MATERIALITY ASSESSMENTS IN CSR REPORTING

Multi-industry analysis over time and linkages to ESG scores in the Nordic context

Lappeenranta–Lahti University of Technology LUT

Master's Programme in Strategy, Innovation and Sustainability, Master's thesis

2022

Kia Eskola

Examiner(s): Professor Laura Albareda

Professor Kaisu Puumalainen

ABSTRACT

Lappeenranta–Lahti University of Technology LUT

LUT School of Business and Management

Business Administration

Kia Eskola

Materiality Assessments in CSR Reporting – Multi-industry analysis over time and linkages to ESGs score in the Nordic context

Master's thesis

2022

117 pages, 20 figures, 25 tables and 1 appendix

Examiner(s): Professor Laura Albareda and Professor Kaisu Puumalainen

Keywords: Materiality assessment, CSR reporting, Sustainability management, GRI

This thesis aims to evaluate the extent and development of materiality assessment disclosures of large Finnish and Swedish companies across different industries as well as the linkage of these disclosures to ESG scores. The materiality assessments were collected from companies' sustainability reports or websites and analysed using a content analysis method and by developing a Materiality Assessment Index. Statistical analysis was applied to examine differences across industries and over time, and regression analysis was used to examine the linkages between materiality assessment disclosures and ESG scores.

It was found that even though most Nordic companies disclose having conducted a materiality assessment, most of them disclose limited amount of information on the process. It was also found that the level of disclosure does not always develop linearly. There is a lot of variation among industry companies, suggesting that reporting on materiality assessments has not yet fully institutionalised. Disclosures related to materiality assessments were found to explain very little of the companies ESG scores, although there is a possibility that a higher level of disclosure partly explains a higher ESG score.

The findings may prove useful to companies aiming to improve sustainability reporting quality and transparency and to prepare for upcoming regulation related to materiality assessment disclosures.

TIIVISTELMÄ

Lappeenrannan–Lahden teknillinen yliopisto LUT

LUT-kauppakorkeakoulu

Kauppatieteet

Kia Eskola

Olennaisuusmäärittelyt vastuullisuusraportoinnissa – Monialainen analyysi raportoinnin kehityksestä ja raportoinnin yhteys ESG-pisteisiin Pohjoismaissa

Kauppatieteiden pro gradu -tutkielma

117 sivua, 20 kuvaa, 25 taulukkoa ja 1 liite

Tarkastaja(t): Professori Laura Albareda ja Professori Kaisu Puumalainen

Avainsanat: Olennaisuusmäärittely, Vastuullisuusraportointi, Vastuullisuusjohtaminen, GRI

Tämä tutkielma pyrkii arvioimaan suurten suomalaisten ja ruotsalaisten yritysten olennaisuusmäärittelyihin liittyvän raportoinnin laajuutta ja kehitystä eri toimialoilla sekä kyseisen raportoinnin yhteyttä ESG-pisteisiin. Olennaisuusmäärittelyt kerättiin yritysten vastuullisuusraporteista tai verkkosivuilta ja ne analysoitiin hyödyntäen sisällön-analyysimenetelmää. Tilastollista analyysia hyödynnettiin tunnistamaan eroavaisuuksia eri toimialojen ja raportointivuosien välillä ja regressioanalyysia käytettiin tutkimaan yhteyttä olennaisuusmäärittelyihin liittyvän raportoinnin ja ESG-pisteiden välillä.

Tulosten mukaan suurin osa pohjoismaisista yrityksistä raportoi laatineensa olennaisuusmäärittelyn, mutta heistä suurin osa raportoi vain rajoitetusti tietoa määrittelyprosesseista. Lisäksi tulosten mukaan raportoinnin laajuus ei aina kehity lineaarisesti. Toimialayritysten välillä on paljon vaihtelua, johtuen mahdollisesti siitä, että olennaisuusmäärittely ei ole vielä institutionalisoitunut. Tulosten mukaan olennaisuus-määrittelytiedoista raportointi selittää vain pienen osan yritysten ESG-pisteistä, mutta on olemassa mahdollisuus, että kattavampi raportointi osittain selittää korkeammat ESG-pisteet.

Nämä löydökset voivat olla hyödyllisiä yrityksille, jotka pyrkivät kehittämään vastuullisuusraportointinsa laatua ja läpinäkyvyyttä, sekä valmistautumaan sääntelyn tuomiin vaatimuksiin olennaisuusmäärittelystä raportoimiseen.

ACKNOWLEDGEMENTS

I would like to thank my supervisors Professor Laura Albareda and Professor Kaisu Puumalainen for their invaluable support, guidance, and patience.

I would also like to express gratitude to my colleagues at KPMG Finland, who have supported me with their extensive subject matter knowledge, advice, and encouragement.

I am also grateful for all the support I received from my friends and family.

Helsinki, 27.5.2022

Kia Eskola

ABBREVIATIONS

CSR	Corporate Social Responsibility
CSRD	Corporate Sustainability Reporting Directive
EFRAG	European Financial Reporting Advisory Group
ESG	Environmental, Social, Governance
GCC	Gulf Cooperation Council
GRI	Global Reporting Initiative
IASB	International Accounting Standards Board
IFAC	International Federation of Accountants
IIRC	International Integrated Reporting Council
NBS	National Business System
NFRD	Non-Financial Reporting Directive
SASB	Sustainability Accounting Standards Board
SDG	Sustainable Development Goal

Table of contents

Appendices

Figures

Tables

1. Introduction

Companies are facing increasing stakeholder demand to disclose credible information on their corporate social responsibility (CSR) management and performance, referring to information related to their environmental, social and economic impacts (e.g., Beske et al. 2020, Lindman et al. 2020). CSR (synonymously referred to as sustainability) has become the "megatrend of our times" (Derqui 2020), boosted by, for example, the adoption of the UN Sustainable Development Goals and the Paris Agreement in 2015, and new legal requirements to disclose non-financial information under the EU Non-Financial Reporting Directive (NFRD) as of 2018.

In the midst of increasing expectations, it is not always self-evident for a company on which CSR topics it should focus on when integrating CSR into its strategy and management and deciding what kind of information it should disclose for its stakeholders in its CSR reporting beyond legal obligations (Calabrese et al. 2019, Whitehead 2017, Porter and Kramer 2006). It doesn't make sense for a company to focus on all possible CSR topics in the world (Torelli et al. 2019, Porter and Kramer 2006) as resources are limited (Calabrese et al. 2019, Bellantuono et al. 2016), which is why companies must identify and prioritise the most relevant CSR topics to their strategy, stakeholders, industry and markets – i.e., the material topics.

The Global Reporting Initiative (GRI 2020a, p.10), an independent, international organisation helping businesses and organisations report about their CSR impacts, defines a material topic to be one that "reflects a reporting organisation's significant economic, environmental and social impacts; or that substantively influences the assessments and decisions of stakeholders". According to GRI (ibid.), "in sustainability reporting, materiality is the principle that determines which relevant topics are sufficiently important that it is essential to report on them. Not all material topics are of equal importance, and the emphasis within a report is expected to reflect their relative priority." The method developed for identifying and prioritising the material topics is called a materiality assessment.

This master's thesis focuses on materiality assessments conducted by large companies in Finland and Sweden. The aim of this thesis is threefold. First, it is to conduct a multi-industry

analysis to see whether there are differences across industries related to their level of disclosure, materiality assessment processes or selected material topics, as an industry has been said to significantly influence the decisions about the type of disclosure to be published and the application of the materiality principle (Torelli et al. 2019, Ruiz-Lozano et al. 2021), and as an industry plays a crucial role in determining material topics (Eccles et al. 2012). Second, the aim is to assess differences over time in terms of level of disclosure, materiality assessment processes and identified material topics, as the assessments are expected to be updated regularly (Ranängen et al. 2018, Lindman et al. 2020) and CSR continuously evolves (Derqui 2020). And third, the aim is to assess whether the disclosures have a linkage to ESG scores, which is a novel approach in materiality assessment studies, to see whether companies benefit from better level of disclosure related to their materiality assessments in their CSR reporting.

The materiality assessments are assessed from three points of view. First, they are assessed based on the level of disclosure that the companies provide regarding the assessments, meaning how much details of the process of conducting the materiality assessment companies report, to understand to what extent companies are transparent about them as expected by international reporting frameworks, such as the GRI. Second, they are examined based on the methods that companies use in conducting materiality assessments to provide insights into the quality of the assessments against international reporting frameworks. And last, they are examined based on which CSR topics have been assessed to be material and whether they reflect the ones identified by international reporting frameworks.

1.1 Background

Currently, the Global Reporting Standards by the GRI are the most widely used CSR reporting standards in the world. To claim that a report has been prepared in accordance with the GRI Standards, a company is required to report on all material topics identified, and the list of material topics must be reported. For organisations in the beginning of identifying its material topics, the GRI Standards are a practical tool as the they include a broad set of CSR topics and guidance on how to report on them. In addition to updating its Universal GRI Standards in 2021, GRI is also in the process of developing GRI Sector Standards that are

designed to help identify a specific sector's most significant impacts and reflect stakeholder expectations for sustainability reporting.

According to GRI (GRI 2020a), stakeholder engagement is a crucial part of materiality assessments, and it expects organisations to consider their expectations and interests when conducting a materiality assessment. Organisations incorporate stakeholder engagement into the materiality assessment process with an aim to increase reporting transparency and accountability (Farooq and de Villiers 2019, Ruiz-Lozano et al. 2021), but managers have still been considered to have room to manipulate their prioritisation of CSR issues according to their values and own priorities (GRI 2021, Machado et al. 2021, Unerman and Zappettini 2014). In addition to concerns about managerial capture (Farooq et al. 2021), the issue of subjectivity in relation to judgments of stakeholders' interests, expectations and values has been of recent discussion among researchers (Farooq and de Villiers 2019, Calabrese et al. 2019, Calabrese et al. 2016, Bellantuono et al. 2016, Hsu 2013, Torelli et al. 2019). Despite of GRI explicitly requiring stakeholder engagement in conducting materiality assessments, there has been little attention to it in the academic literature regarding its practical implementation (e.g., Calabrese et al. 2019, Bellantuono et al. 2016, Hsu et al. 2013, Ruiz-Lozano et al. 2021).

Materiality assessments are currently of temporary interest for at least three reasons. Firstly, in October 2021, GRI released its updated Universal Standards in which it revised its approach on how organisations should conduct their materiality assessment. Secondly, in 2019, the European Commission formally proposed the concept of double materiality in the context of sustainability reporting (GRI 2020a), broadening the original concept of materiality to cover not just economic, environmental, and social impacts, but also impacts to the value of the company, i.e., financial materiality. The European Financial Reporting Advisory Group (EFRAG) is currently in the process of developing sustainability reporting standards that apply the double materiality concept and has published a draft of a working paper related to double materiality conceptual guidelines for standard-setting in January 2022 (EFRAG 2022).

Thirdly, large organisations are required to report on sustainability-related information due to increasing regulation in the European Union (EU). For instance, the proposal of Corporate Sustainability Reporting Directive (CSRD) requires large companies to disclose their materiality assessment as of January 2024, affecting the 2023 reporting period

(PricewaterhouseCoopers 2021). The CSRD amends the existing reporting requirements of the EU Non-Financial Reporting Directive (NFRD) by extending the scope to all large companies and all companies listed on regulated markets (with the exception of micro-enterprises), requiring an assurance of reported information, introducing more detailed reporting requirements, and requiring companies to digitally tag the reported information to make it machine readable. (European Commission 2021).

1.2 Previous research

Materiality in the context of CSR has been studied from various angles since the 1980s (Torelli et al. 2019). Some studies (e.g., Edgley et al. 2014, Whitehead 2017) have focused on the development of the concept from its original use in the field of accounting, whereas some have paid attention to the practical implementation of materiality assessments (e.g., Calabrese et al. 2019, Bellantuono et al. 2016, Hsu et al. 2013, Ruiz-Lozano et al. 2021). Especially the issue of subjectivity in relation to judgments of stakeholders' interests, expectations and values has concerned many researchers (Farooq and de Villiers 2019, Calabrese et al. 2019, Calabrese et al. 2016, Bellantuono et al. 2016, Hsu 2013, Torelli et al. 2019), and some have tried to introduce new quantitative methods to conduct materiality assessments in a systematic and consistent manner in accordance with stakeholder needs (Farooq and de Villiers 2019, Calabrese et al. 2019, Calabrese et al. 2016, Bellantuono et al. 2016, Hsu 2013).

In addition, some studies have focused on identifying the determinants of using the materiality principle (e.g., Torelli et al. 2019, Fasan and Mio 2017), and others have focused on the extent to which organisations disclose information about their materiality assessment processes (e.g., Jones et al. 2016, Beske et al. 2020, Farooq et al. 2021, Machado et al. 2021, Ruiz-Lozano et al. 2021). These studies, even though a limited amount, all communicate the same message: despite of reporting guidelines and standards, for some reason, organisations tend to disclose only a small amount of information about their materiality assessment processes, and not in a comprehensive and detailed manner. To explain this, Farooq and de Villiers (2019) have identified reasons why organisations may fail disclosing information about their material topics, whereas to solve this, they have studied how sustainability

reporting and materiality assessments have been institutionalised. Related to institutionalising CSR reporting, previous research has debated on the effect of mandatory reporting requirements to the quality of sustainability reporting (e.g., Aureli et al. 2020, Ruiz-Lozano et al. 2021, Michelon et al. 2015, Puroila and Mäkelä 2019, Farooq et al. 2021, Calabrese et al. 2019).

Studies on materiality assessments have also focused on varying geographical areas, covering companies for example in the UK (Jones et al. 2016), Germany (Beske et al. 2020), Spain (Ruiz-Lozano et al. 2021) and the GCC region (Farooq et al. 2021). Research on materiality in the context of CSR in the Nordic region is not vast, but there is some, nonetheless. What is common for these studies is a single-sector focus, for example on mining (Lindman et al. 2020), forestry (Puroila and Sendlhofer 2019), real estate (Andelin et al. 2013) or public sector (Ranängen et al. 2018).

1.3 Research gap

There is a research gap for materiality assessment studies in the Nordic countries with a multi-industry focus, which gives a comprehensive view of the geographical area. This focus is not letting industry-specific characteristics affect the generalisation of the results but allows comparison between different industries. This thesis aims to fill this gap by assessing how the 100 biggest companies by turnover both in Finland and Sweden report on their materiality assessments, also examining industry differences and similarities.

In addition, this thesis adds on the scarce research on the extent of disclosures of materiality assessment processes, by looking at the extent of disclosures among Nordic companies, building on existing literature covering companies in the UK (Jones et al. 2016), Germany (Beske et al. 2020), Spain (Ruiz-Lozano et al. 2021) and the GCC region (Farooq et al. 2021).

There is no previous research that would study the connection between materiality assessment processes, selected material topics or level of disclosure and ESG performance. This thesis aims to bring novel insights into this area.

1.4 Research problem and objectives

This thesis is built on two phases. The first phase consists of a literature review and the second phase is an analysis of materiality assessments. The main goal is to study how companies that have adopted sustainability reporting have also adopted materiality assessments as the basis of their reporting and to what level they disclose information about the assessments. In the analysis, I will study how the 100 biggest companies by turnover both in Finland and Sweden report on their materiality assessments in the context of CSR. I will analyse the level of disclosure, materiality assessment processes and selected material topics across industries of the 200 companies' materiality assessments available in 2020 and 2015, limited to the assessments that have been disclosed publicly.

A question arises, what does the level of disclosure or disclosed information indicate in practice. As the materiality assessment works as a foundation for CSR management and strategy in organisations, it can be expected to benefit the business itself (Porter and Kramer 2006). To see whether level of disclosure translates to good sustainability performance, I will analyse whether there is a connection between a company's level of disclosure as well as the content of those disclosures regarding materiality assessments and the company's ESG score.

The thesis is based on one research question and three sub-questions covering three themes. First, the thesis looks at the level to which the sample companies disclose information about their materiality assessments, then the materiality assessment processes they have, and lastly, the material topics they have identified. All these themes are assessed in terms of how they differ between industries, are there differences over time, and are there linkages to ESG performance.

The research question (RQ) and sub-questions are the following (Figure 1):

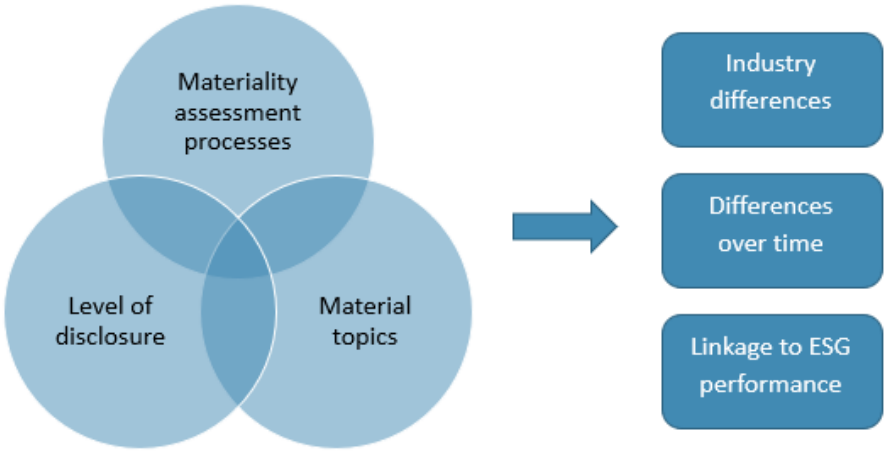
RQ: How do companies report on materiality assessments across industries and over time, and do the disclosures have linkages to ESG scores?

1. Level of disclosure
    - RQ1.1. How level of materiality disclosure differs between industries?
    - RQ1.2. Are there differences of level of materiality disclosures over time?

- RQ1.3 Is there a linkage between level of disclosure and ESG performance?

2. Materiality assessment process
    - RQ2.1 How materiality assessment processes differ between industries?
    - RQ2.2 Are there differences of materiality assessment processes over time?
    - RQ2.3. Is there a linkage between materiality assessment processes and ESG performance?
3. Material topics
    - RQ3.1. How material topics differ between industries?
    - RQ3.2. Are there differences of material topics over time?
    - RQ3.3. Is there a linkage between material topics and ESG performance?

Figure 1. How do companies report on materiality assessments across industries and over time, and do the disclosures have linkages to ESG scores?



The materiality assessments will be collected from companies' sustainability reports or websites and will be analysed using a content analysis method and by developing a Materiality Assessment Index to analyse qualitative data quantitatively. Statistical analysis will be applied to examine differences across industries and over time, and regression

analysis will be used to examine the linkages between materiality assessment disclosures and ESG scores.

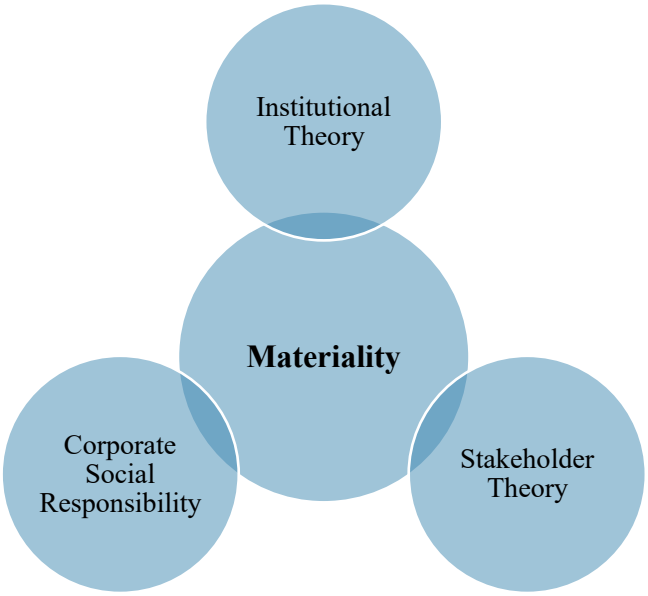
1.5 Structure

In the next chapter I will introduce the literature review of key academic papers related to materiality assessments, stakeholder theory, and institutional theory in the context of CSR. In chapter 3 I will introduce the research methods and chapter 4 covers the findings. In chapter 5 I will discuss the results of the analysis and how it reflects to the previous literature. Finally, chapter 6 is for conclusions.

2. Literature review

This literature review aims to give an understanding of previous research conducted on materiality and materiality assessments and connect them to the underlying concept of CSR, institutional theory, and stakeholder theory (Figure 2). The literature review is by no means a complete bibliography, but it aims to give an understanding of the variety of conducted research and the theoretical background of this thesis.

Figure 2. Theoretical background



2.1. Theoretical background

This section presents the key concepts and theories to which this thesis builds on, i.e., the concept of CSR, institutional theory, and stakeholder theory.

2.1.1 Corporate Social Responsibility

It has been considered difficult to define corporate social responsibility (CSR), but one of the widely used definitions is the European Commission's (2011) updated definition of CSR:

> "The commission puts forward a new definition of CSR as "the responsibility of enterprises for their impact on society". Respect for applicable legislation, and for collective agreements between social partners, is a prerequisite for meeting that responsibility. To fully meet their corporate social responsibility, enterprises should have in place a process to integrate social, environmental, ethical, human rights and consumer concerns into their business operations and core strategy in close collaboration with their stakeholders, with the aim of: maximising the creation of shared value for their owners/shareholders and for their other stakeholders and society at large; and identifying, preventing and mitigating their possible adverse impacts." (European Commission 2011, 6.)

Dahlsrud (2008) conducted a content analysis of 37 different existing definitions of CSR and found that the confusion is not so much about how CSR is defined, but how CSR is socially constructed in specific context. As a social construction he acknowledges that it is not possible to develop an unbiased definition, but it is possible to study the similarities and differences in between the available definitions. Based on this finding, Dahlsrud developed five dimensions of CSR definitions:

1. The environmental dimension,
2. The social dimension,
3. The economic dimension,
4. The voluntariness dimension, and
5. The stakeholder dimension.

Dahlsrud finds that all the five dimensions are likely to be included in a random definition and looking at the European Commission's (2011) updated definition, we can see that it covers all of the five dimensions. Dahlsrud (2008) claims that the environmental, social, and economic dimensions are merely different categories of impacts from business, but the voluntariness dimension implies that companies should perform above regulatory requirements, setting regulatory compliance as the minimum standard. Dahlsrud argues that it is the stakeholders that set the expectations for the optimal CSR performance level above regulatory requirements.

Dahlsrud argues that a successful CSR strategy is context specific for each individual company, meaning that companies need to address specific CSR issues and engage with their stakeholders. He continues, that this focus on specific CSR issues is not useful in the CSR definition itself, but that this specific context must be obtained by other means, such as through stakeholder identification for which Mitchell et al. (1997) have provided a widely used conceptual framework. Dahlsrud states that CSR is nothing new at a conceptual level as companies have always had social, environmental, and economic impacts, they have always dealt with regulations and been concerned about their stakeholders, but in the context of globalisation and rapid changes in business environments and stakeholder expectations, it is also important to have CSR management tools.

2.1.2 Institutional theory

Matten and Moon (2008) agree that defining CSR is not easy, despite of vast literature, and refer to it as an umbrella term that overlaps with some terms and is synonymous with other terms related to conceptions of business-society relations. More importantly, they too take part in the discussion of CSR being context specific, noting that both stakeholder identities and interests vary cross-nationally. They consider that institutional theory – a theory that posits that in addition to market pressures organisational behaviours are also responses to institutional pressures arising from peers, regulation, and societal expectations (Mio et al. 2019, Greenwood and Hinings 1996) – is useful in understanding these differences. Matten and Moon (2008) see that institutional theory allows exploring and comparing the motives of managers, shareholders, and other key stakeholders within their national, cultural, and institutional contexts.

Regarding these contexts, Matten and Moon (2008) argue that the reason why there are contrasts between the types of CSR for example in USA and in Europe lies in the respective national business systems (NBSs). Matten and Moon (ibid.) refer to Whitley (1999), who identifies four key features of historically grown national institutional frameworks that explain these differences. The four key features are the political system, the financial system, the education and labour system, and the cultural system. For example, differences in the

financial systems may have impacts on which stakeholder groups have more influence and power on a company.

Matten and Moon (2008) also look at the theoretical perspective of new institutionalism, which refers to the homogenisation of institutional environments across national boundaries, i.e., the institutional isomorphism. Institutional isomorphism, a concept developed by DiMaggio and Powell (1983), relates to an argument that once a field becomes well established, organisations start to become more homogeneous, meaning that organisations start to adopt similar organisational practices. This, for example, could explain why European companies have also adopted more explicit approaches to CSR, which had been previously seen mainly in the US due to the NBS characteristics in their political system, financial system, education, and labour system, as well as their cultural system.

Matten and Moon (2008) argue that "organisational practices change and become institutionalised because they are considered as legitimate". This legitimacy in the context of institutional CSR practices is due to *coercive isomorphism* (e.g., increasing regulation, voluntary initiatives such as GRI, and supply chain driven compliance requirements as well as growth of responsible investment indices), *mimetic processes* (e.g., best practices in an organisational field) and *normative pressures* (e.g. educational and professional authorities promoting CSR as a legitimate organisational practice) (Matten & Moon 2008, DiMaggio & Powell 1983).

Talking about legitimacy, Porter and Kramer (2006) note that companies' approaches to CSR have not been very strategic or operational but rather cosmetic, focusing mainly on communications or improving CSR ratings or rankings. However, they argue that there is a link between CSR and competitive advantage. The typical four arguments for CSR have been moral obligation, sustainability ("meeting the needs of the present without compromising the ability of future generations to meet their own needs"), licence to operate, and reputation, but according to Porter and Kramer (ibid.) they share the same weakness, as "they focus on the tension between business and society rather than on their interdependence." To advance CSR, it is important to anchor CSR in companies' strategies and understand the interrelationship between a company and society:

> "Successful corporations need a healthy society. Education, health care, and equal opportunity are essential to a productive workforce. Safe products and working conditions not only attract customers but lower the internal costs of

> accidents. Efficient utilization of land, water, energy, and other natural resources makes business more productive. Good government, the rule of law, and property rights are essential for efficiency and innovation. Strong regulatory standards protect both consumers and competitive companies from exploitation. Ultimately, a healthy society creates expanding demand for business, as more human needs are met and aspirations grow. Any business that pursues its end at the expense of the society in which it operates will find its success to be illusory and ultimately temporary." (Porter and Kramer 2006, p.83)

Porter and Kramer continue that because companies are dependent on a healthy society, and a healthy society needs companies to create jobs, wealth, and innovation to improve life, companies and societies need to follow the principle of shared value. They see that each company should pay attention to the issues that intersect with their particular business, meaning that when considering which CSR issues to pay attention to companies should consider whether they present an opportunity to create shared value (i.e., to be beneficial both for the society and business).

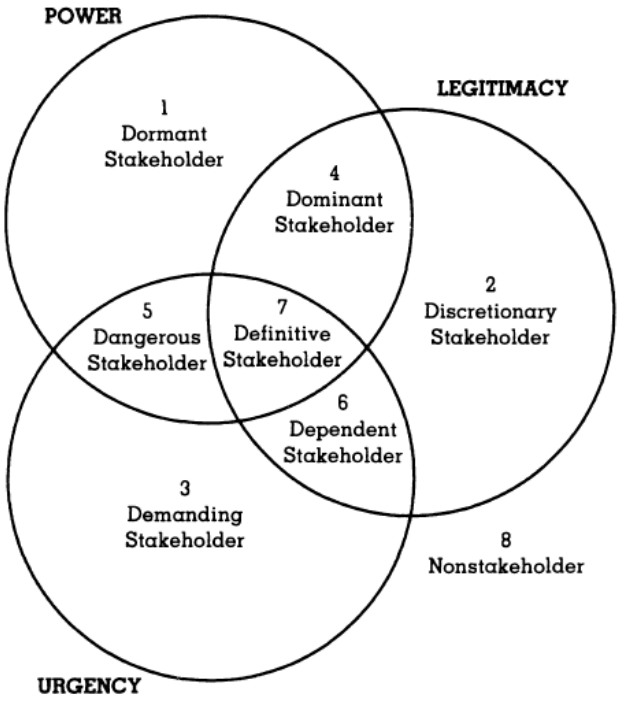
2.1.3 Stakeholder theory

As Dahlsrud (2008) mentioned, Mitchell et al. (1997) have provided a widely used conceptual framework for stakeholder identification, which builds on Freeman's (1984, 1994) previous work. It has been argued that "stakeholder theory can be regarded as a CSR theory in that it provides a normative framework for corporate responsibility towards society" (Lindman et al. 2020, p.893; Melé 2008). The two questions that Mitchell et al. (1997) aim to answer are: who the stakeholders of a company are and to whom should managers pay attention. According to Mitchell et al. (ibid.) the first question calls for a normative theory of stakeholder identification and the second a descriptive theory of stakeholder salience.

Mitchell et al. (1997) reviewed stakeholder literature within various theories, such as agency, behavioural, ecological, institutional, resource dependence, and transaction cost theories. They start their analysis from Freeman's (1984, p.46) famous definition: "A stakeholder in an organization is (by definition) any group or individual who can affect or is affected by the achievement of the organization's objectives", but consider it to be too broad, meaning

that with this definition anybody could be a stakeholder. Through their analysis, they conclude that stakeholders can be identified based on three attributes: their possession of power, legitimacy, and urgency. Based on these three attributes, they identify seven types of stakeholders depending on their possession of the attributes (Figure 4).

