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Title

# Sustainability reporting and approaches to materiality: tensions and potential resolutions

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Sustainability  
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Headline

## Abstract

**Purpose** – The concept of materiality is becoming increasingly important for sustainability performance measurement and reporting. It is widely agreed upon that materiality matters, in the sense that companies should identify, prioritize and disclose information on sustainability issues that are considered material. There is, however, a tension at the heart of this consensus, owing to parallel approaches to materiality being used in practice. This paper aims to shed light on how and why the parallel uses of the materiality concept may cause confusion and how this tension could be resolved.

**Design/methodology/approach** – This paper takes as point of departure the tension between two approaches to materiality: based on the Global Reporting Initiative definition, which emphasizes sustainability issues that are important to stakeholders and that have significant impacts and based on the Sustainability Accounting Standards Board definition, which emphasizes sustainability issues that are financially material, i.e. likely to influence the financial performance of the company. This paper discusses the nature and consequences of the tensions between how the two definitions of materiality in sustainability reporting are used in practice, with a particular emphasis on users of information in financial markets. This paper provides empirical insight on these users' perspectives through a survey ( $n = 30$ ) and qualitative interviews ( $n = 6$ ) of financial market professionals.

**Findings** – This study reveals tensions between different approaches to materiality in practice and how this may lead users of sustainability reports to draw unjustified conclusions on the basis of materiality assessments. Specifically, this paper demonstrates the perceived shortcomings in information availability and information quality from the perspectives of different stakeholders in financial markets with different information needs.

**Practical implications** – The users of sustainability reporting information require clarity in the communication of materiality in non-financial reports. This paper addresses how such clarity can be pursued.

**Social implications** – Clarity about materiality in non-financial reporting is important both for investors that pursue financial return on green investments and for society at large, which relies on information about real sustainability impacts.

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## Content

**Originality/value** – This paper furthers the understanding of how different materiality concepts may be problematic and how recent and ongoing developments may mitigate the risks of conflating uses of the concept.

**Keywords** – ESG, Materiality, Sustainable business, Sustainability reporting

**Paper type** Research paper

## heading

### Introduction

In different ways and to varying degrees, companies increasingly attempt to improve their sustainability footprints and to disclose sustainability performance information (Kiron *et al.*, 2017). There are a multitude of stakeholder expectations that drive this development. Companies show willingness to respond to such expectations, e.g. to comply with regulatory requirements, act in accordance with social norms and to act in ways that maintain a good reputation (Pérez-López *et al.*, 2015). Thus, sustainability reporting is becoming widespread for both legitimacy and accountability purposes (Comyns *et al.*, 2013). In recent years, also investors and lenders – who are important users of sustainability performance information – have increasingly demanded such information, in particular about companies' sustainability efforts that are correlated with financial performance (Nidumolu *et al.*, 2009; Jørgensen and Pedersen, 2018).

As reporting on sustainability has become more prevalent across industries globally, new standards have emerged for measurement and reporting with an aim to ensure high-quality sustainability information. A key challenge for companies is how to assess which sustainability issues are more or less material for companies in different industries (Eccles *et al.*, 2012; Beske *et al.*, 2020). The development towards more standardized sustainability reporting responds to calls for relevant and comparable information on so-called environmental, social and governance (ESG) factors by investors and other users of non-financial information (Eccles *et al.*, 2012).

In the field of sustainable business generally and sustainability reporting specifically, there seems to be widespread agreement that materiality matters. That is, scholars and practitioners alike argue that companies should conduct materiality analyses and that such analyses can inform both sustainability strategy and reporting (Khan *et al.*, 2016; Whitehead, 2017; Rogers and Serafeim, 2019; Steinbarth and Bennett, 2018; PwC, 2019, p. 10). Companies' sustainability efforts and the reporting thereof are subject to continuous prioritization, for instance, regarding which efforts should be conducted, which indicators should be chosen as measures of performance and which information should be disclosed. Materiality assessments are central tools in such prioritizations, as they allow for an assessment of the relative importance of various sustainability issues. Furthermore, materiality assessments can help in the tradeoffs between potentially vastly different activities along each of the E, S and G dimensions.

At the heart of the apparent consensus about materiality, however, is an important source of confusion (Jebe, 2019). As pointed out by Edgley (2014), the malleable nature of the materiality concept has allowed for realignment and reinvention of the concept over time, to meet changing priorities and challenges. Materiality has been a contested concept for a long time. Already in 2003, Simon Zadek and Mira Merme argued that materiality was in the process of being redefined through pressures from civil society, through regulatory and litigation pressures as well as through practices developed by business organizations themselves (Zadek and Merme, 2003; Calace, 2019). The problem at present is that the concept of materiality as it relates to sustainability is used in two very different ways and that there is a tension between the two. The two approaches to materiality correspond with those used by the Global Reporting Initiative (GRI) on the one hand and those used by the Sustainability Accounting Standards Board (SASB) on the other hand. They diverge from each other in an

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important way, as we will explore in depth below. This difference can easily deceive users of sustainability reports when references to “material sustainability issues” are made.

In this paper, we take as point of departure the perspective of users of sustainability performance information in financial markets. The challenge of the two parallel approaches to materiality is important to this stakeholder group owing to their use of such information to inform investment and lending decisions. There is a widespread claim that companies that prioritize material sustainability issues in their strategies and operations are more profitable than those that do not. This is based on recent empirical findings (Khan *et al.*, 2016; Grewal *et al.*, 2020) that have received wide coverage in the business press. [1] Furthermore, these findings have informed both consulting advice (PwC, 2019; EY, 2018) and investment advice (Steinbarth and Bennett, 2018). Importantly, however, while the empirical findings that are the basis for these conclusions are based on a SASB understanding of the concept of (financial) materiality, much of companies’ activities on the measurement and reporting of sustainability performance is based on a wider GRI understanding of materiality. A lack of clarity about what is implied when referring to “material sustainability issues” may consequently lead users of this information to draw unjustified conclusions and make potentially wrong decisions (e.g. investment decisions) accordingly. Indeed, as pointed out by SASB CEO Janine Guillot and Chair of the SASB Standards Board Jeffrey Hales, the GRI and SASB “have historically used fundamentally different definitions of materiality. This has led to a market dialogue in which even informed participants must take pains to avoid talking past each other” (Guillot and Hales, 2021).

