; Mohammed, 2020; Farizal et al, 2019; Mariadoss et al, 2011; Webster 1965). The elements have been collected to the table 3. The table is not exhaustive, and decisions are typically a combination of attributes, but it proofs how multifaceted the final decision is.

#	Decision elements	Decision attributes
1	Imaginary	- brand, - reputation, - aestetics, - feelings
2	Performance	- usability, - features, - performance, - service provided, - quality
3	Timing	- availability, - on-time delivery
4	Behavioral	- customer service, - relationships, - past purchases (Journey) - knowledge, - process easiness
5	Regulatory	- laws, - regulations, - policies
6	Financials	- cost, - switching cost, - cost saved, - revenue increased, - future value of the purchase

Table 4. Decision-making elements and attributes (Modified from Menon et al, 2022; Nyadzyao et al, 2020; Celik et al, 2021; Farizal et al, 2019; Casidy et al, 2018; Mariadoss et al, 2011; Webster 1965; Yu et al, 2020; Sheth, 1973; Steward et al, 2019; Stek and Vlek, 2009; Ulaga 2003; Mogre et al, 2017; Giunipero et al 2012; Mohammed, 2020)

As the mutual importance of these elements varies, the key question, to which answer was not found from literature, is that where sustainability is placed in this equation. This research considers three options; (1) it is a precondition for all six elements, (2) it is a seventh decision element or (3) it is embedded to some of the identified elements, like regulations. The largest benefit of being as a precondition is that it is clear non-negotiable criteria and ensures fully the sustainability impact. The downside of it is its resource intensity and it is not viable economically for all actors, like for example smaller companies. Adding it as seventh element would bring it better visible in the decision-making, but it is still subject to trade-offs in the decision-making due to its optionality. Embedding it into only some elements makes sure, that sustainability is considered in some ways, but the impact remains blurry and exposes it to optionality. Sustainability activities as customer value are presented in the chapter 3.3.3.

3.3.2 Exchange

Exchange is core concept in marketing field (Bagozzi, 1975; Hunt, 1991). The *exchange* takes place, when value offered, and value perceived meet each other between the actors in the value chain (Ulaga, 2003). Anderson et al, 1993 define value as perceived amount of money of the set of economic, technical, service and social benefits received for the paid price of the complete solution (Anderson et al, 1993). This definition contains first efforts to include also social benefits into value construct (Ulaga, 2003). According to Ulaga there are recurring characteristics in exchange: (1) Customer is a subjective concept, (2) Trade-off takes place between benefits (what to get) and sacrifices (what to give), (3) Benefits and sacrifices are multifaceted and (4) Value perceptions are relative to competition (Ulaga, 2003). Between the need recognition and the exchange there is decision-making process, which both parties the purchaser and the seller go through before final transaction takes place. The overall *exchange process* is illustrated in the figure 12.

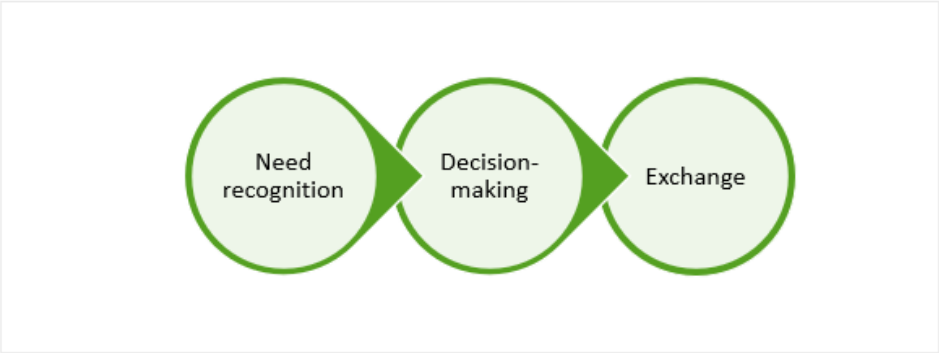

Figure 12. Exchange process (Bagozzi, 1975; Hunt, 1991; Ulaga, 2003)

3.3.3 Sustainability as customer value

This research dismantles sustainability as customer value based on the impact it makes either to the commodity itself including its usage or to the process to build and deliver it to customer. The term commodity includes together products, services and solutions. It is focusing solely to the commodity itself and its lifecycle impact to the environment. The process includes all the necessary value chain steps to make commodity complete and customer satisfied about the commodity functionality. The approach is combined model from Blome et al, 2014; Sharma et al, 2010; Mogre et al, 2017 and Kristensen et al, 2019 and all value activities are collected from articles, that are included into the research scope. Sustainability as customer value is clustered under seven fields. *(1) Eco-design* includes

material and technology selection in the product design and engineering stage. *(2) Manufacturing* takes care of production process, inventories, waste and energy efficiency, *(3) Logistics* cover the network footprint, packaging and transportation. *(4) Commodity use* focus on customer's usage, *(5) Circularity* includes lifetime extensions, repairs, re-use and disposal activities. *(6) Capabilities and competencies* deal with marketing and communications, personnel, regulations and financial capabilities. *(7) Business model innovation* seeks fundamental changes to the way to bring sustainable benefit to customer. Sustainable customer values are presented in table 4, where value activities are explained more in details. Similarly, as in chapter 3.3.1, the table is not exhaustive, and activities are typically a combination of activities, but it explores the wide variety of opportunities with sustainability.

#	Article	Impact	Sustainability value field	Description of sustainable value activity
1	Aquillani et al 2018, Bocken et al 2013, Celik et al 2021, Maxwell et al 2003, Min et al 2001	Commodity	Eco-design	- alternative materials, - renewable materials, - less materials, - alternative technologies
2	Blome et al 2014, Bocken et al 2013, Lo et al 2018, Min et al 2001, Mohammed et al 2020, Mogre et al 2017, Sharma et al 2010, Yu et al 2022	Process	Manufacturing	- precision with demand management to avoid waste, - resource usage (gas, oil, water), - manufacturing equipment, - lean manufacturing, - reduction of manufacturing steps, - imporved inventory control, - reduction of scrap, - waste management, - energy efficiency, - emission saving
3	Blome et al 2014, Lo et al 2018, Min et al 2001, Maxwell et al 2003, Sharma et al 2010	Process	Logistics	- distribution network optimisation (nearshoring), - environmentally sustainable packaging, - green transportation and logistics, - reduction of reverse supply
4	Maxwell et al 2003, Yu et al 2022	Commodity	Commodity use (Product, service, solution)	- environmental healthy use
5	Blome et al 2014, Bocken et al 2013, Casidy et al 2018, Khan et al 2022, Kristensen et al 2019, Min et al 2001	Commodity and process	Circularity	- design for durability, - maintenance for life-time extension, - service resource optimisation, - remanufacturing, - design for disassmebly and re-use (creating value from waste), - disposal and recycling
6	Altaf et al 2020, Khan et al 2022, Lo et al 2018 Min et al 2001, Mogre et al 2017, Mohammed et al 2020, Sharma et al 2010, Sheth 1973, Terho et al 2017	Process	Capabilities and compentencies	- role of marketing, - organisational training and involvement, - comply with regulation and policies, - management system and certificates, - financial capabilities
7	Bocken et al 2013, Brocovic et al 2020 Vargo and Lusch 2004	Process	Business model innovation	- deliver functionality rather than ownership (asset vs. access), - digitalisation - repurpose the business from profit to environment, - deliver environmental benefit for customer's business processes

Table 5. Sustainability as customer value

Sustainability creates many advantages for customers and companies themselves. There are also investments, that companies need to make. The main advantage is to gain enhanced environmental performance (Altaf et al, 2020) with optimized resource usage (Giunipero et al 2012), resulting to less waste and emissions (Min et al, 2001). This enables different quality perception (Celik et al, 2021) and leads to overall improved brand image (Khan et al 2022; Casidy et al, 2018). Finally, it generates better profitability (Khan et al, 2022) and new market opportunities with option to differentiate (Altaf et al, 2020; Giunipero et al 2012). Min et al and Mogre et al highlight the role of resources and strategy in sustainability transition (Min et al, 2001; Mogre et al 2017). Min et al points out, that sustainability transition requires resources and thus can be costly for smaller companies (Min et al, 2001), which limit the company's ability to make sustainability transition. Mogre at al reminds, that companies' sustainability strategies need to be well defined (Mogre et al 2017) otherwise it leads to uneconomical outcomes like costly processing of reverse supply chain for re-use and recycling purposes (Min et al, 2001).

4 Methodology

The methodology chapter consists of four subchapters. First subchapter explains the choice of methodological approach and steps of the empirical research. Second subchapter describes the case study. The description of sample data and data collection is included into the third subchapter. Finally, reliability and validity of the research is being explained.

4.1 Methodological approach

The research methodology is mixed-method case study. It combines literature findings from *sustainable B2B marketing*, *sustainable B2B purchasing* and *purchasing decision-making* together with empirical findings from both quantitative survey data and complementing qualitative interviews to explain the sustainability phenomenon. The research approach is abductive, which combines the elements from both: inductive and deductive approaches. Inductive approach forms conclusions from theory and supports it with data, whereas deductive forms theory from collected data. The relevancy and validity of the theories are tested within real-life case company scenario (Yin, 2014) and the results are being interpreted and reflected with literature to understand the phenomenon within the scenario (Eisenhardt, 1989). The limitation of this method is its scientific generalization. It is dependent on the quality and size of the case sample (Saunders et al, 2016). The steps of the empirical study have been modified from Eisenhardt's case study research methodology. Table 6 outlines in details the case study steps and describes the purpose of each step.

Step	Eisenhardt's activity (Eisenhardt, 1989)	Procedure as adopted to this research
1. Getting started	- Definition of research questions	- Research questions defined
2. Define the case	- Specify the population - Theoretical sampling	- Specify the population as sample companies
3. Crafting instruments and protocols	- Data collection methods - Quantitative and qualitative data	- Detailing the questionnaire - Detailing the interview process
4. Entering the field	- Data collection (interviews, field notes)	- Detailed data collection protocol - interviews, no visits
5. Analyzing the data	- Case analysis - Cross case analysis	- Data analysis of the questionnaire - no cross-cases
6. Concluding the findings	- Iterative tabulation of evidencies - Hypothesis - Search evidence for why	- Iterative tabulation of evidencies - concluding summaries of findings - proposal for future research
7. Comparison to the literature	- Comparison to literature, similarities/differencies	- Comparison to the systematic literature review fingings
8. Reaching closure	- Theoretical saturation when possible	- Theoretical and managerial implications

Table 6. Case study research methodology (Modified from Eisenhardt, 1989)

4.2 Case description

The case company is a Finnish machinery company, who is specialized in highly advanced industrial solutions and preventive maintenance services. The company has for several years been engaged in sustainable business development and has great interest in developing new sustainable and circular business models. Company's special interest is to gain more understanding on added value of sustainability provided as part of customer products and services. The author has worked with the company since 2007. From January 2023 onwards the author has been engaged with the development of a new sustainable and circular business models in the remanufacturing field. The author has conducted the online interviews himself to maintain the relevancy and validity of the study. To support the data gathered from interviews, several additional documents have been studied, like reports, articles and white papers from the case company. A case study protocol has been followed, capturing case study notes, minutes of the meeting, and interview transcripts and notes. To maintain the objectivity of the author in the interviews, there has been set an auditor from the case company. The auditor has ensured, that author has not led interviewee's responses to any preferred direction.

4.3 Data collection

The data collection method of this research is semi-structured interviews, where first was sent questionnaire to respondent (Table 7.) upfront and then in separate Microsoft Teams interview respondent was able to interactively complement the specific answers with interviewer.