Figure 3. Stakeholder typology: One, two, or three attributes present (Mitchell et al. 1997)



Regarding stakeholder salience ("to whom should managers pay attention"), Mitchell et al. (ibid., p.873) argue that it "will be positively related to the cumulative number of stakeholder attributes – power, legitimacy, and urgency – perceived by managers to be present." Therefore, those stakeholders that possess only one attribute, are considered to be of low salience, whereas stakeholders that possess all of the three attributes have high salience and managers should give priority to their claims. It must be remembered, however, that stakeholder salience is determined by the managers of the company, i.e., it is up to the managers to consider which of the attributes different stakeholders possess. (ibid.)

2.2. Materiality

This section connects the concept of CSR, stakeholder theory and institutional theory to the concept of materiality and presents some of the key research conducted on materiality in these contexts as well as in the Nordic context, which is the regional focus of this thesis.

2.2.1 Materiality concept

Materiality in the context of CSR has been studied from various angles since the 1980s (Torelli et al. 2019) and today it is considered to be in the very centre of sustainability reporting (Puroila and Mäkelä 2019) and strategy (Porter and Kramer 2006). According to Edgley et al. (2014), materiality has been adopted as a key reporting principle in CSR reporting, but it has been redefined for the context of CSR from its original use in the field of accounting (see e.g., IASB definition of materiality in Table 1). Edgley et al. (2014) explain that in financial reporting, materiality determines the importance of an item (i.e., the financial impact) for specific information users, whereas in the context of CSR, the concept has been extended beyond just financial impacts to cover also the significant social and environmental impacts of a company for all its stakeholders.

Edgley et al. (2014) identify three prominent bodies that have played an important role in the adoption of materiality into CSR reporting: International Federation of Accountants (IFAC) and stakeholder organisations AccountAbility and GRI. Already in 2005, GRI guidelines were the most referenced tool used to decide CSR report content (KPMG 2005). The GRI definition of material topics (see Table 1) reflects the conceptualisation of materiality from the field of accounting observed by Edgley et al. (2014), as well as the five dimensions of CSR identified by Dahlsrud (2008).

In addition to GRI and AccountAbility, other widely used standards in reporting material sustainability information are the Sustainability Accounting Standards Board (SASB) Standards. The SASB Standards are used especially in the North America and SASB's mission is to guide the disclosure of financially material sustainability information by companies to their investors. Currently, the SASB Standards are available for 77 industries

and they "identify the subset of environmental, social and governance (ESG) issues most relevant to financial performance in each industry".

Table 1. Definitions of materiality by different organisations

ORGANISATION	DEFINITION OF MATERIALITY
International Accounting Standards Board (IASB)	"Information is material if omitting, misstating or obscuring it could reasonably be expected to influence the decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity" (IASB 2018, p.4).
International Federation of Accountants (IFAC)	"A matter is material if it could substantively affect the organisation's ability to create value in the short, medium or long term" (International Integrated Reporting Council (IIRC) & International Federation of Accountants (IFAC) 2015, p.8).
AccountAbility	"-- to identifying and prioritizing the most relevant sustainability topics, taking into account the impact each topic has on the organization and on its stakeholders. -- Materiality includes the disclosure of risks and opportunities posed by these issues affecting environmental, social, and governance (ESG) domains that have impacts on corporate performance and on stakeholders in the long-term" (AA1000 Accountability Principles 2018, p.20).
GRI (2020)	"-- reflect a reporting organisation's significant economic, environmental and social impacts; or that substantively influence the assessments and decisions of stakeholders. -- In sustainability reporting, materiality is the principle that determines which relevant topics are sufficiently important that it is essential to report on them. Not all material topics are of equal importance, and the emphasis within a report is expected to reflect their relative priority" (GRI 2020a, p.10).
GRI (2021)	"-- topics that represent the organization's most significant impacts on the economy, environment, and people, including impacts on their human rights" (GRI 2021, p.30).
Sustainability Accounting Standards Board (SASB)	"a long-term focus on the issues that make a difference to both an organisation's performance and management priorities and on the information needed to make sound judgements" (Torelli et al. 2019, p.471).

In 2019, the European Commission took the concept of materiality even further, when it formally proposed the concept of double materiality in the context of CSR reporting (GRI

2020a). This broadens the concept of materiality to cover not just a company's economic, environmental and social impacts, but also impacts to the value of the company, i.e., the financial materiality, bringing together the approaches of SASB and GRI. According to GRI (2021), the benefits of applying double materiality include, for instance, enhanced stakeholder engagement, enhanced financial performance of companies through investments in material CSR issues, and enhanced transparency and lower uncertainty potentially resulting in more accurate forecasts of CSR performance.

On the other hand, there are also issues in double materiality application, including poor disclosure of the materiality assessment process (the process in which material topics are identified), variation in the use of materiality principle, using stakeholder engagement to manage risks by reducing materiality, lack of skills to apply materiality to CSR issues, favouring short-term financial interests, and leaving materiality assessment processes outside of the scope of sustainability assurance engagements (GRI 2021). GRI (ibid.) finds that organisations tend to prioritise financial materiality over impact materiality, which it argues to be detrimental to sustainable development as well as to long term financial success.

The European Financial Reporting Advisory Group (EFRAG) is currently in the process of developing sustainability reporting standards that apply the double materiality concept and has published a draft of a working paper related to double materiality conceptual guidelines for standard-setting in January 2022 (EFRAG 2022). The workpaper provides definitions, guidance, tools and processes that should be used to determine material topics as well as appropriate disclosures.

2.2.2 Materiality assessment processes

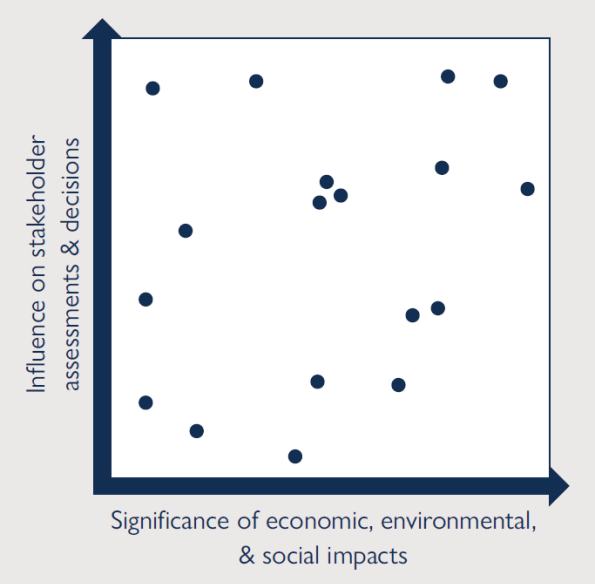
Dahlsrud's notion on CSR to be socially constructed in a specific context relates to the role of stakeholders that are specific to each company and that set the expectations for the optimal level of CSR. Regarding Dahlsrud's call for new CSR management tools, a tool developed for identifying and prioritising the material topics is called a materiality assessment, in which a key component is stakeholder engagement (Calabrese et al. 2019).

Materiality assessments are fundamental to companies in identifying the material CSR topics to stakeholders and the business itself, as well as being able to make rational decisions and

create shared value (Calabrese et al. 2019, Porter and Kramer 2006, Whitehead 2017). However, despite a wide use of materiality assessments for over a decade, there have been calls for companies to better capture the stakeholder expectations in their assessments (KPMG 2005) and to increase the transparency of the process (KPMG 2013).

GRI has guided companies on stakeholder engagement in the materiality assessment process as well as the related disclosures. GRI's previous approach to materiality (2020) acknowledged the differences between financial and sustainability reporting, and in terms of sustainability reporting it highlighted the wider range of impacts and stakeholders as its two key dimensions. For the two key dimensions, GRI (2020a) had presented an example matrix that shows an example company's material topics in terms of their impacts and influence on stakeholders, as well as their relative priority (Figure 3). It also showed that a topic could be material based on only one of the dimensions (GRI 2020a).

Figure 4. Visual representation of prioritisation of topics (GRI 2020a)



Even though the use of the exact matrix had not been required, many organisations have adopted using this matrix form to identify material topics as well as to give a visual representation of them. However, GRI's updated approach to materiality emphasises merely the significance of *impact* as a basis for materiality (also integrating the double materiality

approach), and the materiality matrix example has been removed from GRI's Updated Universal Standards 2021.

Despite of GRI explicitly requiring stakeholder engagement in conducting materiality assessments, there has been little attention to it in the academic literature regarding its practical implementation (e.g., Calabrese et al. 2019, Bellantuono et al. 2016, Hsu et al. 2013, Ruiz-Lozano et al. 2021). In addition, Ruiz-Lozano et al. (2021) conclude in their literature review that "there is no consensus about how to apply the principle of materiality to non-financial reporting, despite the existence of regulation and guidelines that establish the need to apply it".

Especially the issue of subjectivity in relation to judgments of stakeholders' interests, expectations and values concerns researchers (e.g., Calabrese et al. 2019, Calabrese et al. 2016, Bellantuono et al. 2016, Hsu 2013, Torelli et al. 2019, Puroila and Mäkelä 2019). Puroila and Mäkelä (2019) highlight that as "matrices merge the divergent stakeholder voices into one unified voice – [t]he matrix may well serve the stakeholder engagement process, but in the end, what the matrix shows is a compromise of different perceptions on what sustainability information is material."

There are only a few studies that have introduced quantitative methods to conduct a materiality assessment in a systematic and consistent manner in accordance with stakeholder needs (see Table 2). These methods more or less build on the materiality assessment process originally presented by the GRI (2011), in which the process is divided into three steps:

1. Identification of stakeholders and their expectations as well as relevant CSR topics (stakeholder engagement),
2. Prioritisation in terms of significance for the two key dimensions (based on a qualitative or quantitative assessment, e.g., materiality matrix), and
3. Validation of identified material issues.

In some studies (e.g., Beske et al. 2020, Ruiz-Lozano et al. 2021), a fourth step has also been added to emphasise that materiality changes over time:

4. Review of material issues.

However, in practice, companies tend not to see the value of reviewing materiality assessments every year (KPMG 2014). Even though the material topics may not change that

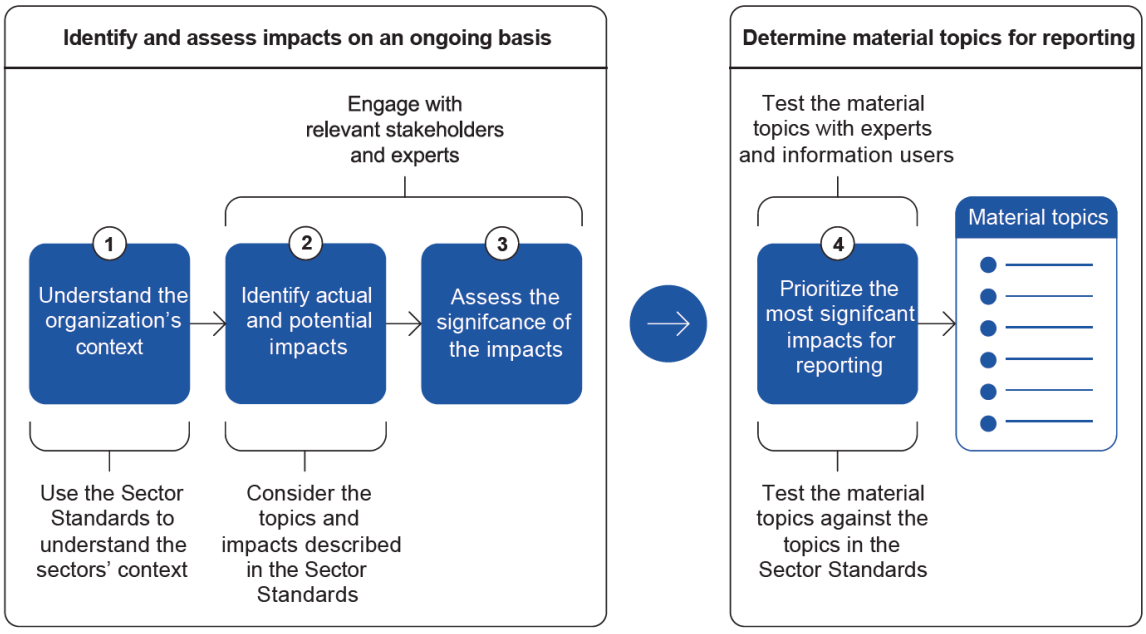
much in one year, it has been argued that their relative importance may (Ruiz-Lozano et al. 2021).

Table 2. Studies introducing quantitative methods to conduct materiality assessments in accordance with stakeholder needs

STUDY	PROPOSED QUANTITATIVE METHOD
Hsu et al. (2013)	An assessment framework using failure modes and effects analysis (FMEA) and analytic network process (ANP) method
Calabrese et al. (2016)	A fuzzy analytic hierarchy process method
Bellantuono et al. (2016)	A quantitative structured approach based on multi-attribute group decision-making techniques
Calabrese et al. (2019)	An "adequacy matrix" which is used alongside the materiality matrix

In its recently updated Universal Standards (2021) GRI has paid even more attention to providing guidance for organisations on how to determine their material CSR topics, building on stakeholder engagement and GRI's upcoming Sector Standards (Figure 5), but the guidance on how to quantitatively assess materiality is still scarce.

Figure 5. GRI Universal Standards: Process to determine material topics (GRI, 2021, p.102)



2.2.3 Level of materiality assessment disclosures

According to GRI (2020a), the reason why reporting standards like the GRI Standards have been created, has been to enhance the global comparability and quality of CSR information, and enabling greater transparency and accountability of organisations. This is justified, as organisations face increasing stakeholder demand to disclose adequate and quality information about their environmental, social, and economic impacts (e.g., Beske et al. 2020, Lindman et al. 2020).

In 2013, nearly 80% of the 250 largest companies globally (that reported on their CSR performance) discussed the identification of material CSR issues, but still over 40% of these companies didn't disclose information about the materiality assessment process itself, and only 5% claimed to assess material issues on an ongoing basis (KPMG 2013). Since then, GRI has transitioned from providing guidelines to setting the first global standards for sustainability reporting and now requiring organisations that report in accordance with the GRI to disclose information about the process for defining the report content and how they have implemented the materiality principle. Even though GRI promotes transparency, Machado et al. (2021) emphasise, that the quality of the reporting and assuring that it aligns with the GRI Standards is still the responsibility of the reporting company.

Torelli et al. (2019) find that the level of application and implementation of the GRI Standards has a significant and positive relationship with the level of application of the materiality principle. Torelli et al. (2019) also find that there is a strong positive relationship between the level of stakeholder engagement and the level of implementation of the materiality principle. However, they argue that even though many companies do have active materiality assessment processes, they may not necessarily plan any type of stakeholder engagement, despite of them reporting that they have considered the needs and issues deemed important by their stakeholders. Torelli et al. (2019) expect that the work of standard setters such as IIRC and GRI push forward the level of engagement through greater emphasis on it in their guidelines.

Some studies have been conducted about the determinants of materiality disclosures. For example, Torelli et al. (2019) discuss in reference to previous studies (Cooke 1992, Hassan and Ibrahim 2012, Patten 2002) that "industry significantly influences the board of the

company on decisions about the type of disclosure to be published and about the application (or nonapplication) of the materiality principle (but also about its level of application and thoroughness)" (ibid., p.479). This is because "direct and indirect external pressures, social-environmental impact of the core business, stakeholder expectations, and the behaviour of competing companies play a crucial role in management choices regarding voluntary disclosure and its underlining process" (ibid, p.479). A study by Fasan and Mio (2017) also finds that industry and some firm-level characteristics such as board size and diversity play a significant role in the determination of materiality disclosures, but that the legal environment in which companies operate does not.

Because industry plays a crucial role in determining material issues, Eccles et al. (2012) believe that developing sector-specific standards or guidelines on what sustainability issues are material to each sector would allow companies to adequately manage important business issues. In developing such standards, one should consider the financial impacts and risks, legal, regulatory and policy drivers, peer-based norms, stakeholder concerns and societal trends, as well as opportunities for innovation (Lydenberg et al. 2010). As mentioned, GRI is in the process of developing its Sector Standards, but the Sustainability Accounting Standards Board (SASB) has already developed a set of 77 Industry Standards in 2018, which identify the minimal set of financially material sustainability topics for a typical company in an industry.

Only a few studies have evaluated the extent of materiality assessment process disclosures. Farooq et al. (2021) examine the disclosure practices of listed companies based in the member states of the Cooperation Council for the Arab States of the Gulf (Gulf Cooperation Council, GCC) and find that while reporters provided more information on their materiality assessments in 2017 compared to 2013, the number of sustainability reports informing how the material issues have been identified had declined. Farooq et al. (2021) argue that this potentially indicates the existence of managerial capture, suggesting that "managers control the reporting process with the aim of using their sustainability reports to present a positive image of the organisation, thereby maintaining the status quo and avoiding any real transparency and corporate accountability" (ibid., p.972).

Farooq et al. (2021) argue that disclosing information on the materiality assessment process and also comparing the process against the requirements of international standards (such as the GRI) and disclosures made by other companies would reduce the likelihood of

managerial capture and improve the quality of sustainability reports, in addition to improved stakeholder confidence due to greater transparency and accountability.

Jones et al. (2016) study the top 10 UK retail companies and their 2015 sustainability reports and find that there was no evidence of collective sector-specific approach to materiality within the retail community. They also find and that while six of the UK's top 10 retailers drew attention to materiality, only some of them made any reference to how they had determined the material issues, and even those references were very limited.

In a more recent study, Beske et al. (2020) examine the methods used for the analysis of stakeholders and topics by listed German companies that are part of the HDAX stock market index, and whether there is a higher disclosure of information of materiality assessment because of adoption of GRI guidelines. They find that companies disclose only a small amount of related information and fail to explain the methods for the stakeholder and topics identification. According to Beske et al. (ibid.), it seems that "the companies tend to use their CSR reporting rather for the transmission of sustainability related topics than to report on materiality, which is merely a means for the purpose to define report content". This is an interesting finding as there is also variation among researchers, whether researchers approach materiality assessments mainly from the reporting point of view or also from the strategic point of view (see e.g. Farooq et al. 2021, Porter and Kramer 2006).

Ruiz-Lozano et al. (2021) have conducted a similar content analysis in the context of state-owned enterprises (SOEs) in Spain. Ruiz-Lozano et al. (2021) find that there is a low rate of information disclosed about the materiality process, which they attribute to "the desire of SOEs to create symbolic legitimacy". They also find that institutional isomorphism has only had a limited effect on the materiality process, as only few organisations subject to mandatory sustainability reporting apply the materiality principle in their sustainability reporting.

Building on the work of Beske et al. (2020), Machado et al. (2021) used different samples and methodological designs, but still found that organisations did not disclose comprehensive and detailed information about their approaches to identifying material topics. Machado et al. (2021) also find that the most frequently engaged stakeholder groups in their sample were (as they had expected) employees, customers, local communities, suppliers, governments and shareholders, i.e., the groups directly related to the

organisations' main products and services. They also find that some sectors have specific types of stakeholders, but that overall, each reporting organisation engaged with eight stakeholder groups on average during the reporting process.

Regarding the used engagement techniques, Machado et al. (2021) find that most frequently cited techniques were meetings with management or staff, call centres, and surveys. 15% of the organisations are cited to use interviews and workshops. In addition, organisations use almost six types of engagement techniques on average. They point out, however, that reports were often unclear about how frequently the techniques are used or how the outcomes of the engagement process were considered in the preparation of reports. What is interesting in the sample selected by Machado et al. (ibid.) is that it intentionally targeted sustainability reports that were likely to mirror good practice by selecting GRI-based reports that had obtained the GRI Alignment Service Organization Mark for materiality disclosures.

These studies, even though a limited amount, all communicate the same message: despite of reporting guidelines and standards, for some reason, organisations tend to disclose only a small amount of information about their materiality assessment processes, and not in a comprehensive and detailed manner.

2.2.4 Institutionalising CSR reporting and materiality assessments

Farooq and de Villiers (2019) examine how sustainability reporting managers (SRMs) have institutionalised CSR reporting within organisations. They categorise SRMs institutional work into four phases, where the fourth phase represents the most institutionalised phase in which companies use sustainability KPIs and materiality assessment reports for planning, decision-making, goal setting, performance appraisal, and incentives, thus linking them to a broader set of CSR objectives and strategy. In the fourth phase, Farooq and de Villiers (ibid.) argue that SRMs are encouraging their organisations to engage in quite frequent CSR reporting, for example, preparing reports on a quarterly or monthly basis, including also materiality assessment reports.

Ruiz-Lozano et al. (2021) argue that a legitimacy gap results when companies use reporting to influence external impressions without considering the principle of materiality and Farooq and de Villiers (2019) have identified reasons that explain why an organisation may fail to

provide disclosure over a material issue. For example, it can be difficult to identify reporting responsibilities in complex group structures, or companies may hesitate to provide balanced reports in fear of competitive disadvantage. According to Farooq and de Villiers (2019), these kinds of issues may take some time to resolve, because they depend on the level that robust CSR reporting practices diffuse amongst organisations, referring to organisational isomorphism.

To increase the level of CSR disclosures, some countries have made CSR reporting mandatory in certain level. However, opinions about its effectiveness and impacts vary among studies. For example, Ruiz-Lozano et al. (2021) argue that it is not clear yet whether regulation and standardised guidelines contribute to or constrain improvements in materiality assessments (Michelon et al. 2015, Puroila and Mäkelä 2019), whereas Farooq et al. (2021) argue that the considerable variation in the way organisations carry out materiality assessments is because sustainability reporting is still voluntary in most jurisdictions, meaning that companies can decide whether they follow the requirements of international sustainability reporting standards or not.

On the other hand, Calabrese et al. (2019) argue that "in order to win at sustainable development, companies must change from the approach of regulatory compliance to a different vision of sustainability as an opportunity for innovation and value generation", and that "companies must integrate sustainability in strategic decision-making". Pérez-López et al. (2015) participate in the debate by arguing that "a company-level examination of [sustainability reporting] drivers and uses might -- contribute to increased corporate accountability and performance without creating excessive administrative burdens".

Regardless of the debate, reporting regulation is increasing in the European Union (EU). For instance, the proposal of Corporate Sustainability Reporting Directive (CSRD) requires large companies to disclose their materiality assessment as of January 2024, affecting the 2023 reporting period (PricewaterhouseCoopers 2021). The CSRD amends the existing reporting requirements of the Non-Financial Reporting Directive (NFRD) by extending the scope to all large companies and all companies listed on regulated markets (with the exception of micro-enterprises), requiring an assurance of reported information, introducing more detailed reporting requirements, and requiring companies to digitally tag the reported information to make it machine readable. (European Commission 2021).

The NFRD currently applies to large public-interest companies with more than 500 employees, covering approximately 11 700 large companies and groups across the EU. The CSRD defines a large company to meet two of the three criteria on its balance sheet date: more than 250 employees on average during the financial year, a balance sheet total in excess of 20 million euros or a net turnover in excess of 40 million euros. It is estimated that the number of entities affected by these new regulations will increase fivefold. This means that the reporting obligation would also apply to family-run and private equity owned enterprises. (European Commission 2021, PricewaterhouseCoopers 2021).

2.2.5 Materiality in the Nordic context

Research on materiality in the context of CSR in the Nordic region is not vast, but there are some studies. What is common for these studies is a single-sector focus, for example on mining (Lindman et al. 2020), forestry (Puroila and Sendlhofer 2019), real estate (Andelin et al. 2013) or public sector (Ranängen et al. 2018).

Lindman et al. (2020) present a case study which investigates how a Nordic mining company and its stakeholders evaluate sustainability aspects, using materiality assessment and matrix as tools. Their approach is influenced by Whitehead (2017) and Beske et al. (2020) and they find that the conducted materiality assessment visualised well the similarities and differences in the evaluations of the company and its stakeholders, and that the management groups found the materiality assessment to be a useful tool for their strategic CSR practice.

Lindman et al. (ibid.) argue that the negative impacts of mining operations have led to increased stakeholder pressure over the last decades, and that various stakeholder expectations explain why conflicts have arisen in the extractive industry, as some stakeholders have been excluded from the decision chain. A concept of social licence to operate (SLO) indicates that in addition to government permissions, mining companies also need a social permission from local stakeholders in order to operate in the area.

Lindman et al. (ibid.) highlight that stakeholders' needs and expectations are highly contextual and that might affect which topics are considered as material (e.g., child labour is a non-issue in a Nordic perspective, and Nordic countries have the highest gender index in the world). According to Lindman et al (ibid., p.903) "the Nordic context is characterised

by extensive laws and regulations governing many of the aspects presented in the sustainability aspect matrix", but they stress that Nordic companies may have exposure to countries with weaker regulation through their value chains, in which case they would have to ensure that they consider materiality in the context of those countries.

Puroila and Sendlhofer (2019) study the temporal dimensions and psychological distance of material topics in the Nordic forest industry. Puroila and Sendlhofer (2019) argue that despite of current events of climate change, deforestation and sea level rise, the sustainability discourse keeps emphasising the future over the present, even though immediate actions are needed. According to Puroila and Sendlhofer (2019, p.76):

> "The concept of 'time' plays a crucial role in the assessment processes, both related to the complex nature of the sustainability information and to the constantly changing nature of the outcome of the assessment of 'the set of material topics' of that particular company in question. Complex sustainability topics included in the assessment processes are different in nature and have different time frames. How the outcome of the assessment guides operational and strategic decisions over time are crucial questions. Ignorance of the different time frames or level or urgency related to these topics might have unintended serious consequences." (Puroila and Sendlhofer 2019, p.76)

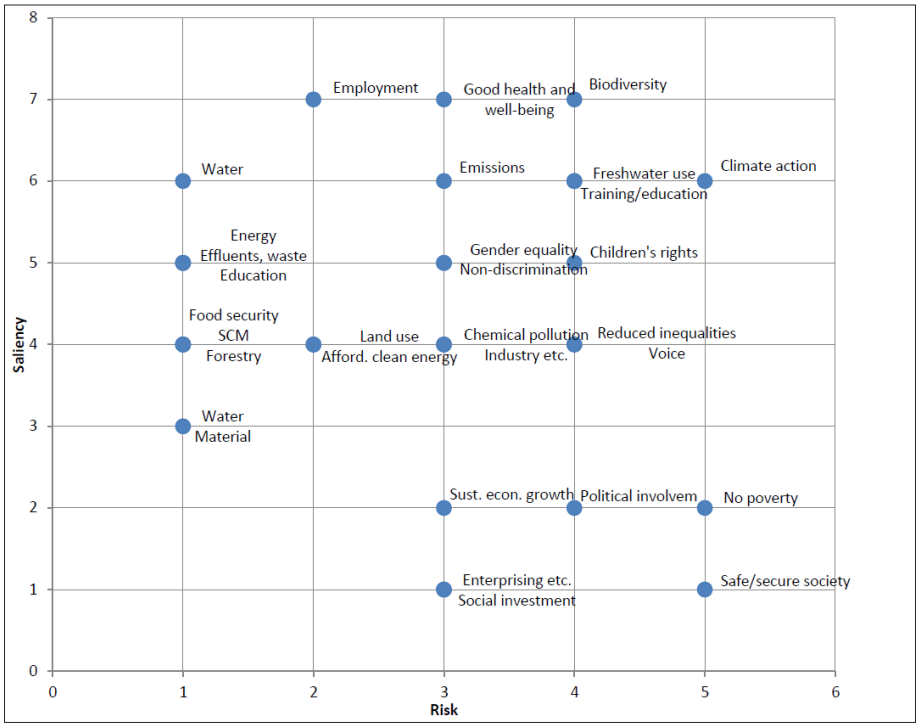
Puroila and Sendlhofer (2019) find that material CSR topics have multiple time frames within the spectrum, emphasising either the long-term thinking or urgency. They find that these time frames can create intergenerational inequality as well as spatial and social inequality, causing adverse impacts especially to marginal groups.

Ranängen et al. (2018) conducted a case study comprising of two Swedish municipalities, where a materiality assessment was conducted to determine the relevance and significance of sustainability aspects introduced by the municipalities. They find the materiality assessment to be a useful and easy method to prioritise the sustainability aspects, though they acknowledge that both the matrix and the risk assessment have to be updated regularly in order to form an effective base for the materiality assessment. This need for regular updates was also stressed by Lindman et al. (2020).