The purpose of this paper is to shed light on the tensions between the two uses of the concept of materiality and what the difference implies for users of information in sustainability reports. We discuss what these differences imply in practice and how it may lead investors and other users of sustainability performance information astray. Furthermore, we provide empirical insight from a survey and qualitative interviews of users of sustainability information in financial markets, i.e. investment professionals and other financial market stakeholders. In doing so, we intend to contribute to the understanding of how parallel approaches to materiality in sustainability reporting may lead to confusion and how the tensions between these concepts can be resolved.

The remainder of the paper is structured as follows. First, we account for existing literature on the concept of materiality in sustainability reporting. Second, we present our empirical study and its results. Third, we discuss the practical challenges of materiality in sustainability reporting and the way forward.

## Headline

**Approaches to materiality in sustainability reporting: definitions and tensions**

Let us first consider the concept of materiality – what it is and how it matters for sustainability reporting. In financial accounting, from where the concept originates, materiality is defined as follows:

The omission or misstatement of an item is material in a financial report, if, in light of surrounding circumstances, the magnitude of the item is such that it is probable that the judgment of a reasonable person relying upon the report would have been changed or influenced by the inclusion or correction of an item (Messier *et al.*, 2005, p. 155).

The concept of materiality has, however, increasingly been translated from its use in the conceptual frameworks of financial accounting into the realm of sustainable business and reporting (Gibassier, 2019; Moroney and Trotman, 2016), as well as assurance (Edgley *et al.*, 2015). Practically speaking, the goal is to distinguish between *material sustainability issues*, i.e. those sustainability issues that are likely to influence the decision making of

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stakeholders (e.g. investors, consumers, regulators) and those issues that are non-material, i.e. not likely to influence decision-making. While the purpose of discerning between more or less material issues in financial reporting is related to understanding factors influencing the financial performance of the company, materiality in sustainability reporting is related to the company's social and environmental performance.

Often, materiality assessments are visualized using a so-called materiality matrix. Such a matrix illustrates the prioritization of sustainability issues in a two-dimensional diagram in which the two axes represent the interests of different stakeholder groups (see the subsequent section for more detail on materiality matrices). In a reporting context, the materiality matrix serves as a taxonomy of the issues that are disclosed in the sustainability report. However, as pointed out by Forstater *et al.* (2006, p. 42), “[t]he basic methodology and matrix can be adapted for different needs and applications either in reporting or strategy development.” Thus, it can be used to support various activities, such as risk assessment, performance management and reporting, that rely on discerning material sustainability information from non-material information.

As defined by Adams *et al.* (2020, p. 9), material sustainability information is any information that is reasonably capable of making a difference to the conclusions drawn by:

- stakeholders concerning the positive and negative impacts of the organization on global achievement of the SDGs; and
- providers of financing concerning the ability of the organization to create long-term value for the organization and society.

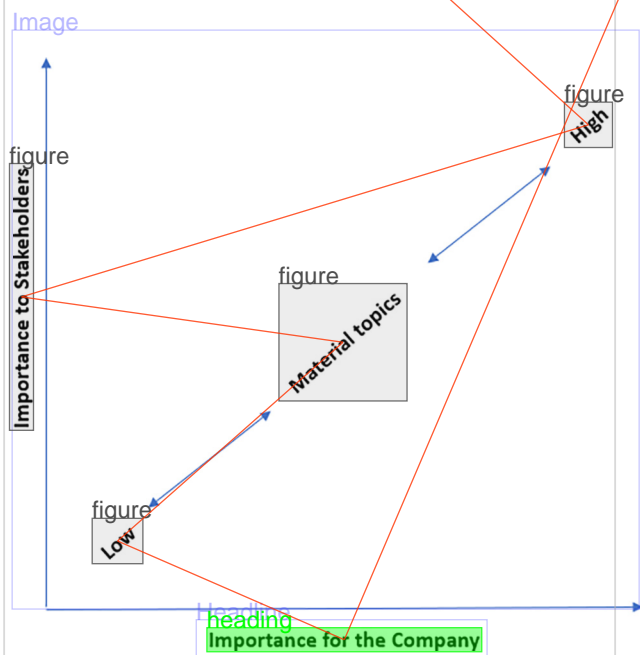
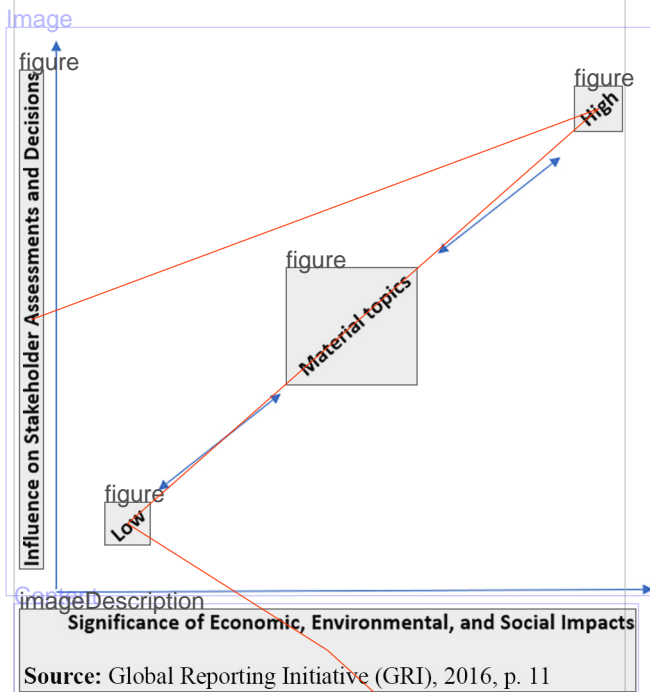
This definition reflects what is often referred to as “double materiality,” in which the former bullet point captures “environmental and social materiality” and the latter captures “financial materiality” (Gibassier, 2019). That is, this definition provides a holistic perspective on materiality, which corresponds with the interest of both stakeholders at large and shareholders or investors specifically. Importantly, however, the two rival definitions of materiality that correspond with each of these two are used separately and in parallel. In the following, we outline these concepts and the tensions between them.

## Headline

## Global Reporting Initiative vs Sustainability Accounting Standards Board: two definitions of materiality

The two rival definitions of materiality are associated with and used by GRI and SASB, respectively. According to Global Reporting Initiative (GRI) (2011, p. 3), material sustainability information refers to “those topics that have a direct or indirect impact on an organization’s ability to create, preserve or erode economic, environmental and social value for itself, its stakeholders and society at large.” The corresponding two-dimensional matrix used by the GRI to visualize degrees of materiality has “Influence on stakeholder assessments and decisions” along the Y-axis and “Significance of the reporting organization’s economic, environmental and social impacts” along the X-axis (Figure 1).