Database ID	Coding	Role in the company	Respondents years of experience in	SME / MNE	Interview time (min]
1	Metal N	Managing director	30	SME	45
2	Machinery H	Sales manager	15	SME	45
3	Machinery I	Managing director	20	SME	40
4	Machinery J	Managing director	17	SME	38
5	Metal O	Purchasing manager	15	MNE	45
6	High-Tech E	Production director	20	SME	55
7	Power P	Procurement director	9	MNE	50
8	Forest products B	Procurement director	12	MNE	45
9	Automotive A	Procurement director	33	MNE	70
10	Forest products C	Senior specialist	2	MNE	50
11	High-Tech F	Production director	24	MNE	45
12	Machinery L	Procurement director	25	SME	50
13	Machinery M	Managing director	20	SME	60
14	Logistics G	Managing director	30	MNE	45
15	Forest products D	Financial director	16	MNE	45
		Avg	19		49

Table 7. Respondents profile and interview time

Semi-structured interview as a method is natural and interactive, where data collection process evolves with complementary questions (Saunders et al, 2016). The target group of respondents have been business leaders and industrial buyers, who have been considered as “key informants” to explain the role and importance of the sustainability. The sample has been derived from the customer database of the case company. Prior to data collection, the interview questionnaire has been pre-tested to ensure the validity of the questions and scales. In a pre-test stage three senior sales leader professionals have assessed the content and clarity of the questions, resulting to minor changes of the wording and scaling of the questions. The final questionnaire (Appendix 2.) includes descriptive variables, Likert scale questions and open-ended questions. Following main themes have been explored with questionnaire:

- The role of sustainability in the decision-making in general
- The importance of different sustainability fields to the customer
- The role of sustainability for customers’ customers
- Willingness to pay more for sustainability fields
- Development of sustainability in the future

4.4 Sample and descriptive variables

The Microsoft Forms questionnaire was sent to 15 companies, which represent wide range of industry sectors including small and medium size enterprises (SMEs) and multinational enterprises (MNEs). To increase the response rate, a modified version of Dillman's total design method (Dillman 1978). was followed. Respondents had the choice to return the questionnaire directly online, but Microsoft Teams interview time was agreed with all the companies to ensure the highest possible response rate. Only one company returned the questionnaire directly online, but the rest 14 companies were additionally interviewed in Microsoft Teams interview. The final response rate was 100 %.

The descriptive variables define the group of interviewed companies and background of them. It explains the distribution of geography and industry sectors from where companies are coming from. It defines the size of the companies based on revenue and personnel to SMEs and MNEs. Business role of respondents and the experience in the industry defines the respondent's role, ability to influence to the decisions and seniority about the context. The overview of descriptive variables is presented in table 8.

Countries

Countries	Share %	Number of companies
Belgium	7 %	1
Germany	7 %	1
Switzerland	7 %	1
France	13 %	2
USA	13 %	2
Finland	53 %	8
Total	100 %	**15**

Industries

Industries	Share %	Number of companies
Automotive	7 %	1
Logistics	7 %	1
Power	7 %	1
High-Tech	13 %	2
Metal	13 %	2
Forest products	20 %	3
Machinery	33 %	5
Total	100 %	**15**

Size of the companies based on revenue and personnel

Size	Share %	Number of companies
Small and medium	47 %	7
Multinationals	53 %	8
Total	100 %	**15**

Profile of the respondents

Profile	Share %	Number of companies
Procurement	40 %	6
Business manager	60 %	9
Total	100 %	**15**

Average working years in the industry	**19**	**years**

Table 8. The overview of the descriptive variables

4.4.1 Geography and industry sectors

The geographical distribution covers companies from Western Europe and United States. There has been eight companies interviewed from Finland, two companies from both France and United States and one company from each of the following countries Belgium, Germany and Switzerland. Similarly, the distribution of industry sectors includes five companies from machinery industry, three from forest industry, two from each metal and high-tech industries and one each from power, logistics and automotive industries.

4.4.2 Size of the companies in revenue and personnel

Company size is categorized from both the revenue size and personnel size. Small and medium sized enterprises (SMEs) have less than 200 m€ annual revenue and less than 1000 employees. Correspondingly multinational enterprises (MNEs) have over 200 m€ annual revenue and more than 1000 employees. There has been interviewed seven small and medium sized enterprises and eight multinational enterprises.

4.4.3 Business role of respondents and average years in the industry

This research has been targeted to collect answers from business management and procurement professionals, because they have long-term experience from the industry and they hold such a position, where they are able to influence to the strategic direction and decisions of the companies. Nine respondents hold a business management position like managing director, financial director, or production director. Six of the respondents hold a procurement position, mainly deciding on the purchase of investment commodities. Respondents have 19 years average working years in the industry.

4.5 Data analysis method

After the interviews the collected data has been analysed. The entire data has been checked and possible deviations and errors have been cleaned. The data has been organized into a form, that it is manageable to conclude. The data set has been clustered into the six groups; 1. Descriptive variables, 2. Importance of sustainability among other purchasing decision-making criteria, 3. Priority of customers' sustainability focus, 4. Priority of customers' customers sustainability focus, 5. Customers' willingness to pay for sustainability and 6. Predictions about the sustainability in 3-5 years' time-horizon. Customers are coded to maintain agreed confidentiality with them, but to retain traceability with all respondents' answers. The companies are coded as follows;

Database ID	Company	SME / MNE
9	Automotive A	MNE
15	Forest products B	MNE
8	Forest products C	MNE
10	Forest products D	MNE
6	High-Tech E	SME
11	High-Tech F	MNE
14	Logistics G	MNE
2	Machinery H	SME
13	Machinery I	SME
3	Machinery J	SME
4	Machinery L	SME
12	Machinery M	SME
1	Metal N	SME
5	Metal O	MNE
7	Power P	MNE

Table 9. Company coding

The findings from the empirical study are presented in chapter 5.

4.6 Reliability and validity

The reliability and validity assessment considers whether the results of the research are credible or not. The reliability refers to replication and consistency – would similar findings be achieved if the research would be replicated. Reliability also includes transparency over the data analysis, wording in the questionnaire and conducting a pilot test. (Saunders et al, 2016). This research provides detailed steps how the analysis has been conducted (Table 6.). It explains the questionnaire pre-testing and finally opens all the relevant information to evaluate the research and its results. Therefore, this research can be replicated at any time. The general downside of qualitative research is its subjectivity and sensitivity for errors when processing results. It contains multiple perspectives, different opinions and feelings and are not easy to conclude as general phenomenon (Saunders et al, 2016). To maintain the objectivity and minimize the processing errors in this research qualitative questionnaire has been built to systematic Microsoft Forms format and questions have been documented in the Teams meeting together with interviewee. To further reinforce the objectivity and minimize the misunderstanding in the interviews, there has been set an auditor from the case company for all interviews. The auditor has ensured, that author has not led interviewee's responses to any preferred direction. Noteworthy is to understand, that research field of sustainability develops over the time, so the context and results are likely to vary.

The validity of the research focus on whether the research studies the phenomenon it is supposed to. In details it means appropriateness of the used measures, accuracy of the analysis and generalizability of the findings (Saunders et al, 2016). Validity, or invalidity can be explored both internally and externally. Internal invalidity refers to the possibility that the conclusions drawn from the experiment results may not accurately reflect what went on in the experiment itself (Babbie, 2004). The weakness of this research empirical experiments is related to their artificiality – the results that are consolidated from realistic business scenario might not necessarily fully realize in practise. In practise the questionnaire has not been conducted at the same time with actual purchasing situation, which might have an effect to the results. External invalidity refers to the possibility that the conclusions drawn from the experiment results may not be generalizable to the 'real' world (Babbie, 2004). The research has been conducted to one industry-segment; therefore industry-specific principles might impact to the outcome of the research. In practice results may vary from industry to another.

5 Findings of the empirical research

Findings of the empirical research describes the research results from questionnaire and complementing interviews. First questionnaire has been sent to respondents, where they filled the form upfront. Then Microsoft Teams interview were conducted, where the respondent had the choice to complement the answers and explain the backgrounds of their choices. Analysis of the results proceeds according to the themes mentioned in data collection chapter. First sustainability's overall position in the decision-making is explained. Secondly, customers' perspective provides in-depth view, what sustainability fields customers value the most. Third subchapter explores further the value chain to observe customers' customers view on sustainability. Customers' willingness to pay green premium is tested after understanding the role and content of the sustainability among customers. Finally, future trends of sustainability in next 3-5 years horizon is concluded. The results of each subchapter are presented in both quantitative and qualitative format based on the questions in the questionnaire (Appendix 2) and conducted interviews. The results are split into two clusters based on the size of the companies in revenue and personnel, small and medium sized enterprises (SMEs) and multinational enterprises (MNEs). This enables more detailed results comparison and better understanding of the causality behind the results. Last subchapter collects the results of the empirical part.

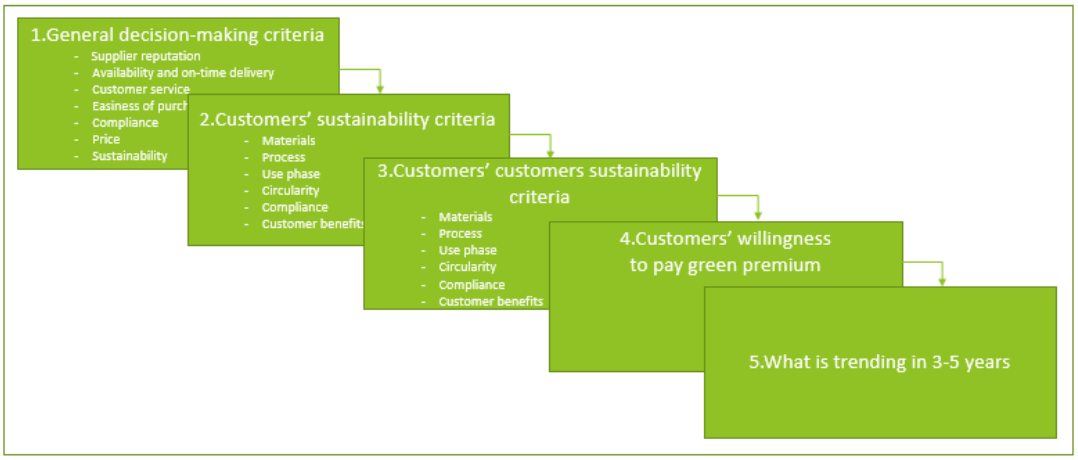

Figure 13. Processing the results

5.1 Role of sustainability in purchasing decision-making

The role of sustainability among other decision-making criteria is asked with two questions. First question follows Likert scale question with five steps from *least important* to *most important*. The results are presented as how many percentages of the total number of respondents (SMEs = 7) and (MNEs = 8) have chosen certain rating. For example, if four respondents from SME companies have rated compliance's importance as *most important,* then the importance score is calculated as four divided by seven. This equals to 57,1% as *most important* importance rating for compliance. Respondents had the possibility to use same score between each variable. This logic has been applied throughout all quantitative questions.

First question is as follows; "Functionality and usability are preconditions for the purchase to take place. Therefore, they are excluded. Please define priority the other decision-making criteria for industrial buyer, when purchasing lifting equipment." In this question author has made base assumption, that commodity must fill its functional purpose of use in qualified manner. Therefore, functionality and quality of the commodity are not asked as decision-making criteria.

The results, shown in figure 14, indicate that SMEs are compliance and price-driven, both end-up being the *most important* criteria with 57,1% among all seven respondents. Secondly both SMEs and MNEs appreciate stable and convenient supplier relationships with reliable deliveries. They all are ranked *very important* (57,1%) among the respondents. Interestingly sustainability as a decision-making criteria is rated *less important* by 57,1%. Overall, this implies of the high importance of responsible business, price-sensitivity and situational factors, like availability, on-time delivery and customer service.

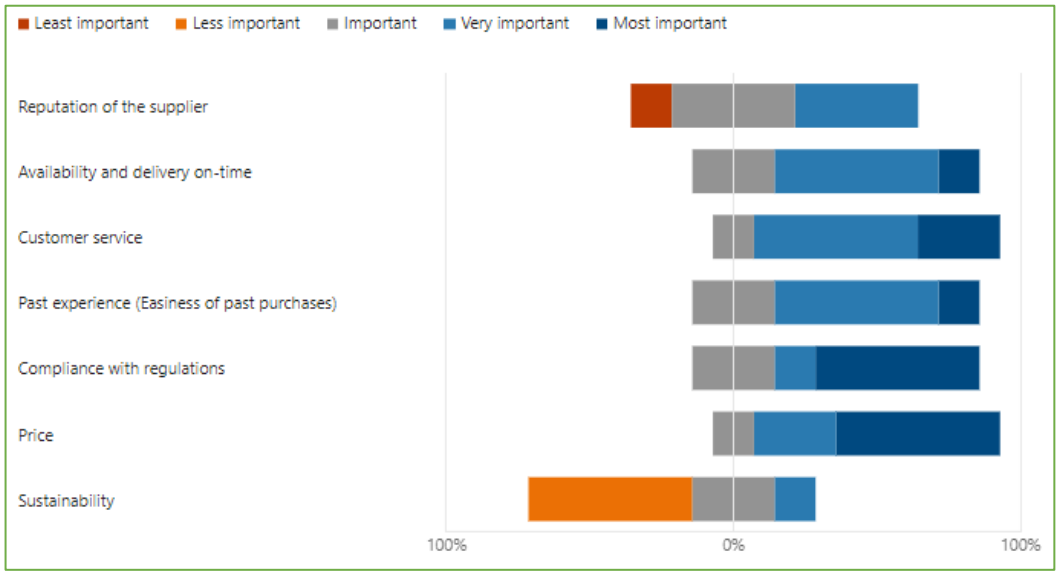

Figure 14. Role of sustainability in purchasing decision-making among SMEs

Multinational enterprises' results are presented in figure 15. MNEs are giving highest scoring for compliance with 87,5% being the *most important* criteria. Price (87,5%) and availability (75%) are following right after as *very important*. The reputation of the supplier, which is connected to compliance is rated 37,1% *most important* among respondents. The existing supplier relationship is perceived as mixed among MNEs; *less important* with 37,5% and *most important* with 37,5%. Contra dictionary to the SMEs, sustainability's importance increases among the MNEs. 25% rates it as *most important* and 62,5% ranks it as *very important*.