The priority of material topics in the case study (Ranängen et al. 2018) is calculated by assessing topic's saliency and risk. The saliency of a topic is assessed by counting its frequency in theoretical frameworks and sustainability initiatives (e.g., the SDGs, ILO and UN declarations, OECD frameworks, GRI, ISO standards), and the risk by the

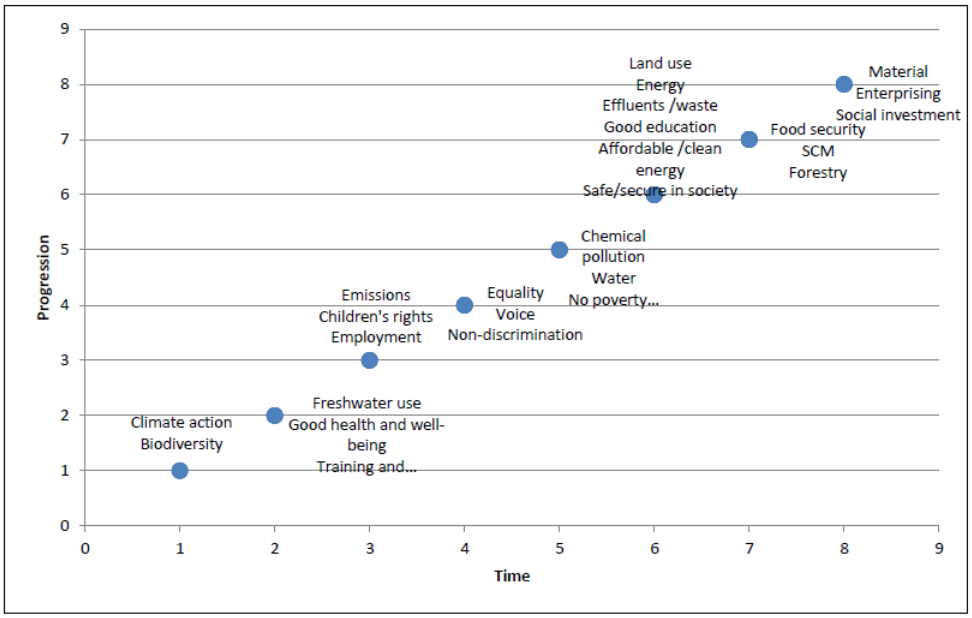
municipality's estimation of the potential severity of consequences a topic could have for the organisation (on a scale from 1 to 5 where 5 is the highest risk) (Ranängen et al. 2018). These assessments are then brought into a matrix, where the y-axis represents saliency and x-axis represents risk. The prioritisation is calculated by the sum of saliency and risk (Figure 6).

Figure 6. Priority of sustainability aspects for a case company (Ranängen et al. 2018)



What is new compared to the previous studies (e.g., Calabrese et al. 2019, Calabrese et al. 2016, Bellantuono et al. 2016, Hsu 2013), is that the priority assessed by Ranängen et al. (2018) takes into account the time frame and progression, meaning that the topics that are given highest priority should be addressed first and over time a company should progress to increasingly lower priority topics (Figure 7). Figure 7 shows that the case company should focus first on climate action and biodiversity. This responds to the request by Puroila and Sendlhofer (2019) to address different time frames in operational and strategic decisions.

Figure 7. Sustainability aspects in order of priority for a case company (Ranängen et al. 2018)



Looking at another study, Andelin et al. (2013) argue that despite of sustainability reporting becoming a necessity and a potential competitive advantage for companies, real estate owners and investors have not yet seen the need to report their environmental performance on a large scale, even though the built environment is responsible for a significant share of natural resource use and contributor to climate change. In their study Andelin et al. (ibid) find that Nordic real estate companies have given varying reasonings for indicator selection. Even though the indicators were most often stated to be chosen based on relevance, there were no clear definition or criteria how this relevance was determined. Some reporters mentioned that their choice of disclosed indicators was based on availability of information, which Andelin et al. (ibid) judge not to be a valid basis for reporting. None of the assessed companies disclosed specific criteria for choosing the indicators, even though some of them reported to have conducted a stakeholder survey or a relevance assessment.

Even though the materiality assessment process-related disclosures were insufficient, Andelin et al. (2013, p.6) found that stakeholder groups were identified in most of the analysed reports, and that "in general all the reports are stated to be based on the desire to continuously provide accurate, consistent, transparent and up-to-date information about the

company and its' operations, in order to give an open and clear picture of it to the markets and stakeholders."

In conclusion, previous studies about materiality assessments in the Nordic context have provided valuable insights from different perspectives. It is important to acknowledge that Nordic companies may have exposure to other countries with weaker regulation through their value chains, in which case they would have to ensure that they consider materiality in the context of those countries as well, and not only in the Nordic context (Lindman et al. 2020). Materiality assessments have been found useful strategic tools (Ranängen et al. 2018), but the level of disclosure has not met expectations in certain industries (Andelin et al. 2013). This thesis aims to give a broader and more current view of the level of disclosure in the Nordic context across multiple industries. In addition, it aims to assess what kind of topics are material to companies in different industries and if some topics are material to many companies, despite of their industry.

3. Research methods

The thesis is based on one research question and three sub-questions covering three themes (see Figure 1, p.18). First, the thesis looks at the level to which the sample companies disclose information about their materiality assessments, then the materiality assessment processes they have, and lastly, the material topics they have identified. All these themes are assessed in terms of how they differ between industries, are there differences over time, and are there linkages to ESG performance.

The materiality assessments will be analysed using a content analysis method and by developing a Materiality Assessment Index to analyse qualitative data quantitatively. Statistical analysis will be applied to examine differences across industries and over time, and regression analysis will be used to examine the linkages between materiality assessment disclosures and ESG scores.

3.1 Sample selection and data collection methods

The scope of this thesis covers the 100 biggest companies (by turnover end of 2020) both in Finland and Sweden, totalling 200 companies. Large companies were selected because they are expected to embrace structured reporting (Torelli et al. 2019) and to be more transparent about their materiality assessment processes, given their superior financial resources (Machado et al. 2021, Fasan and Mio 2017). The number of companies is also expected to give a broad view of materiality assessments in the geographical area to fill the existing research gap, as well as to cover multiple different industries. The sample includes companies from 11 different sectors and 19 industries.

The 100 biggest Finnish companies were selected based on a list provided by Talouselämä (TE500)[1] and for the Swedish companies, a list provided by LargestCcompanies[2] was used. Sector and industry categories for each company were retrieved from Bloomberg. The ESG

[1] https://www.talouselama.fi/te500
[2] https://www.largestcompanies.com/toplists/sweden/largest-companies-by-turnover

scores used in the analysis were collected from Refinitiv, a provider of financial markets data.

3.1.1 Companies in scope

The websites of the 200 companies listed by Talouselämä and LargestCompanies were visited to identify materiality assessments published in 2020 and 2015 sustainability reports or annual reports, depending on company's choice of reporting document. A five-year comparison was selected to identify differences among level of disclosure, reporting practices and identified material topics as many changes in the reporting world have occurred since 2015 (e.g., the adoption of the UN Sustainable Development Goals and the Paris Agreement in 2015, and new legal requirements to disclose non-financial information under the EU Non-Financial Reporting Directive (NFRD) as of 2018).

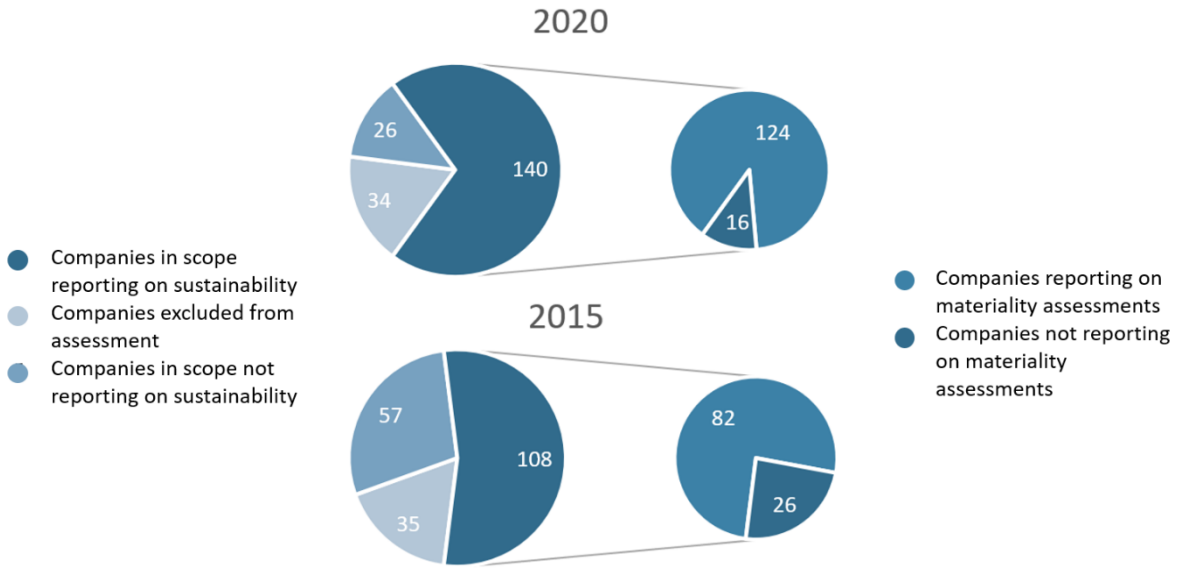
In case where a company is a subsidiary of a parent company and does not produce its own sustainability reporting (e.g., if the subsidiary is included in the parent company's sustainability report), the company is excluded from the sample. First, it is to avoid double counting of assessed materiality assessments, and second, it is to make sure that the assessed materiality assessments are conducted for Finnish and Swedish companies specifically. The second part is important especially in cases where a Finnish or Swedish subsidiary of an international parent company with headquarters in another country or another continent has only a minor share of the parent company's operations. With these exclusions the remaining number of companies within the scope is 166 in total, including 80 Finnish and 86 Swedish companies. Due to organisational changes in these companies between 2015 and 2020 (such as mergers, splits or a company being founded after 2015), the 2015 sample consists of 165 companies in total, including 80 Finnish and 85 Swedish companies.

During the data collection process, it was assessed how many of the companies within the scope of the thesis report on sustainability (this could be either just shortly on their website or through sustainability or annual reports) and could be expected to report about their materiality assessments. It was found that in 2020, 140 of the 166 companies report on sustainability, including 71 Finnish companies and 69 Swedish companies. In 2015, the total

number of companies in scope that reported on sustainability was 108, including 54 companies in both Finland and Sweden.

Finally, it was found that from the sample, 61 Finnish companies and 63 Swedish companies (124 in total) disclosed information about their materiality assessment in 2020, whereas in 2015 respective figures were 44 Finnish companies and 38 Swedish companies (82 in total). Thus, 206 materiality assessments were identified and assessed (see Figure 8).

Figure 8. Companies in scope



3.1.2 Industry categories

Based on the industry categories retrieved for each company from Bloomberg, the companies reporting on sustainability represent 11 different sectors, 19 different industries and 44 different sub-industries (see Table 3).

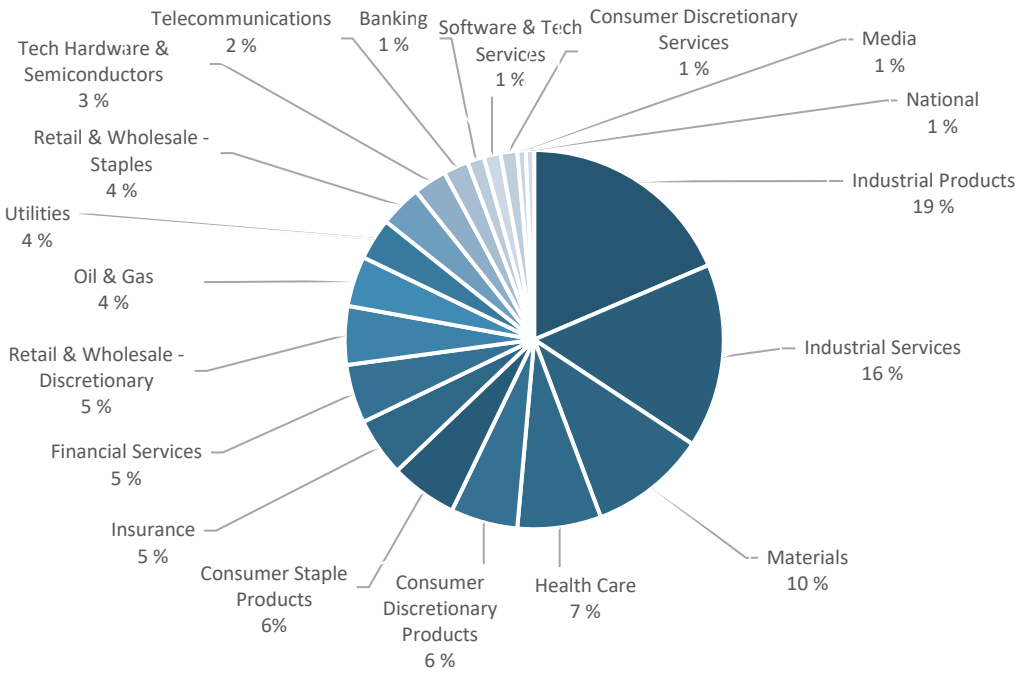
Table 3. Sectors, industries, and sub-industries of companies in scope reporting on sustainability

SECTOR	INDUSTRY	SUB-INDUSTRY
Communications	Media	Entertainment Content
		Publishing & Broadcasting
	Telecommunications	Telecommunications
Consumer Discretionary	Consumer Discretionary Products	Automotive
		Home & Office Products
		Home Construction
		Leisure Products
	Consumer Discretionary Services	Leisure Facilities & Services
	Retail & Wholesale - Discretionary	Retail - Discretionary
		E-Commerce Discretionary
Consumer Staples	Consumer Staple Products	Beverages
		Food
		Household Products
		Tobacco & Cannabis
	Retail & Wholesale - Staples	Retail - Consumer Staples
		Wholesale - Consumer Staples
Energy	Oil & Gas	Oil & Gas Producers
Financials	Banking	Banking
	Financial Services	Asset Management
		Institutional Financial Services
		Specialty Finance
	Insurance	Insurance
Government	National	Governmental Banks
Health Care	Health Care	Biotech & Pharma
		Health Care Facilities & Services
		Medical Equipment & Devices
Industrials	Industrial Products	Aerospace & Defense
		Diversified Industrials
		Electrical Equipment
		Industrial Intermediate Products
		Machinery
		Transportation Equipment
	Industrial Services	Commercial Support Services
		Engineering & Construction
		Transportation & Logistics
Materials	Materials	Chemicals
		Containers & Packaging

		Forestry, Paper & Wood Products
		Metals & Mining
		Steel
Technology	Software & Tech Services	Technology Services
	Tech Hardware & Semiconductors	Technology Hardware
Utilities	Utilities	Electric Utilities
		Gas & Water Utilities

The industries are not equally represented in the sample, as can be observed from Figure 9. Notably, industrial companies account for a third of companies in the scope that report on sustainability. The real estate sector was the only sector category in which no company in the scope reported on sustainability. Regarding industry categories, no companies in the real estate, renewable energy, or retail and wholesale – discretionary industries reported on sustainability.

Figure 9. Industry division of companies in scope reporting on sustainability



The industry division of companies in scope that report on sustainability is in line with the number of materiality assessments identified and assessed for the year 2020 while some minor differences can be observed for year 2015 (see Table 4).

Table 4. Number of materiality assessments identified and analysed across industries in 2020 and 2015 and share of companies in that industry having conducted a materiality assessment

Industry	Materiality assessments 2020	Materiality assessments 2015
Industrial Products	22 (81%)	16 (62%)
Industrial Services	17 (71%)	13 (57%)
Materials	14 (74%)	12 (67%)
Health Care	9 (69%)	4 (33%)
Consumer Discretionary Products	8 (80%)	6 (60%)
Consumer Staple Products	8 (73%)	5 (50%)
Insurance	7 (88%)	2 (33%)
Financial Services	6 (43%)	2 (17%)
Utilities	5 (100%)	4 (100%)
Retail & Wholesale - Discretionary	5 (45%)	3 (25%)
Oil & Gas	5 (63%)	1 (13%)
Retail & Wholesale - Staples	4 (57%)	3 (43%)
Tech Hardware & Semiconductors	3 (75%)	2 (40%)
Telecommunications	3 (75%)	2 (50%)
Banking	2 (67%)	2 (67%)
Software & Tech Services	2 (50%)	2 (50%)
Consumer Discretionary Services	2 (100%)	1 (100%)
Media	1 (50%)	1 (50%)
National	1 (100%)	1 (100%)

3.1.3 Data collection and measurement

As mentioned, the websites of the 200 companies listed by Talouselämä and LargestCompanies were visited to identify materiality assessments published in 2020 and 2015 sustainability reports or annual reports, depending on company's choice of reporting

document. In total, 206 materiality assessments were identified and assessed (see Figure 8, p.44).

Each materiality assessment was screened through specific questions determined before data collection based on the literature review and research questions. The information was collected to two identical Excel tables for 2020 and 2015 data and coded as indicated in Table 5.

Table 5. Collected information and coding

Information collected	Code
Definition of materiality	Text
Disclosure of potential integration of materiality into the company's strategy, risk management or target setting	Text
Description of the assessment method and process.	Text
Use of external consultants	1 = present, 0 = absent
Reference to international reporting standards (e.g., GRI)	1 = present, 0 = absent
Application of double materiality approach	1 = present, 0 = absent
Assessment year	Year
How many years passed from the previous update	Number of years
Update frequency (plan)	Number of years
Stakeholder identification methods	Text
Stakeholder engagement methods	Text (categorisation)
Numerical information about stakeholder engagement (e.g., number of stakeholders participating in survey/number of interviews)	Number of engagements
Engaged stakeholder groups	Text (categorisation)
Weighting of stakeholder input	Text
Geographical differences.	Text
Has a company conducted a materiality matrix	1 = present, 0 = absent
Prioritisation of material topics	1 = present, 0 = absent
Material topics	Text

Specific key words, such as 'materiality', 'material topic', 'material aspect', 'double materiality', 'matrix', 'stakeholder', and 'GRI', were used in reading the reports and finding information related to the above questions.

In this thesis the materiality assessments were analysed using a content analysis method in a similar manner to studies by Farooq et al. (2021), Ruiz-Lozano et al. (2021), Beske et al.

(2020) and Fasan and Mio (2017), evaluating disclosure by scoring materiality assessment disclosures on a six-level scale (MA Index):

1. No materiality assessment. Based on publicly available sources it cannot be confirmed whether a materiality assessment has been conducted.
2. A company claims to have conducted a materiality assessment, but it doesn't provide any information on the assessment process.
3. A company provides limited information on the materiality assessment process and material topics but does not provide a materiality matrix.
4. A company provides limited information on the materiality assessment process and provides the materiality matrix.
5. A company provides a comprehensive disclosure on their materiality assessment process and material topics but not the materiality matrix. The disclosures give a clear and complete picture of the steps used in the materiality assessments.
6. A company provides a comprehensive disclosure on their materiality assessment process and the materiality matrix. The disclosures give a clear and complete picture of the steps used in the materiality assessments.

Subjectivity is a risk when it comes to transforming qualitative data to quantitative analysable data, and specifically when categorising materiality assessment disclosures between "limited information" and "comprehensive information" (Farooq et al. 2021). Whereas Farooq et al. (2021) address this by providing examples of disclosures that qualify in specific category, the aim in this thesis is to adopt a more quantitative approach. To be considered "comprehensive", the organisation must disclose information related to most of the following indicators: assessment year, update frequency or time since previous update, type of assessment (full assessment including stakeholder engagement or a management update), definition of materiality (i.e. what materiality means for the organisation), whether assessment was conducted in-house or with an external consultant, and include disclosures of the materiality assessment process, such as stakeholder identification method, stakeholder engagement method (e.g. interviews, surveys), number of possible stakeholder engagements, and stakeholder groups participating in the assessment. This more quantitative evaluation increases the reliability of the coding, as there is only one person doing the assessments.

3.1.4 Refinitiv ESG company scores

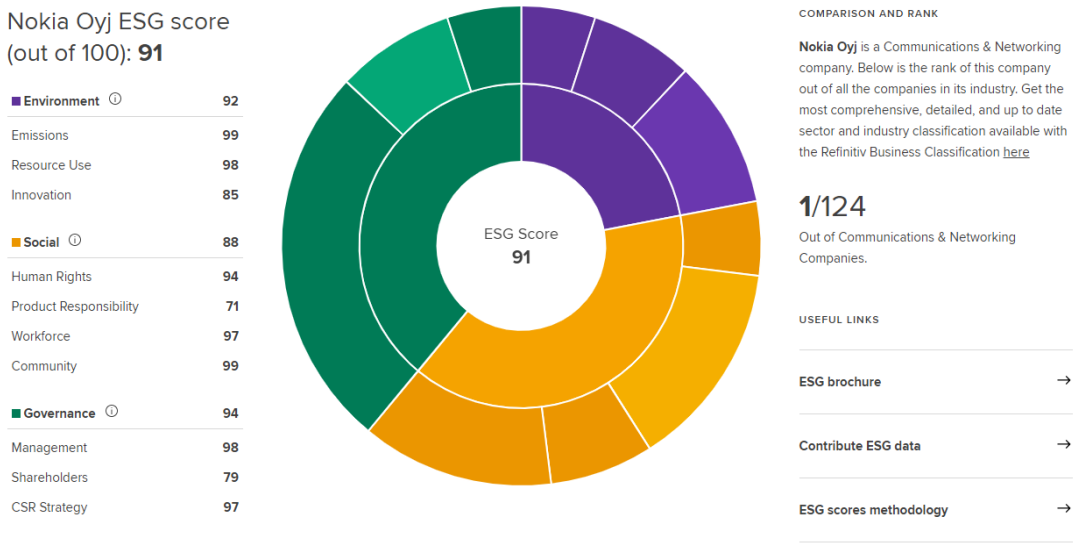
To examine the linkages between materiality assessment disclosures and ESG scores, a Refinitiv ESG company score was retrieved from a public Refinitiv database[3] for all companies within the scope. Refinitiv was selected as the ESG score provider as its ESG scores are publicly available and it uses verifiable reported data in the public domain in its assessments. The scores were retrieved on the first week of January 2022 and they represent the situation at the time of the search with no possibility to retrieve historical data. Refinitiv's ESG scores measure companies ESG performance based on public information and the methodology builds on considerations around comparability, impact, data availability and industry relevance. Refinitiv calculates around 630 company-level ESG measures, of which a subset of about 200 of the most comparable and material measures per industry drive the overall company assessment and scoring process.[4]

In total 89 companies within the scope were given a Refinitiv ESG company score, whereas for 77 companies in the scope Refinitiv did not have ESG data. The data coverage is 54% in total, although Swedish companies seem to have a better data coverage (60%) than Finnish companies (46%). This may be explained by Swedish companies' larger size in terms of turnover and thus inclusion in specific indices. Refinitiv reviews the constituents of specific indices on a quarterly basis and the coverage evolves over time.

The Refinitiv ESG company score includes a total ESG score (out of 100), as well as sub-scores for environment (E), social (S) and governance (G), under which there are 3-4 more sub-scores for each. Under environment there are scores for emissions, resource use and innovation. Under social there are scores for human rights, product responsibility, workforce, and community, and under governance there are scores for management, shareholders, and CSR strategy. An example of a Refinitiv ESG company score is illustrated in Figure 10. Although Refinitiv has its own sector categorisation system, in this thesis the Bloomberg categorisation will be used, due to Refinitiv's low data coverage. For the purpose of this thesis, only the total ESG score was used.

[3] https://www.refinitiv.com/en/sustainable-finance/esg-scores
[4] https://www.refinitiv.com/en/sustainable-finance/esg-scores#methodology

Figure 10. Refinitiv ESG company score example of Nokia Oyj



[5]

3.2 Data analysis methods

The data analysis methods to be used in this thesis include content analysis, statistical analysis and regression analysis, as described in the following sections.

3.2.1 Methods to analyse level of disclosure

In order to answer to RQ1.1, I will analyse whether there are differences in the level of disclosures (i.e., the Materiality Assessment (MA) Index values generated from the content analysis) across industries, by comparing the minimum, average, median and maximum values of the industry companies' MA Index. In order to answer to RQ1.2, I will conduct a similar exercise for 2015 data and compare the differences.

In order to answer to RQ1.3, I will analyse whether there is a linkage between companies' level of disclosures (independent variable = MA Index) and their ESG scores (dependent variable) through a regression analysis. Companies' level of disclosures that is estimated

[5] Source:www.refinitiv.com/en/sustainable-finance/esg-scores#global-coverage, retrieved 8.1.2022.

with the MA Index is tested as the explanatory variable trying to predict the ESG score that is the dependent variable. The range of MA Index scores can be between 1-6 and the ESG scores between 0-100.

Because it was not possible to retrieve historical ESG scores, only 2020 materiality assessments will be analysed in terms of linkage to ESG score. The data will be sorted to cover those companies for which ESG scores are available, including 89 companies, out of which 52 companies are Swedish and 37 Finnish. These companies all report on sustainability and thus no other exclusions to data will be needed. 85 out of the 89 companies have disclosed information about materiality assessments.

3.2.2 Methods to analyse materiality assessment processes

The same variables that indicated comprehensiveness in RQ1.1, are used to find answers to RQ2.1, but in this I will have a more detailed view on each of the variable to see whether there are differences among the materiality processes among industries. The following information will be assessed in comparison to industries and differences over time: assessment year, update frequency or time since previous update, type of assessment, definition of materiality, use of external consultant, stakeholder identification method, stakeholder engagement method, number of stakeholder engagements, and stakeholder groups participating in the assessment, as well as adoption of double materiality concept. In order to answer to RQ2.2, I will conduct a similar exercise for 2015 data and compare the differences.

In order to answer to RQ2.3 and to test whether there is a linkage between materiality assessment processes (independent variables = disclosures) and their ESG scores (dependent variable), a regression analysis will be conducted. Used materiality assessment processes are tested as the explanatory variables trying to predict the ESG score that is the dependent variable. The independent variables are the update frequency or time since previous update, disclosure of materiality definition, disclosure of in-house assessment or use of an external consultant, and disclosures of the materiality assessment process, such as stakeholder identification method, stakeholder engagement method (e.g., interviews, surveys), number of possible stakeholder engagements, and stakeholder groups participating in the assessment,

as well as adoption of double materiality concept. The independent variables are given a binary value depending on disclosure. For example, if a company discloses its materiality assessment update frequency, it will be given a score of 1, whereas a company not disclosing the information will be given a score of 0. The range of ESG scores can be between 0-100. Because there is no historical data available for ESG scores, only 2020 materiality assessments will be analysed.

3.2.3 Methods to analyse material topics

All material topics listed in the materiality assessments will be collected. Synonyms will be collected under one term, for example, under climate would fall topics such as climate, carbon handprint and carbon neutral, whereas under business ethics and compliance would fall topics such as ethics, values, anti-corruption and anti-bribery. As thorough a list of topics as possible will be made based on found topics, thus inductive coding will be used to analyse qualitative data. Identified material topics will be analysed based on their frequency within industries by counting how many times a specific topic is mentioned in the lists of companies' (within a specific industry) material topics, divided by the number of companies in that industry. From the data, I will also analyse which topics are considered material by many companies regardless of their industry, and which topics are considered material only by specific industries.

Using the same list of topics, a separate analysis will be conducted to the group of companies that prioritise their material topics. The same coding methodology as for the first group will be applied to identify which topics the companies in each industry find the most material. By comparing which topics have been identified as the most material in 2020 and in 2015, we can also assess whether the relative importance of material topics varies in time. Based on collected data, it will be also be analysed how many material topics the sample companies in each industry have identified on average in 2020 and in 2015.

In order to answer to RQ2.3 and to test whether there is a linkage between identified material topics (independent variables = material topics) and their ESG scores (dependent variable), three regression analyses will be conducted. First, the number of material topics will be used as the explanatory variable trying to predict the ESG score that is the dependent variable.

Second, whether a company prioritises its material topics (e.g., in the form of a materiality matrix) will be used as the explanatory variable trying to predict the ESG score that is the dependent variable. And third, whether companies have selected the 10 most common material topics across industries as their own material topics will be used as the explanatory variables trying to predict the ESG score that is the dependent variable. The ranges of independent variables may range between 0-1 and the ESG scores between 0-100. Because there is no historical data available for ESG scores, only 2020 materiality assessments will be analysed.

3.3 Reliability and validity

Analyses that are built on transforming qualitative data into quantitative analysable data are inherently prone to subjectivity. In this thesis, attention has been paid to transparent data collection and analysis of different materiality assessment disclosures.

In the data collection phase efforts were taken to assure that all materiality assessments were interpreted and analysed in a systematic manner. However, there is a risk that the data collection has suffered from a human error due to only one person collecting the data, even though data quality checks were made.

In the analysis phase inductive coding was used in multiple stages to analyse qualitative data. It is possible, that the coding did not capture all varying word forms, even though attention was paid to this to ensure analysis quality. Especially related to the analysis of material topics, there is a high risk of double counting, which is why the findings are not absolute, but indicative by nature.

Despite of a large number of companies in the sample, the industry distribution is not very even, as the industrial industries are very dominant whereas, for example, media and national industries are less represented, posing a challenge to generalise findings for these industries.