SASB (2020) defines material issues as those “that are likely to affect the financial condition or operating performance of companies within an industry.” [2] SASB does not explicitly use a comparable materiality matrix as the one in Figure 1. However, conceptually, the SASB approach to materiality is more akin to what is captured in a different kind of materiality matrix commonly used in sustainability reports, e.g. by large companies such as Unilever and Nestlé. In such materiality matrices, the Y-axis typically reads “Importance for stakeholders” while the X-axis typically reads “Importance for the company” or some comparable variety thereof (Figure 2) [3]. The latter phrase relates to the business performance of the reporting company itself, which is of crucial importance to its shareholders. While the materiality matrix



**Figure 1.**  
Materiality matrix  
based on GRI  
definition

Content imageDescription  
Figure 2  
imageDescription  
Materiality matrix  
based on SASB  
dimensions

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illustrated in [Figure 2](#) is not used by SASB, it visualizes an approach to materiality that lies closer to the SASB variant. As is evident from the axes in [Figure 2](#), such an approach to materiality much more strictly delineates those sustainability issues that are financially material – a concept that SASB indeed has begun using to distinguish it from other forms of materiality. We should note, however, that issues that are judged to be important for the company's business performance by the company itself, may not necessarily be financially material. Thus, to use [Figure 2](#) as a visual proxy for the SASB approach to materiality, we need to assume that "Sustainability issues that are important for the company" refers to sustainability issues that are deemed financially material for the sector in which the company operates.

Companies increasingly use such materiality analyses and develop materiality matrices to analyze and visualize which sustainability issues are material to them and that therefore needs to be addressed. Such materiality assessments can thus inform sustainability strategy as well as the measurement and reporting of sustainability performance, as they are a tool for identifying and prioritizing between sustainability issues ([Whitehead, 2017](#); [Jørgensen and Pedersen, 2018](#)). Consequently, materiality analyses can be found on corporate websites, in strategy documents and in sustainability reports or integrated reports to visualize and communicate such prioritizations.

A relatively recent development in sustainability reporting that should be taken into account is the emphasis on so-called *dynamic materiality*, which reflects the time dimension of materiality. As pointed out by [Kuh et al. \(2020, p. 13\)](#), "[a]s companies more rapidly change their business models, what is material to such companies will be changing in stride. Just as the new material topics will emerge for companies as the company evolves, some sustainability issues that were previously material financially to companies will no longer be." This dynamic characteristic of materiality, that the relative importance of sustainability issues to companies and their stakeholders as well as their sustainability impacts can vary over time, requires approaches to materiality that are not static. This is in line with the findings of a field study by [Edgley et al. \(2015\)](#), who found evidence of a forward-looking rather than historical focus in the conceptualization of materiality. [4]

In a recent paper, [Rogers and Serafeim \(2019\)](#) analyze the processes through which sustainability issues become financially material. By systematically shedding light on these "pathways to materiality," the authors accentuate the importance of the dynamic materiality understanding of sustainability. One need only refer to the present situation of the COVID-19 pandemic to recognize an ESG issue that companies likely had not expected, but that has had immense financial, social and environmental consequences. [Rogers and Serafeim \(2019\)](#) point out the #MeToo phenomenon as another social issue that took many companies off guard. For companies and their investors alike, taking on a forward-looking and dynamic perspective on materiality is important to make qualified assessments of which sustainability issues might rise in importance in the time to come. The fundamental concept of financial valuation is to estimate today the value of all future, risky, cash-flows and financially material sustainability issues will necessarily impact these cash-flows and thus the value of a company.

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[Tensions between the two approaches to materiality](#)

In principle, there is nothing problematic in having two rival approaches to materiality, as long as both are clearly defined and communicated and the subsequent use of the concepts in practice is well-informed. Arguably, when inspecting the GRI and SASB sources outlined above, the concepts are clearly defined and communicated in the initial sources. We propose, however, that there are tensions between the two approaches to materiality as they are



applied in practice and that these can lead to confusion or wrongful conclusions being drawn by users of sustainability performance information.

There are many examples of tensions between different concepts in corporate sustainability (Hahn *et al.*, 2015). In this regard, tensions can be defined as “two phenomena in a dynamic relationship that involve both competition and complementarity” (Epstein *et al.*, 2014, p. 3). As pointed out by Haffar and Searcy, (2017), many concepts in corporate sustainability have a “private value vs shared value” tension, which not at least extends to the question of “value for whom,” i.e. which stakeholders are taken into consideration (Wannags and Gold, 2020). The difference between the GRI and SASB approaches to materiality is exactly tied to this question, as the difference in the X-axes in Figures 1 and 2 show. Furthermore, this also relates to the tension between short-term and long-term orientation, i.e. between relatively short-term measurement of financial performance versus the need for long-term orientation for environmental protection and social equity (Hahn *et al.*, 2015, p. 304). Users of information will typically differ in the degree to which they emphasize performance information related to each of the two. For instance, investors will arguably have an appetite for the former, while an environmental regulatory agency or an NGO will typically emphasize the latter.

Even if the two approaches to materiality are clearly defined and communicated by the two standard-setting institutions GRI and SASB, however, there might still be conflation among the two in practice, by users of sustainability reports. For instance, the widespread belief, or even hope, that addressing financially material sustainability issues can drive financial performance may increase investor demand for such information. As this relationship has been found for issues that are material *in a SASB sense*, it does not necessarily hold for issues that are material in a GRI sense. Thus, it is crucial that users of sustainability information receive such claims about materiality in a manner that unequivocally communicates which concept of materiality is assumed. If not, an investor may draw unjustified conclusions about whether any given sustainability effort communicated in a sustainability report is likely to make the company more valuable.

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## Practical illustration

Let us consider what such potential tension and conflation might mean in practice. When companies improve their sustainability conduct, investors are particularly interested in the financial implications of those improvements, while other stakeholders may care more about the real sustainability impacts of the improvements. For instance, companies in logistics can pursue strategies to electrify their transportation fleets, which can reduce greenhouse gas emissions and at the same time result in lower fuel bills. Similarly, agricultural companies can reduce the waste from their operations by attempting to make products from the residual resources in their production, for instance, sugar companies that make energy from sugarcane residue. Such efforts can clearly lead to improvements both in sustainability performance and business performance.

