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Sustainability priorities of Swedish companies: an analysis of materiality matrixes

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Abbreviations

CSR	Corporate Social Responsibility
CSRD	Corporate Social Responsibility Directive
DEI	Diversity Equality Inclusion
EARD	Employee Attraction Retention and Development
EF	Ecological Footprint
ESG	Environmental, Social and Governance
EU	European Union
GICS	Global Industry Classification Standard
GRI	Global Reporting Initiative
NFRD	Non-Financial Reporting Directive
SMEs	Small and Medium Enterprises
TBL	Tripple Bottom Line

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Abstract: In this study, I used quantitative content analysis to analyze the materiality matrixes of sustainability reports to identify the sustainability priorities of major companies in Sweden. I focus on the 131 largest listed companies in the country within six industries: material, consumer goods, capital goods, daily goods, banks, and investment companies. The research questions include: (1) What are the primary focus areas of materiality for the largest listed companies in Sweden by industry? (2) On an overarching level, is the focus among all companies more environmental or social? (3) What are the primary applications of materiality analysis in the context of corporate decision-making in Sweden? The findings reveal that the primary materiality topics for Swedish companies are business ethics and climate impact. The focus is slightly more environmental, with 54% of companies having more of an environmental focus. Interestingly, only 22% of companies mentioned using materiality strategically, while a larger portion (40%) use materiality to identify their sustainability priorities. This research highlights the need for companies in Sweden to prioritize strategic sustainability in the face of new legislation, such as the Corporate Sustainability Reporting Directive (CSRD). Overall, this study demonstrates the value of analyzing materiality matrixes for identifying sustainability priorities in different industries and provides insights into using materiality analysis in corporate decision-making. The results can inform future sustainability strategies for Swedish companies and contribute to the broader conversation around sustainable business practices.

Keywords: banking, capital goods, consumption items, daily items, material, investment

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Summary:
The private sector can make a significant contribution to sustainable development through its financial and technological resources, capacity for innovation, employment generation, and partnership building. To achieve sustainability, companies must customize their strategies to their unique contexts, report on material sustainability aspects, and engage in strong communication with stakeholders through sustainability reports. Environmentally and socially sustainable practices are increasingly crucial for companies, not only as an ethical responsibility but also as a means of gaining a competitive advantage. The European Union Non-Financial Reporting Directive (NFRD) requires large public-interest companies in Sweden to disclose non-financial information related to environmental, social, and governance (ESG) factors in their management reports. To determine what to report, companies can undertake a materiality analysis, which involves identifying stakeholders, reviewing internal and external sources of information, assessing potential topics' significance, and prioritizing them based on their relevance. Materiality analysis is crucial in non-financial information reporting as it helps companies to identify the most relevant topics to report on and prioritize them. The most significant sustainability topics could relate to social, economic, or environmental sustainability, and companies can save time and resources by reporting only on material parameters.

The aim of this research was to identify significant sustainability priorities of major companies in Sweden across various industries by analyzing their materiality matrixes in sustainability reports. Specifically, the study aimed to answer three questions: (1) What are the primary materiality focus areas of major companies in Sweden by industry? (2) Is the overall focus among these companies more environmental or social? and (3) What are the primary applications of materiality analysis in the context of corporate decision-making in Sweden? To achieve these objectives, the study analyzed sustainability reports of 131 of the largest listed companies in Sweden, operating within the material, consumer goods, capital goods, daily goods, banks, and investment companies industries. Materiality matrixes, which help to identify the most significant sustainability issues for a company and its stakeholders, were analyzed through qualitative content analysis to determine the primary materiality focus areas and the overall focus on environmental or social issues.

The findings of the research indicated that business ethics and climate impact were the primary materiality topics among the companies analyzed, with a slightly greater focus on environmental issues than social issues. Additionally, the study highlighted that only 22% of the companies mentioned using materiality strategically, while 40% used it to identify their sustainability priorities. The research concluded that while the focus on sustainability in Sweden is balanced, companies need to prioritize strategic sustainability in the face of new legislation. The study suggests that strategic sustainability can help companies to create long-term value for themselves, their stakeholders, and society as a whole. By integrating materiality analysis into their decision-making processes, companies can identify and address sustainability issues that are most relevant to their business operations, thereby enhancing their sustainability performance and improving their competitiveness.

Keywords: banking, capital goods, consumption items, daily items, material, investment

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1 Introduction

The following section will set the context of the paper and provide an overview of the problem background, problem statement, aim, research questions, and delimitations, and outline the study.

The private sector has the potential to contribute significantly to sustainable development through its vast financial and technological resources, capacity for innovation, employment generation, and partnership building (Berrone *et al.*, 2019). This symbiotic relationship between sustainability and the private sector can help businesses pivot towards strategic change (Wicki & Hansen, 2019). However, since sustainability impacts and stakeholder expectations vary depending on organizational characteristics, each company must tailor its sustainability strategy to its unique context (Murillo & Lozano, 2006; Roberts *et al.*, 2006; Porter & Kramer, 2006). To demonstrate genuine accountability and transparency, companies must report on sustainability aspects and indicators deemed material to their primary stakeholders (Arena & Azzone, 2012). Materiality refers to information deemed important and relevant to stakeholders, such that if it were omitted or misrepresented, it could affect their decisions (Edgley, 2014).

Therefore, achieving sustainability for businesses requires strong communication with stakeholders and a two-way dialogue that fosters active engagement and responds to their needs (Breuer & Lüdeke-Freund, 2017). Sustainability reports, which disclose environmental, social, and governance-related information, are critical in shaping organizational members' discourse on sustainability and their communication regarding the natural environment (Livesey, 2002). They are designed to communicate a sense of accountability and transparency to the company's stakeholders (Milne, Tregidga, & Walton, 2009). Materiality assessment is usually part of the reporting process and supports sustainability reporting by integrating stakeholder communication to understand their priorities. It ensures that sustainability efforts are laser-focused on the issues that matter most to those who matter most. Mostly material topics are focused on overarching governance, environmental and social topics; however, environmentally and socially sustainable practices are increasingly being seen as crucial priorities for companies, not only as a way to fulfil their ethical responsibilities but also as a means of gaining a competitive advantage in the market (McWilliams & Siegel, 2011).

1.1 Problem background

While for most companies, sustainability reporting is a voluntary initiative, the European Union **(EU)** Non-Financial Reporting Directive **(NFRD),** which was adopted in 2014 and amended in 2017, requires large public-interest companies with over 500 employees to disclose non-financial information relating to environmental, social, and governance **(ESG)** factors in their management reports (EU NFRD, 2014). The Swedish government implemented the EU directive into the Swedish Annual Act on December 31, 2016 (European Commission, 2014; 2014/95/EU). The requirements for sustainability reporting, as set out in Swedish Act L, align with the EU directive regarding what information has to be disclosed (Justitiedepartementet, 2016). Several studies indicate that Swedish companies are among the best at informing their stakeholders about ESG issues (Cahan *et al.*, 2016). It is essential to mention that many Swedish companies voluntarily took responsibility before regulatory obligations, with around 72% of the top 100 companies reporting corporate responsibility activities (Habek & Wolniak, 2013, page 45). A recent study by Arvidsson and Dumay (2022) indicates that Swedish companies raised sustainability reporting practices from 2008 to 2015, levelling down at some point, with the quality of the reporting strongly improving. Sweden is widely recognized for its prominent role in advocating corporate social responsibility (**CSR**), which can be attributed to the active participation of the government (Hąbek & Wolniak, 2013). Sweden's cultural context, which includes a strong emphasis on environmental protection and sustainability, along with a culture of consensus, may have contributed to the success of CSR in the country as well (The Green Business Times, 2011).

Non-financial information requires a specific and suitable principle to assist organizations in determining which topics to disclose and what amount of detail to employ (Torelli, Balluchi, & Furlotti, 2020). Many frameworks and standards guide the creative process and the content of sustainability reports by defining many essential concepts; among them, the Global Reporting Initiative, or **GRI,** is the most significant (Torelli, Balluchi, & Furlotti, 2020). GRI also prioritizes materiality assessments and provides guidelines on how companies should identify and prioritize topics they report on. The term "materiality" in GRI refers to the degree to which challenges threaten a business's long-term success regarding financial, environmental, and social factors. Materiality analysis aims to determine what sustainability information is most significant to companies and their stakeholders (GRI, 2021). The materiality concept is borrowed from the field of accounting, where it is used as a cutoff point for affecting the financial choices of those who employ company budgets, namely investors (Messier *et al.,* 2005).

The materiality analysis process involves several steps that organizations must undertake to identify and prioritize the most relevant topics. The first step of materiality analysis is to identify stakeholders, their interests, needs, and expectations. Secondly, organizations should review internal and external sources of information to identify potential topics, which include financial, operational, and market data, trends, and regulatory requirements. Thirdly, organizations should assess the significance of the potential topics regarding their potential impacts and opportunities. Finally, organizations should prioritize the topics based on their significance and relevance. Reporting on material parameters makes reports more relevant, reliable, and transparent, enabling corporations to better inform markets and society about their sustainability commitment (Hess, 2007). Companies can additionally save time, money, and resources on reporting responsibilities (Calabrese *et al.*, 2017).

Materiality is fundamental in non-financial information, as there is little regulation on what to report; hence, companies need to undertake a materiality analysis and define a materiality matrix to identify the relevant topics and the level of detail to report. Most of the sustainability topics in the materiality matrix could relate to social, economic, or environmental sustainability. In the broader sense, environmental sustainability can be defined as a state of balance, resilience, and interconnectedness that enables human society to meet its needs while not exceeding the ability of its supporting ecosystems to regenerate the services required to meet those needs (Calabrese *et al.,* 2017). Social sustainability, on the other hand, is a concept that seeks to ensure that people have access to resources and opportunities to develop and maintain healthy social systems and relationships. It is concerned with the well-being of individuals and communities and the long-term sustainability of communities and society as a whole (Boström *et al.,* 2015).

1.2 Problem

Effective business management depends on active stakeholder engagement. It enables stakeholders to offer valuable insights and raise issues that can positively or negatively impact an organization, influencing managerial decisions (Manetti, 2011). In this context, stakeholder communication prevents potential opposing challenges, which are potentially harming the corporation and other organizations or local communities (Andriof *et al*., 2002; Windsor, 2002). While materiality analysis is a process that supports such communication when it comes to sustainability, strategic management of environmental and social priorities is a daunting task for companies to tackle, given the complexity of current reporting practices, which require a long list of compliance-focused demands (Baumüller & Sopp, 2022). This especially holds true when addressing environmental and social sustainability issues, which are intricate and require a longer-term perspective (Roehrich *et al*., 2014). The complexity of environmental and social priorities for firms additionally stems from their interconnectedness, which makes it challenging to address one problem at a time without considering its impact on other related issues (Garst, Maas & Suijs, 2022). Assuming that pillars of sustainability are independent is misleading because a weak pillar can harm others; hence, organizations should consider the connections among pillars and their contributions to overall sustainability performance. (Jitmaneeroj, 2016). Such interdependence also requires tackling multiple issues simultaneously,

while in materiality assessment, sustainability topics are compared and focused on individually (Garst, Maas & Suijs, 2022). Additionally, the prioritization of sustainability topics is implemented on an company basis hence lacking the overarching industry basis perspective. Research findings indicate that one of the motivations for companies to develop better practices in disclosing their reports is peer pressure within the same industry (Amran & Keat Ooi, 2014). Hence lack of such knowledge makes it challenging to enhance sustainability strategies in policymaking and encourage collaboration and collective action, which are crucial to achieving sustainability.

Understanding the priorities of different industries is essential since each operates differently and faces unique challenges. By analyzing industry-specific issues, stakeholders can gain insights into where companies focus their attention and priorities, helping identify gaps and opportunities for addressing critical concerns. Such analysis can also potentially enhances transparency by providing clear information on the current state of companies within an industry.

Additionally, it is crucial to take into account whether companies are strategically incorporating stakeholder input because stakeholders frequently directly benefit from a company's actions and can provide insightful information about potential risks and opportunities. Companies that effectively consider stakeholder feedback are better equipped to anticipate and address stakeholder concerns, leading to improved relationships, reduced risks, and enhanced performance. The lack of overarching knowledge regarding the strategic implementation of materiality analysis in companies raises essential questions about the effectiveness of current sustainability reporting practices. Without a comprehensive understanding of whether companies are strategically prioritizing their sustainability efforts, it is difficult to assess the true impact of these efforts on both the environment and society. Such knowledge is particularly crucial in Sweden, a country known for its progressive stance on sustainability issues.

1.3 Aim and research questions

The primary objective of this study is to identify the sustainability priorities prevalent within companies across diverse industries in Sweden, focusing on the extent to which these priorities are strategically integrated. To achieve this aim, the study focuses on evaluating the materiality matrixes of sustainability reports to identify the key sustainability priorities of major companies. Specifically, the study will examine the sustainability reports of the 131 largest listed companies operating in six key industries in Sweden, including material, consumer goods, capital goods, daily goods, banks, and investment companies. Focus is placed on the following questions:

1. What are the primary focus areas of the materiality of the largest listed companies in Sweden by industry?
2. On an overarching level, is the focus among all companies more environmental or social?
3. What are the primary applications of materiality analysis in the context of corporate decision-making in Sweden?

1.4 Delimitations

Delimitations have been made in terms of empirics, method and theory.

The focus in the study is placed on large and listed companies in Sweden, leaving out smaller companies and companies that are not listed. Therefore the findings are limited to the studied segment (large and listed companies in Sweden). Empirical delimitations also made in terms of industries includes in the report: capital items, investment, daily goods, consumption items, banking and material. It does not include other industries operating in Sweden, primarily because the research period is limited to the master's thesis's timeframe. Sustainability reporting is a selected unit of

analysis; hence the findings are limited to the information provided in the sustainability reports and do not include any additional data or information from other sources.

The study focuses exclusively on the environmental and social aspects of sustainability, while excluding the governance aspect. This decision was made to provide a more focused and in-depth analysis of the specific dimensions of sustainability that pertain to the environmental and social impacts of companies. By narrowing the scope to environmental and social aspects, the study aims to delve deeply into the challenges, practices, and strategies related to these dimensions, allowing for a more comprehensive exploration of their integration within companies operating in different industries in Sweden.

Methodological delimitations are made in the sampling strategy for this study; it relied on Hållbara Bolag's 2021 list of companies, limiting the diversity of companies that could have been included otherwise.

1.5 Outline

The thesis is divided into ten sections, each covering different aspects of the study. The first section is the introduction, which provides a background to the problem, defines the problem statement, outlines the aim and research questions, and sets the delimitations of the research. The empirical background section explores sustainability reporting challenges and introduces materiality analysis and triple-bottom-line frameworks. The section also discusses the social and environmental sustainability dimensions, identifies the industries for the study, and explains the purpose of the materiality analysis. The theoretical background and framework section presents stakeholder theory, strategic sustainability, and the conceptual framework. The method section covers the research design, data collection process, and companies selected for the empirical study. The findings section presents the results of the empirical study, which are grouped according to the industries studied and the sustainability dimensions in focus. The discussion section interprets and links the results to the theoretical background and framework. The conclusion summarizes the research findings, answers the research questions, and provides recommendations for future research. The acknowledgements and references section completes the thesis.