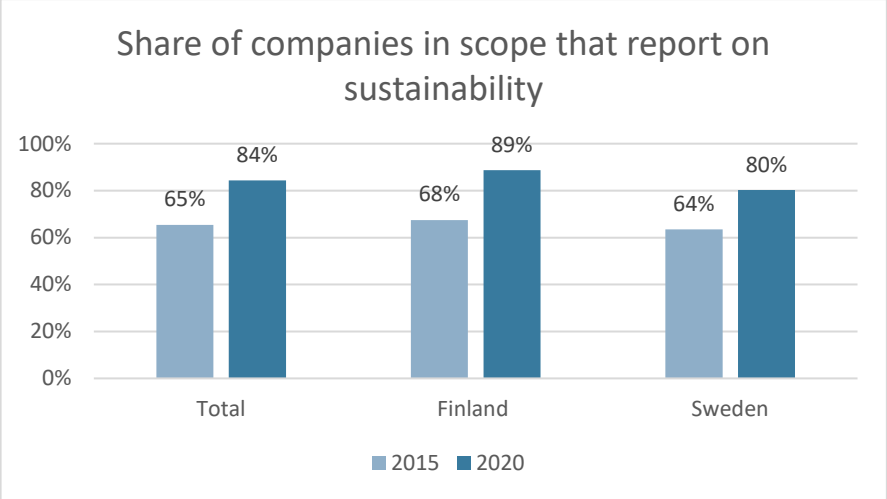
4. Findings

This chapter presents the findings that have been gathered using the proposed research framework. The findings are based on content analysis, statistical analysis, and regression analysis conducted on the manually collected data. The chapter is divided based on the three sub-questions covering the three themes (see Figure 1, p.18).

4.1 Level of disclosure

In 2020, 84% of the companies in the scope reported on sustainability either on their website or on sustainability or annual reports. The share was slightly higher for Finnish companies, of which 89% reported on sustainability, than for Swedish companies, of which 80% did the same. This had increased from the levels in 2015, when only 65% of companies reported on sustainability (68% of Finnish companies and 64% of Swedish companies) (see Figure 11).

Figure 11. Share of companies in scope that report on sustainability



In 2020, out of the companies that report on sustainability, 89% report to have conducted a materiality assessment (86% of Finnish companies and 91% of Swedish companies), whereas in 2015, the share was 76% (81% Finnish companies and 70% of Swedish companies) (see Figure 12).

Figure 12. Share of reporting companies in scope that have conducted a materiality assessment

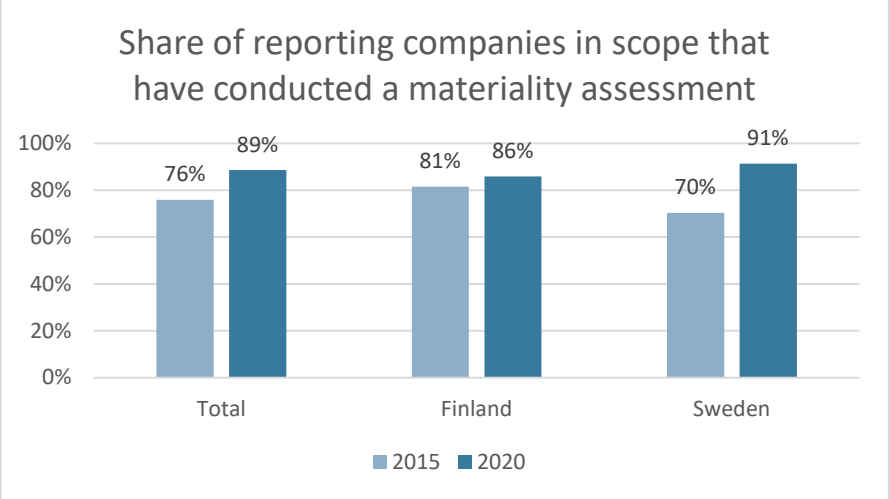
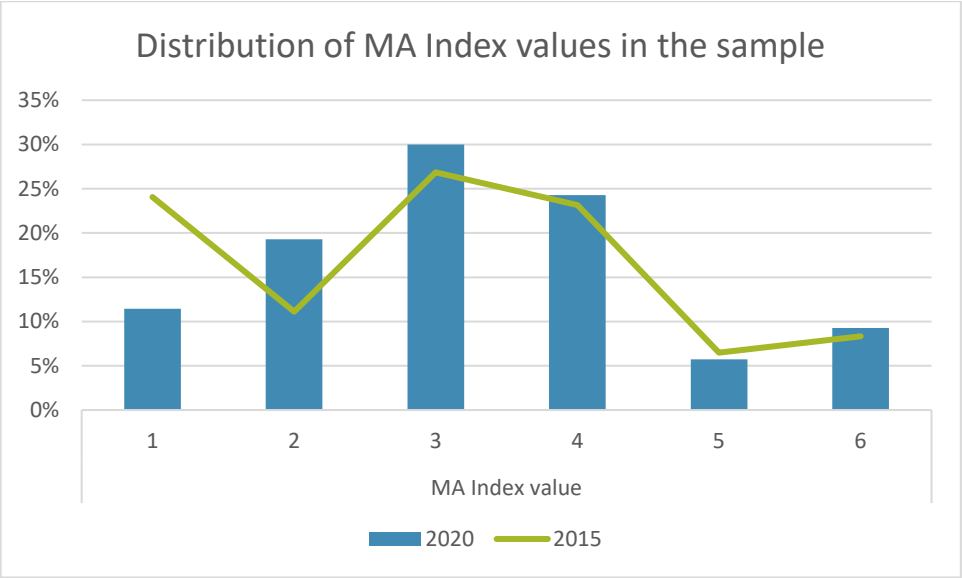


Figure 13 demonstrates the distribution of given MA Index values for sample companies (excluding companies that do not report on sustainability). The clustered column represents MA Index values for companies based on their 2020 reporting and the line represents the same for 2015 reporting. What is notable is that in 2015 more companies were given an MA Index value of 1 (no disclosure of materiality assessment) than in 2020, but in 2020 more companies were given an MA Index value of 2 (a company claims to have conducted a materiality assessment, but it doesn't provide any information on the assessment process) than in 2015. The first observation may be explained with materiality assessments becoming more common over the years, but the second observation may require more research. For example, whether it is more common to report about the assessment process in more detail in the report of the same year of conducting the assessment.

Figure 13. Distribution of MA Index values in the sample

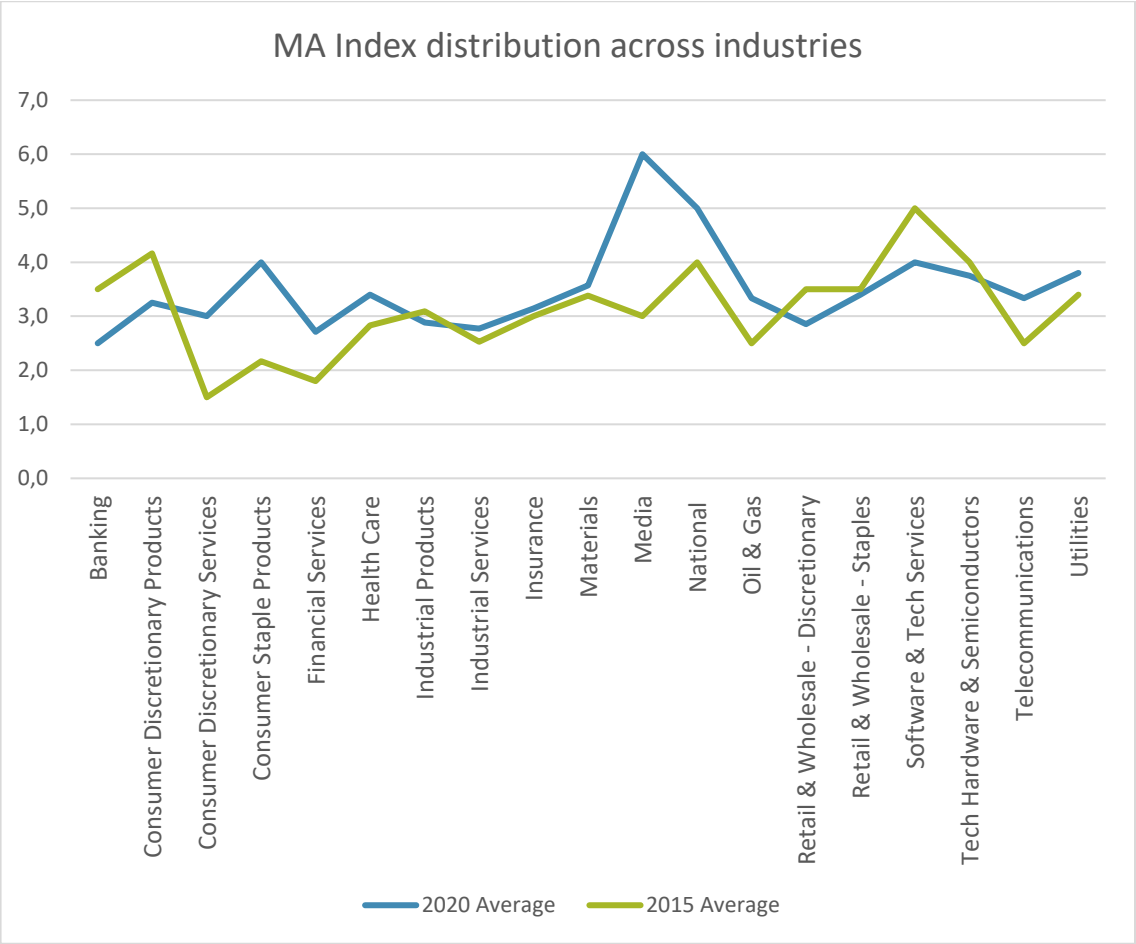


4.1.1 Comparison to industries and differences over time

In order to answer to RQ1.1 and to see whether there are differences in the level of disclosures among industries, the minimum, average, median and maximum values of MA Index were compared across industries (see average scores in Figure 14). Regarding media and national industries, there is only one company in each industry category.

All sample companies in materials, media, national and software & tech industries disclose information about their materiality assessment processes to at least some level (minimum MA Index value of 3). In general, most of the industries' average and median MA Index values are also 3 (see Figure 14). Almost all industries, apart from banking, consumer discretionary products and services, financial services and software & tech industries, have at least one company reaching an MA Index value of 5 or 6, meaning that a company provides comprehensive disclosure about its materiality assessment process. In 2020, the banking industry (two companies in the sample) stands out as the industry with the lowest maximum MA Index value of 3, as well as the lowest median and average values (2,5). However, all of the sample companies within the banking industry disclose at least having conducted a materiality assessment.

Figure 14. MA Index distribution across industries in 2020 and 2015



In 2015, 12 out of the 19 industries had companies with a minimum MA Index value of 1, whereas in 2020 there were only 8 industries. Apart from one industry category (tech hardware & semiconductors), the industries having at least one company receiving an MA Index value of 1 in 2020 were the same industries in 2015. Surprisingly, the minimum value for the tech hardware & semiconductors in 2015 was 4. This is explained with the fact that the 2020 sample for the tech hardware & semiconductors industry consists of four companies whereas the 2015 sample consists of two companies. The company receiving the MA Index value of 1 in 2020, was only founded in 2016, explaining why it is not included in the 2015 sample. This company was the only sample company founded after 2015.

Comparison of maximum values between 2020 and 2015 reveals that the level of disclosure does not necessarily improve over time. This means that even if a company had conducted a materiality assessment in 2015 and had provided comprehensive disclosure about the

process, it does not mean that the same practice would continue in the company's future reporting. For example, the consumer discretionary products, industrial products, insurance, materials, and software & tech services industries have all had companies in 2015 that have reached the MA Index value of 6 but have not reached it in 2020. In three of the industries (industrial products, insurance and materials) the maximum has dropped from 6 to 5, indicating that the level of disclosure has still been comprehensive, however, a materiality matrix has not been disclosed anymore. In the other two industries (consumer discretionary products and software & tech services) the maximum value had dropped from 6 to 4, indicating that the level of disclosure had dropped from comprehensive to limited information, but the materiality matrix had still been disclosed.

This trend can also be seen in the banking industry that stood out in the 2020 analysis, with low MA Index values. Surprisingly, in 2015, the minimum MA Index value was 3 while the maximum value was 4. Looking at the two sample companies, the first banking company received an MA Index value of 3 in both 2015 and 2020, whereas the other banking company received an MA Index value of 4 in 2015 but a value of 2 in 2020.

4.1.2 Linkage to ESG score

To test whether there is a linkage between companies' level of disclosures (independent variable = disclosure index) and their ESG scores (dependent variable), a regression analysis was conducted. Because it was not possible to retrieve historical ESG scores, only 2020 materiality assessments were analysed in terms of linkage to ESG score.

Companies' level of disclosures that is estimated with the MA Index is tested as the explanatory variable trying to predict the ESG score that is the dependent variable, and the results of the regression analysis are presented in Table 6. The Multiple R is the correlation coefficient measuring the strength of the linear relationship between the MA Index and the ESG score. Multiple R of 0,31 indicates a weak positive relationship between the two variables. The R Square indicates how many of the values fit the regression analysis model. In this analysis, the R Square is 0,094 meaning that only 9,4% of the ESG scores can be explained with the MA Index, suggesting that other variables may better predict the ESG score. The standard error measures the average distance that the data points fall from the

regression line and a standard error of 14,6 is rather high considering that the ESG score range is 0-100.

The analysis of variance (ANOVA) gives information about the levels of variability in the model. The residual sum of squares (SS) is not much smaller than the total sum of squares, indicating that the model does not fit the data very well. The significance F value is 0,0034, which is less than 0,05, meaning that the results are statistically significant.

With the coefficients a linear regression equation (y = bx + a) can be built, which is y = 3,7052x + 54,734. This predicts that with an MA Index value of 1 a company would get an ESG score of approximately 58, whereas with an MA Index value of 6 a company would get an ESG score of approximately 77.

Table 6. MA Index linkage to ESG total score regression analysis results

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,306918
R Square	0,094198
Adjusted R Square	0,083787
Standard Error	14,75277
Observations	89

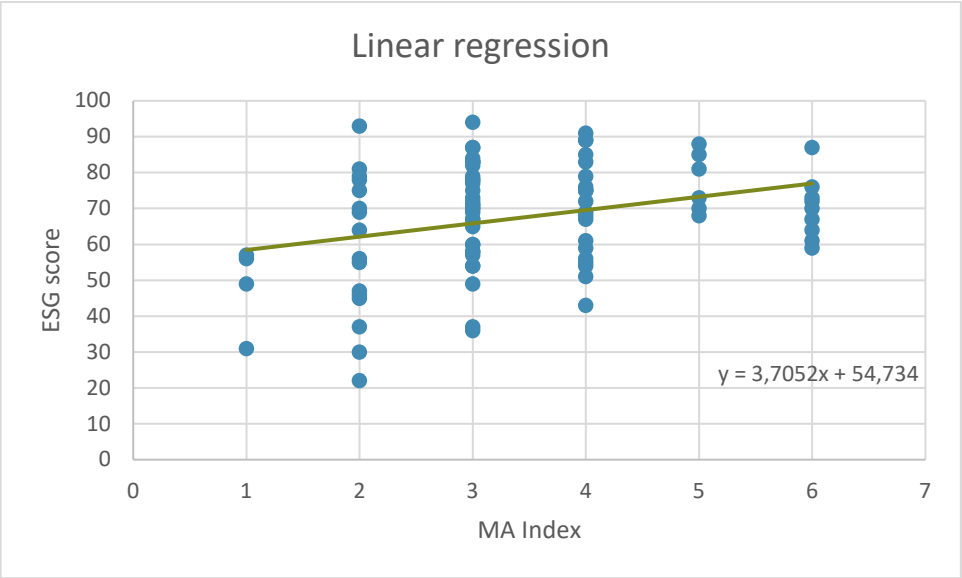
ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1969,144	1969,144	9,04753	0,003439
Residual	87	18935,06	217,6443		
Total	88	20904,2			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	54,73414	4,475744	12,22906	1,35E-20	45,83811	63,63016
MA Index	3,705154	1,231803	3,007911	0,003439	1,256812	6,153496

Figure 15 visualises the MA Index linkage to ESG score in a linear regression graph. The trendline is indeed positive indicating that with higher MA Index value the company may receive a higher ESG score. The graph also demonstrates deviation from the trendline and clearly expresses that it is possible to receive high ESG scores as long as the MA Index value is 2 or above, but for example companies with higher MA Index values (5-6) there is not as drastic deviation between received ESG scores as there is for companies with MA Index value of 2. However, it is to be noted that the sample is not equally distributed in terms of MA Index values, as is shown in Figure 13 (p.57).

Figure 15. MA Index linkage to ESG score linear regression graph



4.2 Materiality assessment process

GRI Standards and specifically disclosure 102-46 and clause 6.1 require companies to explain how the materiality principle has been applied to identify material topics. GRI recommends companies to include explanations of the steps taken to define the content of the report, at which steps in the process the reporting principles were applied, assumptions and subjective judgements made in the process, and challenges the organisation encountered. (GRI, 2020a).

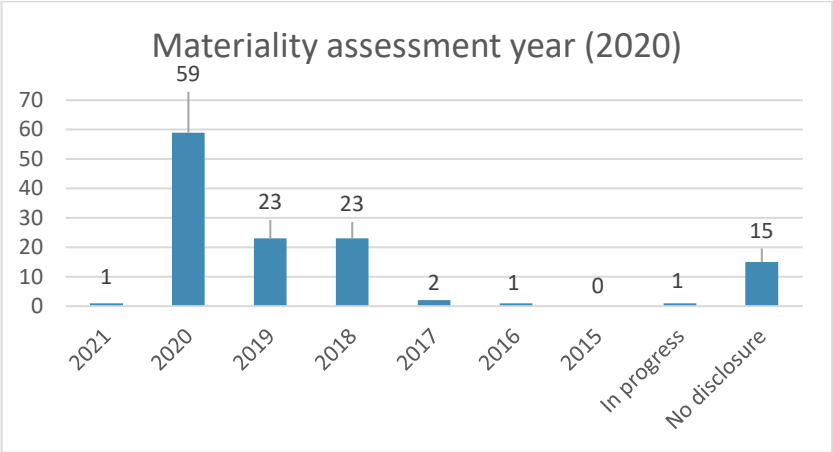
The level of companies referring to GRI Standards in their reporting is high among the sample companies: 85% in 2020 and 95% in 2015. However, the way they report on their materiality assessment processes varies. Even though the MA Index score already gives an indication of how much information is provided about the process, it is worthwhile to have a closer look at what kind of information is disclosed. The following information will be assessed in comparison to industries, differences over time and linkage to ESG score: assessment year, update frequency or time since previous update, type of assessment, definition of materiality, use of external consultant, stakeholder identification method, number of stakeholder engagements, and stakeholder groups participating in the assessment, as well as adoption of double materiality concept.

4.2.1 Comparison to industries and differences over time

Materiality assessment frequency and type

In total, 124 companies in 2020 had conducted a materiality assessment and nearly half of the companies (59) had disclosed to have either conducted or updated their materiality assessment in 2020 (see Figure 16). One company had updated their materiality assessment recently in 2021, but because it reported about their materiality assessment only on their website but not in their annual or sustainability report, the 2020 disclosures were not available. In the 2020 report the company only shortly referred to have used their materiality assessment from 2018. 23 companies had conducted or updated their materiality assessment in 2019, and the same number of companies in 2018. Only three companies used a materiality assessment more than 2 years old. 15 companies (12%) or every 8th company did not disclose the year in which the materiality assessment or update had been conducted.

Figure 16. Materiality assessment year in 2020 reports (including updates)



In 2015, a total of 82 sample companies reported to have conducted a materiality assessment and over 60% of them had conducted the assessment that year. 14 companies reported to have conducted the materiality assessment in 2014 and 5 companies in 2013. No companies reported to have conducted a materiality assessment in 2012 or earlier. 10 companies (12%) or again every 8th company did not disclose the year in which the materiality assessment or update had been conducted (Figure 17).

Figure 17. Materiality assessment year in 2015 reports (including updates)

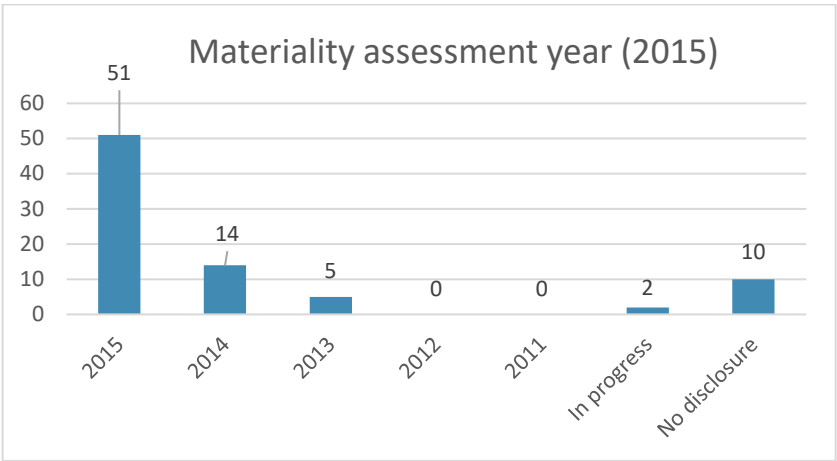
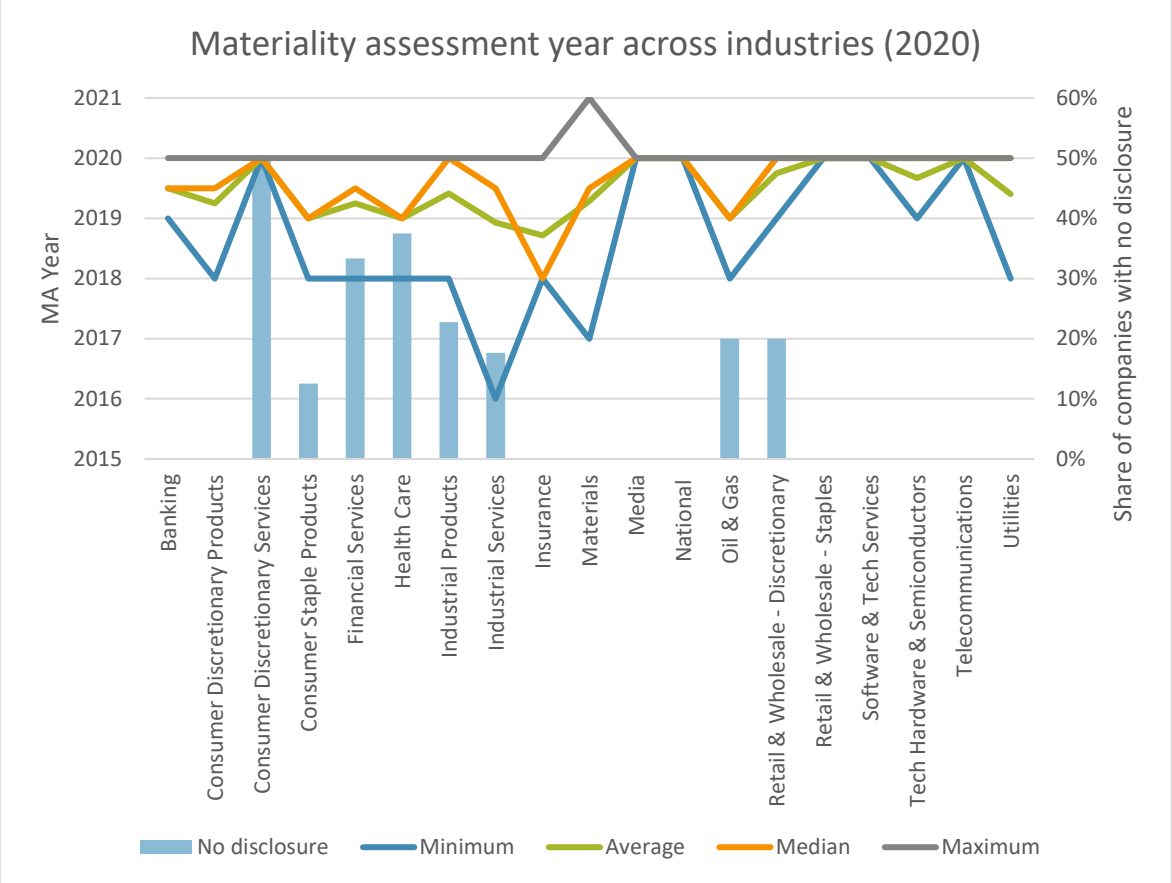


Figure 18 illustrates in which year the sample companies' materiality assessments (in 2020 reports) have been conducted across industries. Looking at the 'maximum' year, it can be

seen that in each industry, there is at least one company that has conducted their materiality assessment in 2020 or later. There is more deviation looking at the 'minimum' year in which materiality assessments have been conducted. For example, there is at least one company in the industrial services industry that has its most recent materiality assessment conducted or updated in 2016 and in the material industry in 2017. The 'average' and 'median' lines vary between 2018 and 2020, indicating that materiality assessments are generally not older than 2-3 years regardless of industry. Based on the sample companies' disclosures, the insurance industry would seem to have less recently updated materiality assessments in use, whereas the retail & wholesale (staple), telecommunications, and software & tech services industries would have the most recent materiality assessments in use. Both media and national industries had only one company in the sample, and although these two companies had both updated their materiality assessments in 2020, it is hardly a sufficient sample size to reflect the whole industry.

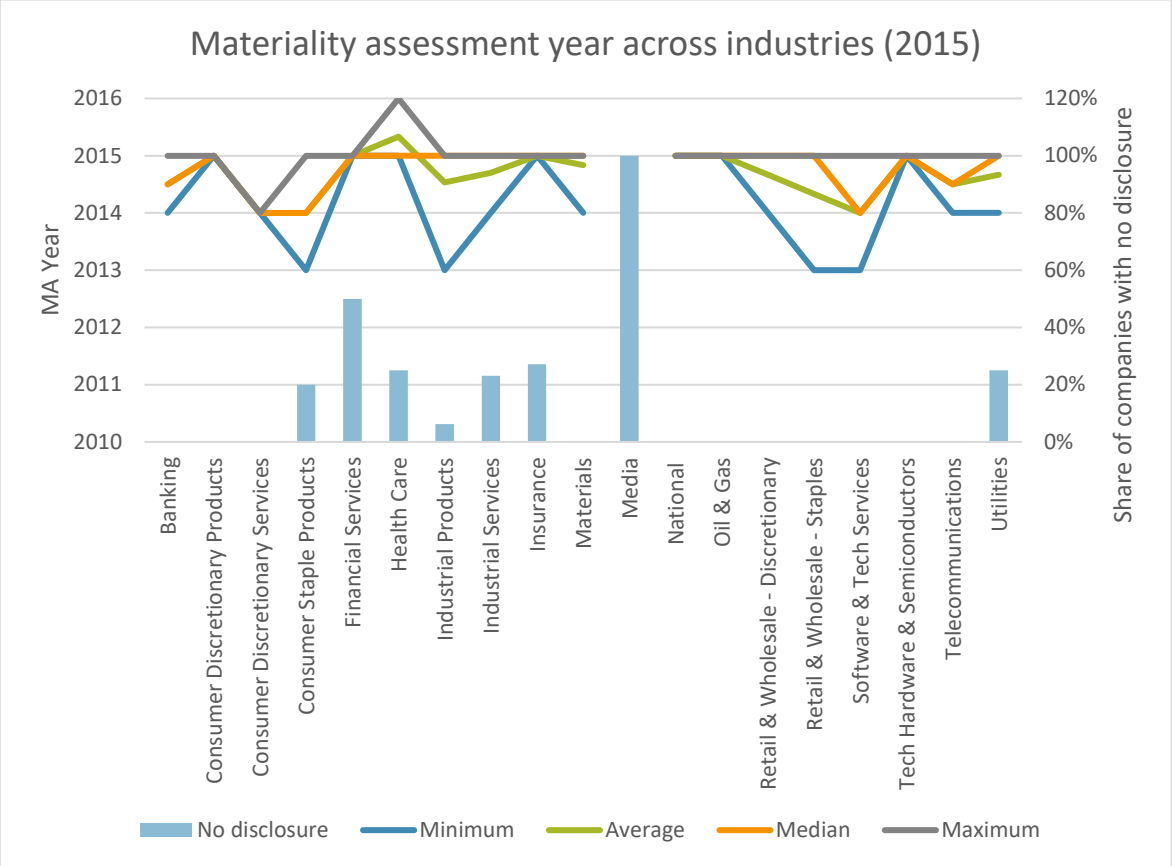
Figure 18. Materiality assessment year across industries (2020)



The 15 companies that in 2020 had not disclosed the year in which their materiality assessment has been conducted represent eight different industries. In the industrial products industry, five sample companies do not disclose the materiality assessment year, which is 23% of the sample companies in that industry. On the other hand, in the industrial services industry three of the sample companies do not disclose the materiality assessment year, representing 18% of the sample companies in that industry. Respectively, 2 companies (33%) in the financial services and 1 company (50%) of the consumer discretionary services industry do not disclose the materiality assessment year either.

Comparing to 2015 results (Figure 19), major differences are not found. There are only two industries, in which there is not a sample company that would have conducted a materiality assessment in 2015 (consumer discretionary services and media industries). The 'minimum' year is 2013 and the 'average' and 'median' lines vary between 2014 and 2015, indicating that in general, in 2015 materiality assessments across industries are as recent as in 2020 (85% of the assessments have been conducted within 2-3 years).