However, not all sustainability improvements have such evident potential for positive effects on revenues or costs. To the contrary: many sustainability measures will be unprofitable, especially in the short term, e.g. the current high investment cost of electric lorries. These may be important for many stakeholders, but not necessarily for investors. One could also turn the problem upside-down. Companies that make improvements only on material issues as defined by SASB will be attractive for investors, but they may underperform on issues emphasized by other stakeholders. [5] That sustainability issues are non-material in a SASB sense does not imply that they cannot be *important* for sustainable development, i.e. have significant impacts on society and the environment. Therefore, users

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of information benefit from being able to discern between these different types of sustainability improvements and their materiality.

Consider the case of the category “Clothing, accessories and footwear” in SASB’s materiality map. This shows that no environmental improvements are considered to have positive effects on profits for companies in this industry, as studies of financial materiality in the textile industry do not find that investments in the environment have yielded financial returns. Hence, the environmental footprints of NIKE’s footwear or Zara’s apparel are not judged as financially material when applying SASB’s materiality map, even though one might expect such environmental improvements to have beneficial outcomes with regard to the companies’ brands and reputations. They will, however, likely be considered socially and environmentally material in a GRI-based materiality assessment.

This challenge of discernment has important implications for numerous questions:

Q1. Which sustainability efforts should companies prioritize and which KPIs should they monitor that reflect relevant improvement?

Q2. Should the reporting company only emphasize financially material sustainability issues, or also those that are environmentally and socially material?

Q3. If both types are reported, how should the report communicate in which sense and by what definition, any given sustainability issue is material?

Q4. How would the sorting between the two materiality categories vary by reporting horizon?

## Headline

**Empirical study: method and results**

To shed light on our proposition that there are tensions and potential conflation between different approaches to materiality, we conducted a mixed-method empirical study of various stakeholders in Norwegian financial markets. Through a combination of a brief survey on sustainability reporting, materiality and information quality ( $n = 30$ ) and follow-up interviews with a selected set of the survey respondents, we aimed to provide insight into the beliefs and assessments of these users of information.

## Headline

**Method**

We conducted a two-part empirical study – the survey and semi-structured interviews – on a sample of financial market professionals who were enrolled in an Executive MBA program in sustainable financial analytics in Norway, offered by the Norwegian School of Economics and the Norwegian Society of Financial Analysts in cooperation. The respondents are experienced professionals working in different roles related to financial markets. The sample is dominated by financial analysts and portfolio managers from large institutional investors, but also includes financial market regulators, managers in finance positions in corporations, professionals from banking and insurance, auditors and financial journalists.

We wanted to capture respondents’ perceptions of central concepts related to materiality as it relates to sustainability reports. We developed 17 items in four broad categories related to sustainability reporting as follows:

- the information needs of users;
- approaches to materiality in sustainability reports;
- information availability in sustainability reports; and
- information quality in sustainability reports.



Regarding *information needs*, we developed items to capture three informational needs: those that relate to financial materiality and the two information dimensions of Adams' definition of materiality outlined above. Regarding *approaches to materiality*, we developed items to capture respondents' views on disclosure requirements with regard to double and dynamic materiality. Regarding *information availability*, we developed items to capture respondents' assessment of how available the information in sustainability reports is and the degree to which they were able to discern between information related to different approaches to materiality. Regarding *information quality*, we developed items to capture respondents' assessment of sustainability disclosures, in light of traditional quality of information concepts. In addition, we collected data on respondents' socio-demographic characteristics.

All items are shown in Table 1 and were measured on Likert scales where 1 indicated "strongly disagree" and 7 indicated "strongly agree." We distributed the survey through the online platform Qualtrics and collected all responses in March 2021. We conducted all statistical analyses in IBM SPSS Statistics 27. The analyses were largely descriptive statistics of the respondents' views on the different themes of the survey.

We conducted follow-up interviews with six of the respondents from the survey in April 2021. As demonstrated by Guest *et al.* (2020), six to seven interviews provide reasonable information saturation within a relatively homogeneous sample, which is the case in this study. Still, we recruited participants in a manner that was intended to capture the relative diversity of stakeholders represented in the sample as follows:

- one financial officer who is also in charge of the company's sustainability reporting (male, 52);
- one sustainability manager in a large bank (male, 46);
- one manager in a public funding body for innovation (female, 41);
- one compliance officer in a financial institution (female, 37);
- one financial analyst (male, 35); and
- one portfolio manager (male, 53).

We conducted the interviews in Zoom owing to the ongoing Corona pandemic. The interviews lasted from 30 to 45 min and were based on the interview guide in Table 2. However, the interviews were semi-structured to allow respondents to address related issues that they deemed important in light of the questions we asked. We conducted the interviews in the respondents' native Norwegian language, but we have translated all quotes below. Initially, we used the findings from the survey responses as guidance for patterns to investigate further in the analysis of the qualitative interviews. Statements that either supported or contrasted with findings from the survey analyses in interesting ways were selected for inclusion in the account of our qualitative findings in the results section. In this way, we aimed to triangulate between the qualitative and quantitative investigations of the respondents' views and perceptions.

## heading Results from the survey

The survey had 30 respondents, of which 80% were male, equivalent to in the whole class of students. The average age was 48.5 years (SD = 9.4) and the average work tenure 22 years (SD = 8.9). The respondents mainly worked in banking (30.0%), institutional investment firms (23.3%), regulatory units or other public sector entities (6.7%) as well as other corporate roles such as consultancy firms, insurance firms or financial positions in