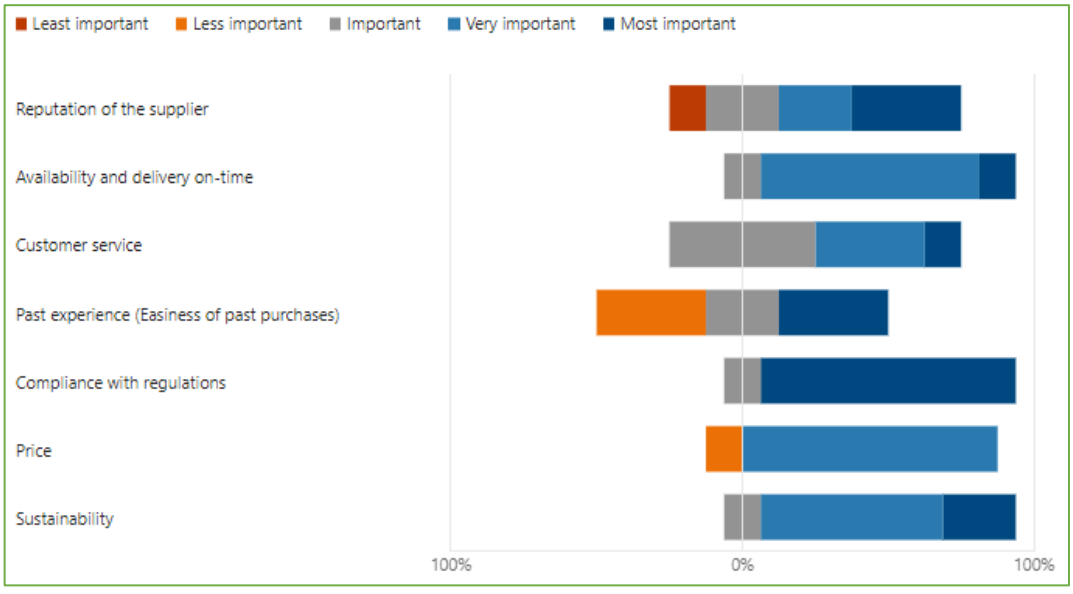

Figure 15. Role of sustainability in purchasing decision-making among MNEs

Second question is an open-ended question, where the respondent can explain, if any of the previous criteria are non-negotiable. Second question goes as follows; “Are any one of the criteria precondition i.e. non-negotiable? If yes, which ones”. There are two most common criteria among the SMEs, compliance and customer service. Although SMEs quantitative results indicate lower importance with sustainability three companies connects the wider sustainability framework, including safety and ethics, under the compliance.

- Metal N company states, that “Compliance with regulations is highly important as it is a business prerequisite.”
- Machinery M company comments, that “Compliance and sustainability must be met as precondition.”
- High-Tech E company highlights, that “Compliance with regulations, especially safety at work, electricity, lifting standards is a must.”
- Machinery H company and Machinery I company require professional customer service as a prerequisite.

Multinational enterprises are more homogeneous with non-negotiables, all of them highlight the importance of compliance with regulations, responsible business and reputation of the supplier. Two of them mention additionally customer service as prerequisite.

- Forest product C company states, that “Responsible supply chain leads to non-negotiable in compliance. Ethics, environment, regulations and safety are preconditions.”
- Forest products B company comments, that “Reputation of supplier and compliance needs to be in place, if supplier wants to qualify for further offering.”
- Power P company and Logistics I company require additionally professional customer service as a prerequisite.

5.2 Sustainability as added-value to business-to-business customers

Sustainability as customer’s added value is measured according to the seven sustainability fields as mentioned in chapter 3.3.3. There are two questions asked in this section. First question follows Likert scale question with seven steps from *least important* to *most important*. First question is as follows; “Please evaluate the importance of environmental sustainability in each phase.”

Small and medium sized enterprises' results are shown in figure 16. The results indicate that SMEs are more focusing on product use-phase, circularity, compliance and their customer benefits than materials selection and supply chain criteria. The most important criteria is product use phase getting the rating for *most important* 42,9% and *very important* 42,9% of all responses. Compliance follows as second most important criteria with 28,6% for *most important* and 14,3% for *very important*. Circularity and capability to deliver customer environmental benefits are following with equal importance with *most important* by 28,6% and *very important* by 28,6%. Suppliers manufacturing process (14,3% *least important*, 14,3% *less important*, 42,9% *somewhat not important*) has been perceived mostly not important sustainability field and same observation is followed with logistics having 28,6% *somewhat not important*. Products material selection shows to be *least important* for 28,6%, *less important* for 28,6% and *somewhat not important* for 28,6% of all responses.

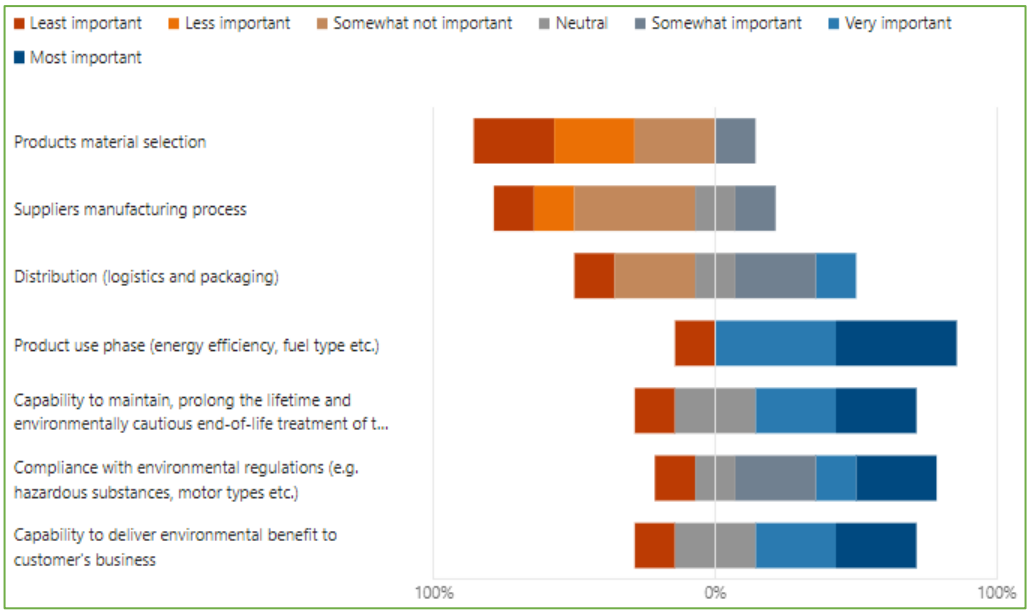

Figure 16. Sustainability as added-value to SMEs' business-to-business customers

The overall positioning of the sustainability fields importance shifts towards more important among multinational enterprises. (See figure 17.) Compliance and product use phase are the most important sustainability fields with 62,5% *most important* rating. Compliance is even complemented with 37,5% *very important* weighting. Circularity follows also with high focus: 50% being *most important* and *very important* being 37,5%. Capability to deliver environmental benefit to customer is seen important, but not as important as product use phase, compliance and circularity. It receives for *most important* and *very important* 25% both and 37,5% for *somewhat important*. Suppliers manufacturing process is positioned in the middle of the scale with 25% of *somewhat not important* and 25% to *neutral*. Distribution

and logistics gets 37,5% for *somewhat important*. Products material selection is slightly mixed with *very important* for 37,5%, but *less important* for 12,5% of all responses.

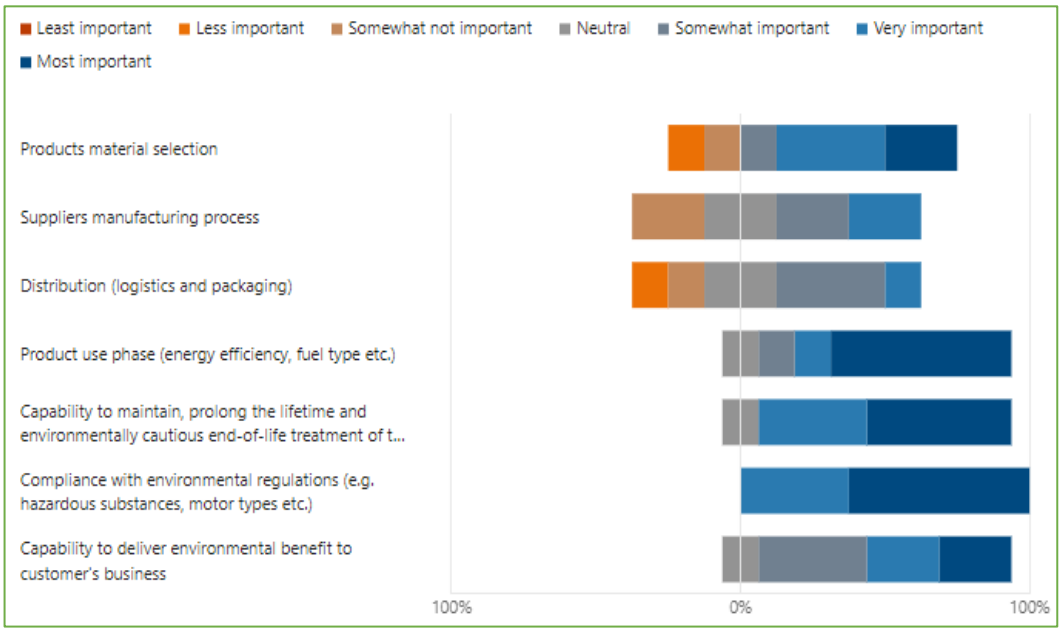

Figure 17. Sustainability as added-value to MNEs' business-to-business customers

Second question is an open-ended question, where the respondent can explain additional comments to the previous question. Second question goes as follows; "Is there anything additional, that you would like to highlight on previous question?" SMEs highlight the benefits of product use phase the most.

- Metal N company states, that "Product use phase and capability to deliver environmental benefits to customers' business are important. Please provide more benefits that we can sell."
- Machinery M company comments, that "Energy-efficiency is beneficial."
- High-Tech E company highlights, that "Equipment is seen as supportive asset. It must perform according to safety standards with no downtime. Energy-efficiency is seen an opportunity."

Multinational enterprises put emphasis on capability to maintain, prolong the lifetime and environmentally cautious end-of-life treatment of the product and capability to deliver benefits to customer's business.

- Power P company states, that "Lifecycle costs are the most important."

- Forest products C company comments, that “Lifetime and lifecycle services are important as factories are typically designed to run decades.”
- High-Tech F company highlights, that “Capability to deliver customer's business is becoming more and more important”

One company reminds, that the laws, norms and regulations are developing fast now.

- Forest products B company observes, that “Sustainability criteria is building up currently fast, but at the moment there is no strict policy in place.”

5.3 The role of sustainability for customers’ customers

Customers’ customers perspective about the role of sustainability has been asked to gain wider value chain understanding and to observe whether there is any differences compared to sole seller-buyer relationship. Four questions have been asked in this section. First question follows Likert scale question with three steps from *1.not important, 2. neutral* to 3. *very important*. First question is as follows; “How important sustainability is for industrial buyer's customers?” The results are shown in figure 18. The results indicate that SMEs are more observing their customers’ importance of sustainability *neutral* today. Also majority of MNEs are observing it as *neutral*, but three ranks it as *very important*.

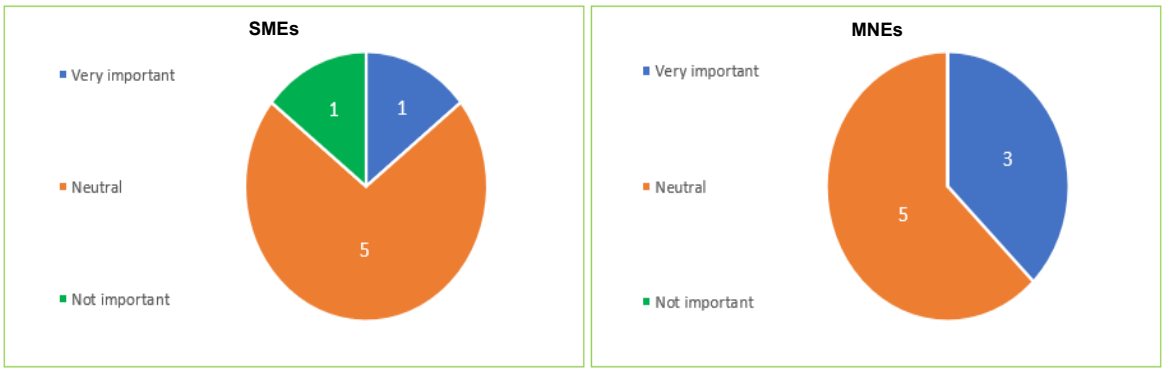

Figure 18. General importance of sustainability to customers’ customers, SMEs vs. MNEs

Second question is an open-ended question, where the respondent can explain additional comments to the previous question. Second question goes as follows; “Is there anything additional, that you would like to highlight on previous question?” SMEs highlight the role of large customers the most for pioneering the sustainability value.

- Metal N company states, that “It is still very heterogenic from one customer to another - only a few big customers include sustainability in their purchasing criteria.

With large companies this is becoming must, that you must qualify with sustainability."

- Machinery H company comments, that "Small companies do not see sustainability that important, price is typically most important for them."
- High-Tech E company highlights, that "Most likely sustainability will develop rapidly further as their customer focus is taking shifts towards the large multinationals."
- Machinery L company concludes that "Sustainability has already been advantage for customer's marketing over five years. Practical examples are use of less energy and avoidance of harmful chemicals."
- Machinery M company observes "Sustainability is in general in discussion with large customers. Not visible yet in decision-making."

Multinational enterprises are highlighting the importance of large customers leading the way, which is homogenous with SMEs. Other two important observations are related to companies' core product vs. indirect purchases and company's image.

- Forest products B company states, that "Despite the general importance, it is not that visible in indirect purchases as it is for direct consumables for the customer end-product."
- Automotive A company comments that "From the marketing perspective, the image is very important. Awareness is developing among the customers as well from what products contain and how is the supply chain set."
- Forest products C company highlights, that "Big customers have indicated the intention to increase the importance of the sustainability."
- High-Tech F company concludes, that "It requires more lead customers, who would change this. Wide customer portfolio impacts also i.e. some large customers are already pioneering, but smaller customers not yet."

Third question follows Likert scale question with seven steps from *least important* to *most important*. Third question is as follows; "What is the importance of the following sustainability fields for your customers?"

Small and medium sized enterprises' results are shown in figure 19. The results indicate similarly as SMEs themselves that their customers are more focusing on product use-phase, circularity, compliance and their customer benefits than materials selection and

supply chain criteria. However, the differences are not that drastic. The most important overall is product use with combination of *most important* 28,6%, *very important* 28,6% and *somewhat important* 28,6%. Compliance and circularity follows right after. Compliance with regulations is *most important* for 42,9% and but interestingly also for 28,6% only *somewhat not important*. Circularity has 28,6% for *most important* and *very important* both. Capability to deliver environmental benefit to customer is *most important* for 28,6% and rest splits equally to 14,3% for each score. Distribution and logistics is *somewhat important* for 42,9%. Suppliers manufacturing process is perceived the *least important* by 28,6% of all responses.

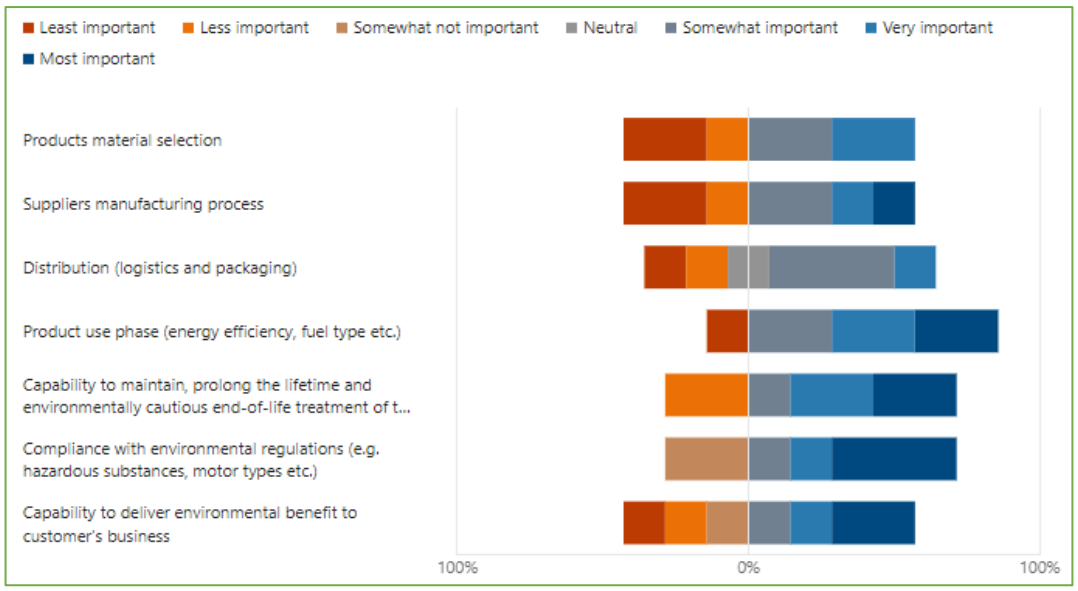

Figure 19. Sustainability as added-value to SMEs' business-to-business customers' customers

Similarly, as with MNEs themselves the overall importance of the sustainability fields increases among their customers. (See figure 20.) Compliance is the most important sustainability field with 62,5% for *most important* rating following with 25% *very important* rating. Both, product use phase and circularity is seen *very important* for 62,5% of respondents. Products material selection shows for 37,5% *most important* and for 37,5% *very important*. Distribution and logistics gets 37,5% rating for *very important* and 25% for *somewhat important*. Suppliers manufacturing process is perceived mostly *somewhat important* by 62,5%. Capability to deliver environmental benefit to customer is *most important* for 25% and *somewhat important* for 25%.

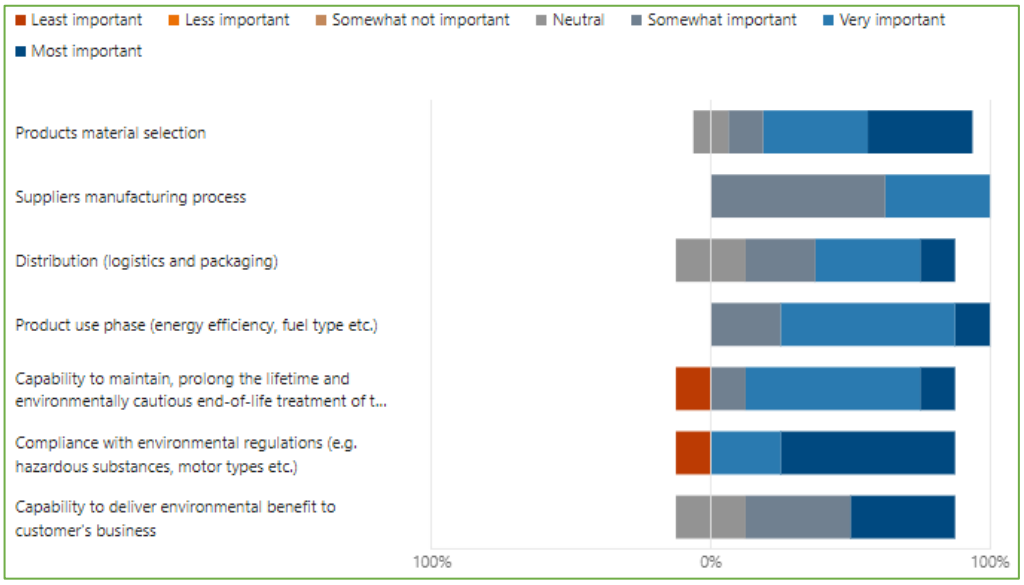

Figure 20. Sustainability as added-value to SMEs' business-to-business customers' customers

Fourth question is an open-ended question, where the respondent can explain additional comments to the previous question. Fourth question goes as follows; "Would you like to complement the previous question?" SMEs highlight that customers are seeking many improvements, where sustainability is part of the customer solution.

- Metal N company states, that "Less weight for the products expected and emissions needs to be shown and proven."
- Machinery H company comments, that "Less packaging waste, if possible."
- Machinery L company and High-Tech E company observe "Proven use cases for improved energy efficiency."
- Machinery M company concludes that "After sales services for customers' process measurement, analysis and control services. New revenue models developing for continues process improvements, which also serves sustainability."

Multinational enterprises remind about understanding the differences between customer segments and highlighting the fact, that MNEs are well resourced around sustainability, even more that market currently demands.

- Forest products C company highlights, that "This depends on customer segment, whether it is B2B and B2C. It might have different weighting."
- High-Tech F company concludes, that "Companies are internally more ready than there is demand in the market with sustainability."

5.4 Customers' willingness to pay green premium

Customers' willingness to pay green premium has been asked to understand, whether customers observe sustainability valuable and worth financially. Three questions have been asked in this section. First question follows numeric question from *no willingness to pay to* steps towards *price can be adjusted if it is sustainable*. First question is as follows; "Would you accept green premium?"

The results are shown in figure 21. The results indicate that SMEs would be most likely willing to *accept less than 5% premium*. Among MNEs there is variation between responses. Two companies would *not accept any premium*, three companies would *accept premium between 0-5%* and *three companies would accept it between 5-10%*.

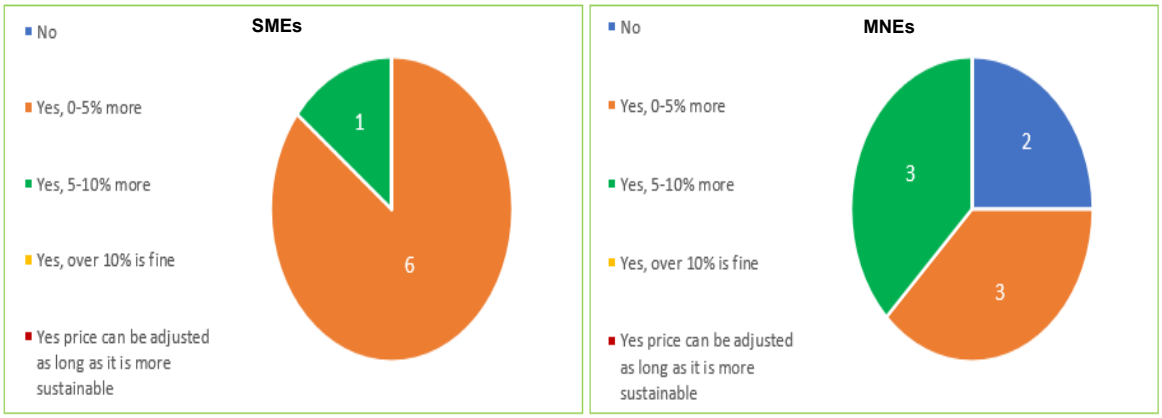

Figure 21. Customers' willingness to pay more for sustainability, SMEs vs. MNEs

Second question is an open-ended question, where the respondent can explain additional comments to the previous question. Second question goes as follows; "Is there anything additional, that you would like to highlight on previous question?" SMEs highlight the price centricity in the market and energy-efficiency of the solution with proven payback.

- Metal N company states, that "The market is quite competitive. Regardless of qualified low carbon steel, customers are not willing to pay premium. There is discrepancy between speech & action. Thus, we can live with a green premium if it does not bring margin squeeze and if you are selling benefit."
- Machinery H company comments, that "It is harder to justify the value in standard components, due to high cost-pressure in the competition - For customized commodities yes, if there is energy-efficiency, which can be demonstrated."

- High-Tech E company highlights, that “As long as customer can use this as marketing advantage, that it proofs greener facility and production processes. Then it will become a essential part of the brand image.”
- Machinery L company and Machinery M company conclude that “Premium can be accepted if value can be demonstrated from energy-efficiency payback in the use phase. For example, saving energy in the future.”

Multinational enterprises’ approach for green premium variates remarkably. Some companies have strong denial for green premium and some companies would accept it if there were payback in place. One company highlights the large companies’ role leading the pricing towards premium.

- Automotive A company comments that “Customer expects to get added value sustainability features with the same price i.e. energy-saving features. Therefore, it would need to be sold with same price as currently.”
- Logistics G company states, that “Green surcharges cannot be passed on to end customer.”
- Power P company notes, that “Partially this is already part of the requirements, therefore might be hard just to say, whether it is a premium.”
- Forest products C company and Forest products B company highlight, that “green premium can be accepted as long as the benefits (for example) energy saving can be demonstrated.”
- High-Tech F company concludes, that “Market leaders would need to show the way in paying premium, then others would follow.”