Figure 19. Materiality assessment year across industries (2015)



Moving from past updates to future updates, in 2020, 25% of the sample companies disclose how often they plan to review or update their materiality assessments, while in 2015 the share was 16%. Referring to future materiality assessments, in 2020 39% of those companies disclosing the frequency of planned updates report to update their materiality assessments annually, while in 2015 the share was rather similar, standing at 38%. Referring to number of years since the latest materiality assessment update, only 36% of companies in 2020 and 42% in 2015 disclose how many years had passed since the previous conducted materiality assessment (excluding companies that have disclosed that their most recent materiality assessment has been their first assessment), and the majority of companies both in 2020 and in 2015 disclose to have either conducted or updated their materiality assessment last year. In 2020, 3 companies (6 in 2015) disclosed that their most recent materiality assessment has been their first assessment. In general, it seems to be more common for companies to report about how often they plan to update their materiality assessments than how many years has passed since their previous assessment.

Looking at the disclosures across industries (Table 7), there are some industries in which none of the sample companies disclose their materiality assessment frequency or when the previous assessment has been conducted or updated (banking, consumer discretionary services, media, and national industries). Although in general the level of disclosure has improved from 2015 to 2020 in regards of planned update frequency, there are also some industries in which the level of disclosure has been significantly better in 2015 than in 2020 (consumer staple products, oil & gas, and retail and wholesale (staples)). Regarding past update frequency, in general the level of disclosure has decreased from 2015 to 2020, with only one industry to have significantly increased their disclosure (the financial services industry).

The average planned update frequency across all industries in 2020 is 1,9 years and 1,8 years in 2015 and there is no large deviation between companies (variation between 1,0 and 2,7 years). Average years from previous materiality assessment across all industries in 2020 is 1,6 years and 1,5 in 2015. Whereas many industries' average time varies somewhere between 1,0 and 2,2 years, the insurance industry stands out with an average of 3,0 years in 2020 (Table 7).

Table 7. Materiality assessment frequency by industry

Industry	Frequency disclosure		Average frequency		Disclosure on previous update year		Average years from previous update	
	2020	2015	2020	2015	2020	2015	2020	2015
Banking	0 %	0 %	-	-	0 %	0 %	-	-
Consumer Discretionary Products	38 %	0 %	1,7	-	38 %	33 %	1,3	1,5
Consumer Discretionary Services	0 %	0 %	-	-	0 %	0 %	-	-
Consumer Staple Products	50 %	0 %	2,3	-	13 %	100 %	1,0	1,00
Financial Services	0 %	0 %	-	-	67 %	0 %	1,8	-
Health Care	0 %	0 %	-	-	33 %	50 %	1,3	1,5
Industrial Products	23 %	13 %	2,2	1,0	32 %	31 %	1,9	1,8
Industrial Services	12 %	15 %	2,0	1,5	29 %	8 %	1,2	1,00
Insurance	14 %	0 %	-*	-	14 %	0 %	3,0	-
Materials	50 %	42 %	1,7	2,2	64 %	50 %	2,2	1,5
Media	0 %	0 %	-	-	0 %	0 %	-	-
National	0 %	0 %	-	-	0 %	0 %	-	-
Oil & Gas	60 %	100 %	2,7	2,0	20 %	100 %	2,0	2,00
Retail & Wholesale - Discretionary	20 %	100 %	1,0	1,0	20 %	100 %	1,0	1,00
Retail & Wholesale - Staples	50 %	33 %	1,5	1,0	25 %	67 %	1,0	1,00
Software & Tech Services	0 %	50 %	-	3,0	0 %	50 %	-	2,00
Tech Hardware & Semiconductors	33 %	0 %	1,0	-	67 %	50 %	1,0	1,00
Telecommunications	0 %	0 %	-	-	33 %	50 %	1,0	1,00
Utilities	40 %	0 %	1,0	-	40 %	50 %	1,0	1,00
TOTAL	25 %	16 %	1,9	1,8	36 %	42 %	1,6	1,5

* The one disclosure identified for insurance industry disclosed to conduct materiality assessment in "alternating years".

Even though materiality changes over time, companies may consider that materiality doesn't change significantly on an annual basis, and therefore a 'full' materiality assessment is not needed every time. In this thesis, a full materiality assessment is considered to be one which includes stakeholder and management engagement as well creating a long list of sustainability topics and prioritising them. A first assessment is also considered to be a full assessment. In this thesis the difference between a full assessment and an update is considered to be such that an update may lack a certain phase from the assessment process, which makes it less thorough than a full assessment. A review is understood as a

management assessment, that completely lacks stakeholder engagement phase but includes updates to material topics. Validation and 'no change' categories are considered to be management reviews in which the management has considered that there have not been significant changes to previous material topics. The difference between validation and no change can be difficult to determine, but the terms refer to the terminology used by the sample companies. The categorisation of materiality assessments is prone to subjectivity as different terminology may have been used to mean the same thing between sample companies' reporting (e.g., update versus review). The categorisation exercise has thus been made on a best effort basis.

In 2020, 57% of the sample companies' materiality assessments were considered to be full materiality assessments (55% in 2015), whereas 12% of the companies did not disclose the materiality assessment process in such detail where the type of the assessment could have been determined (19% in 2015) (Table 7 and Table 8). In 2020, most of the materiality assessments that were not full assessments were updates, whereas in 2015 they were reviews. In 2020, 3% of the assessments were considered to have no changes from the previous assessment (no cases in 2015), but in 2015, 5% of the assessments were conducted as validations (no cases in 2020).

There are no big industry differences to be observed regarding the type of the assessments in 2020 (Table 8). The deviation between assessment types within an industry may be explained by an unbalanced sample size (e.g., the two companies in the banking industry in 2020 both have a full assessment giving the industry 100%, whereas in the industrial products industry six companies have conducted a full assessment out of 16 companies in the sample, giving the industry only 32%). However, a couple of industries stand out in the 2020 sample, mainly the banking and financial services industries. The banking industry has 100% of the assessments considered to be full (two companies), whereas in the financial services, the assessments have been evenly divided between updates, reviews, and no disclosures (six companies). Also, the highest rate of no disclosures is observed within the consumer discretionary services industry, but that industry included only two sample companies. Some companies in the health care, industrial products, and oil and gas industries reported that their most recent materiality assessments were their first assessments.

Table 8. Materiality assessment type (2020)

2020	First assessment	Full	Update	Gap analysis	Review	Validation	No changes	No disclosure
Banking	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %
Consumer Discretionary Products	0 %	38 %	0 %	0 %	38 %	0 %	0 %	25 %
Consumer Discretionary Services	0 %	50 %	0 %	0 %	0 %	0 %	0 %	50 %
Consumer Staple Products	0 %	75 %	13 %	0 %	0 %	0 %	0 %	13 %
Financial Services	0 %	0 %	33 %	0 %	33 %	0 %	0 %	33 %
Health Care	11 %	44 %	11 %	11 %	11 %	0 %	0 %	11 %
Industrial Products	5 %	32 %	18 %	0 %	18 %	0 %	0 %	27 %
Industrial Services	0 %	41 %	18 %	0 %	12 %	0 %	6 %	24 %
Insurance	0 %	57 %	29 %	0 %	0 %	0 %	14 %	0 %
Materials	0 %	50 %	7 %	7 %	14 %	0 %	0 %	21 %
Media	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %
National	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %
Oil & Gas	20 %	20 %	20 %	0 %	20 %	0 %	0 %	20 %
Retail & Wholesale - Discretionary	0 %	60 %	40 %	0 %	0 %	0 %	0 %	0 %
Retail & Wholesale - Staples	0 %	50 %	25 %	0 %	25 %	0 %	0 %	0 %
Software & Tech Services	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %
Tech Hardware & Semiconductors	0 %	33 %	33 %	0 %	0 %	0 %	33 %	0 %
Telecommunications	0 %	33 %	67 %	0 %	0 %	0 %	0 %	0 %
Utilities	0 %	60 %	20 %	0 %	20 %	0 %	0 %	0 %
TOTAL	**2 %**	**55 %**	**18 %**	**1 %**	**10 %**	**0 %**	**3 %**	**12 %**

Comparing to 2015, more deviation between industries can be detected (Table 9). For example, the banking, consumer discretionary services, financial services, national, oil & gas, and software and tech services industries all have a 100% of materiality assessments considered to be full assessments, whereas the insurance (two companies) and media (one company) industries have no disclosures. Especially in the consumer staple products industry many of the materiality assessments were disclosed to be first assessments.

Table 9. Materiality assessment type (2015)

2015	First assessment	Full	Update	Gap analysis	Review	Validation	No changes	No disclosure
Banking	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %
Consumer Discretionary Products	0 %	33 %	0 %	0 %	17 %	17 %	0 %	33 %
Consumer Discretionary Services	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %
Consumer Staple Products	40 %	20 %	20 %	0 %	0 %	0 %	0 %	20 %
Financial Services	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %
Health Care	25 %	25 %	0 %	0 %	25 %	25 %	0 %	0 %
Industrial Products	13 %	38 %	13 %	0 %	19 %	0 %	0 %	19 %
Industrial Services	8 %	54 %	0 %	0 %	0 %	0 %	0 %	38 %
Insurance	0 %	0 %	0 %	0 %	0 %	0 %	0 %	100 %
Materials	0 %	50 %	17 %	0 %	17 %	0 %	0 %	17 %
Media	0 %	0 %	0 %	0 %	0 %	0 %	0 %	100 %
National	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %
Oil & Gas	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %
Retail & Wholesale - Discretionary	0 %	33 %	33 %	0 %	33 %	0 %	0 %	0 %
Retail & Wholesale - Staples	0 %	33 %	0 %	0 %	67 %	0 %	0 %	0 %
Software & Tech Services	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %
Tech Hardware & Semiconductors	0 %	0 %	50 %	0 %	0 %	50 %	0 %	0 %
Telecommunications	0 %	50 %	50 %	0 %	0 %	0 %	0 %	0 %
Utilities	0 %	25 %	0 %	0 %	50 %	0 %	0 %	25 %
TOTAL	**4 %**	**51 %**	**10 %**	**0 %**	**12 %**	**5 %**	**0 %**	**19%**

Definition of materiality

In 2020, 93% of the 124 sample companies have given at least a vague definition of how they understand materiality and what it means (98% of the 82 sample companies in 2015). In its simplest forms, the material topics may have been disclosed to mean the key sustainability topics that the company should focus on, although some companies may have given a broader definition related to, for instance, stakeholder engagement, impact, importance, or priorities.

A word count analysis was conducted on the identified materiality definitions. In 2020, the words that were referred to most often (Table 10) were ‘stakeholder’ (80), ‘impact’ (48), ‘topic’ (46), ‘identification’ (41), and ‘relevance’ (31). Especially in the industrial products and services industries, key words such as ‘stakeholder’, ‘report’, and ‘topic’ were often used. The most references to ‘opportunity’ were made in the health care industry, and to ‘strategy’ in the materials and industrial products industries.

Table 10. Key components of materiality definitions (2020)

2020	Stakeholder	Impact	Topic	Identification	Relevance	Importance	Focus	Report	Priority	Strategy	Risk	Influence	Opportunity	Core	Purpose	Future	Key sustainability issue	Critical	House in order	Meaning of responsibility	Added value
Banking	0	1	1	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Consumer Discretionary Products	3	3	2	2	2	3	1	0	0	0	2	1	0	1	0	0	0	0	0	0	0
Consumer Discretionary Services	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Consumer Staple Products	7	2	1	3	0	4	2	1	1	1	0	0	0	0	0	0	0	0	1	0	0
Financial Services	3	3	3	3	1	2	3	0	1	0	2	0	1	0	0	0	0	1	0	0	0
Health Care	7	3	4	2	2	1	2	1	0	0	2	1	3	0	1	1	0	0	0	0	0
Industrial Products	15	7	9	6	7	4	5	10	4	3	2	1	0	1	0	1	1	0	0	0	0
Industrial Services	12	6	6	8	3	1	3	3	4	2	1	1	1	0	0	0	1	0	0	0	0
Insurance	5	4	1	1	2	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0
Materials	8	6	7	7	5	2	5	5	4	4	1	1	2	0	1	1	0	1	0	0	0
Media	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
National	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Oil & Gas	3	2	2	2	2	1	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0
Retail & Wholesale - Discretionary	4	2	2	2	3	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
Retail & Wholesale - Staples	4	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Software & Tech Services	0	1	1	0	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Tech Hardware & Semiconductors	1	0	1	1	0	2	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0
Telecommunications	0	0	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Utilities	5	4	1	1	1	4	2	0	1	1	0	1	0	0	0	0	0	0	0	0	0
TOTAL	**80**	**48**	**46**	**41**	**31**	**28**	**28**	**24**	**20**	**16**	**12**	**8**	**8**	**4**	**3**	**3**	**3**	**2**	**1**	**0**	**0**

In 2015, ‘stakeholder’ (57) was also the most referenced key word (Table 11), whereas next in line were ‘identification’ (28), ‘report’ (25), ‘importance’ (23), and ‘impact’ (22). In 2015, less references were made to ‘opportunity’ than in 2020 (one in 2015 and eight in 2021). Also, in 2015 especially in the consumer staple products, industrial products and services, and materials industry the key word ‘report’ has been widely referenced, whereas in 2020 it has been referenced mainly by the industrial products and materials industries.

Table 11. Key components of materiality definitions (2015)

2015	Stakeholder	Impact	Topic	Identification	Relevance	Importance	Focus	Report	Priority	Strategy	Risk	Influence	Opportunity	Core	Purpose	Future	Key sustainability issue	Critical	House in order	Meaning of responsibility	Added value
Banking	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Consumer Discretionary Products	4	1	1	2	1	1	0	1	2	0	0	0	0	0	0	1	0	0	0	0	0
Consumer Discretionary Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Consumer Staple Products	2	0	0	1	0	2	1	4	1	1	0	0	0	0	0	0	0	0	0	0	0
Financial Services	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Health Care	3	0	0	1	1	3	0	2	1	2	0	0	0	0	0	1	0	0	0	0	0
Industrial Products	14	4	5	9	2	7	2	6	3	2	1	1	1	1	0	0	1	0	0	0	0
Industrial Services	10	3	2	5	1	3	3	7	1	0	0	0	0	0	0	0	1	1	0	0	0
Insurance	2	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials	10	5	4	1	4	1	0	3	2	3	0	2	0	0	1	0	0	0	0	0	0
Media	1	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
National	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oil & Gas	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail & Wholesale - Discretionary	2	1	1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Retail & Wholesale - Staples	2	0	0	2	2	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Software & Tech Services	1	2	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Tech Hardware & Semiconductors	1	1	1	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Telecommunications	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Utilities	2	3	0	1	1	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**57**	**22**	**14**	**28**	**15**	**23**	**11**	**25**	**15**	**9**	**1**	**4**	**1**	**1**	**2**	**2**	**2**	**1**	**0**	**1**	**1**

External resources

The share of companies in 2020 that disclose to have conducted a materiality assessment together with an external consultant is low. Only 13% (16 out of 124) of the companies have disclosed the information and only 25% of them have disclosed the name of the external consultant. The average MA Index of the 16 companies is high (4,68), indicating that these companies are transparent about their materiality assessment process on other aspects too. Most often the companies disclosing having conducted the assessment together with an external consultant represent the materials (5), health care (4) and consumer staple products industries (3) (see Table 12).

Table 12. Level of disclosure of use of external consultant in 2020 and in 2015

Industry	Disclosure of use of an external consultant			
	2020		2015	
Health Care	4	44 %	2	50 %
Consumer Staple Products	3	38 %		
Materials	5	36 %	2	17 %
Industrial Products	1	5 %	3	19 %
Industrial Services	1	6 %	1	8 %
Oil & Gas	1	20 %		
Retail & Wholesale - Staples	1	25 %		
Total	**16**	13 %	**8**	10 %

The share of companies that disclose to have conducted a materiality assessment together with an external consultant in 2015 is even lower than in 2020. Only 10% (8 out of 82) of the companies have disclosed the information and only one of them has disclosed the name of the external consultant (13%). The average MA Index of the 8 companies is not as high as compared to the 16 companies in 2020, but is still relatively high (4,25), indicating that these companies are transparent about their materiality assessment process on other aspects too. Material and health care industries are represented both in 2020 and in 2015, but the number of companies in the industrial products industry disclosing to have used an external consultant has decreased from 2015 to 2020.

Stakeholder identification and engagement

The share of companies in 2020 that disclose how they have identified their stakeholders is low (26%), as shown in Table 13, and only in the telecommunications and utilities industries the share has been above 50%. In 2015, the share has been moderately higher (33%), and there have been three industries, in which the share has been 100%, namely the telecommunications, retail and wholesale (discretionary), and software and tech services industries.

Table 13. Level of disclosure of stakeholder identification method

Industry	Number of companies disclosing stakeholder identification method and the share within industry			
	2020		2015	
Telecommunications	2	67 %	2	100 %
Utilities	3	60 %	1	25 %
Financial Services	3	50 %	1	50 %
Banking	1	50 %	0	0 %
Consumer Discretionary Products	3	38 %	3	50 %
Industrial Products	8	36 %	6	38 %
Industrial Services	6	35 %	3	23 %
Consumer Staple Products	2	25 %	0	0 %
Retail & Wholesale - Discretionary	1	20 %	3	100 %
Materials	2	14 %	3	25 %
Health Care	1	11 %	2	50 %
Software & Tech Services	0	0 %	2	100 %
Retail & Wholesale - Staples	0	0 %	1	33 %
Total	**32**	**26 %**	**27**	**33 %**

In 2020, 66% of the companies have disclosed how they have engaged with stakeholders (73% in 2015), as shown in Table 14. Companies especially in the utilities, software and tech services, media and banking industries have provided information about the engagement method (see different methods in Table 15).

Table 14. Level of disclosure of stakeholder engagement method

Industry	Number of companies disclosing stakeholder engagement method and the share within industry			
	2020		2015	
Utilities	5	100 %	4	100 %
Software & Tech Services	2	100 %	2	100 %
Media	1	100 %	1	100 %
National	1	100 %	1	100 %
Retail & Wholesale - Discretionary	5	100 %	2	67 %
Tech Hardware & Semiconductors	3	100 %	1	50 %
Telecommunications	3	100 %	1	50 %
Banking	2	100 %	2	100 %

Materials	11	79 %	9	75 %
Health Care	7	78 %	4	100 %
Industrial Services	11	65 %	8	62 %
Consumer Staple Products	5	63 %	4	80 %
Insurance	4	57 %	1	50 %
Consumer Discretionary Products	4	50 %	6	100 %
Industrial Products	11	50 %	10	63 %
Financial Services	3	50 %	1	50 %
Retail & Wholesale - Staples	2	50 %	1	33 %
Oil & Gas	2	40 %	1	100 %
Consumer Discretionary Services	0	0 %	1	100 %
Total	**82**	**66 %**	**60**	**73 %**

The used stakeholder engagement methods have not varied much between 2015 and 2020 (Table 15). Surveys, interviews, and workshops are the most used engagement methods in both years. The engagement methods have not been analysed in terms of industry differences, as differences are not expected based on the literature review.

Table 15. Share of companies disclosing stakeholder engagement method

Used stakeholder engagement methods	2020	2015
Survey	51 %	55 %
Interview	37 %	34 %
Workshop	19 %	27 %
Dialogues and discussion (incl. meetings)	10 %	16 %
Peer analysis	7 %	9 %
Research	6 %	2 %
Megatrend analysis	3 %	4 %
Benchmark analysis	3 %	1 %
Ratings	2 %	0 %
Feedback	2 %	2 %

Although many companies have disclosed which stakeholder engagement methods they use, not all of them disclose, for instance, the number of conducted interviews or people participating in surveys (Table 16).

Table 16. The level of detail in which stakeholder engagement is described

Engagement method	Disclosed to conduct		Disclosed the number or response rate		Average number	
	2020	**2015**	**2020**	**2015**	**2020**	**2015**
Survey	51 %	55 %	37 %	38 %	1487	713
Interview	37 %	34 %	28 %	11 %	30	14
Workshop	19 %	27 %	48 %	36 %	2	2

In 2020, 51% of the companies had disclosed to conduct surveys to conduct materiality assessments (55% in 2015), but only 37% of those companies disclosed the number of participants (38% in 2015). The average number of participants in 2020 was over double compared to 2015, standing at nearly 1500 people (see Table 16).

Regarding interviews, 37% of the companies reported to conduct them as a part of their materiality assessment (34% in 2015), while 28% of those companies reported the average number of interviews (11% in 2015). On average, in 2020 companies interviewed 30 people, while in 2015 the number of people interviewed was less than a half of that, 14 people.

Third most popular stakeholder engagement method is to conduct workshops (this may be for either external or internal stakeholders and is not specified further in this thesis). In 2020, 19% of the companies reported to organise workshops as part of their assessment process (27% in 2015), and nearly a half of those companies report how many workshops they organised (36% in 2015). The average number of workshops stood at 2 both in 2020 and in 2015. The majority of companies disclose which stakeholder groups they engage with to determine their material topics (Table 17). Companies especially in the tech hardware and semiconductors, software and tech services, and media industries have been transparent in their disclosures both in 2020 and in 2015. Companies in the consumer discretionary services industry have not been as transparent as none of the industry's sample companies have disclosed the stakeholders they have engaged. There has not been a significant change between 2015 and 2020 disclosures, and some of the changes may be affected by different sample sizes in different years. Industries where the level of disclosure has significantly improved are, for instance, national, health care, financial services, telecommunications, and consumer staple products industries.

Table 17. Number of companies disclosing engaged stakeholder groups and their share within industry

Industry	Number of companies disclosing engaged stakeholder groups and the share within industry			
	2020		2015	
Tech Hardware & Semiconductors	3	100 %	2	100 %
Software & Tech Services	2	100 %	2	100 %
Media	1	100 %	1	100 %
National	1	100 %	0	0 %
Health Care	8	89 %	2	50 %
Financial Services	4	67 %	1	50 %
Telecommunications	2	67 %	0	0 %
Consumer Staple Products	5	63 %	2	40 %
Oil & Gas	3	60 %	1	100 %
Materials	8	57 %	7	58 %
Insurance	4	57 %	1	50 %
Industrial Products	12	55 %	11	69 %
Industrial Services	9	53 %	7	54 %
Consumer Discretionary Products	4	50 %	4	67 %
Banking	1	50 %	1	50 %
Retail & Wholesale - Discretionary	2	40 %	3	100 %
Utilities	2	40 %	2	50 %
Retail & Wholesale - Staples	1	25 %	2	67 %
Consumer Discretionary Services	0	0 %	0	0 %
Total	**72**	**58 %**	**49**	**60 %**

The engaged stakeholder groups have not varied much between 2015 and 2020 (Table 18). Customers and clients, employees, investors, and suppliers are the most engaged stakeholder groups in both years. The engaged stakeholder groups have not been analysed in terms of industry differences, as differences are not expected based on the literature review.

Table 18. Share of companies that have disclosed which stakeholder groups have been engaged

Stakeholder group	2020	2015
Customer / Clients	72 %	71 %
Employees	69 %	63 %
Investors	51 %	49 %
Suppliers	42 %	51 %

Governments (incl. decision-makers)	24 %	20 %
NGOs	22 %	14 %
Shareholders	19 %	16 %
Media / Press	17 %	20 %
Communities	13 %	12 %
Others (analysts, environment)	10 %	12 %
Financial Institutions	10 %	8 %
Management (senior and non-senior)	10 %	6 %
Business Partners	8 %	4 %
Neighbours	7 %	16 %
Competitors and peers	7 %	8 %
Public Agencies / Organisations	7 %	6 %
Regulators	7 %	6 %
Academic Institutions	7 %	4 %
Contractors	4 %	2 %
Civil Society	3 %	4 %
Tenants / residents	1 %	4 %
Trade Unions	1 %	2 %
Retailers	0 %	4 %
International / Regional organisations	0 %	2 %

Double materiality

In the data collection phase, in addition to companies that clearly stated to have applied the concept, also companies that implied to look at both impact materiality and financial materiality (or ability to create value) were considered to apply the concept. Based on this analysis, it was found out that double materiality has not yet been widely applied, as only 10% of companies disclose to have applied it, representing industries, such as, banking, consumer discretionary products, consumer staple products, health care, industrial products, materials, telecommunications, and utilities industries (Table 19). None of the industries had more than 50% of companies to apply the concept.

Table 19. Number and share of companies that apply the double materiality concept in 2020

Industry	Number of companies	Share of companies
Banking	1	50 %
Consumer Discretionary Products	2	25 %
Consumer Discretionary Services	0	0 %
Consumer Staple Products	1	13 %
Financial Services	0	0 %
Health Care	2	22 %
Industrial Products	3	14 %
Industrial Services	0	0 %
Insurance	0	0 %
Materials	2	14 %
Media	0	0 %
National	0	0 %
Oil & Gas	0	0 %
Retail & Wholesale - Discretionary	0	0 %
Retail & Wholesale - Staples	0	0 %
Software & Tech Services	0	0 %
Tech Hardware & Semiconductors	0	0 %
Telecommunications	1	33 %
Utilities	1	20 %
TOTAL	**13**	**10 %**

Because the double materiality concept was formally proposed in 2019, it was not specifically analysed whether companies had adopted it already in 2015. However, during the data collection process, it was noticed that some companies already approached materiality from the perspective of the company's ability to create value in addition to the impact materiality perspective.

4.2.2 Linkage to ESG score

In order to answer to RQ2.3 and to test whether there is a linkage between materiality assessment processes (independent variables = disclosures) and their ESG scores (dependent variable), a regression analysis was conducted. Used materiality assessment processes are

tested as the explanatory variables trying to predict the ESG score that is the dependent variable, and the results of the regression analysis are presented in Table 20. The Multiple R of 0,616 indicates a positive (but not perfect) relationship between the variables and the R Square indicates that 29,6% of the ESG scores can be explained with the disclosures, suggesting that perhaps other variables may better predict the ESG score. The standard error of 12,6 is also rather high.

The residual sum of squares (SS) is only about a third smaller than the total sum of squares, indicating that the model does not fit the data that well. The significance F value is 0,00005 which is less than 0,05, meaning that the results are statistically significant.

Table 20. Process disclosures' linkage to ESG total score regression analysis results

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,616498
R Square	0,38007
Adjusted R Square	0,296296
Standard Error	12,59697
Observations	85

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	10	7199,222	719,922	4,537	0,00005
Residual	74	11742,590	158,684		
Total	84	18941,812			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	60,012	7,362	8,152	0,000	45,343	74,680
Update frequency	5,202	3,061	1,700	0,093	-0,896	11,301
Time since previous update	8,132	3,308	2,458	0,016	1,540	14,723
Definition	-7,822	6,127	-1,277	0,206	-20,030	4,386
External	3,348	3,893	0,860	0,393	-4,409	11,106
SH identification	-4,604	3,296	-1,397	0,167	-11,171	1,964

SH engagement method	-2,325	3,499	-0,665	0,508	-9,296	4,646
Number of engagements	2,136	3,462	0,617	0,539	-4,762	9,034
SH groups	6,396	3,272	1,955	0,054	-0,123	12,915
Use of reporting standards	8,308	4,780	1,738	0,086	-1,215	17,832
Double materiality	14,410	4,424	3,258	0,002	5,596	23,224

Unfortunately, only disclosures about time since previous update and double materiality have individual p-values less than 0,05 (they are statistically significant), meaning that the other disclosures are not statistically significant.

4.3 Material topics

While GRI and SASB have pioneered in developing sector-specific guidelines and standards on determining material topics, there is not an official standard for how many material topics a company should select. It is of interest to find out which topics are material to specific industries and whether they reflect the international reporting standards, and whether some topics are material to many companies regardless of their industry, and which topics have generally become more material over time.

4.3.1 Comparison to industries and differences over time

The sample companies had identified on average 13 topics as material in 2020 and 16 topics in 2015, indicating a slight decline in general. However, there are industries in which the average number of material topics increased from 2015 to 2020, for example, consumer discretionary services, financial services, health care, media, national, software & tech services and utilities industries (Table 21). In 2020 the range was from 3 to 27 material topics and in 2015 from 5 to 36 material topics across companies regardless of industry.

Table 21. The average number of material topics identified by companies within industries

Industry	2020	2015
Banking	10	17
Consumer Discretionary Products	12	16
Consumer Discretionary Services	23	9
Consumer Staple Products	11	16
Financial Services	8	7
Health Care	17	13
Industrial Products	14	15
Industrial Services	12	13
Insurance	9	14
Materials	14	23
Media	20	6
National	19	15
Oil & Gas	14	25
Retail & Wholesale - Discretionary	19	28
Retail & Wholesale - Staples	15	19
Software & Tech Services	17	15
Tech Hardware & Semiconductors	16	18
Telecommunications	6	11
Utilities	12	10
TOTAL	**13**	**16**

All material topics listed in the assessed materiality assessments were collected. Information was also collected on whether they did not prioritise their material topics or whether they did prioritise them (for example in the form of a materiality matrix). From this data, it was analysed which topics are considered material by many companies regardless of their industry, which topics are considered material only by specific industries, and which material topics have been identified as the most material by companies in each industry.