figure Measures	figure Items
figure Sustainability reporting and information needs	figure As a user of sustainability reports, it is important for me to acquire information about sustainability information that is financially material As a user of sustainability reports, it is important for me to acquire information about sustainability information that is important for overall sustainability impact As a user of sustainability reports, it is important for me to acquire information about sustainability information that is considered as important by other stakeholders such as NGOs and the general public I believe that there is large overlap between sustainability issues that are financially material and sustainability issues that are important for other stakeholders such as NGOs and society at large I believe that there is considerable change over time in which sustainability issues that are material I believe that sustainability reporting should account only for sustainability issues that are financially material I believe that sustainability reporting should account for sustainability issues that are likely to become material in the future I believe that properly addressing material sustainability issues is crucial for companies' financial performance
figure Sustainability reporting and materiality	figure When I read sustainability reports and other reports in which companies disclose sustainability performance information, I find it easy to find information about which sustainability issues are financially material When I read sustainability reports and other reports in which companies disclose sustainability performance information, I find it easy to find information about which sustainability issues are important for various stakeholder groups other than investors (e.g. investors, NGOs, regulators, society at large)
figure Sustainability reporting and information availability	figure When I read sustainability reports and other reports in which companies disclose sustainability performance information, it is clear to me when the reports communicate about materiality whether they are referring to financial materiality or other forms of materiality When I read sustainability reports and other reports in which companies disclose sustainability performance information, I generally disapprove of sustainability reports that do not report in accordance with an acknowledged reporting standard I believe that sustainability reports generally provide relevant information about sustainability issues I believe that sustainability reports generally provide timely information about sustainability issues
figure Sustainability reporting and information quality	figure I believe that sustainability reports generally provide comparable information about sustainability issues I believe that sustainability reports generally provide high quality information about sustainability issues I believe that sustainability reports generally provide verifiable information about sustainability issues

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Table 1.  
Measures and items  
in the survey

Footnote  
corporations (30.0%). With regard to the respondents' positions, 26.7% were portfolio managers, 16.7% were financial analysts, 10.0% worked in executive management, 10.0% were sustainability directors, while the remaining 36.6% had other roles in corporations or public sector entities (e.g. regulators, auditors, consultants).  
Regarding *information needs*, respondents strongly agreed that they desired both information about financially material sustainability issues (M = 6.47; SD = 0.51) and real

Image

figure Theme	figure Questions
figure Sustainability reporting and information needs	figure As a user of information in sustainability reports, could you elaborate on the kind of information needs you have? What are you looking for and what are you expecting when reading a sustainability report? What is your perception of the different information needs that different user groups have (i.e. different stakeholders)? To what degree do you believe that these overlap and to what degree (and in which ways) do they diverge?
figure Sustainability reporting and materiality	figure As a reader of such reports, do you believe that your information needs are largely met, or not? If not, in which ways are they not met? In your view, how should sustainability reports disclose sustainability issues and their materiality?
figure Sustainability reporting and information availability	figure To what degree, if any, do you think sustainability reports need to explicitly distinguish different types of materiality? Do you believe that dynamic materiality needs to be taken into account in sustainability reporting and if so, how?
figure Sustainability reporting and information quality	figure To what degree do you find it easy or difficult to find information about financially material sustainability issues in sustainability reports? To what degree do you find it easy or difficult to find information about financially sustainability issues that are important in other ways than financially in sustainability reports, i.e. those issues that are important to assess real sustainability impacts?
	figure To what degree do you find it easy or difficult to distinguish between the two categories of information above (if at all you find them to be different/diverge from each other)? What do you believe are the biggest reasons for lacking information availability in sustainability reports?
	figure What do you believe are the biggest strengths of sustainability reports with regard to the information quality? What do you believe are the biggest weaknesses of sustainability reports with regard to the information quality? In your view, how could the information quality in such reports be improved?

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Math - Inside Text

sustainability impacts ( $M = 6.37$ ;  $SD = 0.49$ ). Respondents to a somewhat lesser degree desired information about sustainability issues that were deemed important by the general public, NGOs and so on ( $M = 5.63$ ;  $SD = 0.96$ ).

Regarding *materiality*, Table 3 shows the respondents' beliefs about materiality and the relationship between material sustainability issues and financial performance. We note that the respondents believe quite strongly that dynamic materiality should be taken into account in reporting and that they do not believe that sustainability reporting should be limited to financially material sustainability issues alone. They also believe that properly addressing material sustainability issues is crucial for companies' financial performance.

Regarding *information availability*, the respondents strongly disagreed that it was easy to identify financially material sustainability issues in sustainability reports ( $M = 2.97$ ;  $SD = 1.30$ ) and also disagreed that it was easy to distinguish sustainability issues that are financially material from those that are material in other ways, e.g. based on a GRI understanding ( $M = 2.93$ ;  $SD = 1.36$ ). Overall, the respondents seem skeptical to the information availability in such reports and express a high appetite for reporting in accordance with recognized standards ( $M = 4.77$ ;  $SD = 1.55$ ).

Finally, with regard to *information quality*, the respondents gave a mixed assessment. When asked to consider different information quality characteristics of sustainability

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reports, they assessed them favorably with regard to the relevance of information (M = 4.80; SD = 1.35), moderately with regard to comparability of information (M = 3.77; SD = 1.36) and poorly with regard to the timeliness (M = 3.20; SD = 1.45) and verifiability (M = 3.00; SD = 1.08) of information.

In the qualitative interviews, the respondents were given the opportunity to elaborate more in-depth on the same topics, based on the questions in the interview guide in Table 2. We treat the three topics information needs, information availability and information quality in three sub-sections, with respondents' views on materiality integrated therein.

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Information needs

The respondents differed substantially in accordance with their roles and the purposes of reading sustainability reports in those contexts. The portfolio manager differed from most of the others by desiring information about how sustainability improvements could lead to new business opportunities: "We are as interested in information about such opportunities as we are about risks and damages," he pointed out. The compliance officer took an opposite stance, in stating that "I am not looking for profitability – I am looking for traces of real sustainability."

The financial analyst took a different view and stated: "Our perspective is somewhat more short-term – we are largely looking at the next quarter." Importantly, however, he also emphasized that this implied a stronger emphasis on dynamic materiality – information that was often not readily available in sustainability reports. Still, he pointed out that "[t]he reporting needs to be as consistent as possible over time in order to allow for comparison – even on issues that change in importance and materiality over time." The portfolio manager also pointed out the trade-off between the desire for as much relevant information as possible on the one hand and quantified and verifiable information on the other hand: "The reports should be based on good and preferably quantified, variables. But preferably less words and pictures and information that cannot be verified – that only drowns out the material information."

The sustainability manager who worked for a large bank had the view that the information that was developed in a way that catered to investor needs was also the most interesting for other stakeholder groups. He said: "Sustainability reports should be tailored for investors – that will make them more useful for other stakeholders as well. The target audience for such reports is often unclear and developing them in a way that is more concentrated around pure facts and figures will most likely make them useful for the largest number of stakeholders." The public funding manager somewhat echoed this by stating that

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I believe that there is large overlap between sustainability issues that are financially material and sustainability issues that are important for other stakeholders such as NGOs and society at large	4.87 (1.22)
I believe that there is considerable change over time in which sustainability issues that are material	5.50 (1.01)
I believe that sustainability reporting should account only for sustainability issues that are financially material	2.63 (1.73)
I believe that sustainability reporting should account for sustainability issues that are likely to become material in the future	5.87 (0.78)
I believe that properly addressing material sustainability issues is crucial for companies' financial performance	6.20 (0.66)

table

Table 3.  
Survey responses on sustainability reporting and materiality

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“[T]he information needs of users are converging – they are becoming more and more similar and that is a good thing. When the banks and the government agencies start adopting the same perspectives and the same language that helps in making better and more consistent decisions.”