Third question follows Likert scale question with seven steps from *least important* to *most important*. Third question is as follows; “From which sustainability fields you would be ready to pay more?”

Small and medium sized enterprises’ results are shown in figure 22. The results indicate that SMEs place their responses mostly to the middle of the scale. There is no sustainability field drastically ahead to another. However, SMEs are likely to pay premium for capability to deliver benefits for their customers, product use phase and compliance. The most important overall is deliver the benefits for the customers with combination of *most important* 14,3%, *very important* 14,3% and *somewhat important* 42,9%. Use of the product follows right after with combination of *most important* 14,3%, *very important* 14,3% and *somewhat*

important for 28,6% of the respondents. Compliance with regulations gets 28,6% for *most important* and but interestingly also 28,6% only for *least important*.

Circularity is *somewhat important* for 28,6% among the respondents. Suppliers manufacturing process perceived mostly *least important* by 42,9%. Products material selection shows to be *least important* for 42,9%, *somewhat important* for 28,6% and the *most important* for 28,6%. Distribution and logistics is overall the lowest in the scale and rated *least important* by 42,9%.

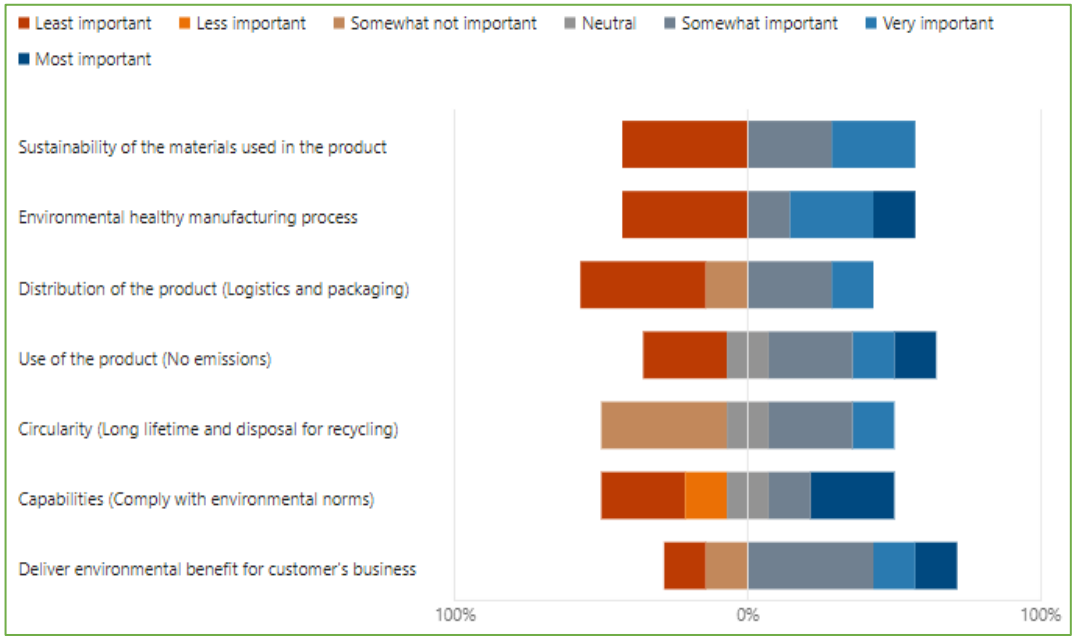

Figure 22. SME customers' willingness to pay more for sustainability fields

Similarly, as with MNEs themselves and their customers the overall importance of the sustainability fields increases also in their willingness to pay premium. (See figure 23.) The most important field, which MNEs would pay green premium is capability to deliver environmental benefit, similar to SMEs, to customer with combination of *most important* for 25%, *very important* for 37,5% and *somewhat important* for 25% of respondents. Right after customer benefit follows compliance, use of the product and the circularity. Compliance has 50% *most important* rating. Both, use of the product and circularity is seen combined *most important* by 37,5% and *very important* by 37,5%. Products material selection shows to be 37,5% for *most important* and 37,5% for *very important*. Distribution and logistics gets 37,5% rating for *very important* and 25% for *very important*. Suppliers manufacturing process is perceived mostly *somewhat important* by 37,5%.

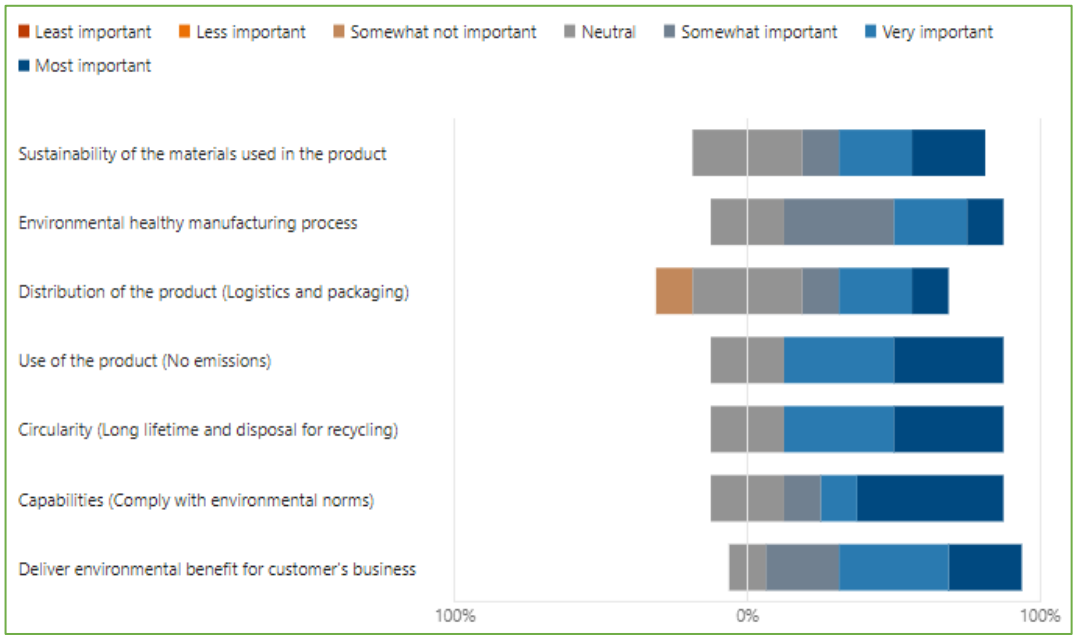

Figure 23. MNE customers' willingness to pay more for sustainability fields

5.5 Sustainability development in the future

Final section of the questionnaire and interview focus on sustainability's future trends in next 3-5 years horizon. Future prediction is conducted to gain knowledge what movements customers observe on the role and importance of sustainability in mid-term. Two questions have been asked in this section. First question follows Likert scale question with seven steps from *least important* to *most important*. First question is as follows; "How do you expect sustainability fields developing in decision-making over the next 3-5 years?"

Small and medium sized enterprises' results are shown in figure 24. The results indicate that importance of each sustainability field will increase. The most important fields for SMEs in the future are product use phase, compliance and capability to deliver customer benefits. Circularity follows right after. Product use phase is seen the *most important* for 71,4% of respondents. Compliance gets both *most important* and *very important* for 42,9%. Capability to deliver customer benefits scores all three *most important*, *very important* and *somewhat important* as 28,6%. Circularity has 42,9% for *most important* and 28,6% for *very important*. Products material selection and suppliers manufacturing process perceived both *very important* by 28,6%. Most behind is distribution and logistics with *somewhat not important* by 28,6%, *less important* by 14,3% and *least important* by 14,3%.

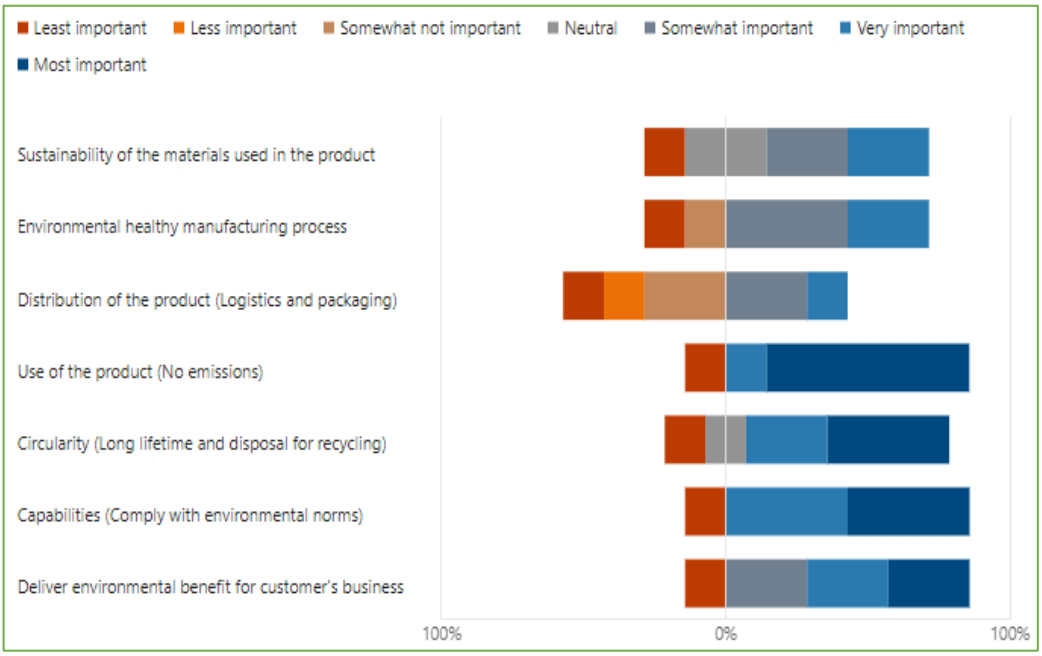

Figure 24. Sustainability fields' development in next 3-5 years in SMEs

The overall positioning of the sustainability fields importance shifts towards *more important* among multinational enterprises similarly as with customers, customers' customers and willingness to pay premium. (See figure 25.) Compliance is the most important sustainability field with 100% *most important* rating. Circularity importance is high with 87,5% scoring to *most important*. Product use phase ends up also to the high scoring with 62,5% for *most important*. Products material selection gets 50,0% for *most important* and 25% for *very important*. Capability to deliver environmental benefit to customer is *most important* for 37,5%, *very important* for 25% and *somewhat important* for 27,5% of respondents. Suppliers manufacturing process and distribution is perceived *very important* by 62,5%.

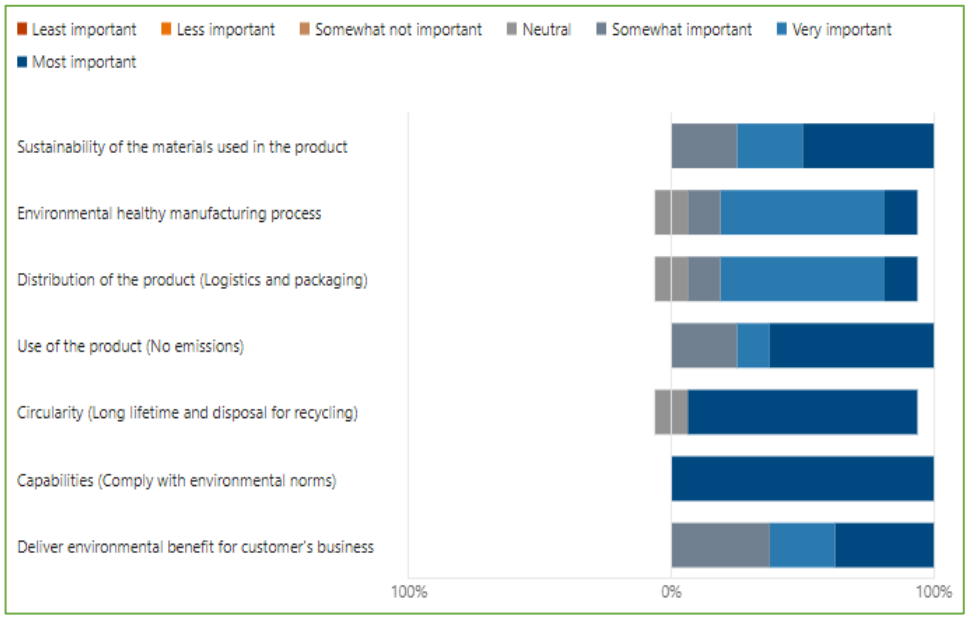

Figure 25. Sustainability fields' development in next 3-5 years in MNEs

Second question is an open-ended question, where the respondent can explain improvements and differences how case company differs from their industry and competition. Second question goes as follows; "How case company differs from your industry in sustainability? Where it is better? Where it is behind?" SMEs highlight the visibility of the sustainability improvements, new functionalities with paybacks and transparency to the material selections and supply chain choices as future trends.

- Metal N company states, that "Promote more existing sustainability improvements"
- Machinery H company comments, that "Bring more low-energy solutions to the market with higher performance"
- Machinery J company notes, that "Launch marketing campaign on sustainability - use cases. What case company could come up on this? How to tie-up it to return on investment?"
- Machinery M company and High-Tech E company highlights, that "Material selections, supply chain choices, lifecycle-thinking could be more publicly visible. For example, when doing sales efforts and promotions towards the customer. Smaller competitors might not have that big effort and resourcing behind sustainability initiative."

Multinational enterprises take up the variety of the suppliers and commodities to the context of sustainability, both direct and indirect. Traditionally companies have focused to their core

products. Customer-specific sustainability contribution and industry standardization will become important for companies in the future.

- Metal O company comments, that “Sustainability has been taken seriously, it is resourced and there is ownership. Customer has not yet observed its indirect suppliers that much as direct suppliers. It has been agreed between case company and customer, that sustainability will become regular part of the account management meetings.”
- Power P company and Forest products C company notes, that “Good is that case company can extend the equipment lifecycle. Customer-specific footprint and emissions will become important for the customer in near future.”
- High-Tech F company asks, that “Will green steel be the next? Are other competitors ready to play with same rules in the market. Success for case company would be to get tighter regulations to the market, where customer demand includes green steel use, energy-efficiency and circularity etc.”

5.6 Summary of the results

The results of the empirical part are collected to the table 10. It describes the results according to the research questions and questionnaire themes. This explores and explains systematically the sustainability phenomenon.

Research question	Questionnaire theme	Small and Medium sized enterprises (7)	Multinational enterprises (8)
RQ: What is the importance of sustainability in purchasing decision-making?	The role of sustainability in the decision-making in general	- Responsible business, price competition and situational factors over the sustainability.	- MNEs observe all fields more important than SMEs. - Responsible business, price competition, situational factors and sustainability are integral.
SRQ1: How does sustainability add value to business-to-business customers?	The importance of different sustainability fields to the customer	- Product use-phase, circularity, compliance and their customer benefits than materials selection and supply chain criteria. - Energy-efficiency and other green features, that customers can sell.	- MNEs observe all fields more important than SMEs. - Product use-phase, circularity, compliance and their customer benefits than materials selection and supply chain criteria. - Lifetime and lifecycle services.
	The role of sustainability for customers' customers	- Neutral importance. - SMEs in highly price-driven market. - Large companies will lead the green transition and some have taken sustainability as decision criteria. - Customers are more focusing on product use-phase, circularity, compliance and their customer benefits than materials selection and supply chain criteria. - Less weight, energy-efficiency, less packaging.	- Mostly neutral importance, three observe it very important. - Large companies will lead the green transition and some have taken sustainability as decision criteria. - MNEs observe all fields more important than SMEs. - Importance of the sustainability fields increases, product use-phase, circularity, compliance and their customer benefits the most important. - MNEs are more ready for sustainability than market demands.
	Willingness to pay more for sustainability fields	- 0-5% premium. - As long as there is payback showed. - To deliver environmental benefits to customers.	- Two companies would not accept any premium, three companies would accept premium between 0-5% and three companies would accept it between 5-10%. - Market leaders would need to lead the way. - As long as there is payback showed. - To deliver environmental benefits to customers.
SRQ2: What are the improvements, that help customers to adopt sustainability in their marketing?	Development of sustainability in the future	- Product use phase, compliance and capability to deliver customer benefits continuous to strenghten. - SMEs highlight the visibility of the sustainability improvements, new functionalities with paybacks and transparency to the material selections and supply chain choices as future trends.	- Compliance, circularity and product use phase continues to strenghten. - Customer-specific sustainability contribution and industry standardization will become important for companies in the future.

Table 10. Empirical results summary

6 Conclusions

This research has studied the role of sustainability in business-to-business purchasing decision-making, which is intersection point between the B2B marketing and B2B purchasing. The point is called *exchange point*, where value offered, and value perceived meet each other between the actors in the value chain (Ulaga, 2003). In B2B marketing, the marketers generate the needs and capture the attention of customers and in B2B purchasing, the buyers assess products and services against the criteria of their needs. Sustainability as a phenomenon has recently started to impact to both fields B2B marketing and B2B purchasing. Therefore, it needs to be studied further, what kind of importance it brings to the decision-making. There is no explicit research, which integrates them together to explain how sustainability is valued together from both sides of the exchange. This gap is particularly visible in its importance as decision-making attribute between buyer and seller. This chapter will explain abduction of sustainability to the theoretical framework and answers to the research questions and evaluate how the empirical results align with the previous literature in the form of theoretical contribution. The managerial implications provide ideas and recommendations, how companies could benefit from the research findings. Final subchapter reviews the limitations of this research and provides suggestion for further research.

6.1 Implications to the research framework

Generally, sustainability as decision-making element is multifaceted. According to the inductive research approach it can be concluded that it is embedded part in the purchasing decision-making process (Nyadzyao et al, 2020; Menon et al, 2022; Celik et al, 2021; Casidy et al, 2018; Mariadoss et al, 2011; Webster 1965; Mogre et al, 2017; Giunipero et al 2012). However, performance, price and situational factors are still more dominant elements, when constituting purchasing decisions. Deductive research approach proofs, that the outcome of purchasing decision varies depending on the type of the sustainability feature, the size of the company, the payback, that sustainable commodity offers and opportunity to gain price premium from customers further in the value chain. According to both approaches the importance of sustainability increases, while moving downstream in the value chain.

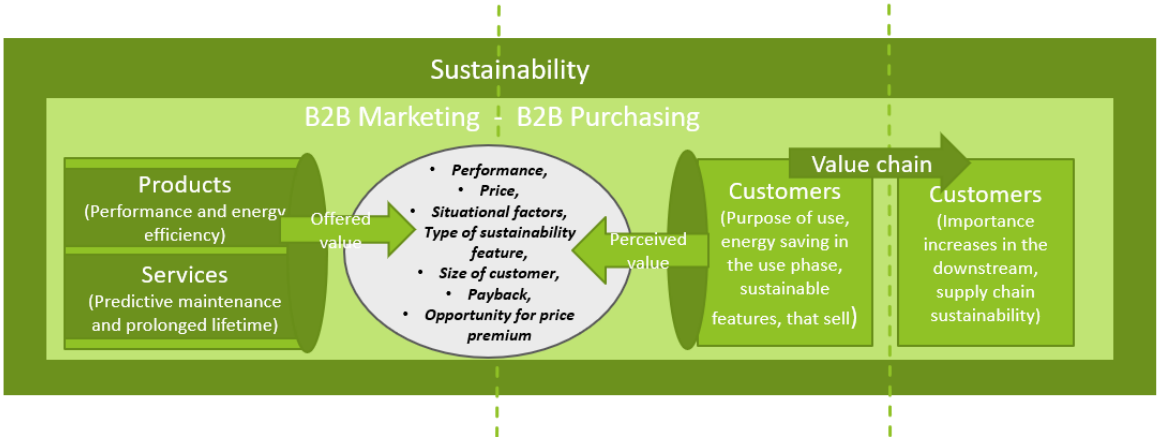

Figure 26. Impacting factors for sustainability in the purchasing-decisions

6.2 Theoretical contributions

The purpose of theoretical contributions is to evaluate whether the theories presented in the second and third chapter deviates or supports the empirical results that were presented in the previous chapter. It provides new insights based on recent case study, explains why findings are important and not discussed before. The results are reviewed by answering each of the research question.

What is the importance of sustainability in purchasing decisions?

This subchapter concludes first the general positioning of the sustainability among other decision-making elements. Second subchapter reflects on the results between empirical part, current research and theoretical context.

There are six different decision-making elements identified from the literature review source data: (1) *imaginary* attributes, like brand image and reputation (Nyadzyao et al, 2020), (2) *performance* attributes like functionality (Menon et al, 2022; Celik et al, 2021; Casidy et al, 2018; Mariadoss et al, 2011; Webster 1965), (3) *situational factors*, like availability and on-time delivery (Yu et al, 2020; Sheth, 1973), (4) *behavioral* elements, like customer service during and at the decision-making (Steward et al, 2019; Stek and Vlek, 2009; Ulaga 2003), (5) *regulatory* elements (Mogre et al, 2017; Giunipero et al 2012) and (6) *financials*. (Menon et al, 2022; Mohammed, 2020; Farizal et al, 2019; Mariadoss et al, 2011; Webster 1965). To further understand sustainability's role in this equation, three options were considered; (1) it is a precondition before all six elements, (2) it is a seventh decision element or (3) it is embedded to some of the existing elements, like regulations. Empirical results with both small and medium sized enterprises and multinational enterprises do not support

sustainability being as precondition nor it being seventh own element. The results support sustainability being as embedded attribute to the imaginary, performance, regulatory and financial elements. The strongest elements are regulatory and performance elements. Customers highlight the role of compliance throughout the questionnaire and majority of the companies, both SMEs and MNEs, mention compliance as non-negotiable. The use phase of product and service is also emphasized in both SMEs and MNEs. Customers expect more energy-efficiency solutions and lifetime and lifecycle services. Imaginary portion of sustainability is positive brand image, that it can offer. Financial element is connected to the sustainability as it is expected provide monetary payback for the companies itself and their customers.

Both SMEs and MNEs have high importance in responsible business, price-sensitivity and situational factors, like availability, on-time delivery and customer service, which is in-line with current research. Blome et al concludes the importance of regulatory environment in promoting sustainability. Ulaga, Farizal et al and Webster reminds about the importance of traditional purchasing attributes (Farizal et al, 209 Blome et al, 2014; Ulaga 2003). Nyadzayo et al, Sheth, Steg and Vlek and Webster, connect buying process, situational factors, functional preferences, individual and company preferences to the purchase engagement and pro-environmental behaviour. (Nyadzayo et al, 2020; Sheth, 1973; Steg and Vlek 2009; Webster, 1965). Mohammend highlights the recent development in macro-economic picture. Pandemic, geopolitical changes and logistics disturbances have brought supply chain resilience to the picture together with sustainability in purchasing (Mohammed, 2020). Interestingly sustainability as a decision-making criteria gets mixed importance between SMEs and MNEs. SMEs observe it less important criteria, whereas MNE observe it very important. SMEs result lines up with Farizal et al, Mohammed and Celik et al, that sustainability is least important decision-making criteria (Farizal et al, 2019; Mohammed, 2020; Celik et al, 2023). Multinational enterprises' result follows Min et al's conclusion, that large firms with purchasing volumes are observing sustainability as important criteria (Min et al, 2001).

How does sustainability add value to business-to-business customers?

This research splits sustainability as customer value based on the impact it makes either to the commodity itself including its usage or to the process to build and deliver it to customer. The commodity focus solely to its composition and lifecycle impact to the environment. The process includes all the necessary value chain steps to make commodity complete and customer satisfied about the commodity functionality. Sustainability as customer value is clustered under seven fields. *(1) Eco-design* includes material and technology selection in

the product design and engineering stage. *(2) Manufacturing* takes care of production process, inventories, waste and energy efficiency, *(3) Logistics* cover the network footprint, packaging and transportation. *(4) Commodity use* focus on customer's usage, *(5) Circularity* includes lifetime extensions, repairs, re-use and disposal activities. *(6) Capabilities and competencies* deals with marketing and communications, personnel, regulations and financial capabilities. *(7) Business model innovation* seeks fundamental changes to the way to bring sustainable benefit to customer.

The results indicate that both SMEs and MNEs are more focusing on product use-phase, circularity, compliance and their customer benefits than materials selection and supply chain criteria. There is notable variation in the importance of supply chain choices between customers and customers' customers and company size. Small and medium sized enterprises observe supply chain sustainability not yet important. Multinational enterprises observe it not so important. The importance changes when moving up in the value chain. Customers' customers observe supply chain sustainability importance higher. Small and medium sized companies identify it as somewhat important and multinational enterprises scores it as very important. This can be concluded, that higher in the value chain sustainability fields move more important it gets. In practise it gets closer to the consumer segments, where sustainability is already more mature than in B2B industry. This result lines up with current research, that supply chain importance has just recently started to evolve. Blome et al, Altaf et al and Mohammed conclude, that the companies have just recently started to get manufacturing processes and logistics engaged to sustainable B2B purchasing, which spans over the entire value chain (Blome et al, 2014; Altaf et al, 2020; Mohammed, 2020). Altaf et al and Khan et al conclude that sustainable B2B purchasing has a key role in entire supply chain activities and is becoming key strategy for firms to improve companies' profitability (Altaf el al, 2020; Khan et al, 2022). Blome et al emphasize further the companies' role to develop collaboratively their suppliers towards the green practices.

Qualitative results for SMEs are expressing the importance of the value provided to the customer, like energy-efficiency. According to Bocken et al, target is understanding the value flows in service ecosystems incorporating sustainability (Bocken et al, 2013). Terho et al emphasize the value-based selling, which continues to be highly relevant for marketing and selling sustainable solutions (Terho et al, 2017). MNEs qualitative results highlight the importance of the complete lifecycle thinking, like Maxwell et al, to identify, assess and implement the options for optimising sustainability in product and/or services (Maxwell et al, 2023). Qualitative results also evidence the role of large companies and their volumes in

promoting the sustainability, which is in line with Min et al. They conclude that size of the company purchasing power with large volumes involves them more to the green purchasing. Firms are taking serious effort to environmental regulations applying green practicalities. According to Min et al high cost of environmental programs are also preventing the green purchasing (Min et al, 2001).

Sharma et al highlight, that it is not only regulatory environment, but pro-environmental business strategy, that will lead to a competitive advantage and superior financial performance (Sharma et al, 2010). According to the empirical results sustainability as pricing instrument does not provide significant strategic advantage. Overall companies promote conservatively green premium between 0-10% for any of the sustainability fields. Among multinational enterprises approach for green premium variates notably. Some companies have strong denial for green premium. Those, who would accept green premium underlined, that there needs to be clear and proven customer benefit and financial payback in place.

What are the improvements, that help customers to adopt sustainability in their marketing?

According to the customers' future prediction, there is a need for (1) *proactive promotion of continuous sustainability improvements*. However, small and medium sized enterprises are not positioned as frontrunners on it, they rather emphasized the role of large companies to lead on the green transition first. Overall, the importance of the sustainability is recognized and there is a consensus about the integral role of marketing to drive the agenda. This matches to current research with Sharma et al, Mogre at al and Khan et al, where marketing has critical and integral role in aiding firm's objectives for environmental sustainability together with other functions like purchasing, manufacturing and supply chain (Sharma et al, 2010; Mogre et al 2017; Khan et al, 2022). Secondly customer's expect new sustainable features, that are sellable and provide environmental benefits. Role of (2) *innovations*, like bringing more low-energy solutions to the market with higher performance, is brought up also by Mariadoss et al and Aguillani et al. They both conclude that sustainable innovations are key factors to company's success. (Mariadoss et al, 2011; Aquillani et al, 2017). Customers observe that importance of (3) *supply chain choices* are growing up. This is in line with current research of Blome et al, Altaf et al and Mohammed. They discover, that the companies have just recently started to get manufacturing processes and logistics engaged to sustainable B2B purchasing, which spans over the entire value chain (Blome et al, 2014; Altaf et al, 2020; Mohammed, 2020). This implies that companies need to start measure and report customer-specific footprint and emissions soon. Finally, customers conclude

together with Blome at al, that tighter (4) *regulations* will start to engage all stakeholders in green practises and sustainability will become precondition. (Blome et al, 2014)

6.3 Managerial implications

The managerial implications are summarized to this chapter to outline strategic themes, that companies should consider, while setting-up company-specific sustainability agenda and observe sustainability's role in their decision-making. There are five implications identified. First, the results of this research indicate, that both small and medium sized (SMEs) and multinational enterprises (MNEs) observe high importance in responsible business, price-sensitivity, and situational factors, like availability, on-time delivery, and customer service. Sustainability as decision-making criteria has mixed importance. This is why companies should approach customers with *hybrid product and service offering strategy*. SMEs will continue to rely on traditional existing offering and MNEs starts to request sustainability features from offering. It is worthwhile to note, that sustainability will not bring notable pricing benefits for the companies, therefore it is more complementary instrument. Secondly, based on the 3-5 years market outlook *continuous innovation* will play significant role for the companies as customers are expecting more solutions, where they can save energy, prolong the lifetime of the equipment or component and enable recyclability of the used products. This ties up together with hybrid offering strategy, where green transition will evolve companies' offering towards greener choices over time. Third implication concerns companies' supply chains as the importance increases, when moving downstream in the value chain, companies need to start requesting *sustainability measures from their suppliers* to proof their own customer-specific emission footprint throughout the entire value chain. Therefore, it will become integral part of the purchasing decision-making. Finally, there will be external regulatory pull and needs to be internal management push towards integrating sustainability more into the companies' operations. External pull will come from the constantly developing *norms and regulations*, which are presumably tightening. Internal push means *strong management attention* driving sustainability agenda, adaptation to the developing norms, aligning strategic goals and new opportunities to launch sustainable solutions. Managerial implications are presented in table 11.

Theme	Managerial implication	Rationale (Why?)
Marketing and product management	- Companies need to have existing offering and sustainable offering additionally.	- SMEs prefer price, availability over sustainability, MNEs observe sustainability as integral to other attributes. Sustainability solely will not offer long-term competitive advantage.
Innovations	- Energy-efficiency (eg. savings in electricity consumption) and long-lifetime features (eg. secondhand products and services) and lifecycle services (eg. maintenance & repairs) need to be invested and developed.	- Market demand will evolve to this direction in next 3-5 years.
Supply chain	- Sustainability measures needs to be requested from all actors in the chain (from entire supplier base).	- Customers demand to specify entire value chain emissions will rise and become as integral part of decision-making.
Compliance	- Pro-active approach to develop and implement sustainability practises	- Norms will continue to develop and leading companies will take the advantage in the market. However, ultimately all actors in the market need to fullfil the norms.
Culture and way of operating	- Management attention, policies, processes and sustainability competencies needs to be secured and developed.	- Sustainability needs to be integrated into daily management practises, otherwise it remains on high-level only.

Table 11. Managerial implications

6.4 Limitations and future research

This research has few limitations. As Saunders et al have highlighted case studies scientific generalization is dependent on quality and size of the case sample (Saunders et al, 2016). This study has only sample of 15 different companies, therefore it does not provide scientific generalization, but results can be used for analytical purposes and comparisons. Secondly this research experiments are theoretical, the results that are consolidated from realistic business scenario might not necessarily realize in practise (Babbie, 2004). In practise the questionnaire has not been conducted at the same with actual purchasing situation, which might have an effect to the results. Thirdly, sample countries are representing developed ie. industrialized countries, where sustainability is also high on the governmental agenda supporting the business environment, where companies operate in. Therefore, it is suggested to research the value of sustainability in decision-making in developing countries, where governmental regulations and norms are not yet mature.

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Appendix 1. Literature review source data.

#	Authors	Title	Year	Type	Journal	Source	IUFO-Rating	Date reviewed	Academic field	Key Theory	Frameworks	Methods	Key words	Key findings
1	Yu X., Tao Y., Wang D., Yang M.M.,	Disengaging pro-environmental values in B2B green buying decisions: Evidence from a conjoint experiment	2022	Article	Industrial Marketing Management	Scopus	3	30.1.2023	Purchasing	Social Cognitive Theory	Experience and situational impact to pro-environmental values	Survey	Green buying, Sustainability, Pro-environmental value. Purchasing experience	B2B purchasing managers disengage their pro-environmental values in B2B green buying decisions when they have little purchasing experience and perceive the business environment as highly competitive.
2	Khan S.A.R., Yu Z., Umar M., Tanveer M.,	Green capabilities and green purchasing practices: A strategy striving towards sustainable operations	2022	Article	Business Strategy and the Environment	Scopus	2	30.1.2023	Purchasing	Resource Based Theory	Green purchasing practicalities	Structural equation modelling	Green capabilities, green purchasing practices, sustainability, triple bottom line	The results illustrated that green capabilites such as financial, innovation, manufacturing and digitalization capabilities have significant positive effect on green procurement.
3	Celik E., Yucesan M., Gul M.,	Green supplier selection for textile industry: a case study using BWM-TODIM integration under interval type-2 fuzzy sets	2021	Article	Environmental Science and Pollution Research	Scopus	1	24.2.2023	Purchasing	Not identified	Green supplier evaluation	Case study	Green supplier selection	Quality determined as most important purchasing criterion. Environmental impact determined as fourth most important.
4	Altaf B., Ali S.S., Weber G.-W.,	Modeling the relationship between organizational performance and green supply chain practices using canonical correlation analysis	2020	Article	Wireless Networks	Scopus	1	25.2.2023	Purchasing	Network	Green supply chain practise	Regression model	Green supply chain, Sustainability, Environmental performance, Economic performance	Meaningful relationships between green supply chain dimensions and the organization's performance. Green purchasing is the most important variable
5	Mohammed A.,	Towards 'gresilient' supply chain management: A quantitative study	2020	Article	Resources, Conservation and Recycling	Scopus	1	25.2.2023	Purchasing	Not identified	Gresilient supply chain	Literature Review	Green and resilient, Supply chain, Supplier selection, Purchasing, DEMATEL, VIKOR,MCDM	Resilience highest importance criteria, cost&quality&availaility then green least important
6	Lo H.-W., Liou J.J.H., Wang H.-S., Tsai Y.-S.,	An integrated model for solving problems in green supplier selection and order allocation	2018	Article	Journal of Cleaner Production	Scopus	2	20.2.2023	Purchasing	Not identified	Green supplier evaluation	Interview	Green supplier selection, Procurement strategy	Green purchasing is an issue of perception and subjectivity in the decision-making to be avoided.
7	Blome, C., Hollos, D., Paulraj, A.	Green procurement and green supplier development: Antecedents and effects on supplier performance.	2014	Article	International Journal of Production Research	Primo search	2	22.2.2023	Purchasing	Institutional and strategic view	Green supplier development	Structural equation modelling	Green procurement, Green supplier development, Financial performance, Market performance, Supplier performance	Market performance was found to have positive influence on green procurement; financial performance was not persuasive in promoting green procurement.Top management commitment is even more important in practising green procurement initiatives than market or financial performance measures.
8	Sharma A., Gopalkrishan R.I., Mehrotra A., Krishnan R.	Sustainability and business-to-business marketing: A framework and implications	2010	Article	Industrial Marketing Management	Primo search	3	24.2.2023	Marketing	Resource Based	Sustainable market	Literature Review	Sustainability, Green marketing, Recycling, Build-to-order, Repair, Reverse logistics	Sustainability value creation not only on demand side, but marketing can make it to manufacturing, operations and the supply chain. Marketing having critical role of in aiding firm's objectives for environmental sustainability.
9	Bocken N., Short S., Rana P., Evans S.	A value mapping tool for sustainable business modelling	2013	Researc	International Journal of Business Society	Primo search	1	23.2.2023	Marketing	Stakeholder	Value-mapping	Case study	Business model, Sustainability, Business model innovation, Sustainable business model, Sustainable value, Value creation	Business model innovation is a key to delivering future sustainability. Embedding sustainability into the core purpose of the firm and its network of stakeholders.
10	Casidy, R., Nyadzayo, M. W., Mohan, M., Brown, B.	The relative influence of functional versus imagery beliefs on brand sensitivity in B2B professional services.	2018	Article	Industrial Marketing Management	Primo search	3	23.2.2023	Marketing	Behavioral	Brand preference - Operational competence	Survey	Brand sensitivity, Operational competence, Service brands, B2B branding, Professional service firms, Small and medium-sized enterprises	Importance of imagery beliefs but not at the expense of functionality. Fundamental functional belief.
11	Maxwell D., Van der Vorst R.	Developing sustainable products and services	2003	Article	Journal of Cleaner Production	Primo search	2	24.2.2023	Marketing	Not identified	Sustainable product and services	Case study	Sustainable products and services; Sustainability; Eco-design; Environmental management; Life cycle approach; Product service systems	Importance of the complete lifecycle thinking to identify, assess and implement the options for optimising sustainability in product and/or services
12	Mariadoss B.J., Tansuhaj P.S., Nouri N.	Marketing capabilities and innovation-based strategies for environmental sustainability - An exploratory investigation of B2B firms	2011	Article	Industrial Marketing Management	Primo search	3	24.2.2023	Marketing	Resource Based Theory	Firm marketing capabilities driving sustainable consumption	Case study	Marketing capabilities, Innovation, Sustainability, B2B firms	Sustainable technical innovation as driver for bring more sustainable products and services without compromising quality, price or performance in the market. Sustainable technical innovation is to deliver high levels of emotional and functional values, while minimizing resource use and environmental impacts.
13	Drumwright, M. E.	Socially responsible organizational buying: Environmental concern as a noneconomic buying criterion.	1994	Article	Journal of Marketing	Primo search	1	24.2.2023	Purchasing	Institutional and strategic view	Socially responsible buying	Interview	Organisational buying, social responsibility	Organisational policy makers (Entrepreneurs) are important influencers
14	Giunipero, L. C., Hooker, R. E., Denslow, D.	Purchasing and supply management sustainability: Drivers and barriers.	2012	Article	Journal of Purchasing and Supply Management	Primo search	2	8.2.2023	Purchasing	Stakeholder	SCM Sustainability	Interview	Sustainability, Green, Environment, Corporate social responsibility, Purchasing/supply management, Supply chain management	Benefits: Top management, Government regulations, Financial benefits, Competitive advantage, ISO certification and Customer demand. Barriers: Lack of Top mgmt attention, Lack of standards, Misalignment with strategic goals, Cost of sustainability and economic conditions). Emphasis on Top management attention
15	Min, H., Galle, W. P.	Green purchasing practices of US firms.	2001	Article	International Journal of Operations and Production Management	Primo search	3	6.2.2023	Purchasing	Not identified	-	Survey	Green Issues, Purchasing	Buying firms with large volumes are involved in green purchasing, Firms taking serious effort to environmental regulations apply green practicalities, Cost-saving opportunities leading to waste reductions. High-cost of environmental programs preventing the green purchasing.
16	Mogre, R., Lindgreen, A., Hingley, M.	Tracing the evolution of purchasing research: Future trends and directions for purchasing practices.	2017	Researc	Journal of Business & Industrial Marketing	Primo search	1	6.2.2023	Purchasing	Resource Based Theory	Marketing, supply chain management, purchasing	Literature Review	Marketing, Decision making, Supply chain management, Purchasing strategy	Importance of integrated business functions in sustainable and ethical purchasing - like marketing, supply chains and purchasing
17	Nyadzayo, M. W., Casidy, R., Thaichon, P.	B2B purchase engagement: Examining the key drivers and outcomes in professional services.	2020	Article	Industrial Marketing Management	Primo search	3	1.2.2023	Purchasing	Behavioral	Purchase engagement	Structural equation modelling	Services selling, B2B, Purchase engagement, Dependence, Professional service firms, Small-medium enterprises	Customization and loyalty, personalization selling services as most important drivers
18	Richey, R. G., Musgrove, C. F., Gillison, S. T., Gabler, C. B.	The effects of environmental focus and program timing on green marketing performance and the moderating role of resource commitment.	2014	Article	Industrial Marketing Management	Primo search	3	8.2.2023	Marketing	Resource Based Theory	Resource advantage theory, resource based view	Regression analysis	Green marketing, Resource commitment, Program timing, Performance	Green initiatives effects on firm performance, Importance in top management attention
19	Sheth, J. N.	A model of industrial buyer behavior.	1973	Article	Journal of Marketing	Primo search	1	1.2.2023	Purchasing	Behavioral	Industrial buyer behavior	-	Buying process, decision-making	Individual, product preferences and company preferences forming the purchasing decision. Varying based on situational factors
20	Steg, L., Vlek, C.	Encouraging pro-environmental behaviour: An integrative review and research agenda.	2009	Article	Journal of Environmental Psychology	Primo search	3	6.2.2023	Purchasing	Behavioral	Industrial buyer behavior	Literature Review	Environmental behaviour, Values, Attitudes, Norms, Behaviour change	Actual behavior is key deciding factor, environmental behavior needs more study and attention, motivational factors to be incorporated. Adaptation to environmental policies is important.
21	Steward, M. D., Narus, J. A., Roehm, M. L., Ritz, W.	From transactions to journeys and beyond: The evolution of B2B buying process modeling.	2019	Article	Industrial Marketing Management	Primo search	3	1.2.2023	Purchasing	Transaction theory, Relationship theory	Process evolution	Literature Review	Business-to-business decision-making, Buying process, Buyer behavior, Digital technology, Customer journey, Customer experience	Buying process has been evoluotionary: First transactions, then situations, influences, responses, relationships, networks and finally journeys
22	Ulaga, W.	Capturing value creation in business relationships: A customer perspective.	2003	Article	Industrial Marketing Management	Primo search	3	20.2.2023	Marketing	Network	Relationship value drivers	Interview	Buyer – seller relationships; Customer value; Relationship value	Value is in relationships, Product quality, delivery, time-to-market, product cost, service support, know-how, personal interaction
23	Webster, F. E., Jr.	Modeling the industrial buying process.	1965	Article	Journal of Marketing Research	Primo search	3	20.2.2023	Purchasing	Behavioral, individual	Process view	Interview	Buying process, decision-making	Product quality, service, and price which provides the most effective solution to customer company problems, variation in process = various problems, buying authority, search process
24	Kristensen, H.S., Remmen A.	A framework for sustainable value propositions in product-service	2019	Article	Journal of Cleaner Production	Primo search	2	20.2.2023	Marketing	Not identified	Sustainable value proposition framework	Case study	Product-service system, Sustainable value proposition, Value creation, Circular economy, Learning environment	Tendency to too narrow focus for value creation, often only customer
25	Brozovic D., Auria A.d., Tregua M.	Value Creation and Sustainability: Lessons from leading firms	2020	Article	Value Creation and Sustainability: Lessons from leading firms	Primo search	1	18.2.2023	Marketing	Stakeholder	Integrative framework	Content analysis	Sustainability, Value creation, Service dominant logic, Institutions, Actors	Pay attention to environmental and societal development, actors, not only economical. Ultimate goal being to understand value flows in service ecosystems incorporating sustainability.
26	Aquilani B., Silvestri C., Loppolo G., Ruggieri A.	The challenging transition to bio-economies: Towards a new framework integrating corporate sustainability and value co-creation	2018	Article	Journal of Cleaner Production	Primo search	2	19.2.2023	Marketing	Network	Integrative framework	Literature Review	Bio-economy, Sustainability, Sustainability Oriented Theory of the Firm, Value co-creation	Sustainainability is co-created in integrative framework with stakeholders
27	Porter, M.E., Kramer, M.R.	Creating shared value	2011	Article	Harvard Business Review	Primo search	-	26.2.2023	Marketing	Stakeholder	Shared value	-	Economical needs, societal needs	Shared value creation focuses on identifying and expanding the connections between societal and economic progress. There are three key ways that companies can create shared value opportunities: by reconceiving products and markets, by redefining productivity in the value chain and by enabling local cluster development
28	Vargo, S.L., Lusch, R.F.	Evolving to a new dominant logic for marketing	2004	Article	Journal of Marketing	Primo search	1	26.2.2023	Marketing	Network	Service-Dominant Logic	Literature Review	Services, Relationships, Value, Resource management, Network management	The focus has shifted from tangibles to intangibles. Instead of exchancing physical goods, the exchange is process. The exchance of knowledge and information.
29	Terho H., Eggert A., Ulaga W., Haas A., Böhm E.	Selling Value in Business Markets: Individual and Organizational Factors for Turning the Idea into Action	2017	Article	Industrial Marketing Management	Primo search	3	22.2.2023	Marketing	Resource Based Theory	Motivation–opportunity–ability framework	Survey	Business-to-business marketing, Customer value, Sales, Value-based selling	Value-based selling differs from customer orientation and adaptive selling. Highlighting individuals ability to connect with other people in his or her own organization, leverage their expertise and skills, and align everyone around the customer value creation is critical.
30	Farizal R., Dewi D, Gabriel S.	Supplier evaluation and order allocation using fuzzy analytical hierarchy process and augmented epsilon constraint methods	2019	Article	Materials Science and Engineering	Scopus	1	19.2.2023	Purchasing	Not identified	Green supplier selection	Case study	Green supplier selection	This is evidenced by the position of quality criteria, price/cost and delivery that occupy the top three ranks. But, green competence/environmental management performance criteria has no weight value.
31	Menon R.R, Ravi V	Using AHP- TOPSIS methodologies in the selection of sustainable suppliers	2022	Article	Cleaner Materials	Scopus	-	19.2.2023	Purchasing	Not identified	Supplier selection in a Sustainable Supply Chain	Literature Review	Sustainable supply chain, sustainable supplier	Economic, environment, social and ethical dimensions are four slections dimensions. The results indicate that economic factors still dominate. Importance of ethics and compliance has increased.

Appendix 2. Questionnaire

Background:
This questionnaire forms empirical part of Master Thesis project called "Effect of sustainability as value driver in business-to-business marketing - case study of industrial buyers' decision-making" conducted by Mr. Antti Kivari. He works for Konecranes Plc. in the role of Vice President Global Spare Supply. The Master's Thesis is final part of the International Marketing Management MBA program in Lappeenranta University of Technology (www.lut.fi)

The purpose of the study:
The purpose of the research is to investigate the role and trends of sustainability (importance and relationship to other decision-making drivers) in the purchasing decision-making. The research covers interview questionnaires for 15 different Konecranes' customers around the world.

The process:
The interaction happens with interviewees via online meetings and emails, where Antti will interview the customer and marks the results to the questionnaire template. One session will last 45 minutes. All participants will receive a summary of the observations afterwards. All information is being treated confidential and anonymous.

A. Descriptive variables

1. **Name of the company (not to be published)**

2. **Name of the respondent (not to be published)**

3. **Business profile of the respondent**
   Procurement
   Business management

4. **Respondents years of experience in business**

5. **Country of the customer**

6. **Industry sector of the customer**

7. **What is the revenue of the company**
   Less than 10 m€
   10 m€ - 50 m€
   50 m€ - 200 m€
   Over 200 m€

8. **What is the amount of personnel in the company?**
   Less than 50
   50-250
   250-1000
   Over 1000

B. The role of sustainability in the decision-making in general

9. **Functionality and usability are preconditions for the purchase to take place. Therefore they are excluded.**
   Please define the priority to other decision-making criteria for industrial buyer, when purchasing lifting equipment.

	1 - Least important	2	3	4	5 - Most important
Reputation of the supplier					
Availability and delivery on-time					
Customer service					
Past experience (Easiness of past purchases)					
Complicance with regulations					
Price					
Sustainability					

10. **Are any one of the criteria precondition ie. non-negotiable? If yes, which ones**

_____

C. The importance of different sustainability fields to the customer

11. **Evaluate the importance of environmental sustainability in each phase**

	1 - Least important	2	3	4	5	6	7 - Most important
Products material selection							
Suppliers manufacturing process							
Distribution (logistics and packaging)							
Product use phase (energy efficiency, fuel type etc.)							
Capability to maintain, prolong the lifetime and environmentally cautious end-of-life treatment of the product (=circularity)							
Compliance with environmental regulations (e.g. hazardous substances, motor types etc.)							
Capability to deliver environmental benefit to customer's business							

12. **Addtional comments to the question 11.**

D. The role of sustainability for customers' customers

13. **How important sustainability is for industrial buyer's customers**

1 - Not important	2	3 - Very important

14. **Addtional comments to the question 13.**

15. **What is the importance of the following sustainability fields for your customers?**

	1 - Least import	2	3	4	5	6	7 - Most important
Products material selection							
Suppliers manufacturing process							
Distribution (logistics and packaging)							
Product use phase (energy efficiency, fuel type etc.)							
Capability to maintain, prolong the lifetime and environmentally cautious end-of-life treatment o fthe product (=circularity)							
Compliance with environmental regulations (e.g. hazardous substances, motor types etc.)							
Capability to deliver environmental benefit to customer's business							

16. **Addtional comments to the question 15.**

D. Willingness to pay more for sustainability fields

17. **Would you accept green premium?**
   No
   Yes, 0-5% more
   Yes, 5-10% more
   Yes, over 10% is fine
   Yes price can be adjusted as long as it is more sustainable

18. **Addtional comments to the question 17.**

19. **From which sustainability fields you would be ready to pay more**

	1 - Least	2	3	4	5	6	7 - The most
Sustainability of the materials used in the product							
Environmental healthy manufacturing process							
Distribution of the product (Logistics and packaging)							
Use of the product (No emissions)							
Circularity (Long lifetime and disposal for recycling)							
Capabilies (Comply with environmental norms)							
Deliver environmental benefit for customer's business							

D. Development of sustainability in the future

20. **How do you expect sustainability fields developing in decision-making over the next 3-5 years?**

	1 - Least important	2	3	4	5	6	7 - Becomes most important
Sustainability of the materials used in the product							
Environmental healthy manufacturing process							
Distribution of the product (Logistics and packaging)							
Use of the product (No emissions)							
Circularity (Long lifetime and disposal for recycling)							
Capabilies (Comply with environmental norms)							
Deliver environmental benefit for customer's business							

21. **How case company differs from your industry in sustainability? Where it is better? Where it is behind?**

_____
_____
_____
_____
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