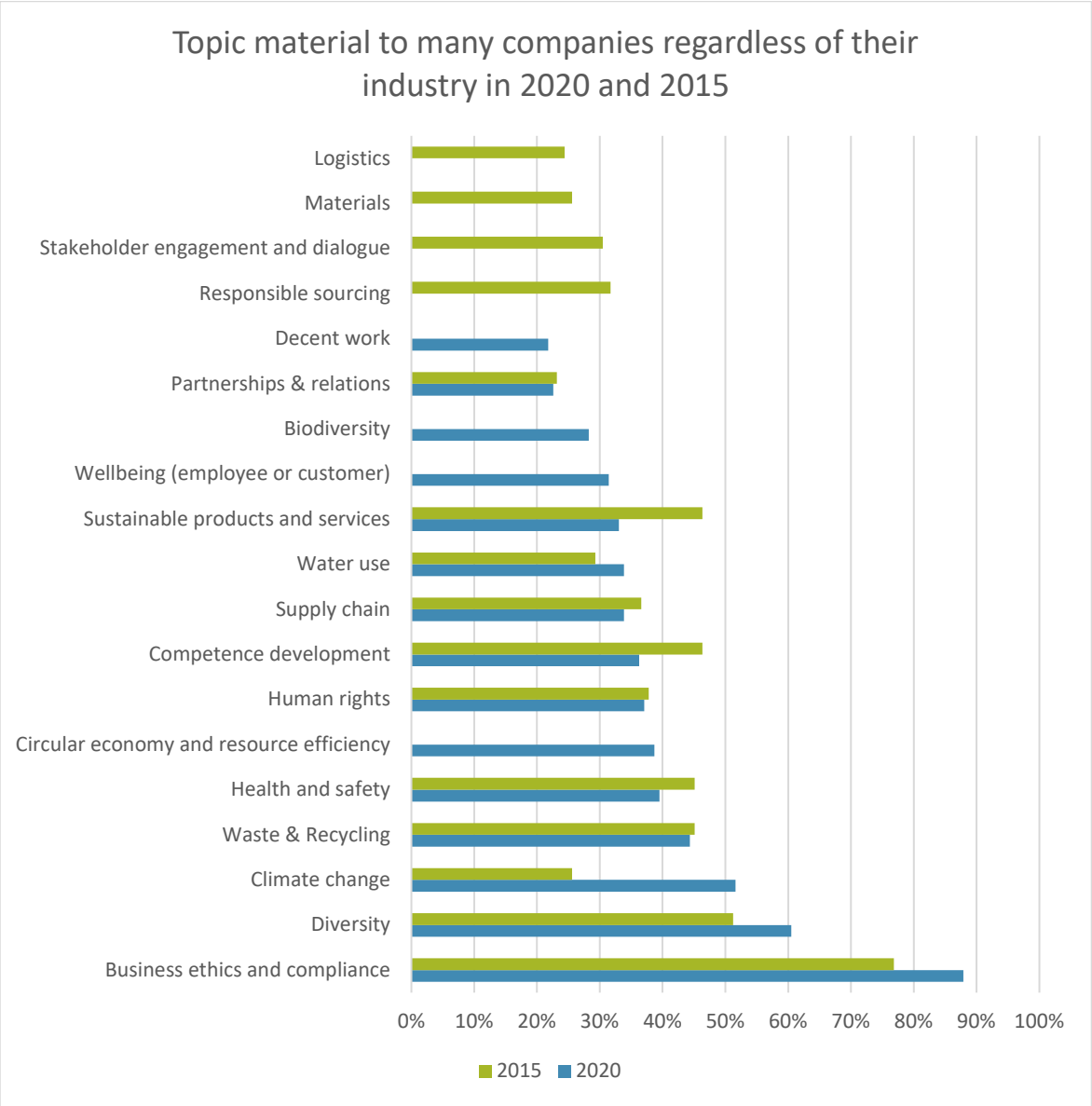
Material topics regardless of prioritisation

The material topics reported in companies' materiality assessments were screened and listed, considering synonyms also. For example, under climate would fall topics such as climate, carbon handprint and carbon neutral, whereas under business ethics and compliance would fall topics such as ethics, values, and anti-corruption. As thorough a list of topics as possible was made based on found topics, thus inductive coding was used to analyse qualitative data.

Identified material topics were analysed based on their frequency within industries by counting how many times a specific topic was mentioned in the lists of companies' (within a specific industry) material topics, divided by the number of companies in that industry. It was noted during the data analysis phase, that there is a high risk for double counting or missing certain topics, which is why the findings are not absolute, but indicative by nature.

It can be noticed that some topics are common for companies regardless of their industry (see Figure 20 where the percentage indicates the share of companies that have identified the topic as material). Business ethics and compliance, as well as diversity have been the most common material topics both in 2020 and in 2015, and their shares have even increased in 2020. What is notable is that climate change was the third most common material topic in 2020, but in 2015 it was only the 12th on the list. Also, wellbeing (both employees' and customers') had become more common material topic, as it was the 12th most common topic in 2020 with 31% of companies disclosing it as material, but in 2015 only around 16% of the companies did the same. Also, biodiversity and decent work had increased from 2015 to 2020. On the other hand, responsible sourcing was more common in 2015 (32%) than in 2020 (22%), as were also stakeholder engagement, materials, and logistics.

Figure 20. Topics material to many companies regardless of their industry, 2020 and 2015



However, as suspected, some topics are considered material only to specific industries (see Appendix I). Material topics that were considered material only by a few industries both in 2020 and in 2015 were for example:

- availability (health care);
- brand (consumer discretionary services, consumer staple products);
- certificated operations or products (consumer discretionary services, consumer staple products, industrial services);

- donations and other humanitarian efforts (insurance);
- financial literacy (banking, financial services);
- indirect economic impacts (consumer discretionary products, materials, oil & gas);
- just transition (industrial products);
- leadership (health care, industrial products, utilities);
- noise and odour (industrial products, industrial services);
- peace, justice, and strong institutions (banking);
- public policy (industrial products, materials, oil & gas);
- reputation (industrial services),
- responsible acquisitions (industrial products);
- rights of indigenous people (materials, retail & wholesale – discretionary);
- security of supply (oil & gas, utilities);
- solvency (insurance); and
- work ability (health care, industrial services, insurance).

There are not dramatic differences between 2020 and 2015 industry specific topics, but topics such as accessibility; clean or renewable energy, circular economy and resource efficiency, culture, GHG emissions, packaging, and wellbeing were more common for multiple industries in 2020 than in 2015. On the other hand, topics such as customer rights and satisfaction, and remuneration, were less common for multiple industries in 2020 than in 2015.

Companies that prioritise their material topics

Using the same list of topics, a separate analysis was conducted for sample of companies that prioritise their material topics. In 2020 the average number of material topics presented in a materiality matrix was 11 topics, whereas in 2015 the average was 12 topics, indicating

that companies prioritising their materiality topics would select a slightly smaller number of material topics. The same codes as in the previous assessment were applied to identify which topics the companies in each industry found the most material. The results have been combined in Table 22.

Table 22. Material topics that have been identified as most material by companies in each industry

Industry	2020	2015
Consumer Discretionary Products	GHG emissions; Materials; Stewardship	Business ethics and compliance; Customer rights and satisfaction; Materials
Consumer Discretionary Services	Creating jobs; Profit/growth/returns; Tax	-
Consumer Staple Products	Biodiversity; Diversity; Human rights; Industry, innovation, and infrastructure; Responsible sourcing	-
Financial Services	Competence development; Corporate governance; Transparency; Wellbeing	-
Health Care	Accessibility; Quality; Safety	Health and safety
Industrial Products	Accessibility; Business ethics and compliance; Health & safety, Human rights; Industry, innovation, and infrastructure; Regulation; Sustainable products and services	Accessibility; Business ethics and compliance; Customer rights and satisfaction; Human rights; Partnerships; Regulation; Safety; Water
Industrial Services	Business ethics and compliance; Circular economy and resource efficiency; Profit / growth / returns; Quality; Sustainable products and services	Information security and cybersecurity; Profit / growth / returns; Quality; Safety
Insurance	Accessibility; Economic performance	Solvency
Materials	Climate change; Health and safety	Industry, innovation, and infrastructure; Safety
Media	Transparency	-
National	-	Assessment of ESG risks
Oil & Gas	Climate change; Quality	Investors / Shareholders

Retail & Wholesale - Discretionary	Economic performance; Sustainable products and services	Climate change; Profit / growth / returns
Retail & Wholesale - Staples	Climate change; Pollution; Sustainable products and services	Climate change; Economic performance
Software & Tech Services	Human rights; Reliability	Business ethics and compliance; Information security
Tech Hardware & Semiconductors	Information security and cybersecurity; Connecting people and things	Accessibility; Business ethics and compliance
Utilities	Accessibility; Climate change	-

Although this table only shows the most important material topics (ranked as number one in the materiality matrix, comparing the most material topics between 2015 and 2020, it can be seen that even if the material topics may not change that much in one year, their relative importance may (Ruiz-Lozano et al. 2021).

Comparing the lists between 2020 and 2015, topics such as 'accessibility', 'circular economy and resource efficiency', 'climate change', 'GHG emissions', 'human rights', 'pollution', 'quality', 'reliability', and 'sustainable products and services' were more often added as the new most material topics in 2020 rather than removed. On the other hand, topics such as 'business compliance and ethics', 'customer satisfaction', 'investors/shareholders', 'partnerships', 'safety', 'solvency', and 'water' were more often removed as the most material topics than added in 2020.

4.3.2 Linkage to ESG score

In order to answer to RQ2.3 and to test whether there is a linkage between identified material topics (independent variables = material topics) and their ESG scores (dependent variable), three regression analyses were conducted.

First, the number of material topics was used as the explanatory variable trying to predict the ESG score that is the dependent variable, and the results of the regression analysis are presented in Table 23. The Multiple R is 0,291 which indicates a weak positive relationship between the variables. The R Square is 0,085 meaning that 8,5% of the ESG scores can be

explained with the disclosures, suggesting that this indicator does not predict the ESG score very well. The standard error of 15,2 is again rather high.

The analysis of variance also indicates that the model does not fit the data very well. The significance F value and the P-value for the independent variable is 0,038 which is less than 0,05, meaning that the results are statistically significant.

Table 23. Number of identified material topics' linkage to ESG total score regression analysis results

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,290762
R Square	0,084542
Adjusted R Square	0,065859
Standard Error	15,17862
Observations	51

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1042,54851	1042,549	4,525135	0,038459
Residual	49	11289,13776	230,3906		
Total	50	12331,68627			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	58,71979	4,819658451	12,18339	1,93E-16	49,03432	68,40526
Number of MT	0,829136	0,38977119	2,127237	0,038459	0,045861	1,61241

With the coefficients a linear regression equation (y = bx + a) can be built, which is y = 0,829x + 58,720. This predicts that with three identified material topics (the minimum number of material topics in the sample) a company would get an ESG score of approximately 61, whereas with 23 identified material topics a company would get an ESG score of approximately 78.

Second, whether a company prioritises its material topics (e.g., in the form of a materiality matrix) was used as the explanatory variable trying to predict the ESG score that is the dependent variable, and the results of the regression analysis are presented in Table 24. The

Multiple R is 0,084 which indicates neutral relationship between the variables. The R Square is 0,007 meaning that 0,7% of the ESG scores can be explained with the disclosures, suggesting that this indicator does not predict the ESG score at all. The standard error of 14,4 is again rather high considering that the ESG score range is 0-100.

The analysis of variance also indicates that the model does not fit the data very well. The significance F value and the P-value for the independent variable is 0,450 which is a lot less than 0,05, meaning that the results are statistically insignificant.

Table 24. Material topic prioritisation's linkage to ESG total score regression analysis results

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,084084882
R Square	0,007070267
Adjusted R Square	-0,005188124
Standard Error	14,41029374
Observations	83

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	119,769989	119,77	0,57677	0,44978595
Residual	81	16820,18182	207,6566		
Total	82	16939,95181			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	68	2,037923284	33,3673	4,27E-49	63,9451719	72,05483
Prioritise	2,454545455	3,23198925	0,759453	0,449786	-3,9760994	8,88519

Had the results been significant, with the coefficients a linear regression equation ($y = bx + a$) could have been built, which would have been $y = 2{,}454x + 68$. This would have predicted that with companies that prioritise their identified material topics would get an ESG score of approximately 70, whereas companies that do not prioritise their identified material topics

would get an ESG score of approximately 68. As we can see, there is not much difference between the two options.

Third, whether companies have selected the 10 most common material topics across industries as their own material topics were used as the explanatory variables trying to predict the ESG score that is the dependent variable, and the results of the regression analysis are presented in Table 25. The Multiple R is 0,515 which indicates a positive (but not perfect) relationship between the variables. The R Square predicts that 26,6% of the ESG scores can be explained with the disclosures, suggesting that this indicator does not fully predict the ESG score. The standard error measures the average distance that the data points fall from the regression line and a standard error of 14,0 is again rather high.

The analysis of variance also indicates that the model does not fit the data very well. The significance F value is 0,008 which is less than 0,05, meaning that the results are statistically significant. However, only water use has a P-value less than 0,05.

Table 25. Selected material topics' linkage to ESG total score regression analysis results

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,515339
R Square	0,265574
Adjusted R Square	0,166327
Standard Error	13,71099
Observations	85

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	10	5030,452	503,0452	2,675896	0,007525
Residual	74	13911,36	187,9913		
Total	84	18941,81			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	59,47416	4,07347	14,60037	1,73E-23	51,3576	67,59073
BE and compliance	0,674101	4,492512	0,15005	0,881134	-8,27743	9,625627
Diversity	4,238293	3,744024	1,132015	0,261283	-3,22184	11,69842
Climate change	-2,75452	3,36256	-0,81917	0,415317	-9,45457	3,945523

Waste & Recycling	2,262238	3,692543	0,61265	0,541986	-5,09532	9,619791
Health and safety	3,105133	3,584727	0,866212	0,389174	-4,03759	10,24786
CE and resource efficiency	4,446488	3,619766	1,228391	0,223193	-2,76605	11,65903
Human rights	3,612255	3,521947	1,025642	0,308402	-3,40538	10,62989
Competence dev.	1,176505	3,210966	0,366402	0,715111	-5,22149	7,574495
Supply chain	-5,56125	3,456327	-1,60901	0,111873	-12,4481	1,325634
Water use	8,355326	3,934748	2,123472	0,037058	0,51517	16,19548

Had the results been significant, with the coefficients a linear regression equation ($y = bx_1 + cx_2 + dx_3 + ex_4 + fx_5 + gx_6 + hx_7 + ix_8 + jx_9 + kx_{10} + a$) could have been built, which would have been $y = 0{,}674x_1 + 4{,}238x_2 – 2{,}755x_3 + 2{,}262x_4 + 3{,}1050x_5 + 4{,}446x_6 + 3{,}612x_7 + 1{,}176x_8 – 5{,}561x_9 + 8{,}355x_{10} + 59{,}474$. This would have predicted that companies that have selected the 10 most common material topics across industries as their own material topics would get an ESG score of approximately 79, whereas companies that had not identified any of those material topics as their own would get an ESG score of approximately 59. Noticeable is that topics such as climate change and supply chain have a negative impact, and topics that have a higher impact are diversity, circular economy, supply chain, and water.

Out of the three regression analyses, only the analysis regarding the number of identified material topics' linkage to ESG total score was statistically significant. This analysis predicted that a higher number of identified material topics could to a small extent result in a higher ESG score. The analysis regarding selected material topics' linkage to ESG total score was statistically significant only for water as a material topic. The results are discussed more in the next chapter.

5. Discussion

The results and how they reflect previous literature will be discussed in this section. The collected data is vast and includes a significant amount of qualitative data transformed to be analysed quantitatively. The collected data set is quite unique both in scope and in detail and it provides an opportunity to look at the level of disclosure of materiality assessments, used assessment processes, and determined material topics across industries and over time in the Nordic context, despite of its limitations.

5.1 Level of disclosure

As the original number of companies within the scope of this thesis was 200 including the 100 largest companies in Finland and the 100 largest companies in Sweden, it was expected that not all of the 200 companies would report about their sustainability performance, let alone their materiality assessment processes. It was also expected that the number of companies reporting about their sustainability performance and materiality assessments would be higher in 2020 than in 2015. Both of these expectations were met. The previous studies indicated that despite of reporting guidelines and standards, for some reason, organisations tend to disclose only a small amount of information about their materiality assessment processes, and the findings of this thesis support the previous studies, although there are some companies that are very transparent.

There is not a dramatic change in the share of Finnish companies having conducted a materiality assessment, but the share of Swedish companies has increased significantly. This increase may partly be explained by the Swedish Government's legislation on sustainability reporting resulting of the EU Non-Financial Reporting Directive (NFRD), which came into effect in all EU member states in 2018. The NFRD requires large companies that either have a balance sheet total that exceeds 20 million euros or a turnover that exceeds 40 million euros, and companies with more than 500 employees to include non-financial statements as

an integral part of their annual public reporting. Companies in the list of 100 largest companies in Sweden all have a turnover of more than 1 billion euros.

MA Index

In the analysis, the level of disclosure was assessed using a Materiality Assessment (MA) Index score. Despite of following a scoring criterion, there may still be some level of subjectivity involved or in some cases the criterion may have been too strict. For example, in the materiality assessment index, a company would automatically receive a score of 4, if it only discloses a materiality matrix, but does not disclose any other information. An underlying assumption is that conducting a materiality matrix according to GRI Standards is a comprehensive exercise and it already requires stakeholder engagement, which justifies the given score. However, it does not necessarily fully reflect the level of disclosure.

Farooq et al. (2021) examined the disclosure practices of listed companies based in the member states of the GCC area and found that while reporters provided more information on their materiality assessments in 2017 compared to 2013, the number of sustainability reports informing how the material issues have been identified had declined. The results of this thesis partly align, as it was found that companies provided more information on their materiality assessments in 2020 compared to 2015, but also the number of sustainability reports had increased. However, it was noted that the level of disclosure and materiality assessment quality did not systematically improve from the 2015 reports to 2020 reports, as could have been expected, referring to an increase in the overall sustainability reporting. Some companies had, for example, excellent level of disclosure of the materiality assessment process in 2015 (MA index score of 6) but the same companies had decreased the level in 2020. Sometimes it could be seen that lower level of disclosure could be a result of the materiality assessment not been conducted during the reporting year, and it had potentially been reported with more details in the previous year. This could refer to the existence of managerial capture, as discussed by Farooq et al. (2021), but it was not analysed further in this thesis, although it could be of potential interest in future studies.

Jones et al. (2016) studied the top 10 UK retail companies and their 2015 sustainability reports and found that only six of the UK's top 10 retailers drew attention to materiality, and that only some of them made any reference to how they had determined the material issues.

Looking at the Nordic perspective, regardless of industry, in 2015 only five out of ten companies reported on materiality (76 % of companies that reported on sustainability and of materiality), but in 2020 it had increased to seven out of ten companies. Looking at the retail industry, in Bloomberg's industry categorisation retail companies fall under consumer discretionary products industry, in which companies received MA Index scores between 3 and 6 in 2015, and between 2 and 4 in 2020, indicating that the level of disclosures in the industry in the Nordics has been on a very good level in 2015, but has declined in 2020, although all of the companies still address materiality in their sustainability reporting. Looking at the data the decline results from two changes: first, a company that did not report on sustainability in 2015 had started to do so before 2020, and second, a company that had disclosed a lot of information in their 2015 report (MA Index score of 6) had disclosed less information in their 2020 report (MA Index score of 3). Even though it is intuitively understandable that companies in the beginning of their sustainability reporting journey may disclose less information, it is also evident that the level of disclosure may not always increase linearly.

In the Nordics, the share of companies reporting on sustainability as well as the share of companies having conducted a materiality assessment have increased from 2015 to 2020 and is on a rather high level (84% and 89% respectively in 2020). Looking at the MA Index distribution regardless of industry, there have not been dramatic changes in the shares of MA Index scores between 3 and 6 comparing 2015 and 2020 assessments, but changes have occurred between the scores of 1 and 2, indicating that the share of companies conducting (or disclosing to have conducted) materiality assessments has increased, but the level of information disclosed in general has not, despite of increased regulation. Therefore, the effect of institutional isomorphism is perhaps better observed when looking at the share of companies conducting materiality assessments rather than in the level of disclosed information about the assessment processes, especially as it has been found that the level of disclosure does not necessarily improve over time.

Looking at KPMG's results from 2013 (KPMG 2013), in which nearly 80% of the 250 largest companies globally (that reported on their CSR performance) discussed the identification of material CSR issues, but over 40% of these companies didn't disclose information about the materiality assessment process itself, it can be seen that at least in the Nordics, the share of companies conducting materiality assessments has increased (from

76% to 89%), and the share of companies receiving an MA Index score of 1 or 2 (disclosing no or limited information) has decreased from 35% to 30% between 2015 and 2020, indicating progress towards meeting international reporting standards' expectations.

ESG scores

Because it was not possible to retrieve historical ESG scores, only 2020 materiality assessments were analysed in terms of linkage to ESG score. The data coverage is relatively low for the sample in this thesis (54% in total) however, Swedish companies seem to have a better data coverage (60%) than Finnish companies (46%). Refinitiv reviews constituents of specific indices on a quarterly basis and the coverage evolves over time, meaning that potentially the coverage may be better if conducting a similar study in the future.

The Refinitiv ESG company score includes a total ESG score (out of 100), as well as sub-scores for environment (E), social (S) and governance (G), under which there are 3-4 more sub-scores for each. For this thesis, only total score was used. For future studies, it would be interesting to see if there would be a difference in the results had only governance sub-scores or CSR Strategy sub-sub-score been analysed instead of the total score.

A similar study, in which materiality assessments and ESG scores would have been analysed, was not found during the literature review process. In that sense the results are of unique value. Especially the results that indicate that there is a weak positive relationship between the MA Index score and the ESG score, suggesting that a higher level of disclosure of the materiality assessment process and its results may partly explain a higher ESG score. These results are also statistically significant. Interestingly, it was found that it is possible to receive high ESG scores (> 75) as long as the MA Index value is 2 or above, but for example companies with higher MA Index values (5-6) there is not as drastic deviation between received ESG scores.

5.2 Materiality assessment process

Studies have demanded more consensus to conducting materiality assessments (e.g., Ruiz-Lozano et al. 2021), and the new GRI Standards 2021 published in October 2021 provide

more guidance for organizations on how to determine material topics (GRI 3: Material Topics 2021). Unfortunately, these have not been available for our sample assessments, but potentially reporting about materiality assessment processes will develop after the new GRI Standards become effective (for reports or other materials published on or after 1 January 2023).

Update frequency and update type

Just like there was variation within the level of disclosure, the way the sample companies report on their materiality assessment processes varies as well. Material issues should be subject to regular review, as materiality changes over time (Christense et al 2018, Puroila and Mäkelä 2019, Beske et al 2020), but based on the sample companies' disclosures it is suspected that they may consider that materiality doesn't change significantly on an annual basis, and therefore a 'full' materiality assessment is not needed every year. Companies are not always very transparent either about whether their assessment has been a full or a light version. The categorisation of materiality assessments in this thesis is prone to subjectivity as different terminology may have been used to mean the same thing between sample companies' reporting (e.g., update versus review). The categorisation exercise has thus been made on a best effort basis. It was also noted on several 2015 to 2020 comparisons that some companies tend to use the same templates in their sustainability reports, which could either suggest that no review has been done in between the years at all - or then there really hasn't been any identified changes comparing to the previous assessment.

Regarding materiality assessment types (full, light or no disclosure), the deviation between different types within an industry (in 2020) may be partially explained by an unbalanced sample size (e.g., the two companies in the banking industry in 2020 both have a full assessment giving the industry 100%, whereas in the industrial products industry six companies have conducted a full assessment out of 16 companies in the sample, giving the industry only 32%).

In 2013, KPMG found that only 5% of companies claimed to assess material issues on an ongoing basis (KPMG 2013). In 2020, 25% of the sample companies in this thesis disclosed the frequency in which they assess material issues (16% in 2015), and 36% disclosed when had the assessment previously been updated (42% in 2015). The average number of years in

both was less than two years, indicating that material issues are assessed at least frequently, if not ongoingly.

The share of companies disclosing to have conducted a materiality assessment together with an external consultant is low. It may well be that a company has conducted their assessment in partnership with an external consultancy but decides not to disclose it in their reporting. An external consultant could be expected to aim to prevent managerial capture, improving the assessment's quality, but this can hardly be assessed from publicly available data only.

Comparing Farooq and de Villiers' (2019) framework of institutionalising sustainability reporting to the Nordic sample companies on a broad level, it seems that sustainability reporting and especially the application of materiality assessment is not quite yet at the fourth phase in which companies are encouraged to engage in quite frequent sustainability reporting, for example, preparing reports on a quarterly or monthly basis, including also materiality assessment reports. Most of the companies in the sample of this thesis reported on their materiality assessments in their annual or sustainability reports (published on an annual basis), and only a few had conducted a separate materiality assessment report. Some companies also had a separate page for their materiality assessment on their website. However, none of the companies were identified to report on sustainability on a quarterly or monthly basis.

Definition of materiality and stakeholder engagement

Based on the literature review, while many companies report having conducted materiality assessments and applying the materiality principle, how materiality is defined, internalised, and operationalised is not always described (Beske et al. 2020; Cerbone & Maroun 2020). However, nearly all companies in this thesis sample gave at least a vague definition of how they understand materiality and what it means. The results do not vary significantly between the years 2015 and 2020, but a slight shift can be identified that materiality no longer means only identification of sustainability topics for reporting, but also to find strategic value and opportunities.

During data collection process it could be identified that some companies give very detailed information on how materiality guides the organisation's strategy and how the organisation's management is involved in sustainability leadership based on the materiality assessment

results. On the other hand, many companies do not disclose anything related to integrating materiality into strategy, and some of those that do, do not give implications on how. Comparing Farooq and de Villiers' (2019) framework of institutionalising sustainability reporting to the Nordic sample companies on a broad level, it seems that sustainability reporting and especially the application of materiality assessment is not quite yet at the fourth phase in which companies would use sustainability KPIs and materiality assessment reports to guide their strategy, although some individual companies may already be there.

Although identification of stakeholders and their expectations is the first step in conducting materiality assessments (e.g., Hsu et al. 2013; Calabrese et al. 2016; Bellantuono et al. 2016; Calabrese et al. 2019), the share of companies in 2020 that disclose how they have identified their stakeholders is low (26%). The share has been higher in 2015 (33%), which could indicate that if companies have already disclosed how they have previously identified their stakeholders, they may not report about the identification process later. This is unfortunate, as sustainability report readers may not read other than the most recent reports.

Machado et al. (2021) argue that neither GRI nor the literature offers a list of stakeholder groups or engagement techniques that organisations should use in their materiality assessments. Consequently, in this thesis, not all sample companies report which stakeholders they engage with during the materiality assessment process. Some companies refer only to 'stakeholders' or 'key stakeholders', whereas 58% of companies in 2020 disclosed the stakeholder groups by name. Customers and clients, employees, investors, and suppliers are the most engaged stakeholder groups in both years, reflecting also the most frequently engaged stakeholder groups in the sample of Machado et al. (2021) (employees, customers, local communities, suppliers, governments, and shareholders, i.e., the groups directly related to the organisations' main products and services). Machado et al. (2021) also found that some sectors have specific types of stakeholders, and that each reporting organisation engaged with eight stakeholder groups on average during the reporting process. A similar assessment was not conducted in this thesis, although the collected data does not contradict their findings but calls for better disclosure of engaged stakeholders, nonetheless.

In 2020, 66% of the companies disclosed how they have engaged with stakeholders (73% in 2015). According to Farooq and de Villiers (2019), the reliability of a materiality assessment depends on the number of stakeholder interviews conducted or the response rate to a survey, but while in 2020, 51% of the companies had disclosed to conduct surveys as part of their

materiality assessments (55% in 2015), only 37% of those companies disclosed the number of participants (38% in 2015). This leaves room to improve to provide readers better opportunities to assess the materiality assessment quality. Machado et al. (2021) also found that reports in their sample were often unclear about how frequently the techniques are used.

The used stakeholder engagement methods had not varied much between 2015 and 2020, and surveys, interviews, and workshops are the most used engagement methods in both years. This reflects the findings of Machado et al. (2021), who also found that meetings with management or staff, call centres, and surveys were the most frequently cited engagement techniques in their sample. Some companies provided information about how the survey, interview or workshop results were analysed and finalised into a list of material topics or a matrix, but their share was also limited, again replicating the findings of Machado et al. (2021) as well.

In this thesis, the level of companies referring to GRI Standards in their reporting is high among the sample companies: 85% in 2020 and 95% in 2015, but similarly to findings of Beske et al. (2020), the way the companies report on their materiality assessment processes was noted to vary. The share of companies in 2020 that disclose how they have identified their stakeholders is low (26%), while in 2015 the share has been moderately higher (33%), while the share of companies disclosing how they have engaged with their stakeholders to identify their material topics has been on a higher level (66% in 2020 and 73% in 2015), reflecting the results of Beske et al. (2020). What comes to companies using materiality only as a means to define report content, it could be seen among the sample companies in this thesis, that the definitions of materiality had slightly moved from mere topic identification and reporting to also assess risks and opportunities in terms of impacts.