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Information availability

The respondents largely echoed the same viewpoints that were captured in the survey questions about information availability. In particular, they found it difficult to distinguish between sustainability performance information that was financially material and information that was more broadly important for other stakeholder groups or for making inferences about real sustainability impacts. The financial officer argued that “there seems to be good intentions in the reporting, but it is hard to discern information that can be verified and that allows for comparisons – over time and between companies.” The portfolio manager emphasized how the reports alone were usually not sufficient to provide the full information required for his purposes: “Many of the things we are looking for do not necessarily appear in the reports – for instance information about emerging topics. If the information is contested or appears risky to disclose, we often need to be in dialogue with the companies to get hold of the information we need.”

The compliance officer emphasized that the information tended to “flow together and become muddled” and that information that should have been readily available was often presented “in unexpected form in unexpected places” in the reports. She also lamented that there seemed to be differences between companies’ reporting that could be a consequence of differences in their information provision: “The companies are very different in what sustainability efforts they choose to carry out and they similarly seem to report differently in a manner that reflects those activities, their priorities and which issues they can provide information about.”

Finally, several of the respondents pointed out that they believed that sustainability reports were becoming increasingly overflowed with information. The sustainability manager argued that there was too much “prose” and “wordiness” on issues of varying materiality, while there was often lacking information about issues one would consider financially material. The financial analyst argued that there was a large variation in how available and clearly communicated the different information was. He believed that there was still a lack of high-quality quantitative information but pointed out that “financial analysts always want more numbers.”

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Information quality

The financial officer pointed out that the narrative style dominated sustainability reports and made a distinction between goals, efforts and results: “Different users might differ in their interests of whether they want to know more about the efforts in themselves or simply about results. The information quality is often better and more concrete for the latter, but many users really want to know about what the company has actually done and how its efforts actually produced the results they report.” The public funding manager argued that environmental performance information was generally of higher quality than social performance information. She moreover added: “There is concrete information – tons of CO<sub>2</sub>, OK. Percentage of women on the board, OK. But the overall picture, actually getting a grasp of the ESG characteristics of the company – then, the report itself comes short.”

The financial analyst pointed at comparability as a key problem, which echoes the results from the survey. He added: “Take oil companies as an example: They seem to arbitrarily select years as point of comparison in order to make improvements appear larger.

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This renders comparisons hard to interpret.” The compliance officer believed that the disclosed information is generally of high relevance, but pointed out that “many companies seem selective in their information disclosure and seem to write more about themes where they have performed well and less about areas in which they have done less, but that are still important.” Several of the respondents, including the portfolio manager, the financial analyst and the sustainability manager, argued that comparability was a key weakness – both within and between firms. The sustainability manager elaborated: “Comparison with peers is difficult – even for companies that are quite similar. The problem is exacerbated when companies merge, spin out sub-units and so on, at which point the basis for comparison changes.” However, the portfolio manager pointed out a maturing of companies in their disclosure practices: “We’re seeing a run of new firms becoming listed on the stock exchange and their ESG disclosures are often insufficient in the early stages. But as they become more experienced, the quality of information in disclosures normally improves.”

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## Discussion

The results of our survey and qualitative interviews shed light on the tensions between the two approaches to materiality and the implications for users of information in sustainability reports. While the different financial market stakeholders included in our sample had somewhat different information needs, they were in relative consensus about the challenges and shortcomings of discerning between various forms of material information in sustainability reports. Our findings thus contribute further to the understanding of how the materiality of sustainability information may lie “in the eye of the beholder” (Reimsbach *et al.*, 2020), or at least be assessed and consumed very differently by different users of information.

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## Tensions in the uses of the materiality concept

The results of our survey showed that the different users of information in our sample – all of whom have roles related to financial markets – desired information about various types of material information (i.e. both in GRI and SASB approaches to the concept). However, they similarly expressed a belief that it is challenging to discern between sustainability issues that are financially material and those that are (only) material in a GRI sense. As shown in the survey, the respondents in our study judged sustainability reports to provide relevant information, but lacking in comparability, timeliness and verifiability.

In follow-up interviews with selected users of information from the survey sample, we dug deeper into the tensions experienced by these users of information and their practical implications. As outlined in the results section above, the respondents generally found it difficult to discern between:

- financially material sustainability information;
- information of broader importance for other stakeholders; and
- information useful for making inferences about real sustainability impacts.

This perceived difficulty echoed the tension between assessing sustainability tensions “not only assessed relative to *when* but also according to *whom*” (Haffar and Searcy, 2017). Our respondents pointed out that the increased standardization of sustainability reports favored some user groups (in particular financial market professionals) over other groups. Nonetheless, they argued that the information is still presented in a manner that was too muddled for real discernment between different types of material information that respond to the various information needs of these user groups.



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The respondents judged materiality to be a crucial dimension of their information needs and emphasized the need for both disclosure on financially material issues and issues that are material in a GRI sense. Hence, they expressed a preference for disclosure in line with double materiality, which directly addresses the problem of clearly delineating financially material from non-financially material sustainability issues. This problem is even more comprehensive when taking into account, as pointed out by the European Lab Project Task Force on preparatory work for the elaboration of possible EU non-financial reporting standards (PTF-NFRS), that “the financial materiality of a sustainability matter is not constrained to matters that are within the control of the reporting entity” (European Financial Reporting Advisory Group, 2021, p. 7). That is, the financial materiality part of double materiality goes beyond sustainability issues that are under the control of the reporting entity itself, i.e. within the boundary of financial reporting.