2 Method

The method section of the research study is structured with a clear hierarchy of headings, starting with the research design, which is a qualitative research design utilizing content analysis. The unit of analysis is then presented, followed by a detailed description of the data collection process, including the choice of companies. The section ends with description of data analysis.

2.1 Research design

In order to address the research questions and achieve the overall objective, it is imperative to establish a set of ontological and epistemological assumptions that govern how the world is perceived and how data will be collected and analyzed. The Research Design chapter provides an explanation of why specific methodologies were chosen for the study, thus ensuring that the research objectives are met efficiently and effectively.

2.1.1 Qualitative research design

Qualitative research is the preferred approach for this paper due to its suitability in investigating new or emerging research questions that lack a well-established theoretical framework (Reinecke, Arnold & Palazzo, 2016). By employing qualitative analysis, the study can generate innovative insights and perspectives, which is particularly advantageous given the complexity of business sustainability (Reinecke, Arnold & Palazzo, 2016). Moreover, the field of business ethics commonly utilizes qualitative research methods to achieve a comprehensive understanding of the characteristics, meaning, and context of the phenomenon under investigation, as highlighted by Lämsä *et al.* (2018). By adopting similar principles in the research on business sustainability, the study can effectively explore the intricate social and environmental dimensions of sustainable business practices. Additionally, qualitative research enables a deep exploration of the perspectives and experiences of stakeholders involved in this domain, contributing to a richer understanding of the subject matter.

2.1.2 Content analysis

Content analysis is the most appropriate method for this study as it involves the analysis of sustainability reports from industries in Sweden. Klettner *et al.* (2014) emphasize the widespread use of content analysis in corporate responsibility research. Furthermore, content analysis has been extensively employed by researchers in the field of social and environmental accounting as a primary method for data acquisition from reporting (Parker, 2005). In the context of this paper, content analysis serves as a valuable tool for systematically examining the content of sustainability reports. It enables a comprehensive exploration of the topics and themes discussed within these documents, both in verbal and nonverbal forms. By employing content analysis, the study aims to identify patterns and themes, and to gain a deeper understanding of the structure of the document's content. This method ensures a rigorous and systematic analysis of the sustainability reports, facilitating the extraction of valuable insights and meaningful findings.

2.2 Unit of analysis

In recent years, sustainability has become a crucial consideration for businesses worldwide, with increasing emphasis on the industry's social and environmental impacts. As a result, there has been a growing demand for transparency and accountability from corporations, leading to the publication of sustainability reports as a means of disclosing information on the company's sustainability practices. Consequently, sustainability reports are a valuable source of data for research purposes, particularly in the analysis of industry-specific sustainability priorities. Previous research in the field of social and environmental studies has also predominantly relied on annual reports submitted to the stock exchange as the primary source of data (Gibson & Guthrie, 1996). While various materials have

been employed in contemporary research, annual reports remain the most commonly used unit of analysis (Guthrie & Abeysekera, 2006).

2.3 Data collection

Studies that have extensively examined the data on material topics within sustainability reporting show cross-sector, cross-region-country differences in the disclosure methods (Moneva *et al.*, 2006; Monteiro & Aibar-Guzmán, 2010). In practice, significant variations exist among companies in their definition, identification, and presentation of materiality (Wu, Shao & Chen, 2018). Such differences were acknowledged during the data collection method. The information analyzed in this research is solely based on the content provided in the sustainability reports of the selected companies. No assumptions have been made in the analysis, and the findings are based solely on the information presented in the reports.

2.3.1 Choice of companies

In 2021, Dagens Industry and Aktuel Hallbarhet ranked the sustainability work of the 131 largest listed companies in Sweden through a unique report called "Hallbara Bolag 2021". The School of Economics at Lund University conducted the ranking on behalf of Dagens Industri and Aktuell Hllbarhet to identify good examples and role models of sustainability work in business. The companies selected for this study will be based on the list of companies disclosed in Hallbara Bolag's 2021 report.

The companies represent the list of the largest companies in the **GICS** (Global Industry Classification Standard) categories of capital goods, consumer goods, materials, consumer goods, banking, and investment companies. These categories represent some of the most significant industries in Sweden and cover a broad range of economic sectors. By focusing on the list provided by Hallbara Bolag, covering these categories, the study aims to provide a comprehensive understanding of the sustainability priorities of various industries in Sweden and to identify the sustainability challenges and opportunities unique to each sector. Furthermore, the selection of companies from the list of the largest companies on the stock exchange ensures that the study focuses on companies with significant economic impacts that can play a critical role in shaping their industries' sustainability practices and standards.

Researchers looking to understand the sustainability practices of Swedish companies can benefit significantly from the list that Aktuell Hållbarhet, Dagens Industri, and Lund University have put together.

Aktuell Hållbarhet is a Swedish research and development organization that promotes sustainability in the country. It focuses on activities related to energy, climate, environment and resources. It includes research, development, innovation, education, and projects that aim to drive sustainability and create a transition to a more sustainable future. Aktuell Hållbarhet collaborates with various stakeholders, including research institutes, companies, and the public sector (Aktuell Hållbarhet, 2023)

Dagens Industry is a Swedish business organization that supports and develops the interests of small and medium-sized businesses. It was founded in 1995 and is now one of the largest business organizations in Sweden. The organization's mission is to promote business growth and development and to support and represent the interests of its members. It has more than 7,000 members and offers a range of services and resources to help them succeed (Dagens Industri, 2023)

The University of Lund is a public university in Lund, Sweden. Founded in 1666, it is one of Scandinavia's oldest, largest, and most prestigious universities. (Lund University, 2023)

2.3.2 Data collection process

To address the first question of the research, which aims to identify the priorities identified by stakeholders, the following process was implemented:

- Identify pages in the report dedicated to materiality: Given the importance of materiality analysis emphasized in GRI reporting and as a method to communicate the stakeholder perspective, most companies dedicate a specific page to materiality analysis and stakeholder analysis.
  The collected metrics on the page were the following:
    - Year of materiality analysis, which is an important identification of the report's relevance. If the year of the analysis was earlier than 2021, it was important to understand whether the analysis had been updated in the year 2021.
    - Prioritized focus areas: Two distinct methods were employed to accurately identify the prioritized focus areas in this study. The first method involved a thorough examination of the text contained within the relevant documents. The text was meticulously analyzed to identify and allocate sections where the priorities were explicitly stated. The aim was to uncover any explicit mentions of priorities or areas of focus outlined by the authors through the scrutiny of the text. In cases where the priorities were not explicitly mentioned in the text, a second method was utilized. This involved the examination of materiality matrixes, which function as visual representations of the relative importance of various factors. These matrixes are commonly used to assist in the identification of priorities and focus areas. The matrixes were carefully analyzed, with particular attention given to the right corner, as it often signifies the highest priorities. This enabled the selection of the top priorities as the identified metrics for further analysis.
    - If a report lacked a dedicated page or section specifically addressing materiality assessment, I employed search methods to ensure comprehensive data collection. The keywords "materiality" and "stakeholder" were utilized to conduct targeted searches within the report. This approach aimed to identify relevant information related to materiality assessment, even in the absence of a dedicated section. The search was followed the structure mentioned earlier, which included the examination of text sections and, if applicable, materiality matrixes. By adhering to this structure, I ensured consistency and thoroughness in the search process. The goal was to gather pertinent data and insights regarding materiality assessment, aligning with the research objectives and requirements.
    - If a report did not contain any information on materiality analysis, either through a dedicated materiality analysis page or the employed search method, it was exempt from the analysis.

To address the second research question on the primary application of materiality analysis in informing corporate decision-making, the materiality analysis section's content was examined to determine whether companies have mentioned the strategic perspective. Explicit mentions of the purpose of conducting materiality analysis were collected from the materiality section of the report.

2.4 Data analysis

To address the first question of the paper, which aims to understand the most prioritized sustainability topics by industry in Sweden, the following was implemented.

As a researcher, it is essential to acknowledge that sustainability practices may vary significantly between organizations, depending on several factors such as their business models, cultural contexts, size, and ownership structures (Adams, 2002; Hahn & Kuhnen, 2013; Spence, 2007). Consequently, it is important to consider different languages when analyzing sustainability reports as a means of identifying industry-specific sustainability priorities. To facilitate this process, this paper utilized MAXQDA software, which provides a powerful suite of tools for qualitative data analysis, including the ability to code and group data based on pre-defined categories. This involved importing relevant data, developing a coding system to categorize the data, applying the codes to identify equivalent phrasings, and grouping them together. MAXQDA facilitated this process by providing tools and features to code and group the data. The resulting groups or sections contained equivalent expressions that were relevant to the research objective. While MAXQDA supported faster grouping of the wordings, additionally changes were made manually to logically group materiality topics. Comprehensive list of how topics were grouped is provided in Appendix 1. The materiality topics emphasized were:

- Health and safety: included mentions of health and safety related both to the product and employees.
- **EARD** (Employee Attraction, Retention and Development): combined topics which focused on education, retention and attraction of employees
- Climate impact: included a broad spectrum of topics, combining emissions and mitigation of climate change
- Biodiversity: focused on natural resources and biodiversity
- Circularity: focused on circular solutions and waste
- Innovation: included digitalization and other innovative solutions approach
- Transportation: focused on emissions from transport, and alternative transport methods
- Supply chain: combined sustainable supply chains, and environmental supplier assessments
- Economic performance: focused on topics which emphasized financial benefits as material topics
- **DEI** (Diversity, Equality and Inclusion): combined topics emphasizing achieving equality and inclusivity.
-

To address question 1.2, which analyzes whether the focus areas are more social or environmental, the following method was implemented:

Based on the context, sustainability priorities were categorized into environmental and social dimensions. The GRI's division of sustainability topics into social and environmental categories was used as a reference. The environmental dimension included climate impact, energy, biodiversity, circularity, innovation, transportation, and supply chain. The social dimension included health and safety, business ethics, EARD and DEI. The economic performance aspect was not considered for this analysis. To understand the focus of companies on environmental and social sustainability, the total number of companies that select each topic will be calculated, and the percentage of the total number of topics will be analyzed. Analysis revealed whether companies are prioritizing environmental or social sustainability topics.

To address the second question of the report, which focused on the strategic application of materiality, the following analysis was conducted:

By scrutinizing the sentences mentioning the purpose of the materiality analysis, it was possible to gain insights into the extent to which companies consider materiality as a core aspect of their sustainability strategy and how they utilize this concept to prioritize their sustainability efforts. Upon

analyzing the content of the sustainability report, an interview was conducted with an expert with over 20 years of experience in writing sustainability reports and forming strategic focus. The insights gained from this interview helped to shape the following five potential ways that companies may use the results of their materiality assessments based on the information presented in the reports:

The basis for strategy: When companies state that they are using sustainability as a basis for their strategy or that it informs their strategy, it can refer to either their sustainability strategy or their business strategy, which may include sustainability as a component. In some cases, companies have a standalone sustainability strategy that outlines specific sustainability goals and initiatives. In contrast, in others, sustainability is integrated into their overall business strategy to align with their broader organizational objectives.

The basis for target-setting: Target-setting refers to the process of establishing specific, measurable goals or objectives for the business to achieve within a certain timeframe. By focusing on the most material issues, companies can set relevant, meaningful, and impactful targets for their business and stakeholders. However, the extent to which target-setting is aligned with a company's overall strategy, or is pursued to achieve specific goals in the absence of a broader strategic framework, remains unclear.

The basis for sustainability prioritization: Companies often use stakeholder input as a basis for sustainability prioritization, seeking to understand which sustainability issues are of greater concern to their stakeholders. However, it is unclear whether companies are using the outcomes of this prioritization exercise to inform their sustainability strategy or solely using stakeholder input to shape the content of their sustainability reports.

The basis for a sustainability framework: A sustainability framework is a broad, high-level conceptual model that provides a structure for understanding and addressing sustainability issues in a comprehensive and integrated way. It includes the fundamental principles, values, and concepts that guide sustainable development. A sustainability framework helps organizations understand and approach sustainability holistically rather than in a fragmented or siloed way.

The basis for sustainability report content: The results of the materiality assessment will inform the content of its sustainability report.

Based on the classification above, each company was allocated a category, which was later calculated to understand companies' overall utilization of materiality in Sweden.

2.5 Limitations

Findings only analyze sustainability reports released in 2021, given that those were available during analyses. Therefore, the findings may not reflect the current sustainability practices of the companies studied.

The research is focused on sustainability reports of large listed companies in Sweden only. Therefore, the findings may not be generalizable to other countries or companies Additionally, given that data collection was manual, the possibility of human error should be considered.

The study is based on the assumption that the sustainability reports are an accurate representation of the company's sustainability practices. However, this may not always be the case, as companies may present a biased or incomplete picture of their sustainability practices in the reports.

The study does not consider any contextual or cultural factors that may influence how sustainability is perceived and practised in Sweden. Thus, the findings may only apply to some countries or cultures with different sustainability practices and norms.

The research has deliberately focused on the sustainability reports of large listed companies in Sweden, using mostly manual data collection methods and qualitative analysis. Manual data collection methods introduce the possibility of human error. As the process involves researchers manually extracting and analyzing data from the reports, there is a chance of inconsistencies, misinterpretations, or inadvertent omissions. These limitations can impact the reliability and validity of the findings.

3 Theoretical background and framework

This chapter will provide a comprehensive overview of stakeholder theory and its relevance to sustainability. It will also explore the concept of strategic sustainability and present a conceptual framework for understanding the strategic implementation of sustainability practices in companies.

3.1 Stakeholder theory

Stakeholder theory cannot be defined as a single theory in itself. Instead, it is a collection of diverse narratives that have emerged from various interpretations and applications in the fields of business ethics, corporate social responsibility, strategic management, corporate governance, and finance (Miles, 2017). Gilbert and Rasche (2008) have described it as an amalgamation of diverse perspectives that are subject to multiple interpretations and applications. Stakeholder theory, developed by Freeman *et al.*, 2010 emphasizes that businesses have a moral and ethical responsibility to take into account the interests of all stakeholders affected by the organization's activities and not just focus on maximizing shareholder value. The theory views the relationships between the organization and its stakeholders as the basis for value creation and recognizes that withdrawal of support from any stakeholder can jeopardize a business's viability (Freudenreich, Lüdeke-Freund, & Schaltegger, 2020). According to stakeholder theory, a common purpose between a company and its stakeholders should be based on shared values, providing a robust and motivating reference point for creating value together (Breuer & Lüdeke-Freund, 2017). Stakeholder theory is a widely used approach in social, environmental, and sustainability management research, with references to stakeholders and stakeholder theory serving as a common starting point for analyses in numerous publications on corporate sustainability and sustainability management, including textbooks, research papers, and policy publications (Frynas & Yamahaki, 2013). Hörisch, Freeman & Schaltegger (2014) highlight that sustainability management and stakeholder theory expand the conversations about businesses by repeatedly questioning the essential purpose and scope of business. While stakeholder theory argues that business should create value for all of its stakeholders, corporate sustainability emphasizes the dependency between the ecological and social world surrounding an organization. However, managing the expectations of different stakeholders is challenging; hence building solid relationships is very important. The management of competing interests in stakeholder theory is focused on relational models and their potential for joint value creation, which is contingent upon how stakeholders frame their relationships with other participants in the value-creating process, their preferences for outcome distributions to self and others, and the communications and other relevant cues from a firm's perceived behaviour towards stakeholders (Bridoux & Stoelhorst, 2016).

3.2 Strategic sustainability

It is widely recognised that companies operating and thriving in today's competitive landscape can generate shared value if they strategically utilise and meet the needs and expectations of their stakeholders. The expectations go beyond merely achieving economic and financial objectives, encompass a diverse range of factors that significantly impact an organisation's strategic choices, and are essential catalysts for promoting socially responsible, ethical and sustainable practices (Formisano, Fedele & Calabrese, 2018). Research demonstrates that companies exhibit varying levels of attention towards sustainability categories, emphasising the intricate and strategic nature of determining where and how to prioritise and invest in such categories (Tang *et al.*, 2012; Flammer & Kacperczyk, 2019).

The introduction of environmental and social sustainability as priorities in operations strategies is expected to complement traditional operations strategy configuration models, such as price-oriented, market-oriented, and capability-oriented models, without compromising their primary orientation (Longoni & Cagliano, 2015). However, incorporating sustainability into the operations strategy adds complexity to the process. First, developing a sustainability strategy itself is challenging, as noted in previous studies (Mohrman & Worley, 2010). Another challenge is strategically and holistically focusing on both environmental and social

sustainability, whereas the interrelationships between them and other competing priorities in operations have not been extensively researched or discussed, as noted in prior literature (Gimenez *et al.*, 2012; Jabbour *et al.*, 2012). The identified process of materiality can become a supporting mechanism for companies when developing their sustainability strategy, as incorporating the results of a materiality analysis into strategy is critical for sustainable development from a global perspective as it enables companies to identify and address the most significant sustainability issues that are critical for society and the environment. According to Font *et al.* (2016), materiality analysis is a crucial process for prioritising issues and strategic planning. It facilitates an integrated approach to developing a sustainability strategy and reporting, as additionally noted by Pfitzer *et al.* (2013). Hence, in the context of sustainability, it is important for organisations to ensure that the "material" issues they address are aligned with strategic objectives and relevant to stakeholders and to provide transparent disclosure on how these issues have been addressed, developed, and resolved (Machado *et al.*, 2020). From an empirical point of view, integrating sustainability issues into an organisational business model requires senior managers to be motivated and involved in decision-making regarding sustainability practices and changing the attitudes and behaviours of those responsible for sustainability integration processes can strengthen and increase resilience to impacts within the organisation (Aguinis & Glavas 2012; Harmon *et al.*, 2009).

3.3 A conceptual framework

The proposed conceptual framework draws on the theoretical underpinnings of strategic sustainability and stakeholder theory to underscore the strategic importance of incorporating stakeholder expectations in sustainability management.

The integration of stakeholder expectations and strategic sustainability is a key driver for businesses to create shared value and promote socially responsible and sustainable practices. Stakeholder theory emphasizes the moral and ethical obligation of businesses to consider the interests of all stakeholders impacted by their activities, rather than solely focusing on maximizing shareholder value. Strategic sustainability prioritizes environmental and social sustainability in operations strategies, without compromising the primary orientation of traditional models. Incorporating sustainability into operations strategy is complex, and materiality is a supportive mechanism for companies to align strategic thinking with stakeholder expectations by identifying and addressing critical sustainability issues. Therefore, organizations need to ensure that the "material" issues they address are aligned with strategic objectives and relevant to stakeholders, while providing transparent disclosure on how these issues have been addressed.

The conceptual framework focuses on analyzing the relationship between stakeholder input, stakeholder-selected and prioritized sustainability topics and strategic implementation of materiality analysis in sustainability reporting. To operationalize this, content analysis is used based on materiality matrix topics and statements by companies regarding their strategic use of sustainability. The framework is based on the underlying assumption that stakeholder engagement is essential for effective sustainability management and that companies must strategically utilize stakeholder input and materiality analysis to prioritize sustainability issues that are most relevant and significant to both their stakeholders and the planet (Figure 1).

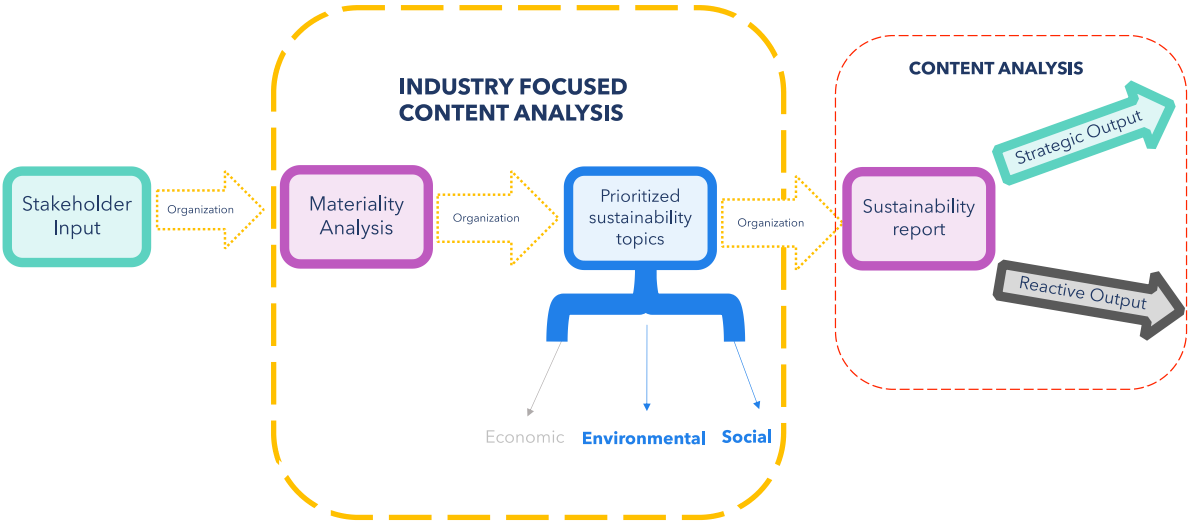

Figure 1. A conceptual framework.

The present illustration provides a graphical representation of the materiality process adopted by companies, displaying the sequential phases involved in this process. The dotted lines in the figure denote the specific areas of focus within the research process. The yellow dotted line indicates the content analysis process on the sustainability topics examined within the industry. The red dotted lines signify the subsequent phase in the process, where the output of the materiality matrix is evaluated within the sustainability report. This evaluation is conducted via content analysis to determine whether the utilization of the materiality matrix is reactive or strategic.

4 Empirical background

The chapter covers the challenges of sustainability reporting, materiality analysis, social and environmental sustainability, the triple-bottom-line framework, and sustainability challenges in industries identified for this research.

4.1 Challenges of sustainability reporting

It is becoming more widely recognized that reporting on sustainability is a critical component of corporate sustainability (Lozano & Huisingh, 2011). Most of the current sustainability reporting practices are voluntary, and companies are flexible in how they disclose information (Chen & Bouvain, 2009). For companies who report voluntarily, sustainability reports potentially are means for reputation enhancement and a way to respond to increasing pressure from the stakeholders to address environmental and social issues. However, for each company, determinants of sustainability reporting can vary and could stem from various factors, including but not limited to competitive advantage opportunities, employee satisfaction and retention, as well as the commitment of management. Braam *et al.* (2016) reviewed 178 articles related to business, management, and accounting from 1999 to 2011 to identify determinants of sustainability reporting and found that company size is the only internal determinant consistently found to have a positive influence on sustainability reporting. External determinants such as media exposure, stakeholder pressure, capital intensity, financing activities, systematic risk, sector affiliation, and social and environmental performance also had a positive influence, although the evidence was mixed and inconsistent. Another study that emphasized company size when it comes to reporting was conducted by Baumann-Pauly *et al.* (2013), which identified that larger companies adopt more robust reporting practices than **SMEs** (Small and Medium Enterprises).

For other companies, reporting is a mandatory procedure required by the EU Directive 2014/95/EU on non-financial information. Certain large companies and groups that meet the size criteria established by their respective member state in European Union are requested to disclose information related to their environmental, social and governance practices. With the introduction of the EU directive, companies were compelled to reconsider the trustworthiness of their information due to the resulting penalties and the involvement of internal auditors (Aureli *et al.*, 2020). On the other hand, La Torre *et al.* (2020) argues that while EU Directive may improve internal procedures for ensuring reliable information, it may also lead to a reduction in disclosed information as companies may remove previously voluntarily disclosed information that is doubtful in reliability, even if it is relevant to stakeholders. Stricter regulations could result in less comprehensive accountability to stakeholders as companies prioritize compliance and reliable disclosure over a broader range of information. For example, according to Purple Ivy (2023), several companies in Sweden revealed feeling overwhelmed by the legal sustainability disclosures, leading to a shift in focus from strategic sustainability to meeting legal requirements. Additionally, while mandatory reporting practices can promote transparency, research shows that mandatory information does not always imply better accountability (Cooper and Owen, 2007; Luque-Vílchez and Larrinaga, 2016).

The topic of whether mandatory disclosure has an impact on the quality of non-financial information has been a subject of ongoing debate in the international literature. Scholars such as Deegan (2002) and Adams (2004) contend that only regulatory requirements can enhance the quality of non-financial information disclosure. However, studies by Bebbington *et al*. (2012) and Lock and Seele (2016) present evidence that contradicts this notion, indicating that regulation is not always associated with improved quality and may not necessarily lead to an increase in the level of non-financial information. Nevertheless, the effectiveness of regulation in enhancing the quality of non-financial information disclosure remains a contentious issue that warrants further research and analysis.
Sierra-Garcia, Garcia-Benau and Bollas-Araya (2018) are one of the first studies to analyze the effects of mandatory regulations on whether companies restrict themselves to meeting regulatory requirements or voluntarily supply additional information following the introduction of the EU NFRD in Spain. The study indicated that following the Directive, the percentage of stock-listed companies in Spain publishing non-financial information separately dropped from 97.1% to 80%, with companies focusing on including sustainability information and financial reporting (Sierra-Garcia, Garcia-Benau and Bollas-Araya 2018, page 8) The study also reveals that the business sector in which a company operates affects its level of regulatory compliance, with sensitive sectors such as oil and gas disclosing more information related to environmental issues. Additionally, companies that include the required information and publish a sustainability report have higher rates of non-financial information disclosure compared to those that do not.

Another challenge of sustainability reporting is the lack of regulated, compulsory guidelines on how to report the information. Despite attempts at standardization, there are still substantial disparities in the content and quality of sustainability reports across businesses from various institutional backgrounds (Braam *et al.*, 2016). Universal sustainability reporting guidelines can make it easier to compare the progress within different industries and sectors and provide a more holistic perspective on achieving sustainability goals. GRI standards are the closest to sustainability reporting management guidelines and offer a comprehensive roadmap of indicators for companies to report on. However, given that the use of indicators is voluntary, it does not always support the scalability and comparability purposes necessary for understanding companies' impacts, given the lack of consistency. For example, Roca & Searcy (2012) conducted a content analysis of 94 Canadian sustainability reports and tried to investigate the use of the indicators suggested by the GRI. The results showcased that while many different indicators were adapted and evenly distributed along the triple bottom line of the reports analyzed, the availability of a sector-based and diverse range of indicators makes it challenging to develop a standard set of comparable and applicable indicators.
Research on sustainability reporting has gained significant attention in recent years, but the existing body of literature still falls short of providing a comprehensive understanding of the topic. Despite the growing number of studies on sustainability reporting, there is a need for further research to explore the mechanisms that affect the quality and effectiveness of sustainability reporting, as well as the factors that drive organizations to engage in such reporting practices.

4.2 Materiality analysis

Stakeholder engagement is a crucial component of materiality analysis as it provides insights into the needs of various groups. In a study conducted by Torelli, Balluchi, and Furlotti (2020) examining the application of the materiality principle in Italian listed companies' disclosure for the 2017 financial year, it was found that stakeholder engagement, industry membership, and adherence to GRI principles play a pivotal role in the materiality analysis process. The study's results indicate that companies cannot achieve high levels of materiality principle implementation without engaging stakeholders directly, which could lead to poor communication with stakeholders.

Current academic research on CSR primarily focuses on measuring CSR activities rather than evaluating their underlying motives, impacts, or links to stakeholder needs (Basu & Palazzo, 2008). However, the lack of completeness in CSR reporting is a serious issue that companies face due to inadequate coverage of all material aspects from a stakeholder perspective, as noted by Calabrese *et al*. (2015). Additionally, there is a dearth of quantitative methods that can support materiality assessment in sustainability reporting, and the existing studies have not fully addressed subjectivity or completeness in reporting.

The materiality process is still subjective because of the absence of a standard definition, leading to managerial discretion in making materiality determinations (Edgley, 2014; Lyon & Maxwell, 2011). To address this issue, there have been efforts to consolidate definitions and agree on two main perspectives on materiality: the business case perspective and the societal impact perspective (Impact Management, 2020). The former considers an ESG topic to be material when it significantly affects the financial performance of the firm, while the latter views an ESG topic as material when it reflects a substantial part of the firm's economic, environmental, or social impact on society (Garst, Maas & Suijs, 2022).

Such an approach, called "double materiality" , was included in European Union's Guidelines on Non-Financial Reporting: Supplement on reporting climate-related information" (2019/C 209/01) in June 2019. The guidelines, however, did not provide a clear understanding or perspective on the future of materiality and how it should be measured. Hence, instead of tackling challenges with existing single materiality, the double materiality perspective poses a challenge for many companies in the face of new and more demanding reporting standards (Baumüller & Sopp, 2022). As per Purple Ivy (2020), all of the companies interviewed mention a raised level of confusion and stress regarding reporting from a double materiality perspective, as most of them lack a clear understanding of the reporting procedure and the capacity to acquire the required amount of data. On the other hand, this may force companies to develop novel processes and reporting mechanisms and challenge their business management approach, which may result in better business sustainability practices (Baumüller & Sopp, 2022). Despite the importance of materiality, research must be done to improve the process, particularly regarding capturing subjectivity and comprehensiveness in the reporting process.

4.3 Triple-Bottom-Line

Today, organisations are confronted with competing objectives that they must resolve. Internal and external stakeholders want organisations to be financially successful on the one hand, fulfil their strategic goals on the other, and participate in sustainability on the third occasion (Hacking & Guthrie, 2008). Consequently, today's corporate environment is characterised by contradictory interactions between company sustainability's economic, social, and environmental dimensions (de Lange, 2017). The concept which adheres to these principles is called triple-bottom-line **(TBL)** and provides a voluntary approach with equal economic, environmental, and social dimensions that can

lead to a competitive advantage for sustainable firms (Hussain, Rigoni & Orij, 2018). According to Elkington (2001), TBL is an extension of sustainable development since it integrates social equality, economic principles, and environmental responsibility. Elkington (2001) proposed that the core of the TBL framework may be summed up in three words: people, planet, and profit. By incorporating environmental, economic, and social factors, this theory addresses several aspects of the same organisation under a single theoretical framework (Janjua, Sarker, & Biswas, 2020). In other words, it is a pluralistic approach to sustainability that directly engages the realities of corporate organisations (Hindle, 2009). Profitability, economic growth and efficiency are all aspects of the bottom line that are fundamental to economic sustainability. Evaluating a company's commitment to fair pay and labour standards, ethical sourcing practices, and corporate social responsibility is part of social sustainability, which concerns social issues. The concept of environmental sustainability refers to the assessment of a company's environmental performance in terms of its capacity to lessen its environmental impact and improve its efficiency, and it is concerned with resolving environmental problems (Alhaddi, 2015).

Incorporating the TBL and corporate sustainability initiatives into corporate company plans is now a greater need than ever (Hogevold & Svensson, 2012). Internationally active enterprises are under increasing pressure to show the effect of their sustainability initiatives through the TBL (Schaltegger & Buritt, 2010). Businesses often face uncertainty over their methodologies and processes to quantify this effect (Svensson *et al.*, 2018). The latest theory on TBL paradoxes suggests that managers should consider all three components of the TBL and recognise their dynamic relationship (Hahn *et al.*, 2015; Van der Byl & Slawinski, 2015). This integrative view is based on the understanding that an effective economy requires environmental and societal components, with a shareholder-profit focus potentially detrimental to both. According to paradox theory, firms can reap multiple benefits from investing in the TBL, such as a better reputation and lower transaction costs (Deng *et al.*, 2013). In addition, long-term relationships with stakeholders can be formed and mutual trust established, which is especially beneficial in financial crises (Lins *et al.*, 2017).

On the other hand, focusing on one dimension while neglecting the others risks increasing tensions (Hahn *et al.*, 2018). Hahn *et al.* (2018) suggest that a paradox perspective provides the foundation for a shift away from viewing sustainability as merely a business case. Svensson *et al. (*2018) examined the triple-bottom-line perspective of 746 firms from 2003 to 2013. The study found that it is possible to achieve financial, environmental, and societal goals simultaneously and that there are benefits to embracing the tensions between these three components. The importance of the research's findings is on the correlation between the factors: high performance in one dimension is related to high performance in the other two, and firms with low profitability heading into the recession maintained their environmental and social performance. Additionally, the market attaches a significantly higher value to firms with high performance in achieving higher levels of TBL, with a an increase in market valuation when all three were achieved at a high level. These findings suggest that many managers have adopted a perspective consistent with abundance rather than scarcity and that the importance of each component of the 3BL is changing with time (Walker, Yu & Zhang, 2020). Svensson *et al.* (2018) analysed cause-and-effect relationships between economic, environmental, and social aspects of environmentally cleaner production and sustainability. Results showed that social aspects partially mediate the relationship between economic and environmental aspects, suggesting that future research should aim to identify further mediators.

4.4 Social and environmental sustainability

Although the TBL approach to corporate sustainability—considering the economic, environmental, and social impacts of a company's activities—is valuable, the current focus will be on sustainability's environmental and social dimensions. Creating social and environmental value is a long-term perspective that considers the needs of future generations, while the economic value resulting from these long-term outcomes is highly uncertain, rendering it unpredictable (Eccles & Krzus,2015). Consequently, firms are often inclined to pursue outcomes that generate economic value in the short

term (Eccles & Serafeim,2013).

Whitehead (2017) has analyzed sustainability indicators of companies in the wine industry of New Zealand, using a four-pillar framework to evaluate sustainability indicators. The study shed light on the current tendency in sustainability assessments to prioritize environmental issues over other non-environmental factors such as social, economic, or governance concerns and suggested that while environmental issues are crucial for sustainability, it is equally important to take into account other factors that are essential for creating a genuinely sustainable business or society. It also highlighted that the prioritization of indicators can be industry specific. For example, indicators commonly found in the scientific literature on agricultural sustainability are often centred on the environmental aspect. This is due to the closely linked socio-ecological system in which agriculture operates, which sets it apart from corporate sustainability, which may place more emphasis on social and ethical concerns, as Fortuna *et al*. (2011) noted.

This type of research holds significant importance as it has the potential to shed light on the potential situation in other industries where companies might prioritize environmental sustainability over social or economic factors. Empirical studies indicate that industry-specific factors significantly impact sustainable performance, implying that corporate sustainability initiatives may be more effective when tailored to a particular industry (Bauer *et al*., 2008; Johnson *et al*., 2009). By analyzing the causal relationships among sustainability pillars by industry, researchers can identify the critical sustainability concerns for each industry and facilitate meaningful comparisons of firms' sustainability performance within a given industry for investors and policymakers (Whitehead, 2017)

4.4.1 Social sustainability dimension

In academia, prior research on sustainability has primarily concentrated on environmental and economic issues. However, recently, there has been a growing interest in social sustainability within academia as it gains recognition and receives support from political and institutional entities. The social aspect has been later integrated into sustainability while previously neglected in favour of climate change and sustainability in public and policy discussions (Grundmann & Stehr, 2010). Such prioritization can particularly result from the fact that sustainable development emerged from the convergence of the environmental movement of the 1960s and the basic needs advocacy of 1970 with a little focus on social aspects. As the importance of the interconnectedness between social and environmental sustainability gained recognition, it became apparent that environmental externalities are distributed disproportionately, both geographically and among different groups (Vinthagen, 2013). The importance of social sustainability can be greatly defined through the prism of the broad definition of sustainability in the Brutland report, highlighting that only when people's basic needs are met can they begin to challenge biophysical environmental problems (Vallance, Perkins and Dixon, 2011). Development sustainability emphasizes the role of poverty and inequity in environmental degradation and sees their alleviation as central to environmental well-being. In contrast, bridge sustainability prioritizes nature and techno-scientific measures for bio-physical environmental health with little consideration for social consequences. Although there is potential for alignment, such as when housing is made both affordable and green, recent studies emphasize the need to be more aware of the social implications of bio-physical solutions (Vallance, Perkins, & Dixon, 2011).

Social sustainability is crucial in developing a just and equitable society with a decent quality of life for all and is means to achieving sustainable development (Koning, 2015). As a concept, social sustainability involves the integration of strategies and structures that aim to balance people's well-being, the planet's health, and economic prosperity, with a focus on the long-term needs and interests of future generations (World Bank, 2016). While there is a consensus that environmental and economic sustainability aligns with environmental and economic well-being, equating social and cultural sustainability with social and cultural well-being is more challenging (Koning, 2015).

Research has additionally highlighted challenges in implementing and integrating social aspects into sustainability initiatives and planning processes (Davidson, 2009; Dillard *et al*., 2009). A lack of conceptual framing and aligned definition and understanding leads to ambiguity and uncertainty regarding its application and measurement of progress (Boström *et al.*, 2015). The comprehension of indicators measuring a company's advancement in social sustainability is of utmost importance, yet it presents a challenge for both the business sector and academia. In the realm of triple-bottom-line reporting, consulting firms have predominantly formulated sustainability indicators to aid large companies in devising indicator systems for their corporate reporting (Newport, Chesnes & Lindner, 2003). However, social sustainability poses a significant challenge in terms of quantification as compared to economic growth or environmental impact, leading to its neglect in such reporting. Universal indicators for social sustainability are too broad to be effective, and tailored indicators must be devised for individual companies, raising concerns about their relevance to academic discourse in specific domains of social sustainability (McKenzie, 2004). Colantonio (2009) has looked at the various indicators of social sustainability and highlighted the emergence of new 'soft' themes, such as happiness, well-being, and social capital, in the social sustainability discourse, alongside the more traditional 'hard' concepts like basic needs, equity, and employment. Including these new themes reflects the changing social needs of individuals and communities, but it also adds complexity to the measurement and interpretation of social sustainability. The paper proposes a taxonomical division between traditional and emergent social sustainability themes and indicators to understand the shift towards more elusive concepts in the social sustainability debate, which may continue in the future as more affluent sectors of society emerge.

However, it is crucial to ensure that this new focus on emerging themes does not come at the expense of in-depth analysis of traditional pillars of social sustainability, such as equity and poverty, which have received less attention in recent social sustainability works. There has been quite substantial criticism against sustainability indicators for various reasons, such as measuring what can be measured rather than what ought to be measured, focusing on one aspect of sustainable development, and not sufficiently taking into account the complex systems' multiple feedback loops and pressures (Briassoulis, 2001; McCool & Stankey).

4.4.2 Environmental sustainability dimension

The traditional approach to sustainability has prioritized the environment, as evidenced by the widespread use of the eco-centric term "environmental sustainability" and the focus on environmental activities at conferences and universities (Newport, Chesnes & Lindner, 2003). Such an approach is potentially a result of recent scientific findings on climate change and current economic activity's devastating effects on the planet. In 2009, Rockstrom *et al.* identified nine planetary boundaries that, if crossed, would have devastating environmental challenges that might be irreversible. Rockstrom *et al.*, 2009 have gained significant recognition among policymakers, academia, and companies committed to sustainability.

While there may be different interpretations of environmental sustainability, this paper focuses on the business perspective. The World Bank has defined environmentally sustainable development as the preservation of ecosystem integrity and capacity, as well as the promotion of natural resource conservation (Koning, 2015). Specifically, environmental sustainability entails the use of natural resources at a rate lower than their replenishment rate, or the use of substitutes, while minimizing emissions and avoiding any activities that could harm the ecosystem (Kleindorfer *et al*., 2005). According to Ekins (2011), the importance of the environment lies in its ability to continue providing environmental functions that contribute to human welfare. Nature's capital, which refers to resources and services provided by nature, such as air, water, biodiversity, and ecosystem services, is similar to financial capital. To put it simply, environmental sustainability means utilizing natural resources wisely and without causing harm to the environment. It is crucial for businesses to consider the impact of their operations on the environment and to adopt practices that promote sustainable

development. By doing so, they can contribute to the preservation of nature's capital and ensure a better future for all.

Hence, environmental reporting is widely used within companies. The term "environmental reporting" has a broad definition that includes providing information about the environmental impact of a company's operations (Deegan, 2002). By reporting on their environmental performance, firms can gain stakeholders' support and evaluate potential risks associated with their operations and take measures to minimize their impact on the environment (Kathy Rao, Tilt & Lester, 2012). Environmental performance is in some way an outcome of strategic management of its activities that reflect its impact on the environment (Walls *et al.*, 2012)

Two strategic approaches can be identified to environmental sustainability: focus on technology and focus on the market (Luukkonen, 2002). With the focus on technological advancement, companies invest in new ideas, such as green solutions, and research and development focus on identifying better and more sustainable solutions for future business (Chen *et al*., 2014). The other focus is on market response to stakeholder demand, particularly customer demands (Jaworski & Kohli, 1993). According to Darnall *et al*. (2010), market-oriented firms often adopt proactive environmental strategies and cultivate new cultural and operational values that reduce their environmental footprint, to prevent negative perceptions among their customers and enhance financial performance. Konar and Cohen (2001) researched to understand whether environmental performance affects the financial performance of 500 large companies listed on stock exchanges in the United States. Their findings show that poor environmental performance has a significant adverse effect on the intangible-asset value.

Focusing on the US market, Al-Tuwaijri, Christensen and Hughes (2004) investigated the interplay between economic and environmental performance and environmental disclosure in the US chemical industry, focusing on how these constructs are jointly determined. The research concludes that good environmental performance and economic profitability go hand-in-hand, consistent with Michael Porter's, a famous business theorist, argument that innovative solutions to reduce inefficiencies associated with pollution promote both environmentalism and industrial competitiveness. On the other hand, companies with good environmental reputations have higher intangible assets.
In conclusion, environmental sustainability is crucial for companies to understand and mitigate the effects of their operations on the environment. In contrast, environmental reporting is essential to communicate environmental practices and performance to stakeholders. Furthermore, evidence suggests a positive relationship between sustainability reporting and financial performance, particularly in industries that face more significant environmental risks and regulations. However, there is a lack of research in understanding and defining indicators for environmental sustainability to better measure and understand progress in comparative terms.

4.5 Industries

4.5.1 Capital goods

The capital goods industry, or capital items industry, is a sector of the economy that produces goods used in producing other goods or services. These goods are typically large, expensive, and have a long useful life. Capital items are an essential factor in the production process, as they help companies to increase efficiency, productivity, and output. The capital items industry can significantly impact sustainable development given its high utilization of resources for the production of equipment as well as intensive energy usage both in maintaining and producing the goods. The mechanical equipment industry is crucial in promoting energy efficiency and reducing emissions in various sectors, such as electric power, metallurgy, and petrochemicals (Shan *et al.*, 2012). However, the industry faces several challenges, including high energy consumption, low precision manufacturing, and significant waste generation, particularly in thermal processes such as casting, forging, and heat

treatment. These processes are responsible for 60-80% of energy consumption and pollutants in the mechanical industry, resulting in an annual loss of approximately $250 billion due to the removal of 100 million tons of metal materials during the machining process (Shan *et al.*, 2012, page 1). While there is a limited amount of studies on the social impact of the capital items industry, García Alcaraz *et al.* (2022) talk about the social impact of the maquiladoras industry, which is local capital items manufacturing companies in Mexico and emphasize its significant social and economic impact, especially when it comes to job creation for the community

4.5.2 Material

The materials sector is a broad category encompassing companies involved in producing and distributing raw materials, such as metals, minerals, chemicals, and forestry products. Literature on sustainability challenges of the materials industry is mainly limited to the forestry and mining sector. Environmental issues in the mining sector are widely recognized as the industry often faces public scrutiny in its efforts to obtain land-use rights and extract minerals (Richards, 1996). In addition to these challenges, mining can generate nuisance effects such as noise, dust, and increased traffic. While the materials industry is an essential contributor to economic development as it creates opportunities for decent employment and improves the lives of local communities, it has a lot of sustainability-related challenges, primarily when adequate environmental and social policies are not implemented. The industry is under great scrutiny from a considerable public segment as they believe the materials industry is not adequately committed to sustainable practices. (Mancini and Sala, 2018; The EU Commission's EIP on raw materials, 2016). The resulting decline in social acceptance poses a considerable disadvantage to the sector, resulting in substantial business expenses and a lack of business opportunities (Franks *et al.*, 2014). Endl *et al.* (2021) talk about recent innovations implemented in the industry and state that they have positively impacted the environmental SDGs, especially in GHG emissions mitigation. However, the study argues that the industry lacks integration of climate change adaptation measures into future planning. Tomazinakis *et al.*(2022) explored the impact of the raw materials sector on SDGs in Greece, Poland, and Slovakia, identifying and ranking the most significant SDGs for the sector based on stakeholder views. The study surveyed 423 participants, and results showcased that SDGs SDG 9 (Industry, Innovation, and Infrastructure), 8 (Decent Work and Economic Growth), and 7 (Affordable and Clean Energy) are highly ranked by stakeholders, with digital transformation, recycling, and increased resource efficiency in mineral processes as essential challenges (Tomazinakis *et al.*2022, page 11-12).

4.5.3 Investment

As the integration of ecological and socio-economic considerations into investment decision-making gains traction, the evaluation of the impact of such investments on sustainability is gaining prominence. In trying to measure the sustainability of investment funds, Popescu, Hitaj and Benetto (2021) find that widely used sustainability measurement methods such as carbon footprints and ESG ratings have several shortcomings and fail to capture the real-world sustainability impacts of investments, hence making it challenging to understand the impact on sustainability from an investment perspective. While economic performance still stands at the forefront of most investmentst ,funds Yue *et al.* (2020) found that in current financial market sustainable funds are less riskier than trad; however there is no data proving that they generate more income. Such queries highlight the importance of considering the wider implications of investment choices beyond financial returns and highlights the importance of investment funds in achieving sustainability (Koellner *et al.*, 2005).

4.5.4 Consumption items

Consumption items are a sector of the economy that produces and sells goods that are intended for use by individual consumers. The sector is divided into two main divisions: durable and non-durable.

Regardless of the division, for most companies in this industry, the relationship to sustainability is usually linked directly to the consumer and their choices and is connected to how much an end user will be willing to pay (Piwońska *et al.*, 2021). While sustainability promotes durable and quality products, for durable goods, the main impact of the product comes from the energy required for its production and during the use phase. Although durable goods themselves make up only 10% of the ecological footprint (**EF**), when combined with their complementary products and services, as well as operational energy, "durable-related" energy flows accounted for two-thirds of the global household EFs in 2011 (Vita *et al.*, 2021). Circularity is also highlighted in the consumer goods industry as critical to its sustainability. A study by Stewart and Niero (2018) has reviewed the sustainability reporting of 50 consumer goods companies and found that while circularity and circular approach is gaining recognition in the industry, the majority of reported activities focus on end-of-life management and sourcing strategies rather than circular product design and business model strategies. When it comes to environmental reporting in the industry, a study on U.S.-based consumer goods companies found that most companies have under-reported carbon emissions and greenhouse gases, frequently leaving out transportation and distribution emissions (Wilson, 2013).

4.5.5 Banking

Sustainable banking is defined as the introduction of “financial products and services that are developed to meet the needs of people and safeguard the environment while generating profit” (Yip & Bocken, 2018). The banking industry plays a crucial role in achieving sustainable development by mobilizing financial resources towards sustainable goals, such as providing resources to green projects and managing and distributing sustainable, responsible investment (SRI) funds, contributing to funding the SDGs (Aracil, Nájera-Sánchez & Forcadell, 2021). Buallay (2019) investigated the impact of ESG disclosures on the performance of 235 banks over ten years regarding how sustainability-related focus affects banks. The study found that ESG disclosures positively impact bank performance, but the relationship varies depending on the type of disclosure. Banks are vital for economic development and rely on public support during financial distress. Therefore, they have a greater responsibility than other industries to provide stakeholders with accurate and reliable information on sustainable business practices (Khan *et al.*, 2020).

4.5.6 Daily goods

The daily goods industry refers to the sector involved in producing, distributing, and selling consumer goods essential for daily life, such as food, beverages, personal care products, household cleaning items, and other necessary items. When it comes to the food industry, the focus is usually on environmental degradation and biodiversity, given the emerging demand for animal protein (Berggren, Jansson & Low, 2019). Protecting natural resources, such as water, energy, and land, and ensuring sustainability in the food supply chain are increasingly important global priorities (Otles *et al.*, 2015). Given the growth of stakeholder demand for sustainability in the industry, sustainability reporting is becoming prioritized. Buallay (2022) has analyzed the relationship between reporting and performance in the food industry and has found that sustainability reporting can positively impact the financial performance of companies in the food industry. Non-food daily goods companies, including fast-moving consumer goods (FMCG), have a considerable environmental and societal impact, with growing pressure to develop more sustainable business models (De Medeiros, Ribeiro and Cortimiglia, 2014).

The literature review identified several challenges in sustainability reporting, including differences in reporting practices among different types of companies and industries, as well as challenges faced by companies reporting voluntarily versus those reporting according to legislation. However, the lack of standardized reporting practices makes it difficult to conduct studies across sectors and countries.

This study aimed to address this challenge by analyzing sustainability reports from 131 major companies in Sweden and contribute to a broader cross-sectoral discussion.

As mentioned in literature review, current academic research on CSR mainly focuses on measuring CSR activities rather than evaluating company's motivations, impacts, and stakeholder connections. This research aimed to understand how companies use materiality analysis, their primary stakeholder communication tool, to incorporate stakeholder perspectives into their long-term thinking and strategy. Additionally, while most academic research focuses on environmental aspects, this study also aimed to examine whether this approach is reflected in the business context.

Furthermore, the literature review revealed a lack of studies on sustainability practices in specific sectors, such as capital goods, banking, investment, materials, consumer goods, and everyday necessities. By examining sustainability reports from major companies in Sweden operating in these sectors, the research will provide insights into their practices, initiatives, and approaches towards sustainability.

5 Findings

This chapter presents the findings of the report through a series of graphs. First five section are structures as per following industries: capital goods, material, investment,consumer goods and banking and answer first question of the research. Last two chapters are focusing on sustainability dimensions present results for prioritized sustainability dimensinos and materiality's purpose for Sweden companies.

5.1 Sustainability priorities by industry

5.1.1 Capital goods

In the study of 55 companies, the final analysis excluded ten companies due to the absence of sustainability reports or the lack of mention of their focus areas. Of 45 analyzed companies in the capital goods industry, 15 had dedicated sustainability reports, with 30 utilizing integrated reporting practices. Most companies had identified material sustainability focus areas in their reports. Specifically, out of the 48 companies, only four did not mention sustainability priorities in their reports, indicating an overall prioritization of sustainable practices. Approximately 56% of the surveyed companies reported 2021 as their most recent materiality update year. The most commonly identified materiality focus areas among the surveyed companies were **climate impact, business ethics, health and safety, diversity, equality, and inclusion.** Community impact and biodiversity as a sustainability focus were not mentioned. Comprehensive findings are shown in Figure 2.

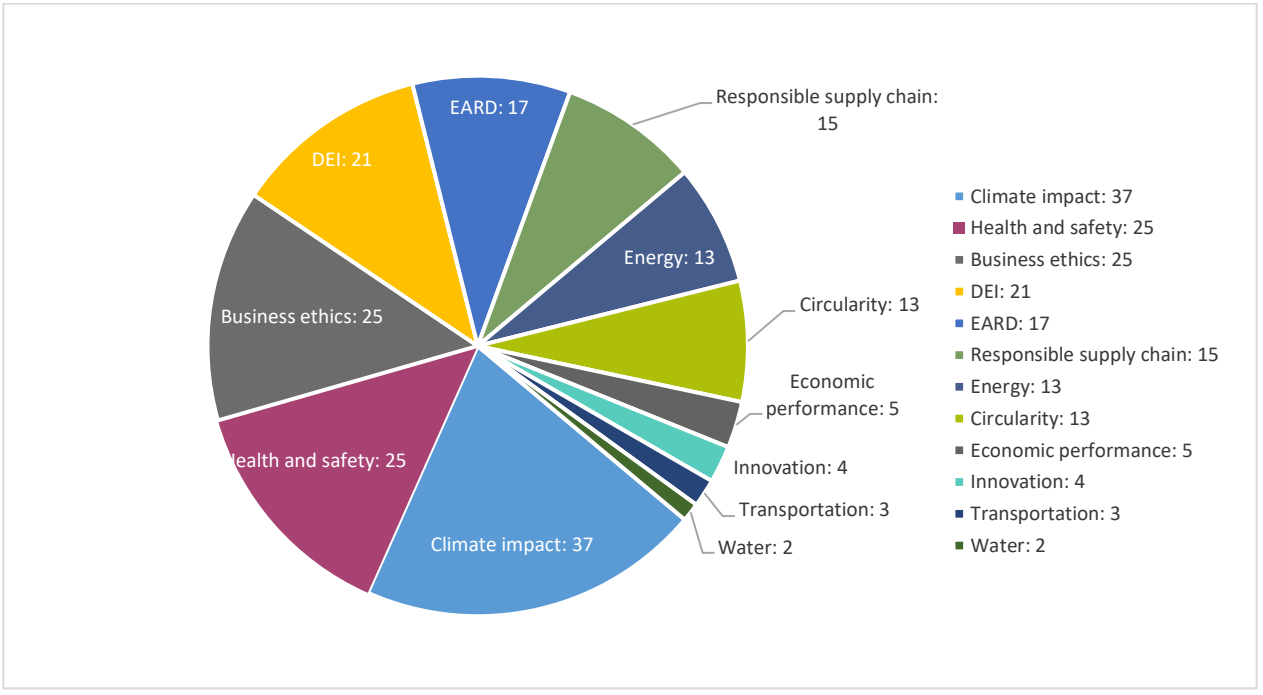

Figure 2. Sustainability priorities of capital items industry.

The circular graph utilizes color-coding to represent various sustainability priorities, with each respective label inscribed within the circle. The numeric values adjacent to each sustainability priority indicate the number of companies that have identified it as a priority within their materiality matrix. The sustainability priority indicators are arranged in order of decreasing frequency of mention, with the most commonly cited priorities listed first and the least commonly cited ones listed last. Most mentioned sustainability priority is climate impact. Sources for the graph are indicated in the Appendix 2.

5.1.2 Material

In the study of nineteen companies, the final analysis excluded four companies due to the absence of sustainability reports or the lack of mention of their focus areas. The majority of the companies relied on integrated reporting practices, with only three companies having dedicated sustainability reports. The most frequently cited sustainability priorities across the companies were **climate impact (22%), health and safety (15%), and business ethics (12%).** Transportation, EARD, DEI, and water were not mentioned. Comprehensive findings are shown in Figure 3.

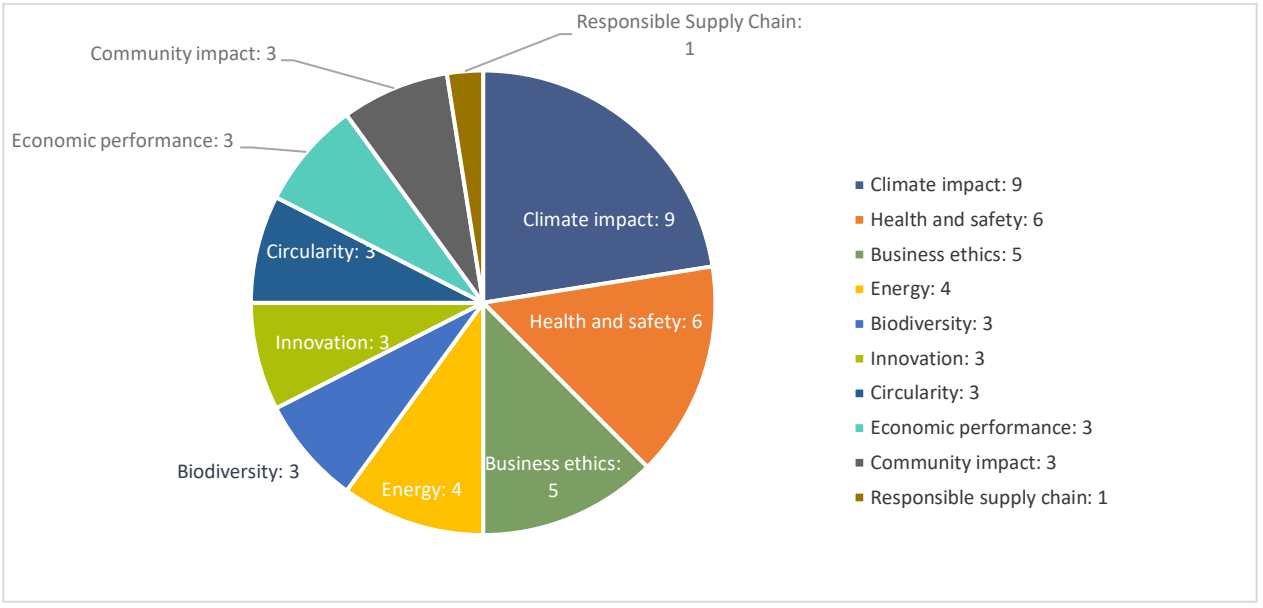

Figure 3. Sustainability priorities of material industry.

The circular graph utilizes color-coding to represent various sustainability priorities, with each respective label inscribed within the circle. The numeric values adjacent to each sustainability priority indicate the number of companies that have identified it as a priority within their materiality matrix. The sustainability priority indicators are arranged in order of decreasing frequency of mention, with the most commonly cited priorities listed first and the least commonly cited ones listed last. Most mentioned sustainability priority is climate impact. Sources for the graph are indicated in the Appendix 2.

5.1.3 Investment

In the analysis of fourteen companies, the final analysis excluded eight due to the absence of sustainability reports or the lack of mention of their focus areas. Two companies had dedicated sustainability reports, while three others relied on integrated reporting practices. Across the companies, the most frequently mentioned sustainability priorities were **business ethics (26%) and climate impact (21%).** Health and safety, energy, biodiversity, circularity, community impact, responsible supply chains, transportation, and water were not mentioned. Comprehensive findings are shown in Figure 4.

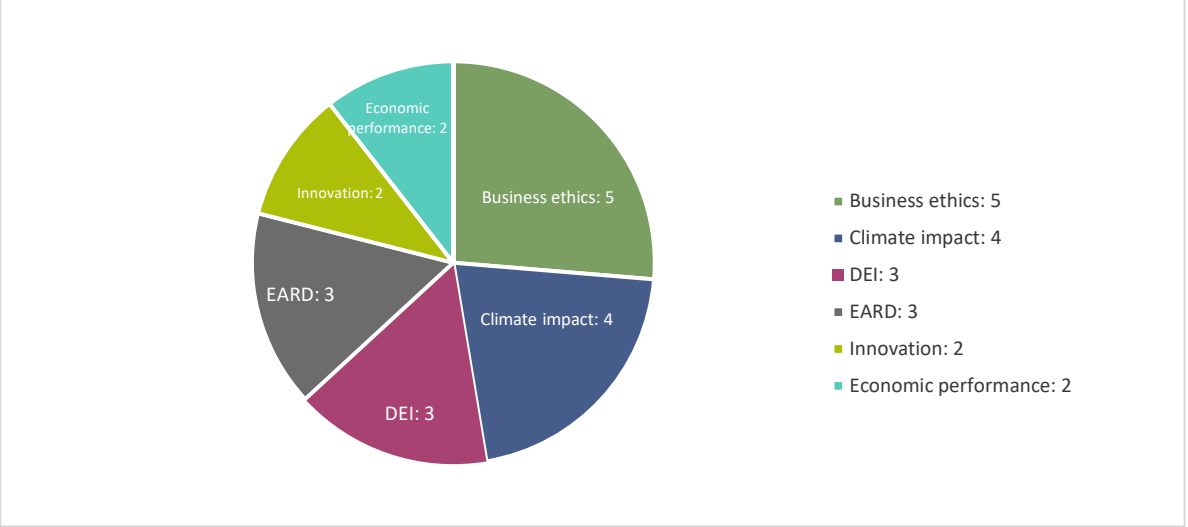

Figure 4. Sustainability priorities of investment industry.

The circular graph utilizes color-coding to represent various sustainability priorities, with each respective label inscribed within the circle. The numeric values adjacent to each sustainability priority indicate the number of companies that have identified it as a priority within their materiality matrix. The sustainability priority indicators are arranged in order of decreasing frequency of mention, with the most commonly cited priorities listed first and the least commonly cited ones listed last. Most mentioned sustainability priority is climate impact. Sources for the graph are indicated in the Appendix 2.

5.1.4 Consumption items

In the study of 27 companies, the final analysis excluded twelve companies due to the absence of sustainability reports or the lack of mention of their focus areas. Five companies had dedicated sustainability reports, while the other 10 relied on integrated reporting practices. Across the companies, the most frequently cited sustainability priorities were **climate impact (19%), business ethics (15%), and circularity (15%).** Innovation, transportation, and community impact were not mentioned. Comprehensive findings are presented in Figure 5.

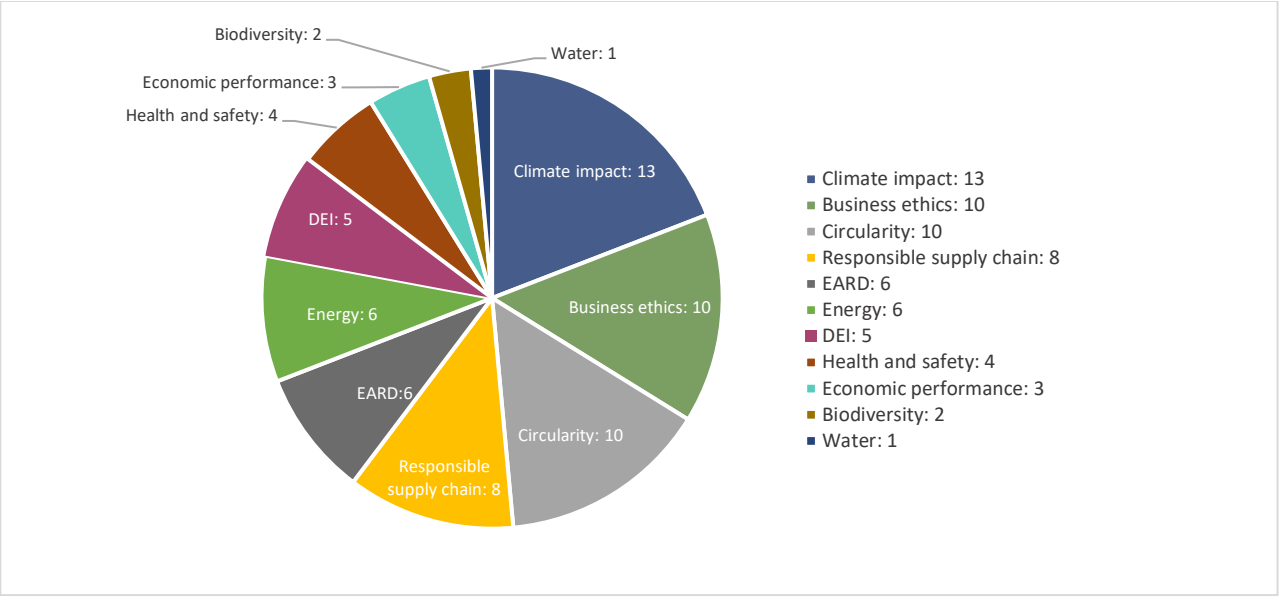

Figure 5. Sustainability priorities of consumption items industry.

The circular graph utilizes color-coding to represent various sustainability priorities, with each respective label inscribed within the circle. The numeric values adjacent to each sustainability priority indicate the number of companies that have identified it as a priority within their materiality matrix. The sustainability priority indicators are arranged in order of decreasing frequency of mention, with the most commonly cited priorities listed first and the least commonly cited ones listed last. Most mentioned sustainability priority is climate impact. Sources for the graph are indicated in the Appendix 2.

5.1.5 Banking

In the analysis of nine companies, the final analysis excluded four due to the absence of sustainability reports or the lack of mention of their focus areas. All of the companies relied on integrated reporting practices. Across the industry's most frequently cited sustainability priorities were **business ethics (19%)** and **climate impact (19%).** Health and safety, responsible supply chains, innovation, transportation, biodiversity, and community impact were not mentioned. Comprehensive findings are presented in Figure 6.

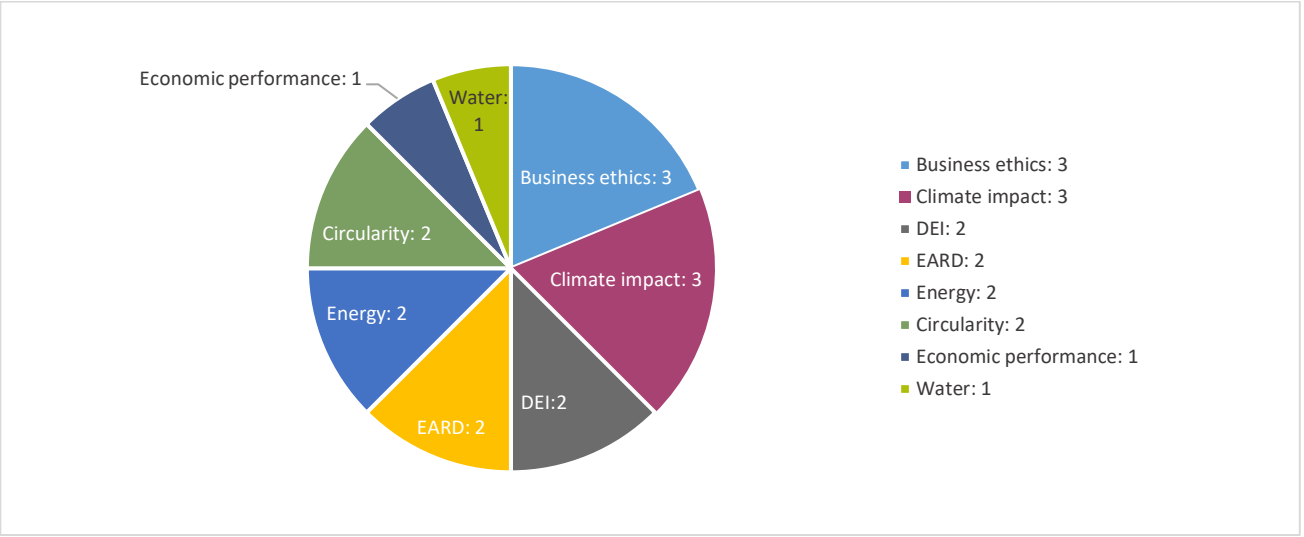

Figure 6. Sustainability priorities of banking industry.

The circular graph utilizes color-coding to represent various sustainability priorities, with each respective label inscribed within the circle. The numeric values adjacent to each sustainability priority indicate the number of companies that have identified it as a priority within their materiality matrix. The sustainability priority indicators are arranged in order of decreasing frequency of mention, with the most commonly cited priorities listed first and the least commonly cited ones listed last. Most mentioned sustainability priority is business ethics. Sources for the graph are indicated in the Appendix 2.

5.1.6 Daily items

In the study of eight companies, one company was excluded from the final analysis due to the lack of mention of their focus areas in the report. All companies, except for one, relied on integrated reporting practices instead of sustainability reporting. Across the companies, the most frequently cited sustainability priorities were **climate impact (35%) and business ethics (15%).** Circularity, economic performance, innovation, and transportation were not mentioned. Comprehensive findings are shown in Figure 7.

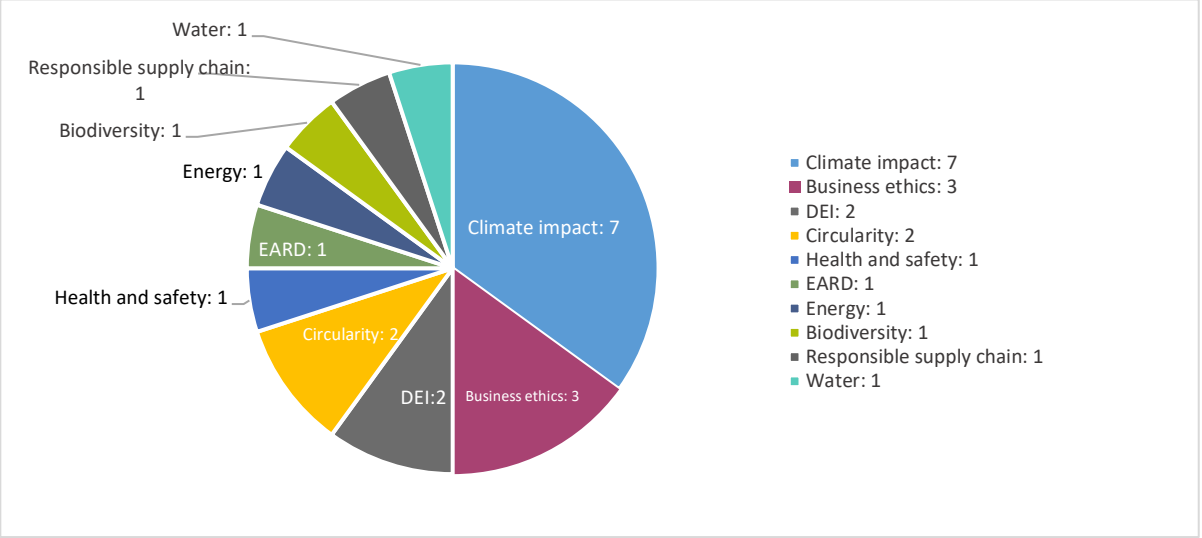

Figure 7. Sustainability priorities of daily items industry.

The circular graph utilizes color-coding to represent various sustainability priorities, with each respective label inscribed within the circle. The numeric values adjacent to each sustainability priority indicate the number of companies that have identified it as a priority within their materiality matrix. The sustainability priority indicators are arranged in order of decreasing frequency of mention, with the most commonly cited priorities listed first and the least commonly cited ones listed last. Most mentioned sustainability priority is climate impact. Sources for the graph are indicated in the Appendix 2.

5.2 Focus of sustainability dimension

Climate change and business ethics emerged as dominant material topics in most industries. A comprehensive analysis of all industries revealed an equal emphasis on social and environmental dimensions in the materiality reports of companies in Sweden. Notably, the environmental dimension was given more weight, accounting for 56% of the focus. The findings are shown in Figure 8.

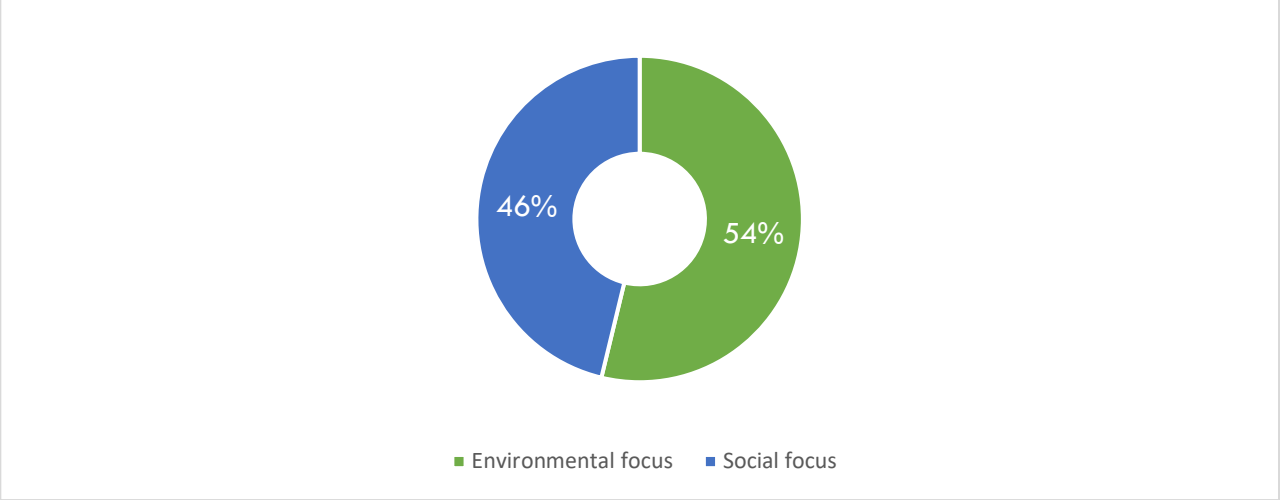

Figure 8. Focus of sustainability

The blue color in the circular graph represents the extent of social focus, while the green color represents the extent of environmental focus among companies. The respective percentages of each focus area are depicted alongside the corresponding color. The findings suggest that environmental focus was prioritized over social focus, with 54% of material topics being environmental in nature, as opposed to 45% that were social in nature. Sources for the graph are indicated in the Appendix 2.

5.3 Purpose of materiality analysis

A comprehensive content analysis was conducted to understand the purpose of the materiality analysis of 98 companies. Notably, companies that did not provide non-financial reporting were excluded from the study. The findings indicated that a majority of the companies, comprising 41 in total, utilized materiality to identify their sustainability priorities. Further, among the companies that utilized materiality, 22 utilized it as a strategic tool to formulate their sustainability strategy, while eight based their targets on the outcome of materiality analysis. Notably, only one company mentioned using materiality as a framework, and two companies cited it as the basis for the content of their report. However, 27 companies did not mention the purpose of materiality in their sustainability reporting. Comprehensive findings are shown in Figure 9.

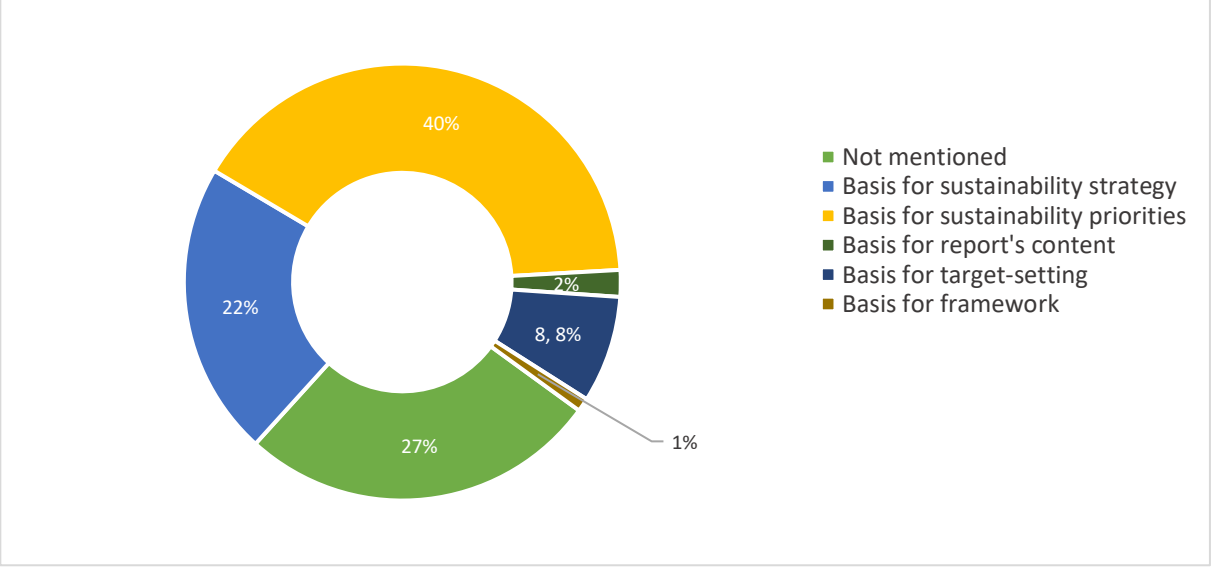

Figure 9. Purposes of materiality analysis. Sources for the graph are indicated in the Appendix 2.

The circular graph displays various bases of materiality analysis, with each color representing a different purpose as labeled on the right-hand side of the graph. The percentages shown within each colored section indicate the proportion of companies that mention the corresponding materiality purpose. The results suggest that the most commonly mentioned purpose for materiality analysis was as a basis for identifying sustainability priorities (40%), followed by using it as a basis for sustainability strategy (22%). A significant proportion of companies (27%) did not mention the basis for their materiality analysis. A smaller number of companies used materiality analysis as a basis for target-setting (8.8%), as a basis for sustainability report content (2%), or as a basis for a framework (1%).

6 Discussion

This chapter is organized into three sections. The first section presents the outcomes of the findings, which are focused on material topics within industries. This is followed by a section discussing the sustainability focus of Swedish companies. The final section of the chapter presents the strategic sustainability findings.

The present study examined non-financial reporting practices of Swedish companies listed on the stock exchange and identified a lack of consistency in reporting materiality analysis. Specifically, around 30% of the total number of companies analyzed did not report on materiality analysis in their non-financial reports, or the reports were not available for analysis. Such findings suggest there is room for improvement in the transparency and consistency of reporting practices among Swedish companies. Previous research has also emphasized the differences in reporting practices across industries and individual companies (Braam *et al*., 2016). Inconsistency was also observed in the reporting of stakeholder input and engagement, with some companies providing detailed information on their stakeholders and communication strategies while others provided only minimal information.

6.1 Most material topics

The purpose of the first question of this paper was to investigate the areas of focus for materiality analysis among companies in diverse industries, such as capital items, materials, daily goods, consumption items, investment, and banking. The study's results indicate that sustainability concerns related to climate change and business ethics are the top priority for companies across all industries examined. This finding underscores the growing recognition among companies of the need to address climate change and uphold ethical business practices. However, the research also highlights that sustainability priorities vary significantly within industries, indicating the importance of industry-specific sustainability assessments.

When it comes to the capital goods industry, previous research highlights challenges with energy as crucial for the sustainability of the companies (Shan *et al*., 2012). However, energy as a material topic has been highlighted only by 14% of companies. Given the unique scope of the materials industry, land use and conflict minerals have been highlighted as urgent matters for a long time (Richards, 1996). Given the implications of land use, social acceptance plays a vital role in the industry (Franks *et al*., 2014). While conflict minerals have not been highlighted as a prioritized topic, community impact as a sustainability topic has emerged when analyzing the industry. Material topics within the industry were mainly focused on environmental challenges and external stakeholders. They did not focus on internal stakeholders, as topics such as DEI and EARD were not mentioned. The topics highlighted for this industry, such as energy, climate impact, innovation and economic performance, were similar to Tomazinakis *et al*. (2022), which analyzed material topics in the raw materials topics from SDGs perspectives e and highlighted SDGs 7,8 and 9 as highly ranked. Economic performance has been mentioned as an important factor investment industry (Yue *et al*., 2020). However, the paper's findings suggest that most investment companies have prioritized climate impact and business ethics as their most material topics. According to Koellner *et al*. (2005), investment companies should consider the broader implications of their investment decisions, and current research indicates that this is indeed underway.

Previous research highlights circularity and energy as essential topics in the consumption items industry (Vita *et al*., 2021; Stewart & Niero, 2018). Circularity is one of the top three material topics within the industry, and energy is gaining more focus and recognition. As mentioned by Khan *et al*., 2020 banking industry can influence other industries regarding sustainable and ethical business practices. Such a notion is aligned with the study's findings, which highlight business ethics and climate impact as the most material topics for the industry in Sweden. The daily goods industry has a broad scope as it ranges from food to other non-edible products used in daily life. Hence the

sustainability focus of the industry has been broad. While previous research (Berggren, Jansson & Low, 2019; Otles *et al.*, 2015) highlighted biodiversity, water, energy and land use as essential topics, findings demonstrate that the industry primarily focuses on mitigating its environmental impact rather than the preservation of natural resources.As mentioned by Khan *et al.*, 2020 banking industry can influence other industries when it comes to sustainable and ethical business practices. Such notion is aligned with the findings of the study, which highlight business ethics and climate impact as most material topics for the industry in Sweden.Daily goods industry has a broad scope as it ranges from food to other non-edible products used in a daily life, hence the sustainability focus of the industry has been broad. While previous research (Berggren, Jansson & Low, 2019; Otles *et al.*, 2015) highlighted biodiversity, water , energy and land use as important topics, findings demonstrate that the industry is mostly focused on mitigating its environmental impact rather than the preservation of natural resources.

Based on the findings of the study, it appears that there is a high degree of similarity in the most prioritized material topics across all industries, while literature review showcases that each industry has its own idiosyncratic challenges. Fidings highlight the need for the development of industry speficic material topics that could highlight and enhance comparability both among companies and among industries. This additionally raises the question of whether there are different implications for each industry in terms of how these material topics should be addressed. It is possible that industry-specific material topics may require more attention or different strategies to address them effectively. For instance, certain industries may face unique challenges related to environmental impact or labor practices, which may require tailored approaches to mitigate.

This suggests that the development of industry-specific indicators may be crucial in accurately measuring and addressing sustainability issues in each industry. This need for industry-specific indicators is particularly relevant in the context of the Corporate Sustainability Reporting Directive (CSRD), which is set to introduce a new reporting framework for sustainability reporting in the EU. The CSRD places greater emphasis on the importance of materiality assessments, and it is expected to require companies to report on more granular indicators that are tailored to their specific industry.

Overall, these findings highlight the importance of developing more industry-specific approaches to sustainability, which may be essential in creating more effective and meaningful sustainability reporting. The introduction of the CSRD framework is likely to be an important step in this direction, as it will provide a more standardized framework for sustainability reporting while also encouraging the development of industry-specific indicators.

6.2 Sustainability focus

The analysis of materiality matrices in this study revealed that most companies focus on environmental and social dimensions of sustainability. The importance of environmental sustainability was slightly more significant than social sustainability, with climate impact being the most frequently reported material topic across all industries. The present study's findings align with Whitehead's (2017) research on the sustainability indicators of the wind energy sector in New Zealand, which revealed a similar emphasis on environmental priorities. Such prioritisation of environmental sustainability can be attributed to the growing awareness of the devastating effects of climate change and the need to manage environmental footprints, as Rockstrom *et al.* (2009) emphasised. Such findings additionally confirm that the traditional approach to sustainability, with a heightened focus on the environment, as mentioned by Newport, Chesnes Lindner (2003), is still relevant in contemporary sustainability discussions.

Regarding social sustainability, business ethics and ethical business practices was the dominant materiality topic. However, the definition of social sustainability varies enormously across industries, with indicators for social sustainability being broadly defined, which is also emphasised by Boström *et al.* (2015). As McKenzie (2004) mentioned, further tailoring of social sustainability indicators is needed to provide more specific guidelines for companies to follow.

6.3 Purpose of materiality

The literature review highlights that incorporating sustainability into operations strategy is a complex process that presents significant challenges for companies. However, the benefits of incorporating sustainability into operations strategies are manifold, and companies can generate shared value if they strategically meet the needs and expectations of their stakeholders beyond just achieving economic and financial objectives. Therefore, companies must focus on sustainability categories relevant to their strategic objectives and stakeholders, as demonstrated by research (Tang *et al*., 2012; Flammer & Kacperczyk, 2019). The content analysis findings conducted in this study show that most companies utilized materiality analysis to identify their sustainability priorities, with only a few companies citing it as a framework for their sustainability strategy. This finding is consistent with the literature review that emphasizes the importance of integrating materiality analysis into developing a sustainability strategy (Font *et al*., 2016; Pfitzer *et al*., 2013).
Furthermore, the literature review notes that the interrelationships between environmental and social sustainability and other competing priorities in operations have not been extensively researched or discussed (Gimenez *et al*., 2012; Jabbour *et al*., 2012). Therefore, companies need to develop a holistic approach to sustainability that considers the interrelationships between different sustainability categories and their relevance to strategic objectives and stakeholders. Overall, the literature review and the findings emphasize the importance of materiality analysis in identifying sustainability priorities (Font *et al.*, 2016).

As companies continue to navigate the complexities of incorporating sustainability into their operations strategies, it is clear that a strategic approach is necessary for long-term success. While materiality analysis has been widely adopted to identify sustainability priorities, it is important for companies also to consider the interrelationships between different sustainability categories and their relevance to strategic objectives and stakeholders. With the introduction of the new CSRD directive, companies will be required to take a more holistic approach to sustainability, considering both the impact of the company on people and the planet, as well as the impact of sustainability challenges on the company's financial performance (Baumüller & Sopp, 2022). By strategically focusing on sustainability priorities and adopting a long-term perspective, companies can generate shared value and meet their stakeholders' needs and expectations while achieving their economic and financial objectives. The future of sustainability in operations strategy lies in a holistic, strategic approach that considers both the short-term and long-term impacts of the company's actions on its stakeholders and the environment.

7 Conclusions

This chapter provides an overview of findings and outlines practical implications of the research. It concludes the paragraph with reflections on methodology and potential for future research.

In conclusion, this study has provided valuable insights into the sustainability priorities of the largest listed companies in Sweden across various industries. Through the analysis of materiality matrixes in sustainability reports, it has been possible to identify the topics that companies consider most significant to their stakeholders.The findings of this study indicate that business ethics and climate impact are the primary materiality topics for the largest listed companies in Sweden. While the literature review revealed that impact of different industries varies based on their operations, findings indicated that prioritized material topicsIt was also found that only a small proportion of companies are utilizing materiality analysis as a strategic tool, indicating a need for increased prioritization of sustainability in corporate decision-making.These findings have important implications for developing sustainability strategies and achieving sustainability goals in Swedish companies. With the introduction of new legislation, such as the CSRD, companies must adopt a strategic approach to sustainability that considers the interrelationships between different sustainability categories and their relevance to stakeholders.This study contributes to the existing knowledge of sustainability reporting and materiality analysis and provides a foundation for future research. This study will be a valuable resource for companies, policymakers, and other stakeholders committed to promoting sustainable practices in the Swedish corporate sector..

7.1 Practical implications

The present study has shed light on the need for a more industry-specific approach to materiality assessments. Despite the unique sustainability challenges faced by different industries as showcased through empirical research, the material topics selected by companies in Sweden were found to be largely similar, with climate impact and business ethics ranking as the top priorities. However, this generic approach to materiality assessment may not capture the full spectrum of sustainability issues that companies in different industries face.
The upcoming Corporate Sustainability Reporting Directive (CSRD) in the EU is expected to address this issue by introducing a more industry-tailored focus on materiality topics. It is essential for companies to consider this upcoming regulatory change and begin aligning their sustainability practices accordingly.

Furthermore, the CSRD places a strategic focus on sustainability, which is currently lacking in most companies in Sweden. The strategic approach involves integrating sustainability considerations into all aspects of the company's operations, including long-term planning, risk management, and stakeholder engagement. Companies should aim to align their sustainability practices with the strategic focus of the CSRD to ensure they are fully prepared for the new regulatory requirements and are effectively contributing to the sustainability agenda. In summary, the findings of this study highlight the need for a more industry-tailored approach to materiality assessments, and the upcoming CSRD presents an opportunity for companies to enhance their sustainability practices in this regard. Additionally, companies should adopt a strategic focus on sustainability to fully integrate sustainability considerations into their operations.

7.2 Methodological reflection and future research

The combination of stakeholder theory and strategic sustainability has enabled this paper to demonstrate the interconnections between these two concepts and how they can contribute to enhancing business sustainability. In order to understand how companies are utilizing the stakeholder perspective strategically, sustainability reports were used as main unit of content analysis. However, it is important to note that the

content of sustainability reports, which serves as the primary means of communication between businesses and stakeholders regarding sustainability, may not always accurately reflect a company's progress due to the prevalence of greenwashing. Conducting interviews with sustainability managers from companies would have added valuable insights to this research. Additionally, since sustainability reports are produced retrospectively, the reports analyzed in this study pertained to data from the year 2020. As the implementation of the Corporate Sustainability Reporting Directive (CSRD) nears, further research is required to gain a better understanding of the state of materiality assessments closer to the adoption of this new regulation. While this study focused on major companies in Sweden that are already required to report according to the Non-Financial Reporting Directive (NFRD), similar research among companies that are not obligated to report would provide a more comprehensive perspective on the state of sustainability in Sweden. Furthermore, future research could encompass cross-sectoral analysis to explore how sustainability challenges vary across industries. This study centered on materiality assessments as a tool for identifying and prioritizing sustainability issues. Further research could delve into the effectiveness of these assessments in driving tangible sustainability outcomes and impacts.

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Appendix 1.

Health and Safety	occupational health and safety, employee health and safety, occupational health , safety and well-being, safe work environments, working environment and injuries, incidents, deaths and accidents, customer health and safety
Business ethics	supplier business ethics, anti-corruption, export compliance, product safety, business ethics and integrity, human rights, transparency and accountability, ethics and anti-corruption, ethics and compliance, High level of business ethics and anti-corruption, implementation of policies and procedures aimed at bribery, corruption and competitive behavior, product and supplier responsibility, ethics and value creation, fair competition, promote transparency, ethics and value creation, child labor, data privacy and protection, open communication and transparency, a safe and responsible culture
EARD (Employee attraction, retention and development)	training and education, recruitment, human capital development, attract and retain employees by developing skills and capacity, labor management, education, education and development for the young, skill development, labor management, employment, attractive employer, employee satisfaction and engagement, people and the team, work environment, employee satisfaction and engagement, employee well-being. work efficiency, development and growth of our employees
Climate impact	climate change, emissions, climate change mitigation and adaptation, reduce emissions with global warming potential, reducing carbon footprint of our operations and products, product eco-efficiency, life-cycle perspective, product carbon impact, resource consumption, climate action, responsible consumption and production, reduce emissions throughout the value chain, environment and quality assurance, cutting carbon dioxide emissions, climate adaptations, environmental impact, products for climate impact, low climate impact, reduced environmental impact, environmental efficiency, sustainable material choices, environmental impact, environmental impacts of products and services, emissions of greenhouse gases, climate positive, sustainable product choices, Sustainable raw materials, CO^2 emissions , sustainable product
Energy	energy use and efficiency, reduce energy consumption, renewable energy and efficiency in operations, energy-efficient products, energy-efficient operations
Biodiversity	natural resources and biodiversity,
Circularity	sustainable and circular products, waste and circularity, resource efficiency, waste, quality, materials and circularity, life-cycle analysis and circular economy, high product quality, resource efficiency, sustainable products, conscious choice of materials, efficient use of resources, product lifecycle, resource efficiency, sustainable use of resources, cleaner material flows, circular ecosystems, food waste
Innovation	Industry innovation and infrastructure, digitalization, developing innovative and sustainable products
Transportation	transport and mobility, emissions from transport activities
Supply chain	responsible supply chain, quality ensured supply chain, evaluated and approved suppliers, sourcing practices, supplier sustainability assessments, control over global supply chains, supplier verification, environmental and social issues in the supply chain, responsible suppliers, supplier requirement, responsible supply chain and conflict minerals, monitoring supply chain, transparency in supply chain, responsible procurement, supplier environmental and social assessment
Economic performance:	stable financial performance, decent work and economic growth, stable financial result, financial stability, shareholder value, customer satisfaction, lasting economic opportunities
Community impact	community infrastructure, community well-being, community engagement
DEI (Diversity, Equality and Inclusion)	diversity inclusion and equality, diversity and inclusion, non-discrimination, equality, diversity and equal opportunity, the work environment and safety culture, gender equality, equality, diversity and equal opportunity

Appendix 2

Banking Industry Analysis

Company	Report type	Date	Focus areas	Purpose of Materiality
Catella	Integrated report	2021	climate impact, DEI, economic performance, business ethics	N/A
Collector	N/A	N/A	N/A	N/A
TF Bank	Integrated report	2021	business ethics	Basis for sustainability priorities
Avanza Bank	Integrated report	N/A	N/A	N/A
Resurs Holding	Integrated report	2017	energy, climate impact, business ethics	Basis for sustainability report content
Handelsbanken	Integrated report	2021	N/A	N/A
Nordea Bank	Integrated report	2020	energy, circularity, water, DEI, EARD	Basis for strategy
Swedbank	Integrated report	2020	climate impact, circularity, EARD	N/A
SEB	Integrated report	N/A	N/A	N/A

Capital Items Industry Analysis

Company Name	Report type	Date	Focus areas	Purpose of Materiality
Skanska	Integrated Report	2020	climate impact, H&S	N/A
Trelleborg	Sustainability report	2021	climate impact, circularity	N/A
Alfa Laval	Integrated report	2021	health and safety, climate impact, business ethics	N/A
Volvo	Integrated report	2021	economic performance, climate impact, EARD, DEI, H&S, business ethics	Basis for strategy
SKF	Sustainability report	2021	economic performance, business ethics, energy, climate impact, EARD, DEI, responsible supply chain	N/A
Sweco	Integrated report	2021	climate impact, innovation transportation, EARD, H&S, DEI	N/A
Assa Abloy	Sustainability report	2021	EARD, H&S, circularity, responsible supply chain, climate impact, business ethics	Basis for sustainability report content
Saab	Integrated report	2021	business ethics, H&S	Basis for strategy
Atlas Copco	Integrated report	2021	Climate Impact, EARD, DEI, H&S, business ethics, responsible supply chain, energy, circularity, water	Basis for target setting
Peab	Integrated report	2021	DEI, EARD, climate impact, responsible supply chain, business ethics	Basis for strategy
ABB	Integrated report	2021	climate impact, circularity, economic performance, responsible supply chain, business ethics, H&S, EARD	Basis for strategy
Projektengagemang Sweden	Sustainability report	2021	EARD,economic performance	Basis for sustainability priorities
Addtech	Integrated report	2019	energy, climate impact, economic performance, DEI , H&S, innovation	Basis for sustainability priorities
NCC	Integrated report	2021	climate impact, circularity, energy, H&S, EARD business ethics, economic performance	Basis for sustainability priorities
Beijer Alma	Integrated report	2021	energy, climate impact, H&S, business ethics	Basis for sustainability priorities
Nibe Industrier	Integrated report	2021	climate impact, H&S, circularity, DEI, responsible supply chain, energy	not defined
Nolato	Integrated report	2021	climate impact, energy	Basis for strategy
Bufab	Integrated report	2021	business ethics, responsible supply chain, transportation, EARD, DEI, economic performance, climate impact	Basis for sustainability priorities
Beijer Ref	Integrated report	2021	H&S, Business ethics	Compliance for stakeholder expectation
Balco	Sustainability report	2020	economic performance, circularity, innovation, H&S	Basis for strategy
Bergman & Bevinge	Sustainability report	2021	EARD, responsible supply chain, climate impact business ethics, responsible supply chain, climate impact, H&S, DEI	Basis for strategy
Hexatronic	Integrated report	N/A		Basis for sustainability priorities
Troax	Sustainability report	N/A	climate impact, business ethics, EARD waste, circularity, H&S, DEI	Basis for sustainability priorities
Sandvik	Integrated report	2021	business ethics, EARD, energy, climate impact, H&S	Basis for target setting
Instalco Intressenter	Sustainability report	N/A		Basis for strategy
Concentric	Integrated report	N/A	business ethics, circularity, DEI, climate impact	Basis for sustainability priorities
Nordic Waterproofing	Sustainability report	N/A	N/A	N/A
Systemair	Integrated report	2020	business ethics energy, H&S climate impact, business ethics, DEI	N/A
Indutrade	Integrated report	2021		Basis for sustainability framework
Garo	Sustainability report	N/A	climate impact, business ethics, H&S, DEI, responsible supply chain	Basis for sustainability priorities
Munters	Integrated report	2021	DEI, climate impact	Basis for sustainability priorities
Alimak	Integrated report	2020	business ethics, EARD, DEI, H&S, circularity, energy, climate impact, water	Basis for sustainability framework
Inwido	Integrated report	N/A	N/A	N/A
VBG	Integrated report	2021	climate impact, H&S	Basis for sustainability priorities
Eltel	Sustainability report	N/A	N/A	N/A
Lindab International	Integrated report	N/A	economic performance, business ethics, energy, responsible supply chain, climate impact, H&S, DEI	Basis for sustainability priorities
Xano Industri	Sustainability report	N/A	climate impact, circularity, economic performance	N/A
Fagerhult	Integrated report	2021	DEI, EARD H&S, climate impact, circularity, energy, business ethics, responsible supply chain	N/A
OEM International	Sustainability report	2021	economic performance, climate impact, DEI, innovation	N/A
CTT Systems	Integrated report	N/A	circularity, climate impact, responsible supply chain, business ethics, H&S	N/A
Haldex	Integrated report	N/A	responsible supply chain, transportation, business ethics, EARD, DEI	N/A
Cavotec	Integrated report	2021	climate impact, H&S, EARD	Basis for sustainability priorities
Lifco	Integrated report	N/A	N/A	N/A
Duroc	Sustainability report	N/A	climate impact, business ethics, H&S, DEI, economic performance	Basis for sustainability priorities
Eolus Vind	Sustainability report	2017	responsible supply chain, climate impact, energy, DEI	N/A

Consumption items analysis

Company Name	Report type	Date	Focus areas	Purpose of Materiality
Electrolux	Sustainability report	2021	N/A	basis for framework
H&M	Integrated report	2021	business ethics, circularity, water, climate impact, biodiversity, EARD, supply chain, economic performance	basis for sustainability priorities
JM	Integrated report	N/A	energy, business ethics, circularity, health and safety, EARD, climate impact	basis for sustainability priorities
Thule	Integrated report	2021	energy, climate impact, business ethics, biodiversity, DEI	basis for sustainability priorities
Nobia	Integrated report	2021	health and safety, climate impact, energy, EARD, DEI, supply chain	basis for strategy
Clas Ohlson	Integrated report	2020	N/A	basis for sustainability priorities
Björn Borg	Integrated report	2021	N/A	basis for strategy
Dustin	Integrated report	2021	Climate impact, business ethics, DEI, circularity, supply chain	basis for strategy
Boozt	Integrated report	2021	climate impact, energy, business ethics, circularity, DEI	basis for sustainability priorities
Mekonomen	Integrated report	2021	EARD, business ethics, climate impact, transportation, energy	basis for strategy
Fenix Outdoor	Sustainability report	2021	climate impact, circularity, business ethics, responsible supply chain, energy	N/A
Husqvarna	Sustainability report	2021	circularity, business ethics, economic performance	basis for strategy
New Wave	Sustainability report	2021	responsible supply chain, business ethics, climate impact, circularity, EARD	basis for sustainability priorities
Duni	Integrated report	2021	climate impact, circularity, supply chain	basis for sustainability priorities
Odd Molly International	N/A	N/A	N/A	N/A
Mips	Integrated report	2021	climate impact, economic performance, supply chain, health and safety	basis for sustainability priorities
Bilia	Sustainability report	N/A	N/A	N/A
Besqab	Sustainability report	N/A	N/A	N/A
Strax	Sustainability report	N/A	N/A	N/A
Qliro	N/A	N/A	N/A	N/A
Byggmax	Integrated report	2019	climate impact, circularity, DEI	basis for sustainability priorities
Retail and Brands	N/A	N/A	N/A	N/A
Electra Gruppen	N/A	N/A	N/A	N/A
Oscar Properties Holding	N/A	N/A	N/A	N/A
Venue Retail Group	N/A	N/A	N/A	N/A
Kabe	N/A	N/A	N/A	N/A
Nilörngruppen	Sustainability report	2019	circularity, climate impact, business ethics, EARD, Health and Safety, Supply chain	basis for strategy

Daily items analysis

Company Name	Report type	Date	Focus areas	Purpose of Materiality
Cloetta	Integrated report	2021	climate impact, circularity, EARD, DEI, transport, health and safety, business ethics	basis for sustainability priorities
Scandi Standard	Integrated report	2021	not mentioned	basis for strategy
ICA Gruppen	Integrated report	2021	climate impact, DEI, health and safety	basis for sustainability priorities
Axfood	Integrated report	2021	climate impact, circularity	basis for sustainability priorities
Midsona	Integrated report	2021	climate impact, energy, supply chain, circularity, water	N/A
Swedish Match	Integrated report	N/A	business ethics, climate impact, DEI	basis for sustainability priorities
AAK	Sustainability report	2019	biodiversity, climate impact, business ethics	basis for strategy
Essity	Integrated report	2021	innovation, climate impact, business ethics, health and safety	basis for strategy

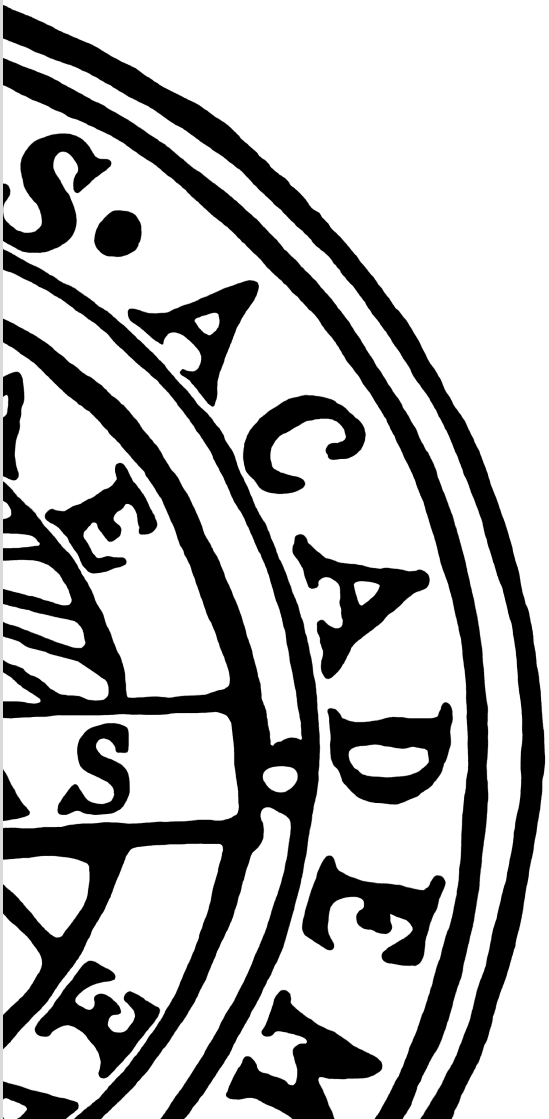
Investment analysis

Company Name	Report type	Date	Focus areas	Purpose of Materiality
Cloetta	Integrated report	2021	climate impact, circularity, EARD, DEI, transport, health and safety, business ethics	basis for sustainability priorities
Scandi Standard	Integrated report	2021	not mentioned	basis for strategy
ICA Gruppen	Integrated report	2021	climate impact, DEI, health and safety	basis for sustainability priorities
Axfood	Integrated report	2021	climate impact, circularity	basis for sustainability priorities
Midsona	Integrated report	2021	climate impact, energy, supply chain, circularity, water	N/A
Swedish Match	Integrated report	N/A	business ethics, climate impact, DEI	basis for sustainability priorities
AAK	Sustainability report	2019	biodiversity, climate impact, business ethics	basis for strategy
Essity	Integrated report	2021	innovation, climate impact, business ethics, health and safety	basis for strategy

Material industry analysis

Company Name	Sustainability Report	Date	Focus areas	Purpose of Materiality2
Endomines	N/A	N/A	N/A	N/A
Josemaria Resources	N/A	N/A	N/A	N/A
Arctic Paper	Sustainability report	2021	health and safety, economic performance, climate impact, water, circularity, business ethics	basis for sustainability priorities
Profilgruppen	Integrated report	N/A	N/A	N/A
Lucara Diamond	Integrated report	2021	Biodiversity	basis for report content

Bergs Timber	Integrated report	N/A	N/A	N/A
Rottneros	Integrated report	N/A	climate impact, DEI	basis for target-setting
Ahlstrom-Munksjö	Sustainability report	2019	business ethics, energy, water, supply chain, innovation, community impact	basis for target-setting
Lundin Gold	Sustainability report	2021	health and safety, climate impact, Innovation, economic performance, community impact	basis for sustainability priorities
Lundin Mining	Sustainability report	N/A	Health and safety, business ethics	basis for target-setting
Boliden	Integrated report	N/A	climate impact, circularity	N/A
Hexpol	Integrated report	2021	climate impact, energy	N/A
Holmen	Integrated report	2018	N/A	N/A
Billerud Korsnäs	Integrated report	2021	climate impact	basis for strategy
Granges	Integrated report	2021	economic performance innovation, energy, health and safety, business ethics	N/A
SSAB	Integrated report	2019	health and safety, energy, climate impact, business ethics, DEI	basis for strategy
SCA	Integrated report	2021	health and safety, climate impact, biodiversity, community impact	basis for strategy
Bonava	Integrated report	2021	N/A	basis for sustainability priorities
Stora Enso	Integrated report	2021	climate change, biodiversity, circularity	basis for strategy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