ESG Scores

The results of the regression analysis regarding the relationship between ESG scores and disclosed materiality assessment processes were not as satisfactory as related to MA Index values. Unfortunately, only disclosures about time since last update and double materiality were statistically significant, meaning that disclosing update frequency, materiality definition, use of external resources, stakeholder identification, number of stakeholder engagements (e.g., number of conducted interviews or survey responses), engaged

stakeholder groups, and use of reporting standards (e.g., GRI) were not. Still, the disclosures improved the model more than would be expected by chance.

Interestingly, the materiality definition, stakeholder identification method and stakeholder engagement method disclosures would have negative coefficients, which would be counterintuitive based on the first regression analysis in which higher MA Index values (higher level of disclosure) would predict higher ESG scores. Nonetheless, the companies that would have all the disclosures in place, would be predicted to get an ESG score of approximately 93, whereas companies with none would be predicted to get 60. Considering only the statistically significant disclosures, the companies with both of the disclosures would receive an ESG score of 92 and companies with no disclosures an ESG score of 63.

Out of the different regression analyses conducted in this thesis, this analysis had the highest adjusted R square (0,296), which implies that nearly a third of the ESG score could be explained by level of disclosure of certain processes included in the assessment. Interestingly, the two statistically significant variables, time since previous update and use of double materiality concept, refer to strategic sustainability management and answer to questions on how up to date is the materiality assessment and does it reflect also the financial materiality.

5.3 Material topics

There is not an official standard for how many material topics a company should select, but in 2020 the companies had on average fewer material topics listed than in 2015. In addition, companies prioritising their material topics in the form of a materiality matrix tend to select a slightly smaller number of material topics than companies that do not prioritise them. Selecting fewer material topics can be practical, if material topics are integrated in the company strategy, as it is easier to manage fewer topics at the same time.

What was noted during the data collection phase, was that many companies group certain GRI topics under bigger themes. Despite of international reporting standards providing lists of potentially material topics, there are multiple different ways for companies to categorise their topics. For example, some companies may disclose ‘climate’ as their material topic, whereas others may be more specific and list separately, for example, ‘physical impacts of

climate change', 'carbon handprint', 'carbon' footprint', or even 'climate change in own operations' (as opposed to in supply chain) as their material topics.

Inductive coding was used to analyse the found material topics and attention was paid to capture varying forms of synonyms. It is possible, that some material topics were missed that would have been specific to a certain company or that coding did not capture all varying word forms (e.g., pollution, polluting, pollutants), even though attention was paid to this to ensure analysis quality. It was also found during the data analysis phase that double counting was more than likely in this type of analysis. Due to these limitations to analysis quality, perhaps a more thorough analysis would be in place, in which more attention could be paid to data manipulation to capture all material topics.

As stakeholders' needs and expectations are highly contextual, the Nordic perspective might affect which topics were considered as material (e.g., child labour is a non-issue in a Nordic perspective, and Nordic countries have the highest gender index in the world) (Lindman et al. 2020). The Nordic perspective is to be kept in mind when discussing the results of material topics, and it could be of potential interest of future studies to see whether different geographic contexts alter the materiality among a specific industry.

Material topics regardless of industry

It was noticed that some topics are common for companies regardless of their industry, including business ethics and compliance, diversity, health and safety, and human rights. Interestingly, climate change and wellbeing had risen in this list, which may reflect societal changes as the Paris Agreement was adopted in December 2015 and the COVID-19 pandemic affected employee wellbeing as of March 2020. Perhaps an even better explanatory variable is the adoption of the EU Non-Financial Reporting Directive (NFRD), that requires large companies to publish information related to environmental matters, social matters and treatment of employees, respect for human rights, anti-corruption and bribery, and diversity on company boards.

At the same time, responsible sourcing, stakeholder engagement, materials, and logistics were less common material topics in 2020 than in 2015. What was noticed during the data collection process, was that at least some companies have made efforts to integrating sustainability practices in their value chain as a whole, and not separately to their own

operations and supply chains, which could potentially explain the change in responsible sourcing. What comes to stakeholder engagement, materials, and logistics, perhaps the discourse has changed, and stakeholder engagement has been considered to be just a standard practice rather than a material sustainability topic, and maybe it is the global challenges (like climate change) that have made their way past common operational challenges (like materials and logistics).

Material topics specific to an industry

As mentioned, the SASB Standards identify the sustainability information that is financially material in the context of sustainability information (i.e., how an organization creates enterprise value), and are thus designed for users whose primary objective is to improve economic decisions. Also, the SASB Standards are industry specific, based on different sustainability risks and opportunities within an industry, resulting in similar value creation models.

Based on the results of this thesis sample, for the banking industry (Bloomberg industry categorisation) topics such as 'affordability', 'financial literacy', 'peace, justice and strong institutions', and 'sustainable finance' were considered as material topics. These topics are aligned with SASB Standards, that have identified topics such as data security (also included by some sample companies), access and affordability, product design and lifecycle management (not included by sample companies), business ethics (included by some sample companies) and systemic risk management (not included by sample companies) as material topics for Commercial Banks. For example, under access and affordability, SASB demonstrates:

> "Commercial banks, as their primary business activity, have to continuously balance their capacity building efforts with the risks and opportunities associated with lending to unbanked, underbanked, or underserved customers. Emerging financing models and technologies provide banks with an opportunity to offer products and services in previously underserved markets and obtain additional sources of revenue. Firms that are able to meet the need to **extend credit and financial services to low-income populations and small businesses** while avoiding predatory and irresponsible lending practices are likely to create long-term value and enhance social capital. These services should also be complemented by efforts to improve **financial literacy**, which will ensure that customers make informed decisions. The recent financial crisis demonstrated the importance of diversified and resilient funding sources that

> these communities can provide. By disclosing their approach to **financial inclusion and capacity building**, commercial banks can provide investors with decision-useful information for assessing banks' ability to ensure long-term, **sustainable value creation**."[6]

In the banking industry, some of the topics are aligned with the SASB standards, but not all of them. This can either indicate that not all of the companies utilise the SASB standards (which are still more popular in the North America) or that material topics have not yet been looked at from a financial perspective as much as from the ESG impact perspective, referring to low level of double materiality application yet in 2020.

GRI is currently in the process of developing its Sector Standards. Previously, GRI has developed GRI Sector Supplements (to be used together with its former G4 Guidelines) for certain sectors that support organisations to "cover key aspects of sustainability performance that are meaningful and relevant to [the sector] and which are not sufficiently covered in the G4 Guidelines" (GRI, 2013). In its Financial Services Sector Supplement (ibid.), GRI has added sector specific content to the following topics: 'economic performance', 'emissions', 'effluents and waste', 'occupational health and safety', 'investment (Human Rights)', 'local communities', and 'product and service labelling' (including e.g., financial literacy). In addition, GRI has added some sector specific topics, such as 'product portfolio', 'audit', and 'active ownership' as relevant to companies in the sector. This is to a large extent a similar list of topics that also the sample companies have identified as material to them, apart from the fact that human rights were not included by the banking companies in the sample (although some companies in the financial services industry had included human rights as a material topic).

Looking at another industry, the industrial products industry had identified topics such as 'chemicals', 'economic value creation', 'just transition', 'leadership', 'quality', 'regulation', 'research', and 'responsible acquisitions' as material. For industrial products, SASB has identified eight relevant issues, including energy management, waste and hazardous materials management, data security, product quality and safety, employee health and safety, product design and lifecycle management, materials sourcing and efficiency as well as business ethics. These topics are all represented in the industry sample, but not all companies

[6] https://www.sasb.org/standards/materiality-finder/find/?industry[]=FN-CB&lang=en-us

within the industry list all of the topics as material to them – meaning that there are also companies that have not identified all of these topics as material to them. GRI is planning to develop its Sector Standards for Industrial industries in the Group II, after the prioritised 10 sectors in Group I (Basic materials and needs) (GRI 2020b).

While diversity was identified as the second most referenced material topic across industries, the SASB Materiality Map identifies only three sub-industries in which it considers it to be financially material: Asset Management & Custody Activities, Hardware, and Investment Banking & Brokerage. This can indicate that diversity is likely material for many companies from the impact materiality point of view rather than the financial materiality point of view. However, looking at business ethics, which is the most referenced material topic in the sample of this thesis, SASB identifies as many as 10 industries in which it is considered to be financially material.

Companies that prioritise their material topics

It was also noticed that the assessed companies rarely wanted to prioritise the material topics in a clear ranking. More often they refer to the materiality matrix and leave the interpretation to the reader. In terms of materiality matrices, it was observed that companies do not follow one format in visualising materiality matrix results. In fact, there are numerous ways to do a matrix. For this reason relating to subjectivity in the materiality matrix interpretation (as well as limitations of a master's thesis), it was decided to analyse only which topics the companies that prioritise their material topics identify as the most material topic (ranked as number one in the materiality matrix). Comparing the most material topics between 2015 and 2020, it can be seen that even if the material topics may not change that much in one year, their relative importance may, as has been suggested by Ruiz-Lozano et al. (2021).

Looking at the changes identified when comparing the lists between 2020 and 2015, it would seem that the identified most material topics are more strategic and topics that are more self-evident or basic requirements for the company to exist have been left to a smaller priority. For example, the topics that were not given as high priority in 2020 than in 2015, were topics such as 'business compliance and ethics', 'customer satisfaction', 'investors/shareholders', 'partnerships', 'safety', 'solvency', and 'water'. Whereas business compliance and ethics is generally material to many companies, it might be considered as a basic requirement in the

Nordic business environment. Customer satisfaction, investors and partnerships all refer to specific stakeholder groups. Referring to the stakeholder salience theory ("to whom should managers pay attention") by Mitchell et al. (1997), perhaps some stakeholder groups have not been considered to have as high stakeholder salience in 2020 than in 2015. Regarding 'safety', 'solvency', and 'water', it may be that those companies that had selected those topics as the most material topics in 2015, had also improved their performance related to those topics, or their stakeholder no longer considered them to be the most material, and thus their priority has changed in comparison to 2020.

ESG Scores

Three regression analyses were conducted to test what kind of linkages could be found between the identified material topics and their ESG scores. However, only one analysis (the analysis regarding the number of identified material topics) was fully statistically significant. This analysis predicted that a higher number of identified material topics could to a small extent result in a higher ESG score. This is interesting, as the average number of material topics had slightly decreased from 2015 to 2020, and intuitively thinking, the concept of materiality would imply to prioritise some topics rather than to select them all. On the other hand, perhaps a wider set of material topics indicates that a company has assessed its operations from a broader perspective, suggesting it has put more efforts in sustainability management and risk assessments. Nonetheless, the analysis estimates that only 8,5% of the ESG scores could be explained with the disclosures, meaning that there are more likely other variables that better explain the ESG score than the number of materiality assessments.

The analysis testing whether there is a linkage between the ESG score and if the companies that had selected the 10 most common material topics across industries as their own material topics was significant only for water as a material topic. The analysis testing the linkage between ESG scores and if the companies prioritise their material topics, were not statistically significant, and even if they were, there would not have been much of a difference in terms of scores.

6. Conclusions

This master's thesis is focused on materiality assessments conducted by large companies in Finland and Sweden. The aim of this thesis was threefold. First, the aim was to conduct a multi-industry analysis to see whether there are differences across industries related to their level of disclosure, materiality assessment processes or selected material topics, as an industry has been said to significantly influence the decisions about the type of disclosure to be published and about the application of the materiality principle (Torelli et al. 2019, Ruiz-Lozano et al. 2021), and as an industry plays a crucial role in determining material topics (Eccles et al. 2012). Second, the aim was to assess differences over time in terms of level of disclosure, materiality assessment processes and identified material topics, as materiality assessments are expected to be updated regularly (Ranängen et al. 2018, Lindman et al. 2020) and CSR continuously evolves (Derqui 2020). And third, the aim was to assess whether the disclosures have a linkage to ESG scores, which has been a novel approach, to see whether companies benefit from better level of disclosure related to their materiality assessments in their CSR reporting.

6.1 Implications for research methods

The thesis used content analysis, statistical analysis, and regression analysis as research methods. Content analysis is a popular method used by many researchers that study materiality assessments (e.g., Torelli et al. 2019, Farooq et al. 2021, Beske et al. 2020, Ruiz-Lozano et al. 2021, Fasan and Mio 2017). Especially the MA Index developed for this thesis was inspired by Farooq et al. (2021), Ruiz-Lozano et al. (2021), Beske et al. (2020) and Fasan and Mio (2017). Statistical analysis was applied to examine differences in level of disclosure, processes, and material topics across industries and over time, and regression analysis was used to find relationships between different variables and ESG scores. For the assessment of material topics, word coding was used based on text analysis, but due to its limitations regarding double counting and missing data, perhaps there would be better ways to analyse this in the future.

6.2 Implications for theory and literature

This thesis contributes to the theory and literature by bringing new findings from various angles. The multi-industry approach gives a broad view of industry differences related to level of disclosure, applied materiality assessment processes and selected material topics. This thesis also gives a comprehensive look at the level of adoption of the materiality principle in the Nordics and has given an attempt to assess linkages between materiality and CSR performance.

It was found that while the industry of a company partly explains the selection of certain material topics, there can be a lot of variation within industries when it comes to level of disclosure and disclosed information. Also, it was found that even though the number of companies reporting on CSR and conducting materiality assessments has increased, the level of disclosure has not, and that the development of level of disclosure is not always linear when looking at individual companies. However, the level of companies reporting on CSR and disclosing at least some information about materiality assessments is high in the Nordics.

Surveys, interviews, and workshops are still the most frequently used methods for stakeholder engagement, but there is little information provided about the technical aspects of the assessment, for example, how companies have prioritised material topics, suggesting that there is still room for managerial manipulation. The new concept of double materiality is not yet widely adopted either and especially disclosures about the methods how it has been applied in the assessments are limited. The regulation is increasing and as companies are required to disclose information both from the impact materiality and financial materiality perspectives, an increase related to double materiality may be expected both in number and in level of disclosure, as best practices develop.

Regarding selected material topics and their prioritisation, even though guided by the GRI, companies are not very willing to give clear rankings of material topics, but rather leave the interpretation of materiality matrices for the reader. Companies also have varying formats of materiality matrices, which makes their comparison challenging. However, some topics seem to be material for many companies regardless of their industry and topics such as climate change and wellbeing have become such topics during the recent years.

It has also been discovered that companies do not just copy lists of material topics from international reporting frameworks or from peers, which indicates that companies consider some topics to be company-specific rather than just industry-specific. The GRI framework is still the most used reporting framework in the Nordics.

It was found that disclosures related to materiality assessments explain very little of the companies ESG scores. Although, there is a possibility that a higher level of disclosure of the materiality assessment process (especially related to time since previous update and use of double materiality) and its results partly explains a higher ESG score, as well as a higher number of material topics - even though to a lesser extent. A similar study, in which materiality assessments and ESG scores would have been analysed, was not found during the literature review process and in that sense the results are of unique value.

Materiality assessment is a strategic tool for a company to prioritise its sustainability topics so that it can then optimise its management focus on the most material ones and create value. The results of this thesis indicate that materiality assessment is a common practice in the Nordics, but not yet institutionalised as part of strategy and value creation, but rather as part of selecting sustainability report content, even though development can be observed to move towards identifying also risks and opportunities for the business.

6.3 Implications for practice

The key implication of this thesis to managers is that there is still more that companies can do in terms of transparency to meet the requirements of international reporting frameworks and upcoming regulation, even though some companies already have demonstrated excellent reporting practices.

6.4 Limitations and future research

The limitations of this thesis are related to limitations of qualitative research in general, but to subjectivity and data capture in particular. In addition, despite of a large number of companies in the sample, the industry distribution is not even in this thesis.

As mentioned, there is little information provided about the technical aspects of the materiality assessments, which makes it difficult to assess the quality of the assessments. However, there are very limited ways to assess the quality from publicly available information without interviews or taking contact to assessed companies. This could be of interest of future studies.

References

AccountantAbility. 2018. AA1000 Accountability Principles 2018.

Andelin, M., Kyrö, R. & Sarasoja, A-L. 2013. Current sustainability reporting practices in Nordic real estate companies. *19th Annual Pacific-Rim Real Estate Society Conference, Melbourne Australia, 13-16 January 2013.* Available at: http://www.prres.net/Proceedings/..%5CPapers%5CAndelin_Current_Sustainability_Reporting_Practices_In_Nordic_Real_Estate_Companies.pdf

Aureli, S., Salvatori, F. & Magnaghi, E. 2021. A Country-Comparative Analysis of the Transposition of the EU Non-Financial Directive: An Institutional Approach. Accounting, *Economics, and Law: A Convivium, 2021, Vol. 10, No. 2*. https://doi.org/10.1515/ael-2018-0047

Bellantuono, N., Pontrandolfo, P., & Scozzi, B. 2016. Capturing the stakeholders' view in sustainability reporting: a novel approach. *Sustainability, Vol. 8, No. 4, 1-12.* https://doi.org/10.3390/su8040379

Beske, F., Haustein, E. and Lorson, P.C. 2020. Materiality analysis in sustainability and integrated reports. *Sustainability Accounting, Management and Policy Journal, Vol. 11, No. 1, 162-186*. https://doi.org/10.1108/SAMPJ-12-2018-0343

Calabrese, A., Costa, R., Levialdi, N., & Menichini, T. 2016. A fuzzy analytic hierarchy process method to support materiality assessment in sustainability reporting. *Journal of Cleaner Production, Vol. 121, 2016, 248-264.* https://doi.org/10.1016/j.jclepro.2015.12.005

Calabrese, A., Costa, R., Levialdi, N., & Menichini, T. 2019. Materiality analysis in sustainability reporting: a tool for directing corporate sustainability towards emerging economic, environmental and social opportunities. *Technological and Economic Development of Economy, Vol. 25, No. 5, 1016-1038.* https://doi.org/10.3846/tede.2019.10550

Claro, P.B.d.O. & Esteves, N.R. 2021. Sustainability-oriented strategy and Sustainable Development Goals. *Marketing Intelligence & Planning, Vol. 39, No. 4, 613-630.* https://doi.org/10.1108/MIP-08-2020-0365

Dahlsrud, A. 2008. How Corporate Social Responsibility is Defined: An Analysis of 37 Definitions. *Corporate Social Responsibility and Environmental Management, 15, 1-13, (2008). Published online 9 November 2006 in Wiley InterScience.* DOI: 10.1002/csr.132

Derqui, B. 2020. Towards sustainable development: Evolution of corporate sustainability in multinational firms. *Corporate social-responsibility and environmental management, Vol. 27, No. 6, 2712-2723.* https://doi.org/10.1002/csr.1995

DiMaggio, P.J. & Powell, W.W. 1983. The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review, Vol. 48, No. 2, April 1983, 147-160*. https://doi-org.ezproxy.cc.lut.fi/10.2307/2095101

Eccles, R.G., Krzus, M.P., Rogers, J. & Serafeim, G. 2012. The need for sector-specific materiality and sustainability reporting standards. *Journal of Applied Corporate Finance, Vol. 24, No. 2, 65-71.* http://dx.doi.org/10.1111/j.1745-6622.2012.00380.x

Edgley, C., Jones, M.J. & Atkins, J. 2014. The adoption of the materiality concept in social and environmental reporting assurance: A field study approach. *The British Accounting Review, Vol. 47, 2015, 1-18.* http://dx.doi.org/10.1016/j.bar.2014.11.001

EFRAG. 2022. [Draft] ESRG 1 Double materiality conceptual guidelines for standard-setting. Working paper, January 2022. Retrieved, 15.4.2022, from: https://pl.materiality.pl/wp-content/uploads/2022/03/esrg_1_double_materiality_wp.pdf

European Commission. 2011. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A renewed EU strategy 2011-14 for Corporate Social Responsibility. Retrieved 9.10.2021, from: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0681:FIN:EN:PDF

European Commission. 2019. Guidelines on non-financial reporting: Supplement on reporting climate-related information. Retrieved 6.9.2021, from: https://ec.europa.eu/finance/docs/policy/190618-climate-related-information-reporting-guidelines_en.pdf

European Commission. 2021. Corporate sustainability reporting. [Website]. Retrieved 6.9.2021, from: https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en#review

Farooq, M.B. & de Villiers, C. 2019. Understanding how managers institutionalise sustainability reporting: Evidence from Australia and New Zealand. *Accounting, Auditing & Accountability Journal, Vol. 32 No. 5, pp. 1240-1269*. https://doi.org/10.1108/AAAJ-06-2017-2958

Farooq, M.B., Zaman, R., Sarraj, D. & Khalid, F. 2021. Examining the extent of and drivers for materiality assessment disclosures in sustainability reports. *Sustainability Accounting, Management and Policy Journal, 2021, Vol. 12 No. 5, 965-1002.* https://doi.org/10.1108/SAMPJ-04-2020-0113

Fasan, M. & Mio, C. 2017. Fostering stakeholder engagement: the role of materiality disclosure in integrated reporting. *Business Strategy and the Environment, Vol. 26, No. 3, 288-305*. https://doi.org/10.1002/bse.1917

Ferrero-Ferrero, I., Fernández-Izquierdo, M.Á., Muñoz-Torres, M.J. & Bellés-Colomer, L. 2018. Stakeholder engagement in sustainability reporting in higher education: An analysis of key internal stakeholders' expectations. *International Journal of Sustainability in Higher Education, Vol. 19 No. 2, 313-336.* https://doi.org/10.1108/IJSHE-06-2016-0116

Freeman, R.E. 2004. The Stakeholder Approach Revisited. *Zeitschrift für Wirtschafts- und Unternehmensethik, Vol. 5, No. 3, 2004, 228-241.* https://doi.org/10.5771/1439-880X-2004-3-228

Freeman, R.E. & McVea, J.F. 2006. A Stakeholder Approach to Strategic Management. *In: Hitt, M.A., Freeman, R.E. & Harrison, J.S. (eds.) The Blackwell Handbook of Strategic Management.* DOI:10.1111/b.9780631218616.2006.x

Greenwood, R. & Hinings, C. R. 1996. Understanding radical organizational change: Bringing together the old and the new institutionalism. *The Academy of Management Review, Vol. 21, No. 4, 1022-1054.* https://doi.org/10.5465/amr.1996.9704071862

GRI. 2011. Technical Protocol - Applying the Report Content Principles. Retrieved 17.10.2021, from: https://www.plateformeco2.ch/portal/documents/10279/17373/GRI_Technical+Protocol.pdf/0e1294be-ce1b-4c31-9943-4904c06240fd

GRI. 2013. G4 Sector Disclosures: Financial Services. Retrieved 29.3.2022, from: https://cdn2.hubspot.net/hubfs/2642721/Recursos/Guias%20y%20Estandares/Suplementos%20sectoriales%20G4/GRI-G4-Financial-Services-Sector-Disclosures%20(1).pdf

GRI. 2015. Defining materiality: What matters to reporters and investors - do investors and reporters agree on what's material in the technology hardware & equipment and banks & diverse financials sectors? Amsterdam: Global Reporting Initiative (GRI) and RobecoSam.

GRI. 2020a. Consolidated Set of GRI Sustainability Reporting Standards 2020. *Amsterdam, The Netherlands, pp.10-11*.

GRI. 2020b. GRI Sector Program – Revides list of prioritized sectors. Approved by the GSSB on 10 November 2020. Retrieved 29.3.2022, from: https://www.globalreporting.org/media/mqznr5mz/gri-sector-program-list-of-prioritized-sectors.pdf

GRI. 2021. The double-materiality concept. Application and issues. Retrieved, 7.11.2021, from: https://www.globalreporting.org/media/jrbntbyv/griwhitepaper-publications.pdf

Guix, M., Font, X. and Bonilla-Priego, M.J. 2019. Materiality: stakeholder accountability choices in hotels' sustainability reports. *International Journal of Contemporary Hospitality Management, 2019Vol. 31, No. 6, 2321-2338*. https://doi.org/10.1108/IJCHM-05-2018-0366

Heras-Saizarbitoria, I., Urbieta, L. & Boiral, O. 2021. Organization's engagement with sustainable development goals: From cherry-picking to SDG-washing? *Corporate Social Responsibility and Environmental Management, 2021, Online version of Record, before inclusion in an issue.* https://doi.org/10.1002/csr.2202

Hsu, C. W., Lee, W. H., & Chao, W. C. 2013. Materiality analysis model in sustainability reporting: a case study at Lite-On Technology Corporation. *Journal of Cleaner Production, Vol. 57, 142-151.* https://doi.org/10.1016/j.jclepro.2013.05.040

IASB. 2018. Definition of Material: Amendments to IAS 1 and IAS 8. IFRS Standards, October 2018. Retrieved, 2.5.2022, from: https://www.efrag.org/Assets/Download?assetUrl=%2Fsites%2Fwebpublishing%2FMeeting%20Documents%2F1709060818526684%2F04-

05%20Definition%20of%20Material%20-%20Published%20Amendments%20-%20EFRAG%20TEG%2018-11-29.pdf

International Integrated Reporting Council (IIRC) & International Federation of Accountants (IFAC). 2015. Materiality in IR - Guidance for the preparation of integrated reports. Retrieved 16.4.2022, from: https://www.integratedreporting.org/wp-content/uploads/2015/11/1315_MaterialityinIR_Doc_4a_Interactive.pdf

Ioannou, I. & Serafeim, G. 2017. The Consequences of Mandatory Corporate Sustainability Reporting. *Harvard Business School Research Working Paper No. 11-100, May 1, 2017.* Available at SSRN: https://ssrn.com/abstract=1799589

Jones, P., Comfort, D. & Hillier, D. 2016. Materiality in corporate sustainability reporting within UK retailing. *Journal of Public Affairs, Vol. 16, No. 1, 81-90.* https://doi.org/10.1002/pa.1570

KPMG. 2014. Sustainable insight. The essentials of materiality assessment. Retrieved 6.11.2021, from: https://assets.kpmg/content/dam/kpmg/cn/pdf/en/2017/the-essentials-of-materiality-assessment.pdf

KPMG. 2015. KPMG International Survey of Corporate Responsibility Reporting 2005. *KPMG Global Sustainability Services and University of Amsterdam.* Retrieved 11.10.2021, from: http://www.theiafm.org/publications/243_International_Survey_Corporate_Responsibility_2005.pdf

Lee, S., Kim, B. & Ham, S. 2018. Strategic CSR for airlines: does materiality matter? *International Journal of Contemporary Hospitality Management, Vol. 30, No. 12, 3592-3608.* https://doi.org/10.1108/IJCHM-10-2017-0697

Lindman Å., Ranängen, H. & Kauppila, O. 2020. Guiding corporate social responsibility practice for social license to operate: A Nordic mining perspective. *The Extractive Industries and Society, 2020, Vol. 7, 892-907*

Lydenberg, S., Rogers, J. & Wood, D. 2010. From Transparency to Performance: Industry-Based Sustainability Reporting on Key Issues. The Hauser Center for Nonprofit Organizations. Retrieved 4.11.2021, from:

https://iri.hks.harvard.edu/files/iri/files/from_transparency_to_performance_industry-based_sustainability_reporting_on_key_issues.pdf

Machado, B.A.A., Dias, L.C.P. & Fonseca, A. 2021. Transparency of materiality analysis in GRI-based sustainability reports. *Corporate Social Responsibility and Environmental Management, 2020, 1-11.* https://doi.org/10.1002/csr.2066

Maniora, J. 2018. Mismanagement of Sustainability: What Business Strategy Makes the Difference? Empirical Evidence from the USA. *Journal of Business Ethics, 2018, 152, 931–947.* https://doi.org/10.1007/s10551-018-3819-0

Matten, D. & Moon, J. (2008). "Implicit" and "Explicit" CSR: A Conceptual Framework For a Comparative Understanding of Corporate Social Responsibility. *Academy of Management Review, 2008, Vol. 33., No. 2, 404-424.*

Melé, D. 2008. The Oxford Handbook of Corporate Social Responsibility. *Oxford University Press, Oxford.*

Michelon, G., Pilonato, S. and Ricceri, F. 2015. CSR reporting practices and the quality of disclosure: an empirical analysis. *Critical Perspectives on Accounting, Vol. 33, 59-78*. https://doi.org/10.1016/j.cpa.2014.10.003

Mio, C., Fasan, M. & Costantini, A. 2020. Materiality in integrated and sustainability reporting: A paradigm shift? *Business Strategy and the Environment, Wiley Blackwell, vol. 29, No. 1, 306-320, January*. DOI: 10.1002/bse.2390

Mitchell, J.R., Mitchell, R.K., Hunt, R.A., Townsend, D.M. & Lee, J.H. 2020. Stakeholder Engagement, Knowledge Problems and Ethical Challenges. *Journal of Business Ethics, 2020.* https://doi.org/10.1007/s10551-020-04550-0

Mitchell, R.K., Agle, B.R. & Wood, D.J. 1997. Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review, 1997, Vol. 22, No. 4, 853-886.*

Pérez-López, D., Moreno-Romero, A., & Barkemeyer, R. 2015. Exploring the relationship between sustainability reporting and sustainability management practices. *Business Strategy and the Environment, Vol. 24, No. 8, 720-734*. https://doi.org/10.1002/bse.1841

PricewaterhouseCoopers. 2021. Sustainability reporting enters a new era: Corporate Sustainability Reporting Directive. 24 June 2021. [Website]. Retrieved 6.9.2021, from: https://www.pwc.ie/services/audit-assurance/insights/corporate-sustainability-reporting-directive.html

Puroila, J. & Sendlhofer, T. 2019. Matter of time – Temporal dimensions and psychological distance of material corporate sustainability topics in the Nordic forest industry. *In: CSR Communication Conference 2019 – Proceedings, The 5th International CSR Communication Conference, Stockholm School of Economics, Stockholm, September 18-20, 2019.* ISBN 978-961-235-889-1 (pdf)

Puroila, J. & Mäkelä, H. 2019. Matter of opinion: Exploring the socio-political nature of materiality disclosures in sustainability reporting. *Accounting, Auditing & Accountability Journal, Vol. 32, No. 4, 1043-1072.* https://doi.org/10.1108/AAAJ-11-2016-2788

Ranängen, H., Cöster, M., Isaksson, R. & Garvare. R. 2018. From Global Goals and Planetary Boundaries to Public Governance – A Framework for Prioritizing Organizational Sustainability Activities. *Sustainability, Vol. 10, No. 8, 2018, 2741.* https://doi.org/10.3390/su10082741

Ruiz-Lozano, M., De Vicente-Lama, M., Tirado-Valencia, P. and Cordobés-Madueño, M. 2021. The disclosure of the materiality process in sustainability reporting by Spanish state-owned enterprises. *Accounting, Auditing & Accountability Journal, Vol. ahead-of-print No. ahead-of-print*. https://doi.org/10.1108/AAAJ-08-2018-3629

Searcy, C. & Buslovich, R. 2014. Corporate Perspectives on the Development and Use of Sustainability Reports. *Journal of business ethics, Vol. 121, No. 2, 2014, 149–169.* DOI: 10.1007/s10551-013-1701-7

Sepúlveda-Alzate, Y.M., García-Benau, M.A. & Gómez-Villegas, M. 2021. Materiality assessment: the case of Latin American listed companies. *Sustainability Accounting, Management and Policy Journal, Vol. ahead-of-print No. ahead-of-print.* https://doi.org/10.1108/SAMPJ-10-2020-0358

Torelli, R., Balluchi, F. & Furlotti, K. 2019. The materiality assessment and stakeholder engagement: A content analysis of sustainability reports. *Corporate Social Responsibility*

and Environmental Management, 2019, Vol. 27, No. 2, 470-484. https://doi.org/10.1002/csr.1813

Unerman, J., & Zappettini, F. 2014. Incorporating materiality considerations into analyses of absence from sustainability reporting. *Social and Environmental Accountability Journal, Vol. 34, No.3, 172-186*. DOI: 10.1080/0969160X.2014.965262.

van Tulder R. & Lucht L. 2019. REVERSING MATERIALITY: From a Reactive Matrix to a Proactive SDG Agenda. *In: Bocken N., Ritala P., Albareda L., Verburg R. (eds) Innovation for Sustainability. Palgrave Studies in Sustainable Business in Association with Future Earth. Palgrave Macmillan, Cham.* https://doi.org/10.1007/978-3-319-97385-2_15

Whitehead, J. 2017. Prioritizing sustainability indicators: using materiality analysis to guide sustainability assessment and strategy. *Business Strategy and the Environment, Vol. 26, No. 3, 399-412.* https://doi.org/10.1002/bse.1928

Whitley, R. 1999. Divergent capitalisms. The social structuring and change of business systems. Oxford: Oxford University Press.