In its *Guidelines on reporting climate-related information*, the EU (2019, pp. 6–7) outlines a double materiality perspective in the context of reporting climate-related information (Gibassier, 2019). Here, there is a clear argument for reporting both issues that are financially material “to the extent necessary for an understanding of the company’s development, performance and position” and those that are socially and environmentally material in order to account for the “impact of its activities.” Perhaps the movement towards explicitly reporting on material issues in a double materiality perspective can lead to more clarity that benefits users of such information. Importantly, as pointed out by Global Reporting Initiative and Sustainability Accounting Standards Board (2021, p. 5) in the document “A Practical Guide to Sustainability Reporting Using GRI and SASB Standards”:

SASB’s industry-specific standards identify the sustainability-related risks and opportunities most likely to affect a company’s financial condition (i.e. its balance sheet), operating performance (i.e. its income statement), or risk profile (i.e. cost of capital) [6]. All of these factors impact a company’s current and future market valuation. The GRI Standards focus on the economic, environmental and social impacts of the activities of a company and hence its contributions – positive or negative – towards sustainable development. It is the underlying assumption that if not already financially material at the time of reporting, these impacts may become financially material over time.

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Thus, in their recent collaborative efforts, GRI and SASB have emphasized how double materiality is important both to discern between these two types of materiality. Furthermore, as indicated in the last sentence of the quote above, the two institutions also suggest that such disclosure may be important to account for *dynamic materiality*.

Our respondents expressed a desire for more dynamic materiality information but at the same time expressed concern that such information was difficult to produce as well as to verify. Thus, the respondents implicitly addressed another widespread tension in the field of sustainability – namely, the time dimension, which in turn influences the scope of disclosures. In this regard, as pointed out by the respondents, there is a tension between demands for:

- high-quality information that is verifiable, which may often be the case for well-established indicators such as CO<sub>2</sub> emissions or energy consumption; and
- timely information on emerging topics that may become financially material, which may often have less standardized and well-developed measures and indicators.

Therefore, the introduction of dynamic materiality may necessitate a tolerance for less standardized and less comparable information, at least in the period when new reporting themes emerge.

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Taken together, then, tensions of several varieties are perceived and pointed out by the respondents of our study. First, there are tensions arising from different information needs and appetites of different user groups – specifically, between financial market professionals (investors, portfolio managers, financial analysts, etc.) on the one hand and stakeholders more oriented towards real sustainability impacts on the other hand. Thus, in addition to being tied to the practical nature of these groups' different decision-making purposes, this type of tension may also relate to a deeper-lying ideological tension. The dividing line then goes between those that believe that sustainability reporting should first and foremost be a tool for better informing decision-makers in financial markets about the financial implications of sustainability issues and those that believe that sustainability reporting should serve to increase the transparency of sustainability impacts in a manner that can drive real sustainability improvements.

A different kind of tension relates to the respondents' appetite for standardized and preferably quantitative information on the one hand and for information about emerging topics that are relevant in a dynamic materiality approach on the other. The respondents clearly stated a preference for the former, while at the same time indicating a need for emerging indicators that could be timely, but perhaps less established, standardized and comparable. Thus, this type of tension is also a consequence of taking the time dimension of materiality seriously. Finally and related to the latter, the perspectives of our respondents are suggestive of a tension between comprehensiveness and completeness on the one hand and precision and parsimony on the other, in the information needs and preferences of financial market professionals. As assessing materiality is ultimately about highlighting what is important for users of information, expanding the universe of non-financial information to disclose is in conflict with the attempt to effectively communicate what is most important. Indeed, this tension lies at the very heart of the practical challenges as well as the professional and academic conversations about materiality in sustainability reporting.

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## Potential resolutions

How, then, can such tensions between different approaches to materiality be resolved? Poole and Van de Ven (1989) outline several strategies for resolving such tensions and paradoxes between two phenomena A and B (*in casu*, two approaches to materiality). The perhaps most applicable of those strategies is to “keep A and B separate and their contrasts appreciated” (Poole and Van de Ven, 1989, p. 565). This implies being as explicit and clear as possible about the manner in which a given sustainability indicator is either material in a SASB sense or in a GRI sense (or both). In its recently published document referred to above, the Global Reporting Initiative and Sustainability Accounting Standards Board (2021) argue for exactly such clarity in indicating the combined GRI and SASB relevance and materiality in sustainability reports. [7]

The recent news of a statement of intent to work together towards comprehensive corporate reporting by the institutions CDP, CDSB, GRI, IIRC and SASB (2020) could also prove helpful to provide a clearer and more informative materiality landscape. These five global institutions are responsible for the dominant frameworks, standards and platforms that shape sustainability reporting and the conflation addressed in this paper is in part because of differences in their respective approaches. In addition, in November 2020, two of the institutions, SASB and IIRC, revealed their plan to merge into one organization in 2021 – the Value Reporting Foundation. In its recent communication about the Corporate Sustainability Reporting Directive, the EU (2021) has also stated its intent to build on this movement towards harmonization. [8]

These two institutions arguably have relatively compatible frameworks and can therefore probably be successfully harmonized into one framework. What remains interesting is how the statement of intent to work together by the five institutions will be

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done in practice. But indeed, in the joint document, these institutions point out both the need for “an approach to standard-setting that results in a globally agreed set of sustainability topics and related disclosure requirements that can serve distinct materiality concepts” (i.e. double materiality) and for an approach that “acknowledges the concept of dynamic materiality and the needs of multiple users.”

The definition and understanding of materiality matters for these questions because despite increased standardization of sustainability reporting, users of information in financial markets still express a perceived lack of information availability and quality. Such users of sustainability reports require clarity and ability to discern between types of information. Investors need to know which ESG factors are considered financially material in a given industry and whether reported non-financial KPIs are indicative of future financial performance, related to returns, risk and in particular downside risk. NGOs or concerned citizens might want to understand the differential performance of companies on socially and environmentally material factors; that is, they want to understand which companies deliver real sustainable change. And yet other stakeholders might have other informational needs. And as shown by [Reimsbach \*et al.\* \(2020\)](#), this heterogeneous nature of stakeholders and their interests also implies that stakeholders systematically differ in their assessments which issues are material and worthy of consideration in decision making. As pointed out by [Calace \(2019\)](#), this will require a concept of materiality and associated standards for disclosure that are strategically oriented, combining qualitative and quantitative indicators and forward-looking.

This heterogeneity in stakeholder interests and assessments is of course also exactly what makes materiality a complex phenomenon for reporting purposes and beyond. [Katz and McIntosh \(2021\)](#) argued that this complexity is both related to scope – as more and more sustainability issues emerge and rise in importance, disclosure becomes increasingly comprehensive – and to the specificity of disclosures for each industry or even each company ([Katz and McIntosh, 2021](#)). As pointed out by [Reimsbach \*et al.\* \(2020\)](#), the SASB approach allows for a narrower focus on the financially material issues demanded by a relatively homogeneous group of financial market professionals, while the GRI approach encompasses a broader emphasis on issues that respond to the information needs of a more heterogeneous group of stakeholders that use this information for different kinds of decisions or assessments. The attempt to combine and harmonize these approaches into one will be challenging but potentially important for retaining a broad focus on real sustainability impacts while ensuring high information quality for professional users of information.

## heading Conclusion

In this paper, we have shed light on the nature and consequences of the parallel use of two approaches to materiality in the practice of sustainability reporting. By means of examples and an empirical snapshot of stakeholders in Norwegian financial markets, we have discussed tensions and potential for conflation in practice. We have argued that there is currently some conflation in the conversation about and application of, materiality analyses as a tool for sustainability management and reporting. We have shown the problems of the coexistence of different understandings of materiality and how they may lead users of sustainability reporting information astray.

The need for clarity for scholars and practitioners alike about financially material and non-financially material sustainability issues (i.e. double materiality) as well as the dynamic nature of materiality analyses poses a large challenge for the institutions that shape the practice of sustainability reporting. We therefore welcome the movement towards embracing double materiality and dynamic materiality, as well as the stated intent of the large institutions in the field to work towards harmonized frameworks for sustainability reporting. This requires that

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they succeed in reconciling the conflicting definitions of materiality without creating further tensions and confusion. The recent intention to collaborate between CDP, CDSB, GRI, IIRC and SASB can be fruitful for such a development and the recent publication by the GRI and SASB gives some indication of what the path forward may look like.

Insofar that these efforts to harmonize the materiality concepts in sustainability reporting are unsuccessful, it may have detrimental effects for users of such information and for society at large more broadly. From a policy risk standpoint, there is a ditch on both sides of the road. On the one hand, the future might hold a concept of materiality that is purely oriented towards financial materiality, which would make it possible to anchor standards in empirical analyses of which sector-specific sustainability issues are financially material for companies. While perhaps being attractive for investors owing to its specificity on financial materiality, such a solution would do little to respond to the needs of other users of information and would likely lead to important sustainability impacts being omitted from sustainability reporting. On the other hand, one could envision that the future holds a concept of materiality that is highly inclusive in terms of capturing both double and dynamic materiality, but without the clarity and guidance that allows users of information to discern between the types of materiality assumed for each sustainability issue or indicator. While allowing for comprehensive disclosure of sustainability impacts, such a future might carry the risk of perpetuating the confusion that is already experienced by many users of information and which is indeed reported by the respondents of the present study. The future development of standards for sustainability reporting and the approaches to materiality therein therefore needs to navigate between these two pitfalls.

As these developments continue, there is ample need for research. From a user of information perspective, several empirical strategies could be fruitful. For instance, conducting in-depth qualitative studies into the process by which different users of information make sense of and discern between different types of material information in sustainability reports would be useful. This could for instance be done by means of in-depth interviews or observation studies. An alternative empirical strategy, inspired by the approach of [Reimsbach et al. \(2020\)](#), would be to conduct experimental investigations of reporting formats. For instance, one could develop treatments that present the various types of material information differently and measure differences in respondents' abilities to discern between financially material sustainability information and other types of sustainability information. In addition, one might study how different stakeholders and financially interested actors assess materiality dependent on their own roles and responsibilities in their respective organizations.

There is also room for further research – perhaps mostly qualitative – on the processes by which different approaches to materiality emerge, evolve and are used in practice. Previous work has shed light on the genealogy of the materiality concept ([Edgley, 2014](#)) as well as the adoption of the concept in practice ([Edgley et al., 2015](#)). The present paper has attempted to add to the understanding of how practitioners understand the application of the materiality concept in sustainability reporting and as new frameworks and standards emerge, further research into perceptions, tensions and resolutions is much needed.

## footnote

## Notes

## footnote

1. A stream of research documents the value relevance of material sustainability information (see [Grewal and Serafeim, 2020](#) for a review). In recent work, the relevance of materiality for understanding this relationship has become influential. [Khan et al. \(2016\)](#) found that firms with good ratings on material sustainability issues significantly outperformed firms with poor ratings on such issues. [Grewal et al. \(2016\)](#) moreover found that only 42% of shareholder proposals relate to sustainability topics that are material, whereas [Grewal et al. \(2020\)](#) found that companies that disclose more material sustainability information have higher stock price informativeness.

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- footnote  
2. The definition is quoted from the SASB website: <https://materiality.sasb.org/> (Accessed: April 4, 2021) and is based on the US Supreme Court's definition of material information (cf. Guillot and Hales, 2021).
- footnote  
3. We note that a materiality matrix with similar axes as Figure 2 was indeed published by the GRI in its Technical Protocol Applying the [Report Content Principles](#) (2011, p. 9) . It has since been superseded by the matrix shown in Figure 1. We are grateful to an anonymous reviewer for pointing this out.
- footnote  
4. There is ongoing debate in the field of law on the question of whether the specific reference to dynamic materiality is actually needed, or if it is already implicit in the materiality definition used by the SEC (Katz and McIntosh, 2021).
- footnote  
5. One might even add that there are sustainability issues that are neither deemed important by the company nor on the radar of stakeholders but might still be important issues from social or environmental standpoints. That is, there may even be "silent voices" that are never heard and that will clearly not be emphasized in materiality assessments whether in a GRI or a SASB perspective.
- footnote  
6. As pointed out by SASB in its conceptual framework, there are important implications of sustainability issues for the risk profile of the company, in the sense that it can influence its cost of capital. In the conceptual framework, SASB (2017, p. 14): "Better disclosure enables a more complete understanding of exposure to risk and more accurate pricing of risk associated with volatile performance and/or industries with an unstable outlook."
- footnote  
7. See Global Reporting Initiative and Sustainability Accounting Standards Board (2021, p. 28) for an example of such combined disclosure.
- footnote  
8. Not at least, this also needs to be seen in relation to the proposed development of an International Sustainability Standards Board (ISSB) by the IFRS Foundation. In a recent consultation paper, the IFRS (2020) discusses the need for such international standards and explicitly addresses the potential compatibility with double materiality reporting based on e.g. GRI standards. Perhaps one could envision that such ISSB standards could serve as a backbone or starting point, which could be combined with standards developed by the Value Reporting Foundation.

Headline

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## Footnote

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