Appendix 1: Material topics listed in companies' materiality assessments across industries (2020 and 2015)

2020	Banking	Consumer Discretionary Products	Consumer Discretionary Services	Consumer Staple Products	Financial Services	Health Care	Industrial Products	Industrial Services	Insurance	Materials	Media	National	Oil & Gas	Retail & Wholesale - Discretionary	Retail & Wholesale - Staples	Software & Tech Services	Tech Hardware & Semiconductors	Telecommunications	Utilities
Accessibility	0 %	0 %	0 %	13 %	0 %	22 %	5 %	0 %	14 %	0 %	100 %	100 %	0 %	20 %	0 %	0 %	0 %	0 %	20 %
Affordability	50 %	0 %	0 %	0 %	0 %	11 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	20 %	0 %	0 %	0 %	0 %	20 %
Clean or renewable energy	50 %	13 %	0 %	0 %	0 %	0 %	5 %	6 %	0 %	14 %	0 %	0 %	0 %	20 %	0 %	50 %	0 %	0 %	20 %
Animal welfare	0 %	0 %	50 %	38 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	20 %	25 %	0 %	0 %	0 %
Availability	0 %	0 %	0 %	0 %	0 %	22 %	0 %	0 %	0 %	7 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Biodiversity	100 %	0 %	50 %	63 %	0 %	0 %	9 %	18 %	0 %	86 %	0 %	0 %	40 %	40 %	75 %	0 %	0 %	0 %	60 %
Brand	0 %	0 %	50 %	13 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Business ethics and compliance	50 %	88 %	100 %	38 %	100 %	89 %	86 %	100 %	57 %	100 %	100 %	100 %	100 %	80 %	50 %	100 %	100 %	33 %	80 %
Certification	0 %	25 %	50 %	0 %	0 %	0 %	0 %	12 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Chemicals	0 %	13 %	0 %	0 %	0 %	0 %	23 %	6 %	0 %	7 %	0 %	0 %	20 %	40 %	0 %	0 %	0 %	0 %	0 %
Child labor	0 %	0 %	0 %	13 %	0 %	11 %	0 %	0 %	0 %	7 %	100 %	0 %	20 %	0 %	25 %	50 %	0 %	67 %	0 %
Circular economy and resource efficiency	0 %	75 %	0 %	50 %	50 %	0 %	41 %	29 %	0 %	71 %	0 %	0 %	0 %	40 %	25 %	100 %	33 %	33 %	80 %
Climate change	100 %	50 %	100 %	50 %	67 %	0 %	36 %	59 %	71 %	57 %	0 %	100 %	80 %	20 %	50 %	50 %	67 %	67 %	80 %
Code of Conduct	0 %	0 %	0 %	13 %	0 %	0 %	5 %	12 %	0 %	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Communication	0 %	0 %	50 %	0 %	0 %	11 %	14 %	18 %	29 %	7 %	0 %	100 %	40 %	0 %	0 %	0 %	0 %	0 %	0 %
Competence development	0 %	13 %	0 %	13 %	17 %	56 %	50 %	47 %	29 %	50 %	100 %	100 %	20 %	20 %	50 %	0 %	0 %	0 %	40 %
Competitiveness	0 %	0 %	50 %	0 %	0 %	33 %	14 %	24 %	0 %	21 %	0 %	100 %	20 %	40 %	0 %	0 %	33 %	0 %	0 %
Corporate governance	0 %	0 %	0 %	13 %	33 %	0 %	5 %	6 %	14 %	0 %	100 %	0 %	0 %	0 %	25 %	0 %	33 %	0 %	20 %
Creating jobs / employment	0 %	0 %	50 %	0 %	0 %	33 %	23 %	12 %	0 %	14 %	0 %	100 %	20 %	20 %	25 %	0 %	0 %	0 %	0 %
Culture	0 %	13 %	50 %	0 %	0 %	11 %	9 %	0 %	0 %	7 %	0 %	0 %	0 %	0 %	25 %	0 %	0 %	0 %	0 %
Customer rights and satisfaction	0 %	0 %	0 %	0 %	0 %	0 %	9 %	0 %	14 %	7 %	0 %	0 %	0 %	20 %	0 %	0 %	0 %	0 %	40 %
Decent work	0 %	25 %	0 %	25 %	0 %	0 %	27 %	18 %	14 %	14 %	0 %	0 %	60 %	40 %	25 %	50 %	67 %	0 %	40 %
Diversity	50 %	50 %	50 %	50 %	50 %	89 %	64 %	59 %	29 %	64 %	100 %	0 %	60 %	80 %	50 %	100 %	100 %	33 %	60 %
Donations and other humanitarian efforts	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	14 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Economic performance	0 %	0 %	0 %	0 %	0 %	22 %	18 %	18 %	14 %	0 %	0 %	0 %	20 %	40 %	25 %	0 %	0 %	0 %	0 %
Economic value creation	0 %	0 %	0 %	0 %	0 %	0 %	5 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Emissions to air, land and water (pollutants)	0 %	0 %	0 %	13 %	0 %	11 %	5 %	12 %	0 %	14 %	0 %	0 %	20 %	20 %	25 %	0 %	67 %	0 %	40 %
Energy efficiency	0 %	13 %	50 %	13 %	0 %	33 %	0 %	18 %	14 %	0 %	0 %	0 %	0 %	0 %	25 %	0 %	0 %	0 %	20 %
Environmental impacts and management	0 %	25 %	0 %	13 %	0 %	22 %	9 %	12 %	29 %	0 %	100 %	0 %	0 %	0 %	0 %	50 %	0 %	0 %	0 %
ESG risks	0 %	13 %	0 %	25 %	50 %	0 %	14 %	6 %	0 %	7 %	0 %	100 %	0 %	0 %	0 %	0 %	33 %	0 %	0 %
Financial literacy	50 %	0 %	0 %	0 %	17 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Freedom of association and collective bargaining	0 %	0 %	0 %	0 %	0 %	0 %	0 %	6 %	0 %	7 %	0 %	0 %	20 %	20 %	0 %	0 %	0 %	0 %	0 %
GHG emissions	0 %	25 %	0 %	25 %	17 %	33 %	14 %	12 %	0 %	14 %	0 %	0 %	20 %	20 %	0 %	50 %	0 %	0 %	40 %
Health and safety	0 %	50 %	50 %	38 %	33 %	33 %	59 %	41 %	14 %	50 %	0 %	0 %	40 %	20 %	25 %	0 %	67 %	0 %	60 %
Human rights	0 %	63 %	50 %	50 %	33 %	44 %	45 %	29 %	14 %	50 %	0 %	100 %	20 %	40 %	0 %	50 %	33 %	0 %	20 %
Indirect economic impacts	0 %	13 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	7 %	0 %	0 %	20 %	0 %	0 %	0 %	0 %	0 %	0 %
Industry, innovation and infrastructure (incl. digitalisation)	100 %	13 %	0 %	25 %	0 %	22 %	27 %	6 %	0 %	21 %	0 %	0 %	20 %	20 %	0 %	0 %	0 %	33 %	60 %
Information security and cybersecurity	50 %	0 %	0 %	25 %	0 %	44 %	18 %	24 %	43 %	7 %	0 %	100 %	20 %	20 %	25 %	100 %	100 %	33 %	0 %
Investments	50 %	0 %	50 %	0 %	17 %	22 %	5 %	6 %	57 %	0 %	0 %	100 %	0 %	20 %	0 %	0 %	0 %	0 %	40 %
Investors / Shareholders	0 %	0 %	0 %	0 %	17 %	11 %	5 %	0 %	14 %	7 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Just transition	0 %	0 %	0 %	0 %	0 %	0 %	5 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Leadership	0 %	0 %	0 %	0 %	0 %	11 %	9 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	20 %
Local communities	50 %	25 %	0 %	13 %	0 %	11 %	9 %	12 %	0 %	21 %	0 %	0 %	60 %	20 %	50 %	0 %	0 %	0 %	20 %
Logistics	0 %	25 %	0 %	0 %	0 %	11 %	23 %	6 %	0 %	7 %	100 %	0 %	20 %	20 %	25 %	0 %	33 %	0 %	0 %
Materials	0 %	50 %	0 %	13 %	17 %	11 %	18 %	12 %	0 %	21 %	0 %	0 %	20 %	40 %	50 %	0 %	67 %	0 %	0 %
Mental wellbeing	0 %	0 %	0 %	0 %	0 %	0 %	0 %	6 %	0 %	0 %	0 %	0 %	0 %	20 %	0 %	0 %	0 %	0 %	0 %
Noise & Odour	0 %	0 %	0 %	0 %	0 %	0 %	9 %	12 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Packaging	0 %	13 %	50 %	38 %	0 %	11 %	0 %	6 %	0 %	0 %	0 %	0 %	0 %	20 %	25 %	0 %	0 %	0 %	0 %
Partnerships & relations	50 %	0 %	0 %	25 %	33 %	33 %	23 %	29 %	14 %	21 %	0 %	100 %	40 %	60 %	0 %	0 %	0 %	0 %	0 %
Peace, justice and strong institutions	50 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Profit / growth / returns	50 %	25 %	100 %	0 %	17 %	22 %	5 %	18 %	14 %	0 %	0 %	100 %	40 %	0 %	0 %	0 %	0 %	0 %	0 %
Public policy	0 %	0 %	0 %	0 %	0 %	0 %	5 %	0 %	0 %	7 %	0 %	0 %	20 %	0 %	0 %	0 %	0 %	0 %	0 %
Quality	0 %	13 %	50 %	13 %	0 %	11 %	5 %	6 %	0 %	0 %	100 %	0 %	20 %	0 %	50 %	0 %	67 %	0 %	0 %
Reduce criminality	0 %	0 %	0 %	0 %	0 %	0 %	0 %	6 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Regulation	0 %	0 %	0 %	13 %	0 %	0 %	14 %	6 %	0 %	7 %	0 %	0 %	0 %	0 %	0 %	0 %	33 %	0 %	0 %
Reliability	0 %	0 %	50 %	0 %	0 %	11 %	0 %	12 %	0 %	0 %	100 %	0 %	0 %	20 %	0 %	50 %	0 %	0 %	20 %
Remuneration	0 %	0 %	0 %	0 %	0 %	0 %	5 %	0 %	14 %	0 %	0 %	0 %	0 %	0 %	25 %	0 %	0 %	0 %	0 %
Reputation	0 %	0 %	0 %	0 %	0 %	0 %	0 %	6 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Research	0 %	0 %	50 %	13 %	0 %	33 %	5 %	0 %	0 %	0 %	0 %	0 %	0 %	20 %	0 %	0 %	0 %	0 %	0 %
Responsible acquisitions	0 %	0 %	0 %	0 %	0 %	0 %	18 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Responsible sales and marketing	0 %	0 %	100 %	13 %	0 %	44 %	0 %	0 %	29 %	14 %	100 %	0 %	20 %	40 %	50 %	50 %	33 %	0 %	0 %
Responsible sourcing	0 %	63 %	50 %	50 %	67 %	22 %	18 %	29 %	0 %	57 %	100 %	0 %	60 %	40 %	50 %	50 %	33 %	33 %	40 %
Rights of indigenous people	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	14 %	0 %	0 %	0 %	20 %	0 %	0 %	0 %	0 %	0 %
Security of supply	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	20 %	0 %	0 %	0 %	0 %	0 %	20 %
Shared value	0 %	0 %	50 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Solvency	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	29 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Stakeholder engagement and dialogue	0 %	0 %	50 %	13 %	0 %	33 %	9 %	12 %	57 %	21 %	0 %	0 %	0 %	0 %	0 %	0 %	33 %	0 %	60 %
Stewardship	0 %	13 %	0 %	0 %	0 %	11 %	0 %	0 %	0 %	7 %	0 %	0 %	20 %	0 %	0 %	0 %	0 %	0 %	0 %
Supply chain	0 %	50 %	50 %	50 %	50 %	33 %	27 %	47 %	0 %	36 %	0 %	0 %	20 %	20 %	50 %	50 %	33 %	0 %	40 %
Supporting local livelihoods and society	0 %	0 %	50 %	50 %	17 %	33 %	0 %	0 %	0 %	21 %	100 %	0 %	0 %	20 %	0 %	50 %	0 %	33 %	0 %
Sustainable financing and investing	50 %	0 %	0 %	0 %	17 %	0 %	5 %	0 %	43 %	0 %	0 %	0 %	0 %	20 %	0 %	0 %	0 %	0 %	20 %
Sustainable products and services	0 %	13 %	100 %	50 %	0 %	22 %	41 %	18 %	0 %	50 %	100 %	100 %	0 %	60 %	100 %	0 %	33 %	0 %	20 %
Sustainable usage of medicine	0 %	0 %	0 %	0 %	0 %	11 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Tax	0 %	0 %	50 %	25 %	17 %	33 %	5 %	12 %	29 %	21 %	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %	20 %
Transparency	50 %	13 %	0 %	38 %	17 %	33 %	9 %	12 %	14 %	14 %	100 %	100 %	20 %	20 %	25 %	50 %	0 %	0 %	20 %
Waste & Recycling	0 %	38 %	50 %	38 %	0 %	100 %	36 %	59 %	0 %	57 %	0 %	0 %	40 %	60 %	100 %	0 %	67 %	0 %	20 %
Water use	50 %	25 %	50 %	38 %	0 %	33 %	32 %	29 %	0 %	71 %	0 %	0 %	60 %	40 %	25 %	0 %	67 %	0 %	40 %
Wellbeing (employee or customer)	50 %	0 %	50 %	25 %	50 %	56 %	9 %	24 %	43 %	14 %	100 %	0 %	60 %	40 %	50 %	50 %	67 %	33 %	80 %
Work ability	0 %	0 %	0 %	0 %	0 %	11 %	0 %	6 %	29 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

2015	Banking	Consumer Discretionary Products	Consumer Discretionary Services	Consumer Staple Products	Financial Services	Health Care	Industrial Products	Industrial Services	Insurance	Materials	Media	National	Oil & Gas	Retail & Wholesale - Discretionary	Retail & Wholesale - Staples	Software & Tech Services	Tech Hardware & Semiconductors	Telecommunications	Utilities
Accessibility	0 %	0 %	0 %	0 %	0 %	25 %	6 %	8 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	50 %	50 %	0 %	0 %
Affordability	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Clean or renewable energy	0 %	0 %	0 %	0 %	50 %	0 %	0 %	8 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Animal welfare	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	33 %	33 %	0 %	0 %	0 %	0 %
Availability	50 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	50 %	0 %	50 %	0 %
Biodiversity	0 %	17 %	0 %	0 %	100 %	0 %	6 %	8 %	0 %	58 %	0 %	0 %	100 %	33 %	0 %	0 %	0 %	0 %	0 %
Brand	0 %	0 %	0 %	0 %	0 %	0 %	0 %	8 %	0 %	8 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Business ethics and compliance	50 %	83 %	0 %	100 %	100 %	75 %	56 %	100 %	0 %	92 %	100 %	100 %	0 %	100 %	67 %	100 %	100 %	100 %	25 %
Certification	0 %	17 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	8 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Chemicals	0 %	0 %	0 %	0 %	0 %	0 %	19 %	8 %	0 %	8 %	0 %	0 %	0 %	33 %	33 %	50 %	0 %	0 %	0 %
Child labor	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	8 %	0 %	0 %	0 %	0 %	0 %	50 %	0 %	0 %	0 %
Circular economy and resource efficiency	0 %	33 %	0 %	20 %	0 %	0 %	6 %	0 %	0 %	33 %	0 %	0 %	0 %	0 %	33 %	0 %	0 %	0 %	50 %
Climate change	50 %	50 %	0 %	20 %	0 %	0 %	31 %	8 %	100 %	8 %	0 %	0 %	100 %	67 %	33 %	50 %	50 %	0 %	25 %
Code of Conduct	0 %	17 %	0 %	20 %	0 %	0 %	0 %	15 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	25 %
Communication	0 %	17 %	0 %	20 %	0 %	0 %	13 %	23 %	50 %	17 %	0 %	0 %	0 %	33 %	0 %	50 %	50 %	0 %	0 %
Competence development	100 %	50 %	0 %	40 %	100 %	25 %	50 %	46 %	50 %	33 %	100 %	100 %	0 %	67 %	67 %	100 %	0 %	0 %	25 %
Competitiveness	0 %	17 %	100 %	20 %	0 %	0 %	13 %	23 %	0 %	33 %	0 %	0 %	0 %	100 %	0 %	0 %	0 %	0 %	25 %
Corporate governance	0 %	0 %	0 %	0 %	0 %	0 %	6 %	0 %	0 %	8 %	0 %	0 %	0 %	0 %	33 %	0 %	50 %	0 %	0 %
Creating jobs / employment	50 %	0 %	0 %	20 %	0 %	0 %	0 %	0 %	0 %	25 %	0 %	100 %	0 %	33 %	33 %	0 %	0 %	0 %	0 %
Culture	0 %	17 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Customer rights and satisfaction	0 %	17 %	0 %	0 %	0 %	0 %	25 %	38 %	0 %	17 %	0 %	0 %	0 %	67 %	0 %	0 %	0 %	50 %	25 %
Decent work	0 %	33 %	0 %	20 %	0 %	25 %	19 %	8 %	0 %	42 %	0 %	0 %	0 %	33 %	0 %	0 %	100 %	0 %	0 %
Diversity	100 %	50 %	0 %	20 %	100 %	25 %	56 %	54 %	50 %	58 %	100 %	0 %	100 %	100 %	33 %	100 %	50 %	0 %	0 %
Donations and other humanitarian efforts	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Economic performance	0 %	0 %	0 %	20 %	0 %	0 %	6 %	23 %	0 %	25 %	0 %	0 %	0 %	100 %	33 %	0 %	0 %	0 %	0 %
Economic value creation	0 %	0 %	0 %	0 %	0 %	0 %	0 %	8 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Emissions to air, land and water (pollutants)	0 %	17 %	0 %	0 %	0 %	0 %	19 %	8 %	0 %	17 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Energy efficiency	0 %	33 %	0 %	0 %	0 %	0 %	6 %	15 %	0 %	25 %	0 %	0 %	100 %	0 %	33 %	50 %	50 %	0 %	0 %
Environmental impacts and management	0 %	17 %	100 %	0 %	50 %	0 %	25 %	15 %	0 %	8 %	100 %	100 %	0 %	0 %	33 %	50 %	0 %	0 %	25 %
ESG risks	100 %	17 %	0 %	0 %	0 %	0 %	13 %	8 %	0 %	8 %	0 %	100 %	0 %	0 %	33 %	0 %	0 %	0 %	0 %
Financial literacy	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Freedom of association and collective bargaining	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	17 %	0 %	0 %	0 %	33 %	0 %	0 %	0 %	0 %	0 %
GHG emissions	0 %	17 %	0 %	0 %	0 %	0 %	0 %	8 %	0 %	0 %	0 %	0 %	100 %	33 %	0 %	50 %	100 %	0 %	0 %
Health and safety	50 %	83 %	0 %	40 %	0 %	50 %	50 %	46 %	0 %	67 %	0 %	0 %	0 %	67 %	33 %	0 %	50 %	50 %	25 %
Human rights	50 %	67 %	0 %	20 %	0 %	25 %	38 %	38 %	0 %	67 %	0 %	100 %	100 %	67 %	33 %	0 %	0 %	0 %	0 %
Indirect economic impacts	0 %	0 %	0 %	20 %	0 %	0 %	0 %	8 %	0 %	8 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Industry, innovation and infrastructure (incl. digitalisation)	0 %	0 %	0 %	0 %	0 %	0 %	13 %	15 %	0 %	33 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	50 %	25 %
Information security and cybersecurity	50 %	0 %	0 %	20 %	0 %	0 %	0 %	15 %	0 %	8 %	100 %	0 %	0 %	67 %	33 %	100 %	100 %	100 %	0 %
Investments	50 %	17 %	0 %	0 %	0 %	0 %	13 %	8 %	100 %	25 %	0 %	0 %	0 %	33 %	0 %	50 %	0 %	50 %	25 %
Investors / Shareholders	0 %	0 %	0 %	0 %	50 %	0 %	6 %	8 %	50 %	17 %	0 %	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %
Just transition	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Leadership	50 %	0 %	0 %	0 %	0 %	0 %	13 %	0 %	0 %	17 %	0 %	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %
Local communities	0 %	17 %	0 %	20 %	0 %	0 %	6 %	23 %	0 %	17 %	0 %	0 %	0 %	67 %	33 %	0 %	0 %	0 %	25 %
Logistics	0 %	33 %	0 %	20 %	0 %	0 %	25 %	15 %	0 %	42 %	0 %	0 %	100 %	67 %	100 %	0 %	0 %	0 %	0 %
Materials	0 %	83 %	0 %	20 %	0 %	0 %	13 %	8 %	0 %	50 %	0 %	0 %	100 %	67 %	33 %	50 %	50 %	0 %	0 %
Mental wellbeing	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Noise & Odour	0 %	17 %	0 %	0 %	0 %	0 %	13 %	8 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Packaging	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	33 %	67 %	0 %	0 %	0 %	0 %
Partnerships & relations	50 %	17 %	0 %	20 %	50 %	0 %	19 %	15 %	0 %	33 %	0 %	0 %	100 %	67 %	0 %	50 %	50 %	0 %	25 %
Peace, justice and strong institutions	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	50 %	0 %	0 %
Profit / growth / returns	0 %	33 %	0 %	0 %	50 %	0 %	0 %	15 %	0 %	17 %	0 %	100 %	0 %	0 %	33 %	0 %	0 %	0 %	25 %
Public policy	0 %	0 %	0 %	0 %	0 %	0 %	6 %	0 %	0 %	8 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Quality	0 %	0 %	0 %	0 %	0 %	0 %	6 %	8 %	0 %	0 %	0 %	0 %	0 %	0 %	33 %	50 %	0 %	0 %	0 %
Reduce criminality	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Regulation	0 %	17 %	0 %	0 %	0 %	25 %	19 %	31 %	0 %	17 %	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Reliability	0 %	0 %	100 %	0 %	0 %	0 %	0 %	8 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	50 %	0 %	0 %	25 %
Remuneration	0 %	0 %	0 %	20 %	0 %	0 %	0 %	0 %	50 %	17 %	0 %	0 %	100 %	33 %	33 %	0 %	0 %	0 %	0 %
Reputation	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Research	0 %	0 %	0 %	0 %	50 %	0 %	6 %	0 %	0 %	0 %	0 %	0 %	100 %	0 %	0 %	0 %	0 %	0 %	0 %
Responsible acquisitions	0 %	0 %	0 %	0 %	0 %	0 %	13 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Responsible sales and marketing	0 %	17 %	0 %	20 %	0 %	0 %	0 %	0 %	0 %	17 %	0 %	0 %	0 %	67 %	33 %	0 %	0 %	0 %	0 %
Responsible sourcing	50 %	67 %	0 %	40 %	0 %	0 %	31 %	54 %	0 %	58 %	0 %	0 %	0 %	67 %	100 %	50 %	50 %	100 %	100 %
Rights of indigenous people	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	25 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Security of supply	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Shared value	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	33 %	0 %	0 %	0 %	0 %	0 %
Solvency	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	50 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Stakeholder engagement and dialogue	0 %	17 %	0 %	20 %	0 %	25 %	44 %	31 %	50 %	25 %	0 %	100 %	0 %	33 %	33 %	50 %	50 %	0 %	50 %
Stewardship	0 %	17 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	17 %	0 %	0 %	0 %	33 %	0 %	0 %	0 %	0 %	0 %
Supply chain	50 %	17 %	0 %	40 %	0 %	0 %	38 %	38 %	50 %	33 %	100 %	0 %	100 %	100 %	0 %	100 %	50 %	0 %	50 %
Supporting local livelihoods and society	100 %	17 %	100 %	20 %	0 %	25 %	6 %	23 %	0 %	42 %	0 %	0 %	0 %	0 %	0 %	50 %	0 %	100 %	0 %
Sustainable financing and investing	100 %	0 %	0 %	0 %	0 %	0 %	6 %	0 %	50 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Sustainable products and services	0 %	33 %	100 %	0 %	50 %	0 %	50 %	46 %	0 %	50 %	0 %	0 %	100 %	33 %	100 %	0 %	100 %	50 %	75 %
Sustainable usage of medicine	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Tax	0 %	0 %	0 %	0 %	0 %	0 %	6 %	8 %	50 %	8 %	0 %	0 %	100 %	33 %	0 %	50 %	50 %	0 %	25 %
Transparency	50 %	33 %	100 %	0 %	0 %	0 %	6 %	23 %	100 %	25 %	0 %	0 %	0 %	0 %	0 %	0 %	50 %	0 %	25 %
Waste & Recycling	0 %	83 %	0 %	40 %	0 %	25 %	38 %	46 %	0 %	50 %	0 %	0 %	100 %	100 %	100 %	50 %	100 %	50 %	0 %
Water use	0 %	33 %	0 %	20 %	0 %	0 %	25 %	23 %	0 %	67 %	0 %	0 %	0 %	100 %	33 %	0 %	100 %	0 %	0 %
Wellbeing (employee or customer)	0 %	0 %	0 %	0 %	50 %	0 %	13 %	23 %	50 %	0 %	0 %	0 %	100 %	0 %	33 %	100 %	0 %	0 %	50 %
Work ability	0 %	0 %	0 %	0 %	0 %	0 %	0 %	8 %	50 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %