

Horn, Andreas et al.

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## Sustainability in the German economy – A comparison of understanding, measures and reporting between SMEs and large companies

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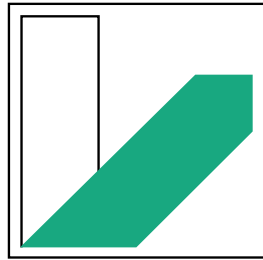
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**UNIVERSITÄT  
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**Bayreuther Arbeitspapiere zu  
Finanzierung, Rechnungslegung, Controlling und Steuern**

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Finance, Accounting and Taxation  
(FACT-Papers)

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# Sustainability in the German economy – A comparison of understanding, measures and reporting between SMEs and large companies

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**Abstract:** Sustainability and non-financial risk management are becoming increasingly important for German companies due to climate change and new regulations. However, it is unclear how well companies of varying sizes are prepared to handle the increasing pressure to adapt. While large companies are obliged to publish a sustainability report due to regulatory requirements such as the CSRD, there is no direct obligation for SMEs. Nevertheless, due to external pressure from stakeholders and information requirements of large companies, SMEs increasingly have to address the issue of sustainability. This raises the question as to how far large companies and SMEs have progressed in implementing sustainability, how the costs and benefits of this adaptation process can be compared and what differences can be identified between the two company sizes. Our study is based on a June 2023 survey of 120 companies and provides an overview of the current state of sustainability management in German companies. Further, our results show that large companies have a broader understanding of sustainability than SMEs. In addition, most large companies already implement and report on sustainability measures. Overall, we observe that there is a link between understanding sustainability, implementing sustainability measures and sustainability reporting.

**Zusammenfassung:** Nachhaltigkeit und das Management nichtfinanzieller Risiken gewinnen für deutsche Unternehmen aufgrund des Klimawandels und neuer Vorschriften zunehmend an Bedeutung. Es ist jedoch unklar, wie gut Unternehmen unterschiedlicher Größe auf den zunehmenden Anpassungsdruck vorbereitet sind. Während große Unternehmen aufgrund regulatorischer Anforderungen wie der CSRD zur Veröffentlichung eines Nachhaltigkeitsberichts verpflichtet sind, gibt es für KMU keine direkte Verpflichtung. Dennoch müssen sich KMU aufgrund des externen Drucks von Stakeholdern und der Informationspflichten großer Unternehmen zunehmend mit dem Thema Nachhaltigkeit auseinandersetzen. Dies wirft die Frage auf, wie weit große Unternehmen und KMU bei der Umsetzung von Nachhaltigkeit fortgeschritten sind, wie die Kosten und Nutzen dieses Anpassungsprozesses verglichen werden können und welche Unterschiede zwischen den beiden Unternehmensgrößen festgestellt werden können. Unsere Studie basiert auf einer Umfrage unter 120 Unternehmen vom Juni 2023 und gibt einen Überblick über den aktuellen Stand des Nachhaltigkeitsmanagements in deutschen Unternehmen. Darüber hinaus zeigen unsere Ergebnisse, dass große Unternehmen ein umfassenderes Verständnis von Nachhaltigkeit haben als KMU. Außerdem setzen die meisten großen Unternehmen bereits Nachhaltigkeitsmaßnahmen um und berichten darüber. Insgesamt beobachten

wir einen Zusammenhang zwischen dem Verständnis von Nachhaltigkeit, der Umsetzung von Nachhaltigkeitsmaßnahmen und der Nachhaltigkeitsberichterstattung.

JEL-Classification: C83; M14; M41; P28; Q01; Y1

Keywords: Sustainability, ESG Risk, Understanding of Sustainability, Sustainability Measures, Sustainability Reporting, Cost-Benefit Analysis

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# 1 Introduction

The reporting of a company's financial position, net assets and results of operations is not only mandatory for large companies, but also for all small and medium-sized enterprises (SMEs) that are required to keep accounts. In contrast, the situation is different for non-financial reporting companies. According to the Non-Financial Reporting Directive (NFRD), it is currently only mandatory for large and capital market-oriented companies. The NFRD was transposed into national German law by the 'CSR-Richtlinienumsetzungsgesetz' (CSR-RUG). In accordance with Sections 289 b ff. of the Commercial Code (HGB), non-financial statements must include information on environmental, social and employee matters (European Union, 2014).

Since 1 January 2024, the requirements of the NFRD were reinforced by the Corporate Sustainability Reporting Directive (CSRD). The CSRD requires reporting companies to disclose more comprehensive and precise data in the context of sustainability. Over the next years, the scope of companies subject to the reporting obligation will be expanded by a step-by-step concept. Companies that were previously obliged to submit an NFRD report must now publish a sustainability report in line with the CSRD for the first time during the 2024 financial year. As of the financial year 2025, the CSRD will be applied to all large companies, regardless of their capital market orientation. From 2026 onwards, the CSRD will also apply to non-complex credit institutions, captive (re)insurers and capital market-oriented SMEs, with the exception of micro-enterprises<sup>1</sup>. Consequently, the number of companies subject to reporting requirements in Germany alone is expected to increase from 550 to 15,000 companies. But even small companies that are not directly affected by the CSRD will be confronted with the issue of sustainability and sustainability reporting (European Union, 2022). Due to the need of the reporting companies to collect information along the value chain, the collection and disclosure of sustainability data will also become relevant for most SMEs. As the German corporate landscape is characterised by a large number of SMEs, they are under direct or indirect pressure from the regulatory framework to set up a sustainability reporting system. A prerequisite for the development of an appropriate system for a sustainability report is a sufficient understanding of the concept of sustainability and the introduction of relevant sustainability measures. Since the CSRD is a very new regulation that is currently in its first year, it is still unclear how well companies are prepared for its implementation. An assessment of the current

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<sup>1</sup> Micro-enterprises are defined as enterprises with a balance sheet total of no more than EUR 450,000, a net turnover of no more than EUR 900,000 and no more than 10 employees (European Union, 2013; European Union, 2023).

status can recognise deficits and identify potential starting points where companies still need to catch up. It is therefore necessary to evaluate how much progress has been made and how companies deal with the topic of sustainability. We analyse the extent to which companies have addressed the issue of sustainability and sustainability reporting. To answer this question, a survey was conducted among 120 companies with the aim of making a comparison between large companies and SMEs. The comparison focused on the understanding of sustainability, the implementation of sustainability measures and the sustainability report. A specific emphasis is placed on the evaluation of the costs and potential advantages associated with the implementation of sustainability measures and reporting. Our objective is to determine the companies' estimated costs and benefits in each instance and to identify the points at which costs or benefits can be observed.

As a result, we show the differences in the understanding of sustainability, sustainability measures and sustainability reporting between SMEs and large companies. We also look at the interrelationship between the three areas and take an approach that links them together. The results show a cross-section of German companies regarding their current status concerning sustainability. Moreover, individual companies can categorise where they currently stand on this basis. This could serve as motivation for companies to focus more on the topic of sustainability and sustainability reporting.

The paper is structured as follows: The initial section presents an overview of the existing literature and surveys conducted in these subject areas, along with their respective findings. After that, we describe our methodology and sample size. This is followed by the results, which are divided into the three categories: understanding of sustainability, sustainability measures, and sustainability reporting. These are discussed in the concluding section, with a particular focus on the differences between SMEs and large companies. Finally, we address the limitations of our study and provide an outlook for future research, whereafter we conclude with a summary of our findings.

## **2 Theoretical Background**

The origin of the term sustainability goes back to Hans Carl von Carlowitz. In his work 'Sylvicultura oeconomica' from the early 18th century, he defines sustainability as a principle that states that a resource, in his case wood, must not be consumed more than can be regrown through planned reforestation (von Carlowitz, 1713). Today's understanding of sustainability is characterized by the 'Brundtland Report' published by the OECD in 1987. According to this report, sustainability refers to the guiding principle of sustainable development, which sees



sustainable development as a given when the current generation satisfies its needs without jeopardizing the ability of future generations to satisfy their needs. Sustainable fulfilment of needs requires both economic, non-wasteful action and consideration of social and ecological aspects (United Nations, 1987). As a result of the Brundtland Report, the UN formulated the Agenda for Sustainable Development, also known as the Sustainable Development Goals (SDGs), in 2015. They encompass 17 globally applicable goals with the intention to provide both states and the economy with guidance for sustainable action (United Nations, 2024). In order to translate the guiding principle of sustainable development into business practice, the ‘ESG criteria’ were developed as corporate measures. ‘ESG’ stands for ‘Environmental’, ‘Social’ and ‘Governance’. An overview of examples of ESG criteria is provided, for example, in BaFin’s information sheet on dealing with sustainability risks (BaFin, 2020). Table 1 shows a selection of these criteria.

**Table 1.** Exemplary overview of ESG criteria.

Environmental (E)	Social (S)	Governance (G)
<ul style="list-style-type: none"> <li>▪ Contribution to climate protection</li> <li>▪ Conservation of resources</li> <li>▪ Reduction of environmental pollution</li> <li>▪ Preservation of biodiversity</li> </ul>	<ul style="list-style-type: none"> <li>▪ Compliance with labor law standards</li> <li>▪ Ensuring occupational health and safety</li> <li>▪ Fairness in terms of remuneration, workplace and promotion opportunities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Prevention of corruption</li> <li>▪ Establishing a risk management system</li> <li>▪ Respect for human rights</li> </ul>

In order to promote the sustainable development of companies, some regulations are becoming mandatory under legislation. Since 2017, for example due to the NFRD, all large capital market-oriented companies, credit institutions and insurance companies with more than 500 employees, a balance sheet total of more than 20 million euros and/or an annual turnover of more than 40 million euros must publish a non-financial report (European Union, 2014).

Since 1 January 2024, the CSRD will apply in the EU as an extension of the NFRD. This expands the group of reporting entities and the depth of the information to be reported. In accordance with the principle of double materiality, the impact of sustainability on the company must be reported and vice versa. The CSRD must be fulfilled by a separate reporting standard, the so-called European Sustainability Reporting Standards (ESRS). In addition, this report must now be audited, initially with limited assurance, and in future with reasonable assurance (European Union, 2022).<sup>2</sup>

<sup>2</sup> In a limited assurance engagement, the auditor's statement suggests that, based on the work performed, there are no indications that the non-financial reporting deviates materially from the reference model. For reasonable assurance, which provides a higher level of confidence, the auditor asserts that the non-financial reporting is in material compliance with and consistent with the reference model (Kammer der Steuerberater und Wirtschaftsprüfer, 2018).

### 3 State of Research

In order to gain an understanding of the current state of research on sustainability and sustainability reporting at SMEs and large companies, surveys from 2018 onwards were identified and analysed. These studies relate to German-speaking countries. Table 2 provides an overview of the studies.

**Table 2.** Overview of previous surveys.

Author (Year)	Title	Methodology and scope	Focus of the survey
Scholl and Waidelich (2018)	Nachhaltigkeitsberichterstattung in Zeiten der Berichtspflicht	Survey of large German companies and SMEs by using survey questionnaires (N=91)	Sustainability reporting
Weber and Weber (2021)	Nachhaltigkeit im deutschen Mittelstand – Ergebnisse einer Studie	Survey of large German companies and SMEs (N=869)	Sustainability activities and management
Soénus (2021)	Nachhaltiges Wirtschaften - Chancen für regionale Unternehmen	Online survey of companies (N=228)	Sustainability activities and management
Kunzlmann et al. (2021)	Sustainability Management Monitor	Online survey of sustainability managers (N=51)	Sustainability activities and management
Löher et al. (2022)	Die Förderung nachhaltiger Finanzierung durch die EU - Auswirkungen auf den Mittelstand	Online survey of IHK Siegen members (N=199)	Sustainability activities and management

*Notes:* Only studies in German-speaking countries were identified. The table provides an overview of the most relevant studies since 2017.

The first study, written by Scholl and Waidelich (2018), examines sustainability reporting in both small and large enterprises. The survey, which is conducted on a regular basis, addresses the general overview of sustainability reporting. A total of 55 SMEs and 38 large companies participated in the study. However, the results of the two size categories were not analysed in direct comparison. Instead, they looked at the development of the two size classes by comparing the results of the surveys over time. The authors conclude that reporting in German companies is developing dynamically. For companies that were already preparing a sustainability report before 2017, this is leading to further professionalisation. In contrast, inexperienced companies that are not obliged to report are taking this as an opportunity to start systematically addressing the topic on a voluntary basis.

Weber and Weber (2021) examine sustainability in German SMEs based on 869 companies. The exclusive focus is on ecological factors and measures in this area. The study examines how individual measures are assessed, what relevance is assigned to them and what companies hope to gain from them. The results of the survey show that there is already a high level of awareness of environmental issues among SMEs. Companies are still in the early stages of sustainability reporting but see an expansion of this as an advantage in terms of competitiveness and on the

labor market. Many companies are willing to invest in this area but are reluctant to do so because knowledge of the topic is not yet widespread and possibilities of support for acquiring expertise are largely unknown.

A survey on the opportunities and challenges of sustainability was conducted by Soénus (2021) for the Industrie- und Handelskammer (IHK) Köln. A total of 228 companies from western Germany were surveyed. Their results show that more than half of the companies have dealt with the topic of sustainability. The companies' main focus is on climate protection measures, economic growth and innovation.

Another study by Kunzelmann et al. (2021), published by the Bertelsmann Stiftung, comprised 160 companies with a focus on large multinational companies based in Germany. They report that the majority of companies are addressing the challenge of proactively shaping the sustainability transformation. The survey findings indicate that sustainability is a key concern for many companies, with a focus on how and where it is anchored in the company and how its relevance is classified. The companies anticipate that there will be greater transparency regarding sustainability aspects in the future, which will have an impact on the competitiveness of companies. However, the introduction of new regulations and pressure from stakeholders is leading to considerable uncertainty and a significant effort for companies.

In their 2022 study, Löher et al. focus on SMEs and industrial companies and surveyed a total of 197 companies. Most companies recognise the necessity for significant investment in the field of sustainability. However, it is evident that a considerable number of SMEs are already required to provide consumption data to major customers, thereby necessitating an increasing focus on sustainability reporting. Many companies have already achieved a high level of proficiency in the collection of consumption data, and it is anticipated that the additional effort required of companies will only marginally increase.

The majority of surveys have concentrated on the broader concept of sustainability. They do not distinct between sustainability understanding, measures and reporting. A particular gap in the literature is the absence of studies directly comparing the implementation of sustainability aspects of SMEs with that of large companies. Moreover, the costs and benefits of both sustainability measures and reporting have not been analysed. Since cost-benefit ratios of measures and reporting have not been compared between SMEs and large companies so far, we aim to extend the literature with our study.

## 4 Data and Methodology

Our study is based on a survey which reached out to 2,500 German SMEs and large companies and took place between mid-June 2023 and the end of August 2023. The 175 responses obtained narrowed to 140 after filtering and cleaning for incomplete and unrealistic responses. We further excluded 20 companies since they did not provide turnover and employee data which were needed to classify the companies into SMEs and large companies. Our final sample consists of 120 German companies.

A total of 32 questions were included in the questionnaire, which were developed with the support of a comprehensive literature research. The survey was divided into an introductory section and three main blocks of questions. The introductory section asked for basic demographic information. This forms the basis for the categorisation of the companies into SMEs and large companies size classes. The main section is divided into the areas of understanding sustainability, sustainability measures and sustainability reporting. The understanding of sustainability aspect aims to determine what companies understand by the term sustainability and how intensively they already deal with the topic. Sustainability measures are defined in the questionnaire as activities that can be assigned to the ESG area. Of interest here is the current status of the implementation of measures and the assessment of the associated costs and benefits. Sustainability reporting should not yet be counted as one of these measures. This is asked about separately in the last section of the questionnaire. Again, the questions focus on categorising the current status quo and the costs and benefits. The assessment employed a five-point Likert scale in conjunction with single and multiple-choice response formats and free text fields for additional input.

The questionnaires are classified into SMEs and large companies size classes based on the Directive 2013/34/EU (European Union, 2013) which is the basis for the implementation of the CSRD (European Union, 2022). As part of an initiative to take account of the impact of inflation, the thresholds contained therein have been adjusted in 2023 (European Union, 2023). Thus, companies are considered large if they meet two of the following three criteria at the balance sheet date:

- Balance sheet total: at least 25 million €
- Net turnover: at least 50 million €
- Average number of employees during the financial year: at least 250

Based on this categorization<sup>3</sup>, 84 responses were received from SMEs and 36 from large companies. This corresponds to a percentage distribution of 70% and 30%. As the number of

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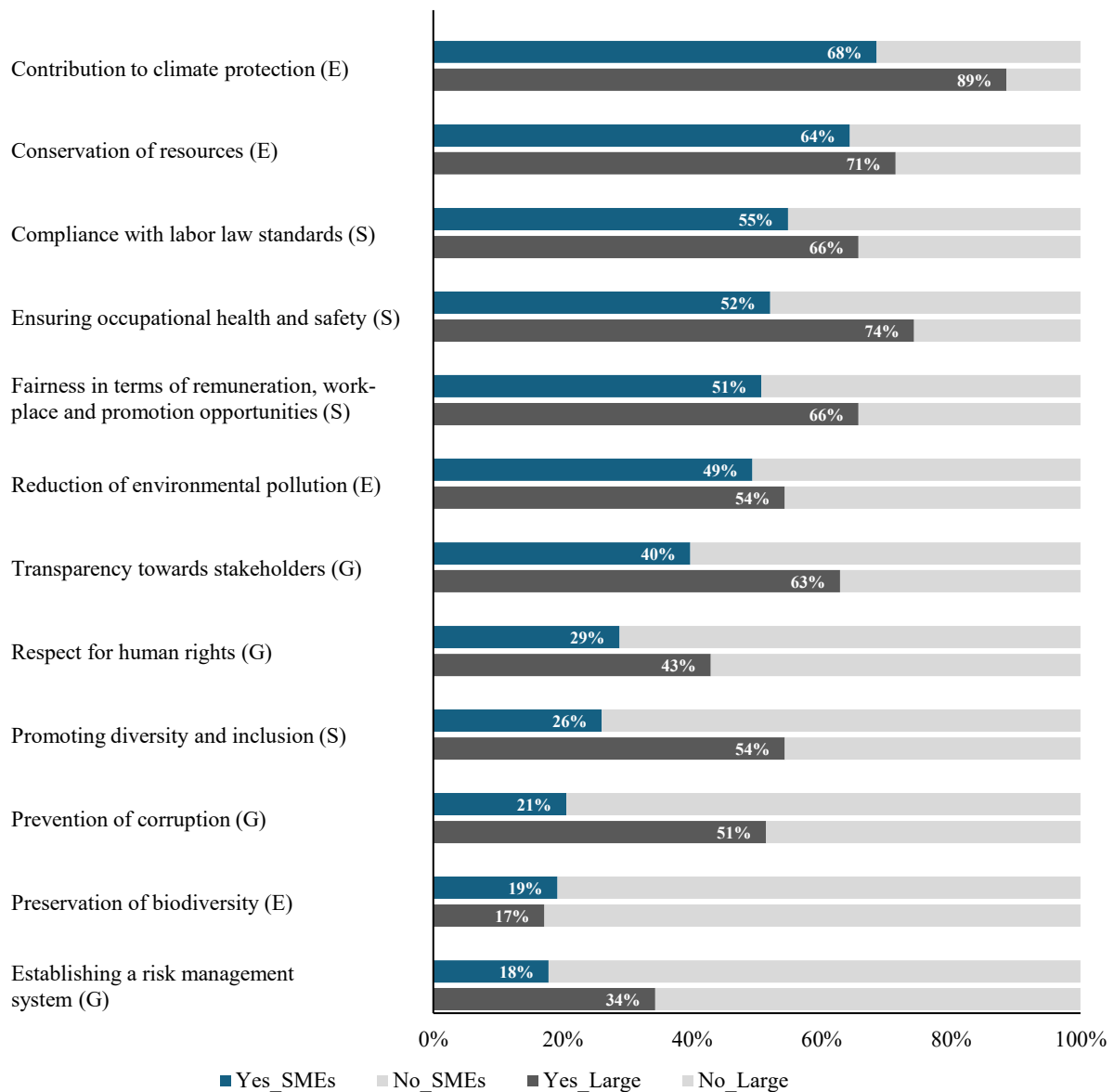
<sup>3</sup> If no annual turnover was provided, the classification was based solely on the number of employees.

responses differs for each question, the number of responses from SMEs and large companies is given for each graph.

## 5 Results

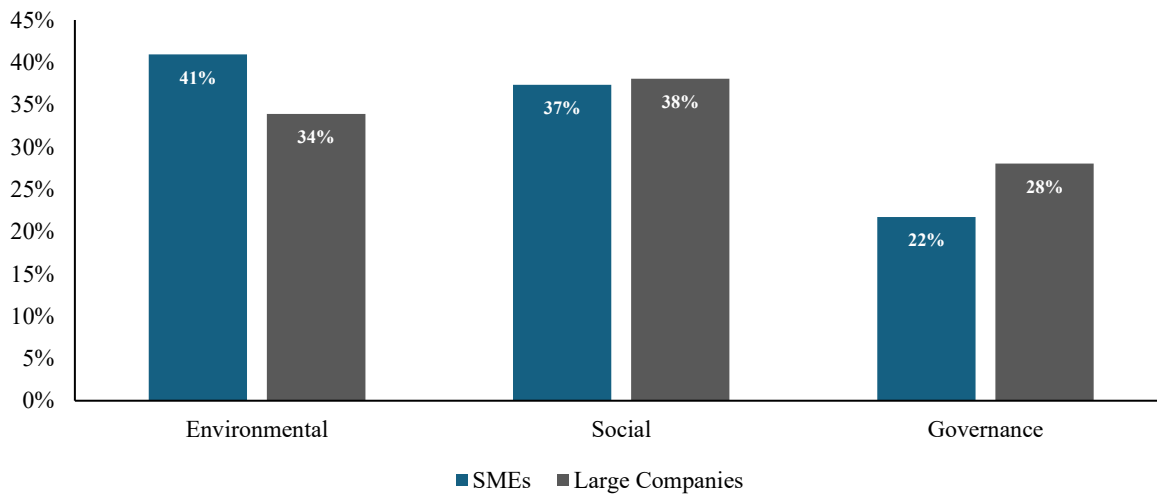
### 5.1 Understanding

The first part of our survey aims to clarify what companies understand by sustainability. Figure 1 shows the selection options and approval rates for different sub-aspects of the ESG criteria.



**Figure 1.** Understanding of sustainability (SMEs n=73 and Large n=35). *Notes:* Left-hand side depicts the possible answers to the following question: ‘What does your company mean by sustainability?’ Multiple Selections are possible. On the right side the percentage of approval is shown for SMEs (blue) and large companies (grey) separately. The light grey bars represent the disapproval for each category. Every Category is assigned to one of the ESG-Dimensions. Environmental is denoted by E, Social by S and Governance by G respectively.

Most SMEs understand sustainability as a contribution to climate protection, conservation of resources and compliance with labour law standards. Less important are establishing a risk management system, preservation of biodiversity and prevention of corruption. Large companies are most likely to see sustainability as a contribution to climate protection, ensuring occupational health and safety and conservation of resources. Preservation of biodiversity, establishing a risk management system and respect for human rights are less associated with the concept of sustainability. It is noticeable that SMEs focus on fewer aspects than large companies. The largest difference in responses is 30% for preventing corruption, 28% for promoting diversity and inclusion and 23% for transparency to stakeholders. The differentiated and higher response rate for the individual alternatives of large companies compared to SMEs indicates a broader and deeper understanding of sustainability for large companies.

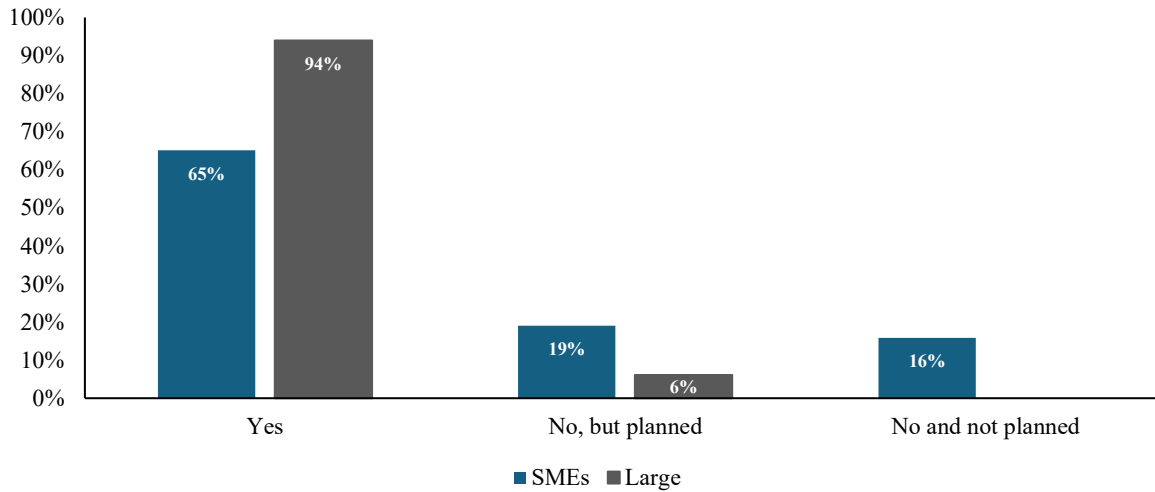


**Figure 2.** Understanding sustainability from an ESG perspective (SMEs n=73 and Large n=35). *Notes:* The figure refers to the question, which is already shown in figure 3: ‘What does your company mean by sustainability?’. The individual possible answers were assigned to the ESG criteria. The column chart shows the distribution of the responses related to each criterion. The values represent the ratio of affirmative responses to the total number of affirmative responses across all answer options. The blue columns represent the response frequency in percent for SMEs, the grey columns represent the large companies.

Figure 2 illustrates that SMEs’ comprehension of sustainability is primarily concentrated in the domains of environmental and social factors. Similarly, large companies’ comprehension of sustainability is also focused on environmental and social aspects. While the role of governance is evidently less significant for SMEs than for environmental and social aspects, it is almost as important for large companies as the other criteria. This again highlights the broader understanding of sustainability among large companies compared to SMEs.

## 5.2 Measures

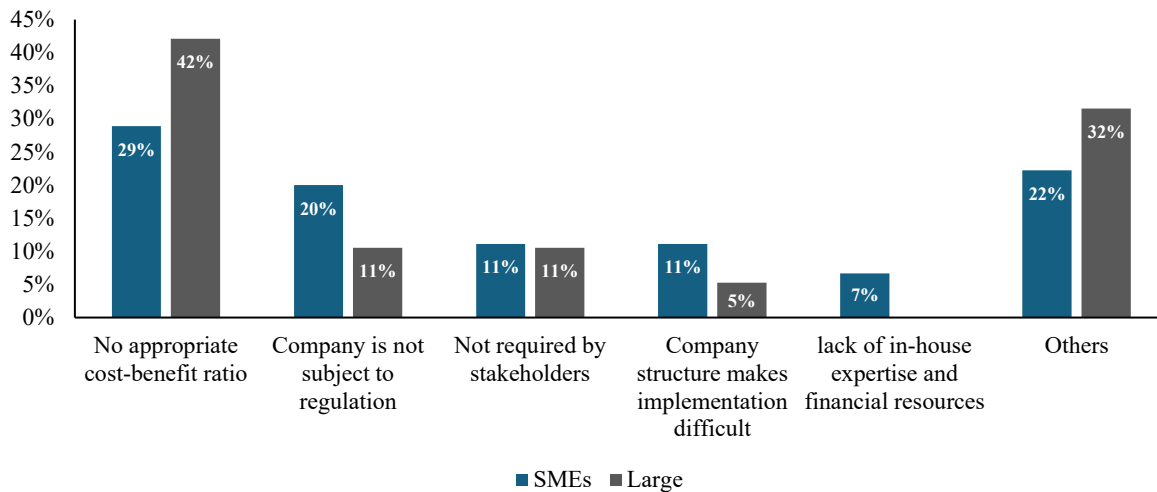
The second part of the survey focuses on sustainability measures in which we analyse the current status of implementation and cost and benefit factors. Figure 3 shows the status of the implementation of sustainability measures.



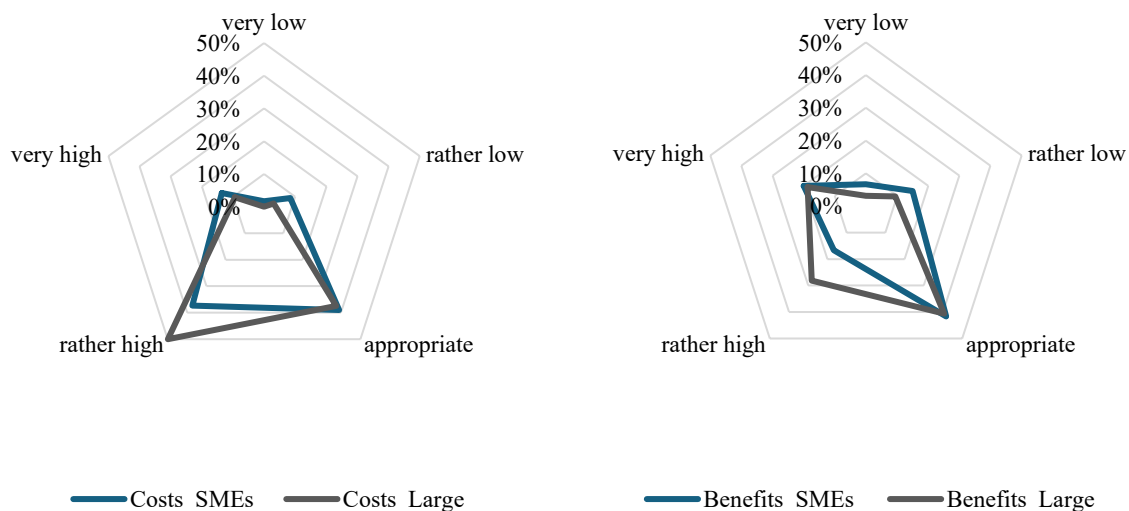
**Figure 3.** Status of the implementation of sustainability measures (SMEs  $n=63$  and Large  $n=33$ ). *Notes:* The distribution shows the answer to the question: ‘Is your company already implementing sustainability measures?’ The bars represent the number of responses, broken down into SMEs (blue) and large companies (grey), as a percentage.

The majority of both SMEs and large companies report that they are already implementing measures. This is the case for 65% of SMEs and 94% of large companies. This implies that almost all large companies have already implemented sustainability measures. The remaining 6% of large companies have not yet implemented any measures but are planning to do so. The same is the case for 19% of SMEs. However, a further 16% of SMEs state that they have not implemented any measures and have no plans to do so in the future.

Figure 4 shows what obstacles might hinder the implementation of sustainability measures. For both large companies and SMEs, the main potential obstacles are that there is no appropriate cost-benefit ratio, that the company is not subject to mandatory regulation and that the measures are not demanded by stakeholders. Lack of in-house expertise and inadequate business structures make implementation even more difficult, especially for SMEs. The ‘others’ option allowed companies to give additional reasons. Many use this space to emphasise that there are no reasons against implementing sustainability measures, and therefore the previous answer options do not apply. Therefore, obstacles don’t play a role here.



**Figure 4.** Obstacles to the implementation of sustainability measures (SMEs n=45 and Large n=19). *Notes:* The distribution shows the answer to the question: ‘What barriers complicate the implementation of sustainability measures?’ Only one selection was possible. The bars represent the number of responses for each category, broken down into SMEs (blue) and large companies (grey), as a percentage. If ‘Others’ was ticked, an individual answer could be given in a free text field.



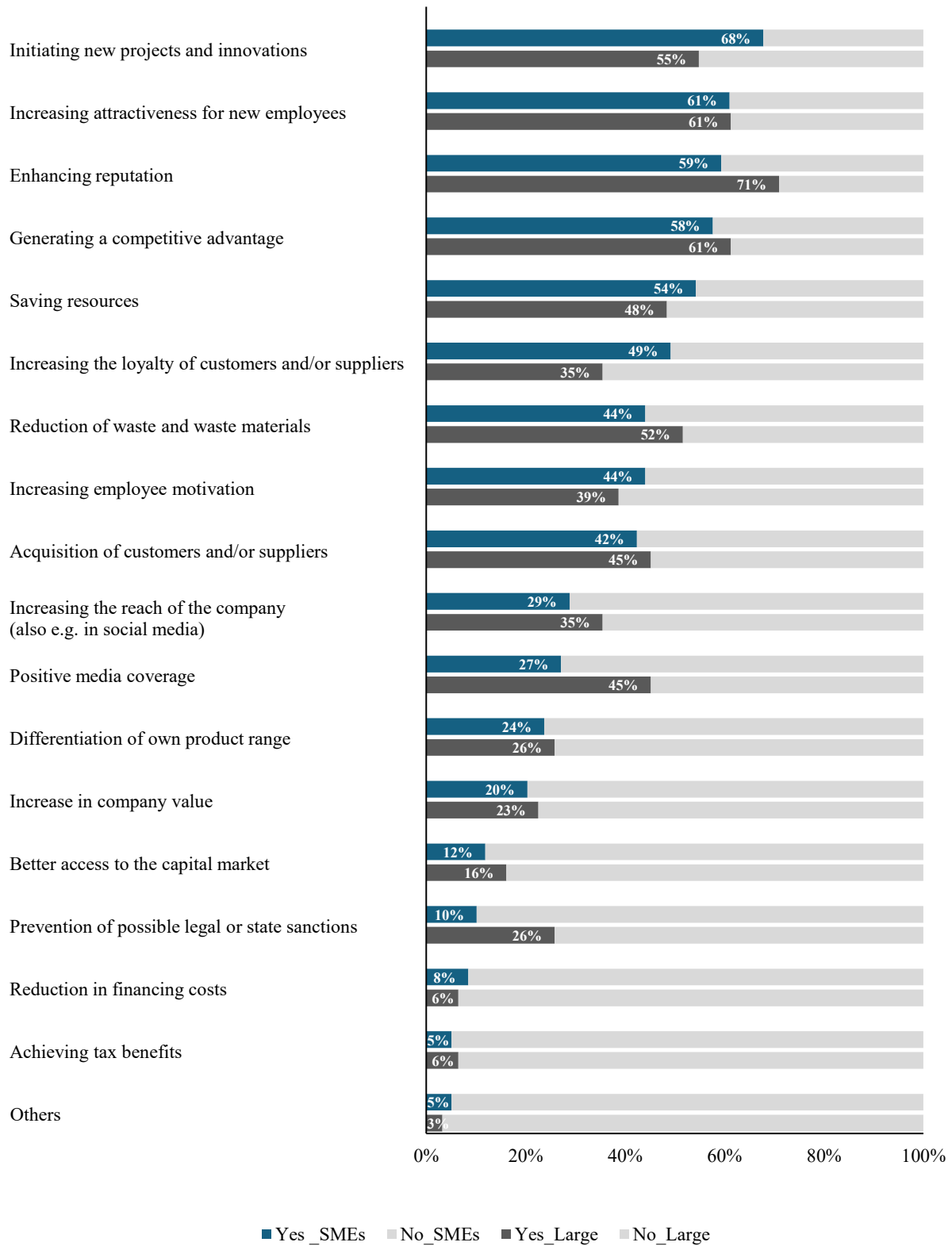
**Figure 5.** Assessment of the costs (SMEs n=60 and Large n=32) and benefits of sustainability measures (SME n=59 and Large n=32). *Notes:* The network diagram on the lefthand side shows the answer to the question: ‘How high do you estimate the costs of implementing sustainability measures?’ The possible answers ranged from very low to very high. The network diagram on the righthand side shows the answer to the question: ‘How high do you estimate the benefits of implementing sustainability measures?’ The possible answers ranged from very low to very high. The blue line for SMEs and the grey line for large companies represent the response frequency and show a tendency of how the costs and benefits are rated.

When it comes to implementing sustainability measures, companies always must consider the cost-benefit ratio. Figure 5 shows a comparison of the assessment of costs and benefits for SMEs and large companies. Most large companies rate the costs as ‘rather high’. SMEs tend to rate them as ‘appropriate’. However, there is also a swing towards ‘rather high’. In evaluating the benefits, both SMEs and large companies tend to ‘appropriate’. There is also a slight



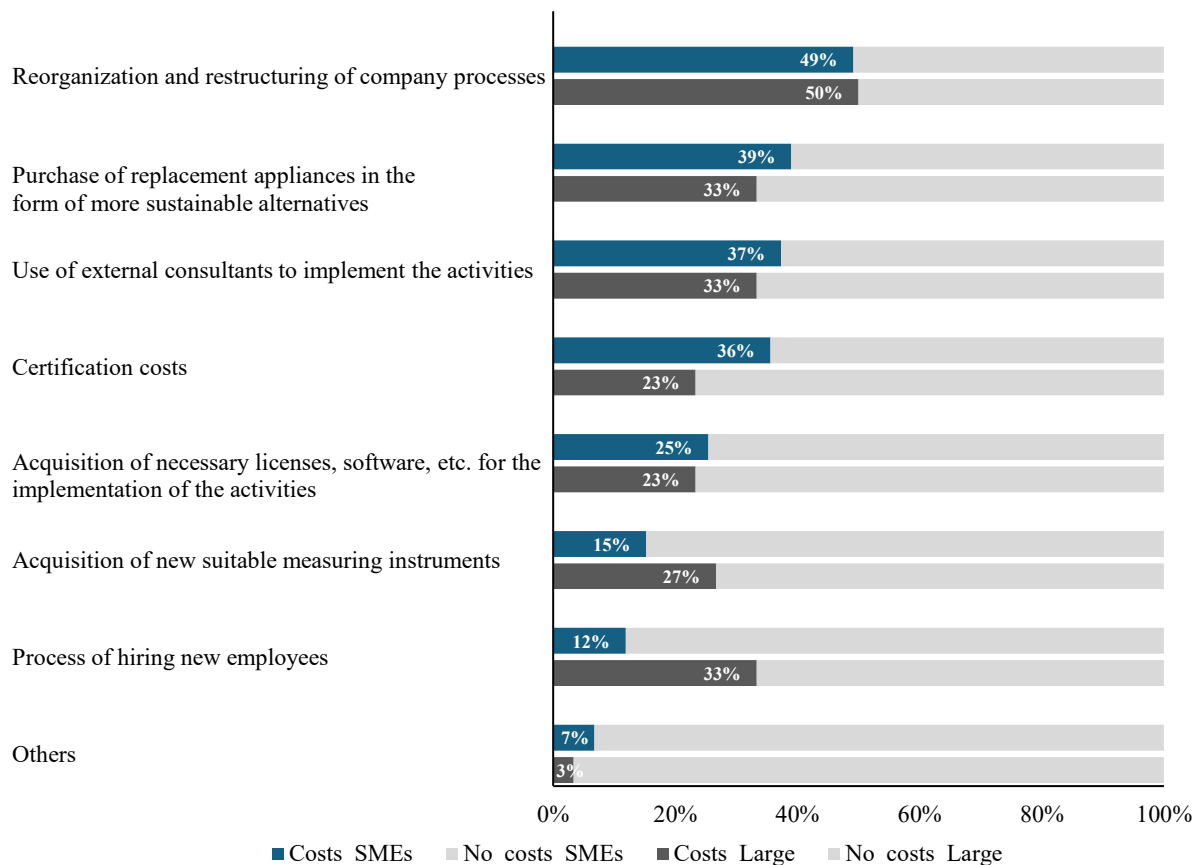
tendency for SMEs to rate the benefits as ‘rather low’. For large companies, the answers also tend towards ‘rather high’. The results show that the costs slightly outweigh the benefits from the perspective of both SMEs and large companies.

To identify possible benefits and costs of sustainability measures, respondents were asked to select the most important benefits and costs from a broad list. Figure 6 shows the results of the benefit aspects. According to our survey, SMEs see the greatest benefit in initiating new projects and innovations. Sustainability measures can also make the company more attractive to new employees and enhance its reputation. The benefits of achieving tax benefits, reduction in financing costs and prevention of possible legal or state sanctions are given little importance. Enhancing reputation, generating a competitive advantage and increasing attractiveness for new employees are the biggest benefits for large companies. On the other hand, achieving tax benefits, reduction in financing costs and better access to the capital market have a lower approval rate. It can be seen that SMEs and large companies categorise the different aspects of benefits in a similar way. This suggests a similar understanding of the benefits of sustainability measures. The largest difference in responses between SMEs and large companies is for positive media coverage (18%), prevention of possible legal or state sanctions (16%) and initiating new projects and innovations (13%).

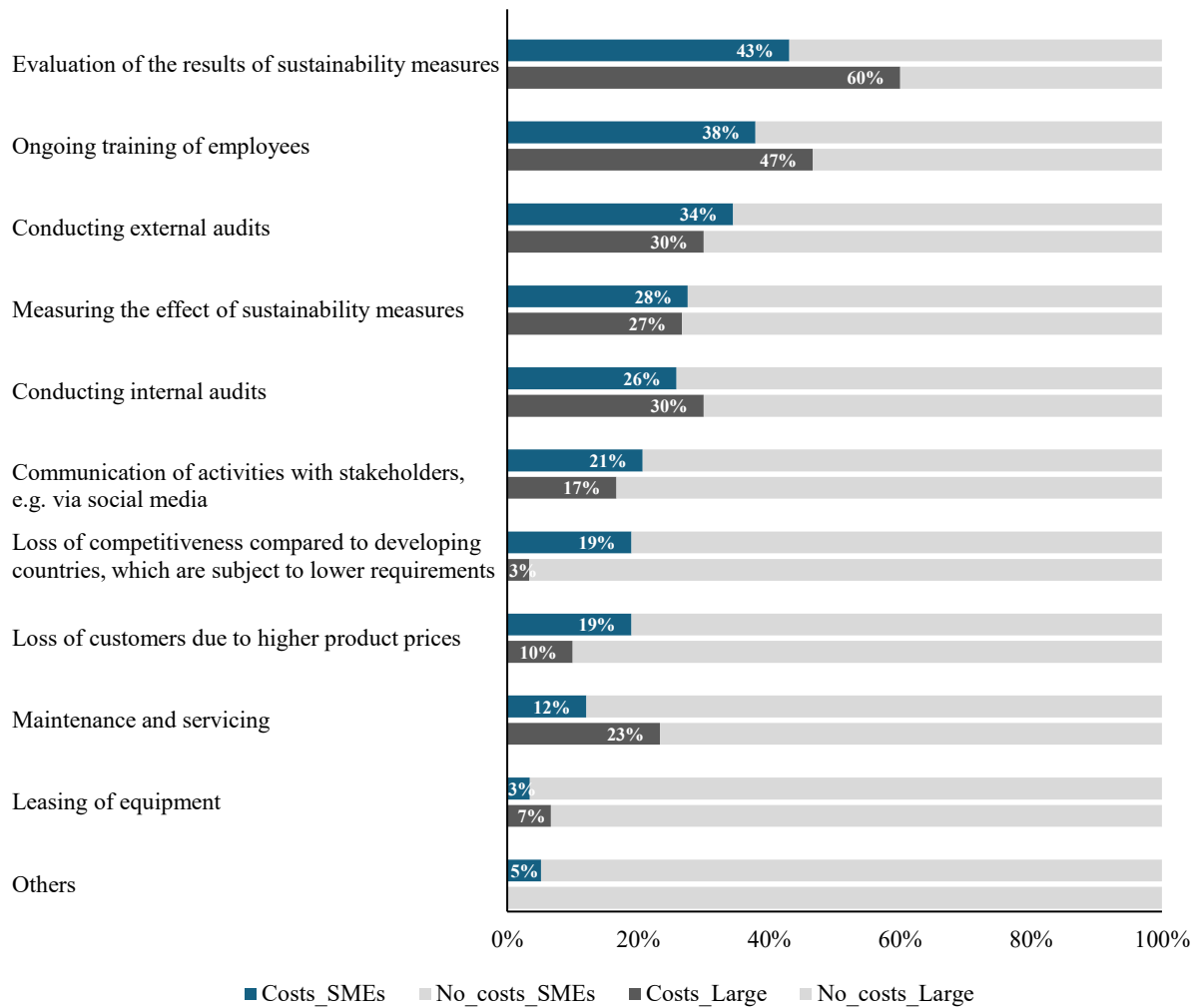


**Figure 6.** Benefit aspects in the implementation of sustainability measures (SMEs n=31 and Large n=59). *Notes:* Lefthand side depicts the possible answers to the following question: ‘What benefits do you see in the implementation of sustainability measures?’. Multiple Selections are possible. On the right side the percentage of approval is shown for SMEs (blue) and large companies (grey) separately. The light grey bars represent the disapproval for each category.

The implementation of sustainability measures is also associated with costs, which we divided into one-off and ongoing costs. One-time costs are directly and immediately linked to the implementation of the measures and will not arise again. In contrast, ongoing costs are incurred on a regular basis to maintain the measures. The One-off costs of introducing sustainability measures are shown in Figure 7. For SMEs these are reorganization of company processes, purchase of more sustainable appliances and use of external consultants to implement the activities. The costs associated with process of hiring new employees, acquisition of measuring instruments and acquisition of licenses and software represent a relatively minor consideration for SMEs. Large companies categorise the relevant one-off costs in the same way as SMEs. The less relevant cost factors are all close to each other and are seen in certification costs, acquisition of licenses and software and acquisition of measuring instruments. When comparing SMEs and large enterprises, it is noticeable that the importance of total one-off costs is rated as less relevant for both, as no response alternative is selected by more than 50%. There are no major differences, except for the process of hiring new employees, where large enterprises and SMEs differ by 21%.



**Figure 7.** Largest one-off costs for the implementation of sustainability measures (SMEs n=59 and Large n=30).  
*Notes:* Lefthand side shows the possible answers to the question: ‘What one-off costs do you see in the implementation of sustainability measures?’. Multiple Selections are possible. On the right side the percentage of approval is shown for SMEs (blue) and large companies (grey) separately. The light grey bars represent the disapproval for each category.



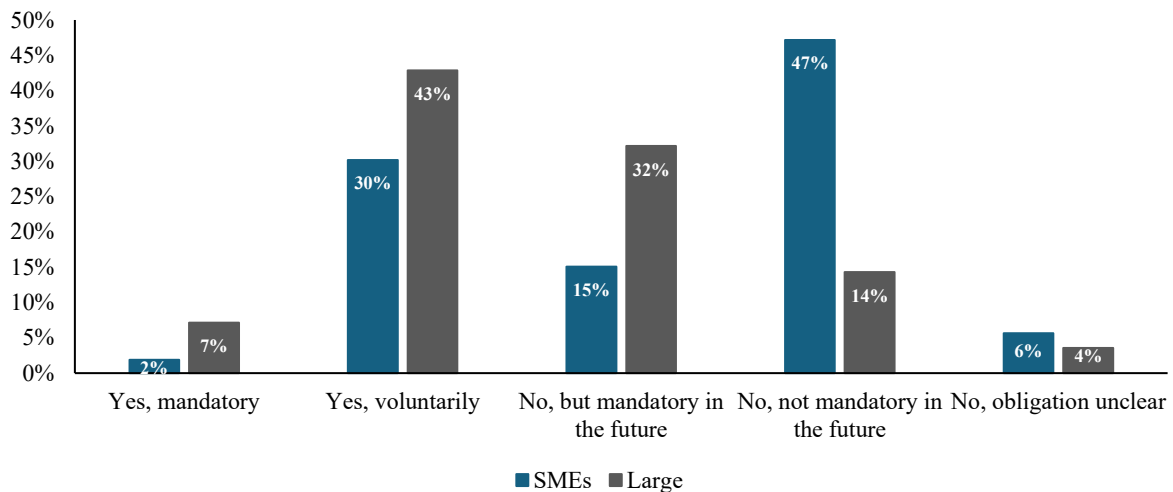
**Figure 8.** Largest ongoing costs for the implementation of sustainability measures (SMEs n=58 and Large n=30). *Notes:* Left hand side shows the possible answers to the question: ‘What ongoing costs do you see in the implementation of sustainability measures?’. Multiple Selections are possible. On the right side the percentage of approval is shown for SMEs (blue) and large companies (grey) separately. The light grey bars represent the disapproval for each category.

Figure 8 shows that the most significant ongoing costs for SMEs are the evaluation of the results of sustainability measures, the ongoing training of employees and conducting external audits. They consider leasing of equipment, maintenance and servicing and the loss of customers due to higher product prices as less relevant. The allocation of the most relevant running costs is similar for both size classes. Yet the cost of conducting external audits for large companies are just as important as the cost of conducting internal audits. For SMEs, the relevance of internal audits is rated slightly lower. Large companies classify the loss of competitiveness, the leasing of equipment and the loss of customers due to higher product prices as little relevant. The largest discrepancy in responses between SMEs and large companies is found for the evaluation of the results of sustainability measures with a difference of 17% and the loss of competitiveness with a difference of 16%. This is for large companies much more important than for SMEs, where merely 3% agree compared to 19% of large companies. With

11% there is also a big difference in answers in the maintenance and servicing. Further cost items, which could be added under ‘Others’, were mentioned by SMEs as an important addition. These include personnel costs in general as well as research and development costs. Large companies are also affected by these costs.

### 5.3 Reporting

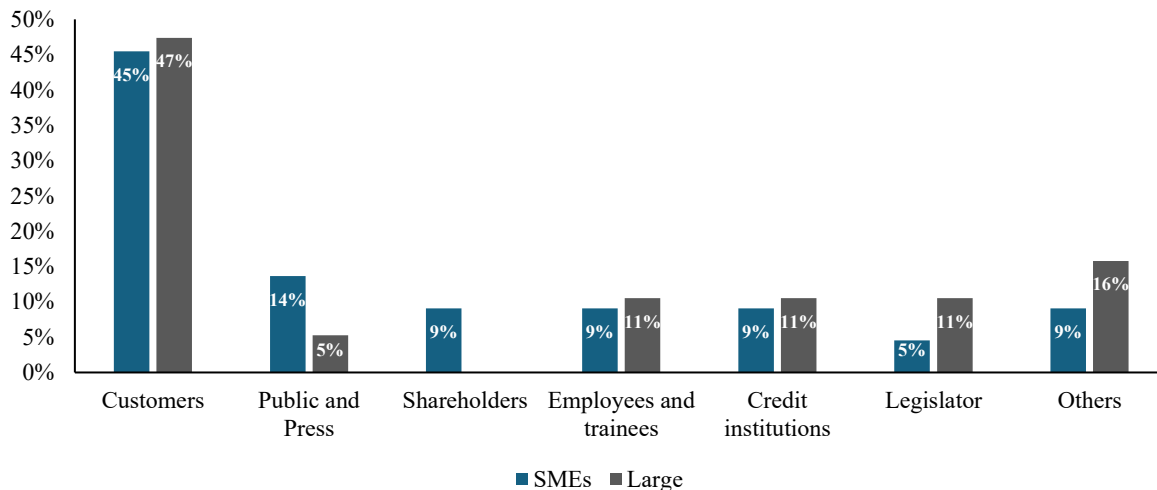
The third and last part of the questionnaire has its focus entirely on sustainability reporting. The first question in this section asks the companies surveyed about the status quo of their current reporting obligations. The results are shown in Figure 9 and therefore demonstrate whether and how the SMEs and large companies in the sample were already committed to a sustainability report at the time of the survey.



**Figure 9.** Existence of sustainability reporting in the company (SMEs n=53 and Large n=28). *Notes:* The column chart shows the answer to the question: ‘Does your company already have a sustainability report?’. The columns represent the percentage of approval for each category and for SMEs (blue) and large companies (grey) separately.

Most companies have already examined the question of whether they will be legally required to produce a sustainability report. However, 6% of SMEs and 4% of large companies state that they have not yet addressed the issue of reporting obligations. Only very few of the companies questioned were already obliged to publish a sustainability report at the time of the survey. This applies to only 2% of the SMEs and 7% of the large companies surveyed. Most of the participating SMEs won’t be obligated to have a sustainable reporting system in the future according to the percentage of the answer ‘No, not mandatory in the future’. Nevertheless, a third of SMEs publish a voluntarily sustainability report. In the case of large companies, most of them have a voluntarily sustainable reporting system or have the obligation to do so in the future.

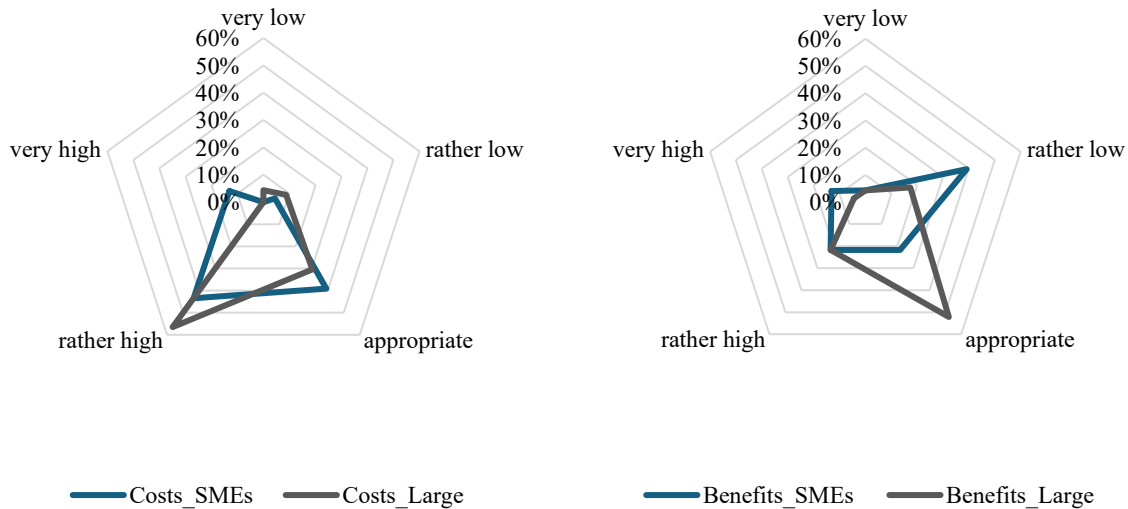
In order to evaluate whom, the companies aim to address with their sustainability report, they were asked to name the main target group of their report. These results are shown in Figure 10. The biggest group of stakeholders for both SMEs and large companies is by far the customer. For SMEs this is followed by the public and press, the shareholders, employees and trainees and credit institutions. A less important role is attributed to the legislator. In contrast, the large companies name the employees and trainees, credit institutions and the legislator as the second largest group of stakeholders with 11% respectively. The public, the press and shareholders are less important for large companies.



**Figure 10.** Main target group for sustainability reporting (SMEs n=22 and Large n=19). *Notes:* The column chart shows the answer to the question: ‘Who is the main target group of your sustainability reporting?’. There was only one answer possible. The columns represent the percentage of approval for SMEs (blue) and large companies (grey) separately.

Assessing the perception of the costs and benefits of a sustainability report, the follow-up question dealt with the assessment of their level. By using a network chart, the tendencies of SMEs and large companies can be compared directly. The left-hand side of Figure 11 shows that SMEs do not have a direct tendency towards one of the answers options but rate the costs between ‘rather high’ and ‘appropriate’. Large companies, on the other hand, tend to rate the costs as rather high.

Another large difference can be spotted by comparing the answers given for the benefits, which is presented on the right-hand side of Figure 11. Most SMEs do not see a benefit in a sustainability report and predominantly rate them as ‘rather low’. Large companies, however, tend to value the benefits as ‘appropriate’. Putting all this together, it can be said that both SMEs and large companies do not consider the cost-benefit ratio to be balanced, with a greater discrepancy for SMEs.

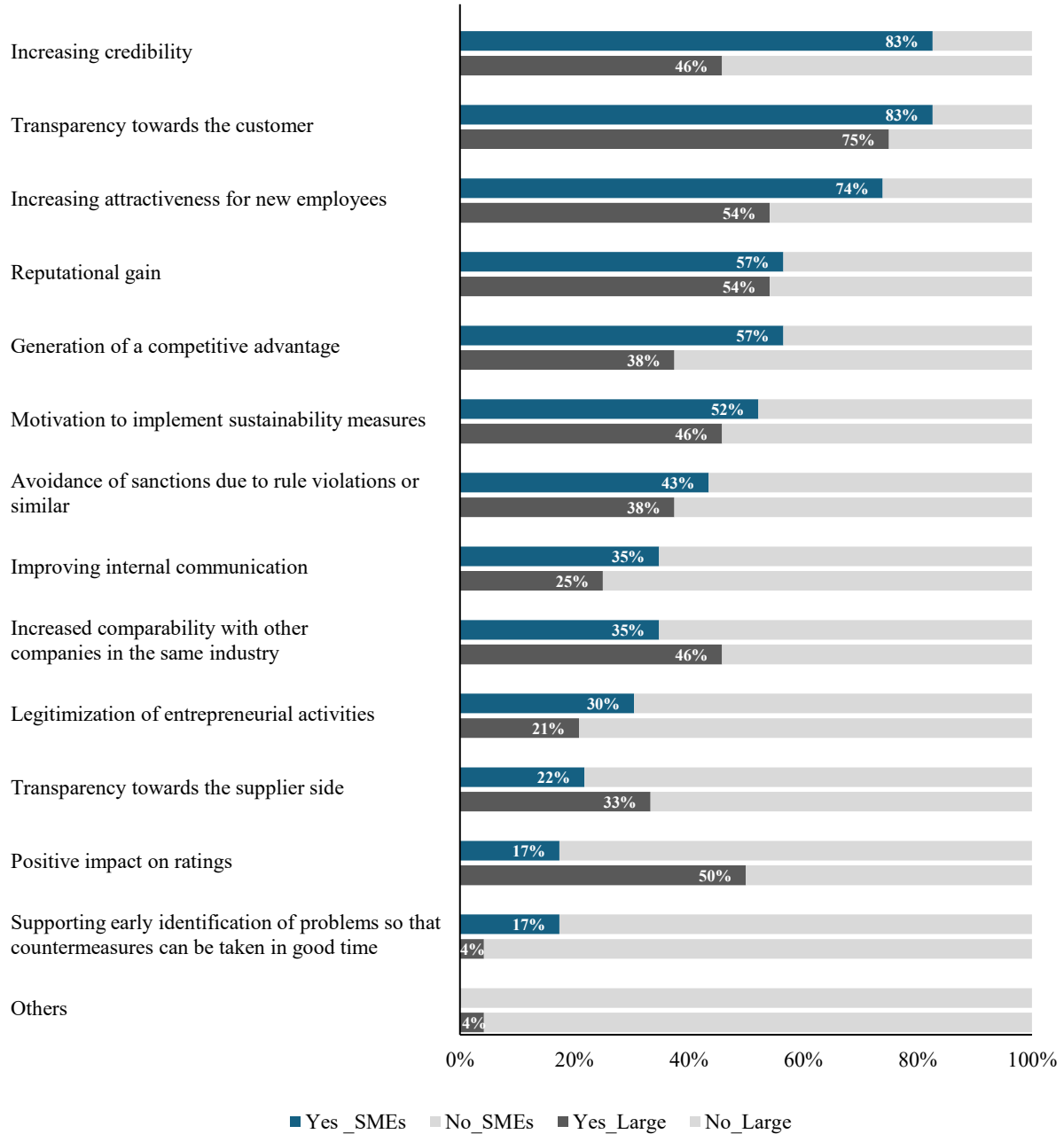


**Figure 11.** Assessment of the costs and benefits of sustainability reporting (SMEs  $n=23$  and Large  $n=23$ ). *Notes:* Network chart on the lefthand side shows the answers to the question: ‘How high do you estimate the costs of generating a sustainability report?’ The possible answers ranged from very low to very high. The network diagram on the righthand side shows the answer to the question: ‘How high do you estimate the benefits of generating a sustainability report?’ The possible answers ranged from very low to very high. The blue line for SMEs and the grey line for large companies represent the response frequency and show a tendency of how the costs and benefits of a sustainability report are rated.

Figure 12 shows the result of what SMEs and large companies consider as benefits by publishing a sustainability report. In general, the distribution of responses is rather similar, with a few exceptions. SMEs see the biggest benefits in the increasement of credibility, the transparency towards the customer and the increasement of attractiveness for new employees. A less important role is attributed to the identification of problems, the positive impact on ratings and the transparency towards the supplier side. The view of large companies on the most important benefit aspects is quite similar. The biggest benefits of a sustainability report for large companies are the transparency towards the customer, the increasement of attractiveness for new employees and the gain of reputation. Only small differences compared to SMEs can be spotted in the least named benefits. The three least mentioned benefits for large companies are the supporting role in the identification of problems, the Legitimization of entrepreneurial activities and the improvement of internal communication.

Despite a quite similar distribution in the answers, a few differences in the answers can be identified. With a gap of 37%, the greatest discrepancy can be found in the responses for the increasement of credibility. While SMEs, with an overall approval rating of 83%, consider the increasement of credibility as the most relevant benefit, only just under half of large companies rate this point as a positive aspect. In addition, there is a recognizable deviation between the responses of SMEs and large companies with regard to the positive impact of sustainability

reporting on the rating, with a difference of 33%. This benefit aspect is important for half of the large companies, while only around one fifth of SMEs consider it to be relevant. A difference of 20% can be observed when it comes to increasing attractiveness for new employees. For both company sizes, this is one of the most important benefit aspects.

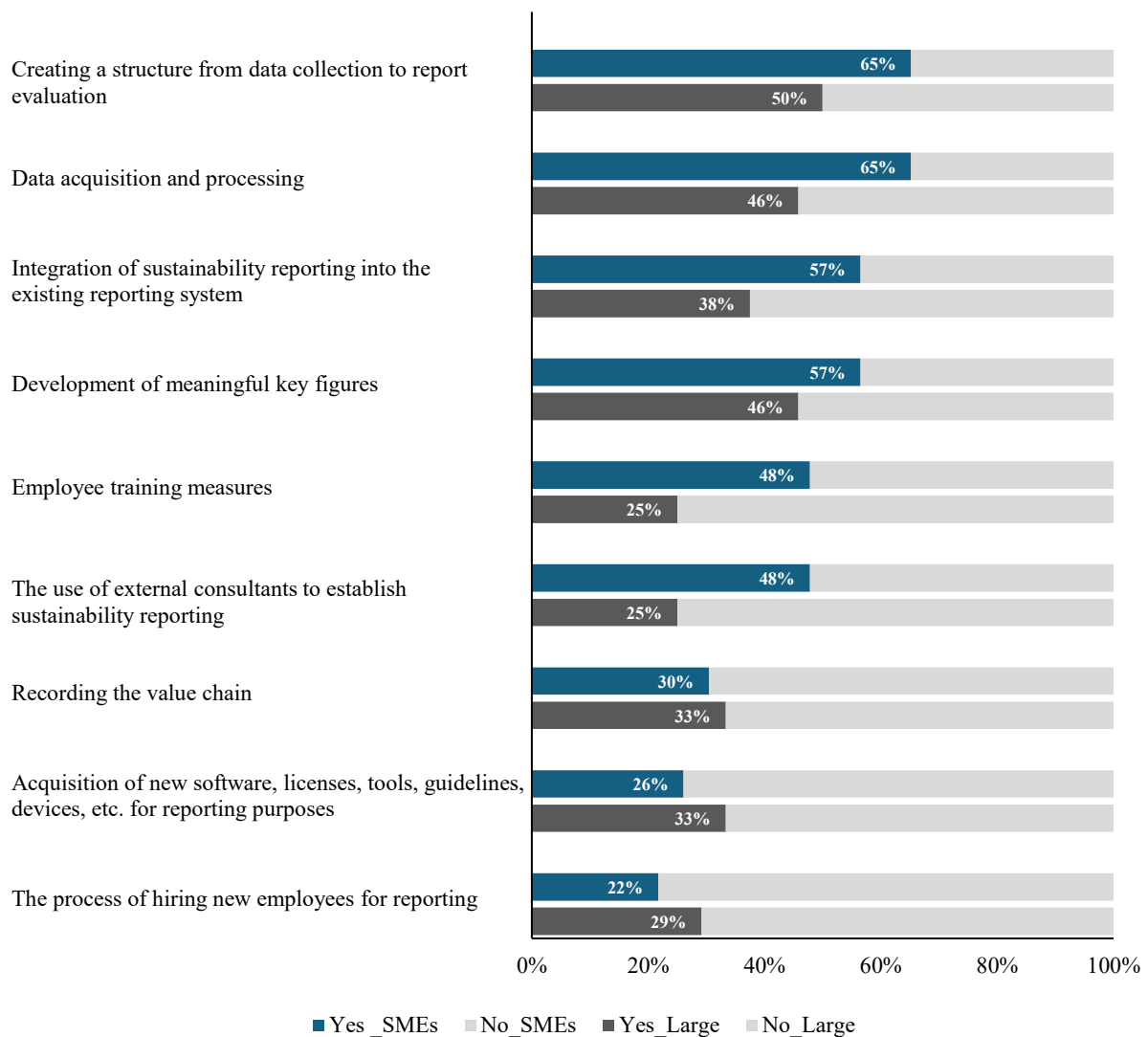


**Figure 12.** Benefit aspects of sustainability reporting (SMEs n=23 and Large n=24). *Notes:* Lefthand side shows the possible answers to the question: ‘What benefits do you see in the implementation of a sustainability report?’. Multiple Selections are possible. On the right side the percentage of approval is shown for SMEs (blue) and large companies (grey) separately. The light grey bars represent the disapproval for each category.

The cost of writing and publishing a sustainability report can be divided into the one-off costs and the ongoing costs. Figure 13 shows the results for the one-off costs. SMEs cite the creation of a structure from data collection to the report evaluation, the data acquisition and



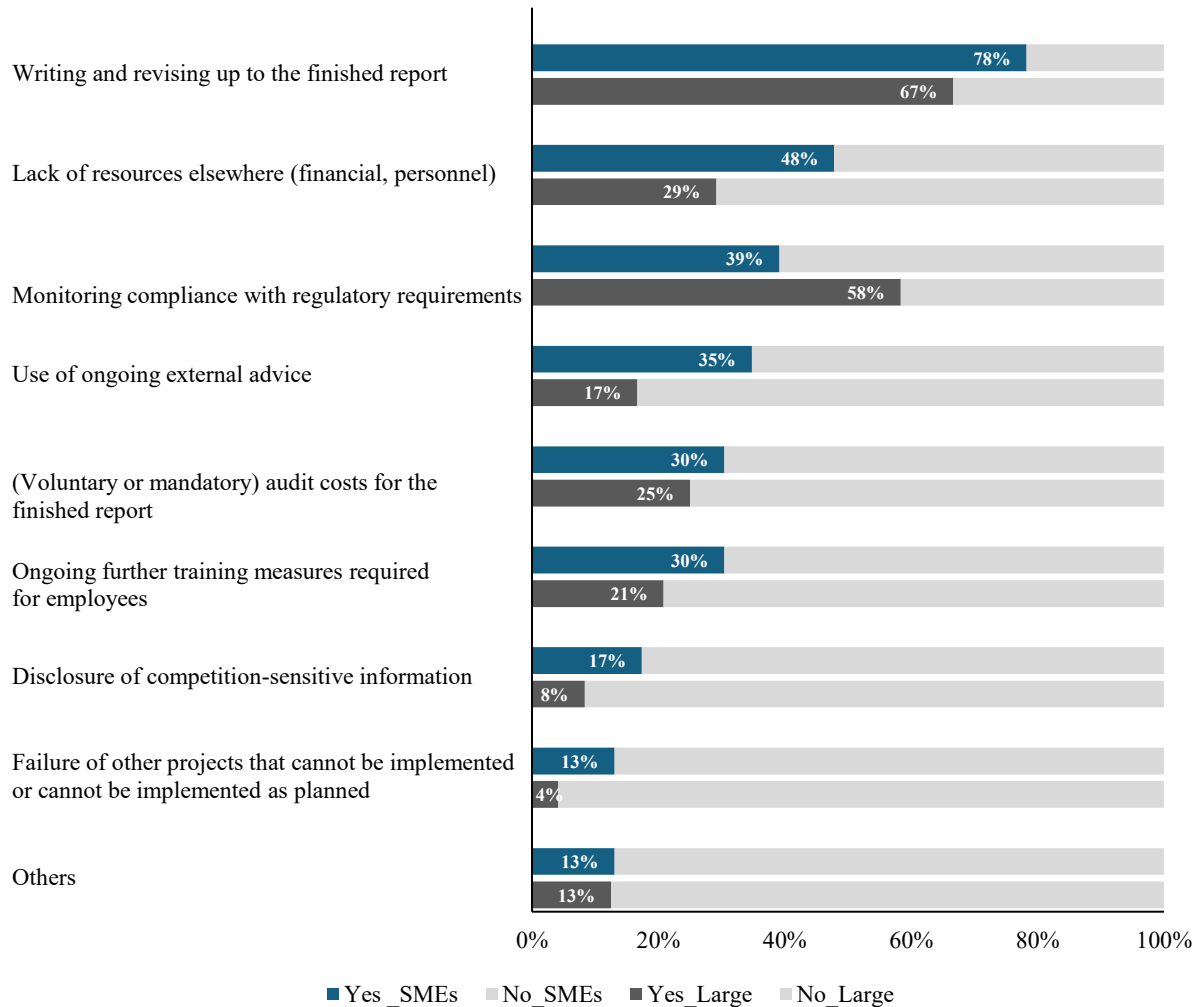
processing as well as the integration of sustainability reporting into the existing reporting system as the biggest one-off costs when implementing a sustainability report. SMEs rate the costs of hiring new employees, purchasing new software and licenses for reporting and the reporting of the value chain as less important. In contrast, large companies rate the costs of creating a structure of data collection, data acquisition and processing as well as the development of key figures as the highest. For large companies, the highest one-off costs are creating a structure from data collection, the data acquisition and processing and the development of meaningful key figures. In contrast, the costs for external consulting, employee training measures and the hiring process for new employees play a minor role.



**Figure 13.** One-off costs of sustainability reporting (SMEs n=23 and Large n=24). *Notes:* Lefthand side shows the possible answers to the question: ‘What one-off costs do you see in the implementation of a sustainability report?’. Multiple Selections are possible. On the right side the percentage of approval is shown for SMEs (blue) and large companies (grey) separately. The light grey bars represent the disapproval for each category.

There are considerable differences between large companies and SMEs when it comes to employee training measures, with a 23% difference in the response rate. Half of the SMEs

consider the one-off costs an important issue. In contrast, just one quarter of large companies consider this a cost aspect. The same situation can be observed for the response rate if external consultants are used when implementing a sustainability report. Another high divergence of SMEs and large companies show in the rating of ‘data acquisition and processing’ and ‘integration of sustainability reporting in the existent reporting system’ with a difference of 19%.



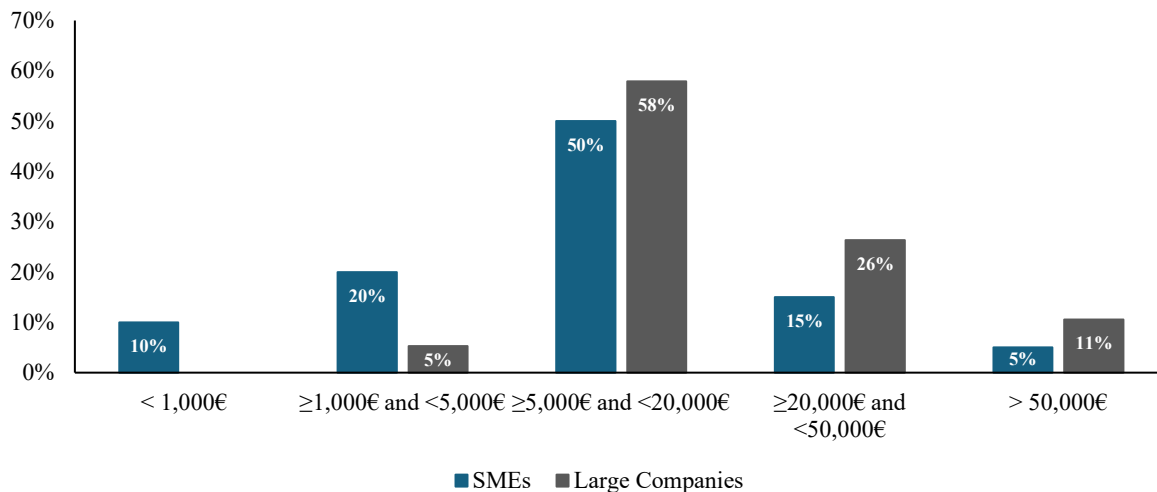
**Figure 14.** Ongoing cost items of sustainability reporting (SMEs n=23 and Large n=24). *Notes:* Lefthand side shows the possible answers to the question: ‘What ongoing costs do you see in the implementation of a sustainability report?’. Multiple Selections are possible. On the right side the percentage of approval is shown for SMEs (blue) and large companies (grey) separately. The light grey bars represent the disapproval for each category.

Figure 14 depicts the cost evaluation. The highest costs for SMEs and large companies arise during the preparation and revision of the report. This cost aspect is followed by the point that human and financial resources are scarce elsewhere due to the sustainability report. Monitoring compliance with regulatory requirements is the third most frequently mentioned running cost item. A less important role is attributed to the failure of other projects, the disclosure of competitionsensitive information and the ongoing further training measures for employees.

Looking at the large companies the highest running costs are the writing and revising process. Monitoring compliance with regulatory requirements is the second most named cost aspect here. In third place, by some distance, large companies see the lack of resources elsewhere as relevant cost aspect. A subordinate part is ascribed to the failure of other projects, the disclosure of competition-sensitive information and the use of ongoing external advice.

The lack of resources elsewhere is more important for SMEs with a difference of 19% compared to large companies. Monitoring compliance with regulatory requirements is a relevant cost aspect for 58% of the large companies. In SMEs, this plays a part in around 39% of the responses. The use of ongoing external advice shows a difference of 18% between SME and large companies.

Looking at the assessment of the absolute total costs in Figure 15, this presents itself as an almost normal distribution for SMEs. For large companies, the distribution is skewed to the left. Both SMEs and large companies predominantly estimate the cost of sustainability reporting to be between EUR 5,000 and 20,000, with an agreement rate of 50% and 58% for SMEs and large companies respectively. The response quote for the costs to be less than EUR 5,000 is higher for SMEs. 30% agree with this, while only 5% of the large companies have this assessment. In contrast, 37% of large companies and significantly fewer SMEs (20%) say that the costs are higher than EUR 20,000.



**Figure 15.** Assessment of the cost of sustainability reporting (SMEs n=20 and Large n=19). *Notes:* The column chart shows the response frequency to the question: ‘How high do you generally estimate the costs of sustainability reporting?’. The blue columns represent the response frequency in percent for SMEs, the grey columns represent the large companies.

## 6 Discussion

Our analysis was based on three key areas: understanding of sustainability, sustainability measures and sustainability reporting. The results indicate that large companies have a broader understanding of sustainability than SMEs. A hierarchy is identified for SMEs, according to which environmental and social issues are more relevant than governance issues. For large companies, we observe a more even distribution across the ESG criteria. One possible explanation could be the stricter regulations for large companies. In Germany, large capital market-oriented companies have been obliged to publish sustainability information since 2017 under the CSR-RUG, which is anchored in the Commercial Code. Therefore, the affected companies have been dealing with the issue of sustainability for a number of years now. The variations in governance can be explained by the Deutscher Corporate Governance Kodex (DCGK)<sup>4</sup>, for instance. This ensures that listed companies inevitably have to deal with governance and thus increase their awareness. SMEs are less likely to be affected by the DCGK (DCGK, 2022).

Similar differences between SMEs and large companies can also be seen in the implementation of sustainability measures. Compared to SMEs, large companies are already increasingly implementing sustainability measures. These differences can once again be primarily attributed to regulatory requirements. Another important factor is the consideration of the cost-benefit ratio when implementing sustainability measures. The comparison between SMEs and large companies shows a quite similar distribution of costs and benefits. Large companies tend to see the costs as ‘rather high’ to ‘appropriate’ with rather high to appropriate benefits. SMEs rate the costs as ‘rather high’ to ‘appropriate’ with an ‘appropriate’ to ‘rather low’ benefit. When analysing the costs in more detail, it is noticeable that large companies increasingly rely on internal expertise and continue to expand this, whereas SMEs rely on external support. This shows that SMEs are increasingly dependent on external expertise, while large companies are already better at providing knowledge internally. This lack of expertise on the part of SMEs is also reflected in the benefit perspective. Accordingly, SMEs derive their benefits from both external impact and the improvement of internal processes. Large companies benefit more from the external impact of implementing policies. The desire of SMEs for external support measured in terms of costs and the internal creation of benefits through the improvement of internal structures show that SMEs lag behind large companies in the

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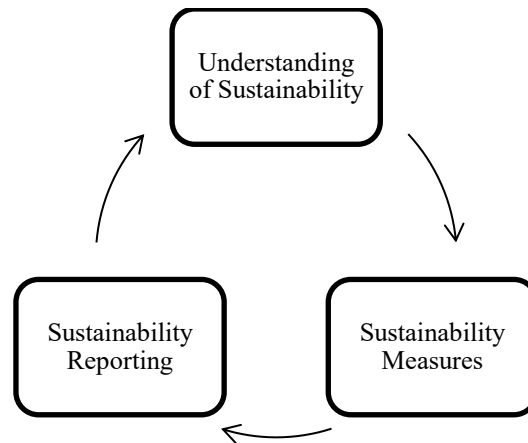
<sup>4</sup> The aim of the Code is to make the dual German corporate governance system transparent and comprehensible. The Code contains principles, recommendations and suggestions for the management and supervision of German listed companies that are recognized nationally and internationally as standards of good and responsible corporate governance (DCGK, 2022).

implementation of sustainability measures. This is in line with the result that SMEs have implemented or planned even fewer measures than large companies.

The analysis of sustainability reporting shows that large companies are increasingly addressing the issue and have already published reports. SMEs, on the other hand, are still in the early stages of reporting. Only a few companies have already addressed the issue and published their first reports. This seems plausible in view of current and future regulation, which affects SMEs to a lesser extent. The reporting obligation currently only affects a small proportion of the companies surveyed. Nevertheless, most companies - regardless of whether they are SMEs or large companies - have already addressed the issue of reporting obligations. A small proportion of the sample stated that the future decision as to whether or not a sustainability report must be published is still unknown. This shows that companies are still not clear whether they need a sustainability report or not. This should not be the case for large companies in particular, as according to the CSRD all large companies will be obliged to produce a sustainability report. It is similarly important for SMEs to be aware of the extent to which they are affected by the reporting obligation. In both size categories, there is a need to catch up.

The objective of sustainability reporting for SMEs and large companies alike is to focus on customers. The cost-benefit ratio of reporting is another factor that must be considered when making a comparison. In general, large companies perceive the costs as rather high, yet they consider the benefits to be appropriate. Most SMEs consider the costs to be rather high to appropriate and the benefits rather low. Upon closer examination of the costs, it becomes evident that large companies tend to rely less on external support than SMEs, as was the case with the sustainability measures. SMEs, on the other hand, tend to rely more on external advice and training, which consequently leads to higher costs. This again shows that SMEs are even more reliant on external support here, while large companies try to integrate the reporting system into their internal processes. The expectations regarding the benefits of SMEs are different and more positive compared to large companies. SMEs have a stronger positive perception of benefits than large companies, which perceive the benefits less strongly in most areas. This could be due to the fact that large companies already deal more intensively with reporting and sustainability reporting in general and therefore no longer perceive the benefits in the same way. It is questionable whether this expectation on the part of SMEs will be confirmed in the future, or whether the assessment of benefits is simply based on a lack of experience. The identified differentiation shows the difficulties in the current recording of the benefits of sustainability reporting and could be an indication of the need for concrete recording and possible quantification of benefits in practice.

We observe that large companies have a broader understanding of sustainability, have implemented or planned sustainability measures and report more about sustainability. This indicates a possible connection between the three areas of corporate sustainability. The broader understanding has an impact on the targeted measures. These promote reporting on sustainability and on the measures implemented. This in turn has an effect on a broader and deeper understanding of sustainability. Figure 16 depicts this hypothesized relationship between these three areas of corporate sustainability.



**Figure 16.** Areas of corporate sustainability.

## 7 Limitations

The design of the questionnaire is subject to the typical limitations of a quantitative survey. They have the restriction that they may contain suggestive questions or social desirability answers. Although an attempt has been made to avoid this in the design of the questionnaire, it is not entirely avoidable, depending on the person answering the questionnaire (Raithel, 2008; Reinecke, 2022).

The questionnaire was distributed within a broad network. No particular emphasis was placed on specific sectors or regions, but rather, the focus was on a very general overview. Nevertheless, the final response rate was relatively low. This may limit the representativeness of the results. The reasons for the low response rate could be the scope and complexity of the questionnaire, a lack of experience in the field and the resulting low willingness to take part in the survey. A particular problem is that companies that have already engaged extensively with sustainability issues were more likely to be approached and complete the questionnaire. Other, less experienced companies may have declined to participate in the questionnaire if they felt that they were unable to contribute to the topic of sustainability. This assumption can be confirmed by the high cancellation rate. Another possible explanation for the low response rate is that currently the topic of sustainability is very present in scientific research. Therefore, a

large number of surveys are being conducted in this area, which may lead to a lack of willingness to participate.

The analysis was purely descriptive. The differentiation into the three areas understanding of sustainability, sustainability measures and sustainability reporting was chosen on the basis of our own considerations in order to further specify sustainability in the companies. The differentiation was explained in the questionnaire. However, the extent to which the respondents understood this differentiation cannot be clearly determined. Furthermore, it is assumed that there is a fundamental connection between these three areas. However, this is not the subject of a more detailed analysis in this paper.

Furthermore, it should be noted that the results of the study are only a snapshot in time. Due to the dynamic nature of sustainability in the corporate context, new scientific findings and changes in regulatory requirements are constantly being made, which may affect the results of this study.

## **8 Conclusion and Future Research**

The field of research into the sustainability of companies is still at an early stage of development. Our study contributes to the question of how sustainability is implemented in companies. Therefore, we conducted a study based on a questionnaire that was completed by 120 companies.

Our study focuses on a comparison of large companies and SMEs in the areas of understanding of sustainability, sustainability measures and sustainability reporting. The results indicate that large companies have already begun to address the issue of sustainability to a greater extent than SMEs. They have a more comprehensive understanding of sustainability and are more advanced in the implementation of sustainability measures. Large companies rate the costs of sustainability measures slightly higher than SMEs. Both consider the benefits to be appropriate. The majority of large companies have already published a sustainability report or will do so in the next few years. One third of SMEs have already voluntarily prepared a sustainability report. Most of the SMEs surveyed are not affected by mandatory reporting. The costs of reporting are rated slightly higher by large companies than by SMEs, in line with the sustainability measures. Large companies rate the benefits of reporting higher than SMEs. Additionally, our survey shows that the main addressee of the sustainability report for both are the customers.

Our study also provides a foundation for further research with regard to the differentiation of the subject into the following areas: understanding of sustainability, sustainability measures

and sustainability reporting - in which we identified a fundamental link. For instance, it is conceivable that a more comprehensive understanding of sustainability could assist in the implementation of sustainability measures in a more targeted manner. This could subsequently lead to improved sustainability reporting. Further research could provide insights into the most effective ways of implementing sustainability in companies regarding the linkage between these three areas.

Another research approach could be the analysis of the costs and benefits of sustainability measures and sustainability reporting in greater detail. This study offers an initial insight into the perceived costs and benefits of large companies and SMEs. It also identifies the most relevant cost and benefit aspects. Further research could attempt to specify the level of costs and benefits. With regard to the costs, it would be beneficial to investigate the differences that arise depending on the sector and company size. This information would enable companies that are beginning to deal intensively with sustainability, to better orientate and prepare themselves. In terms of benefits, it would be interesting to analyse whether quantification offers added value and how those can be implemented. Consequently, the results of the cost-benefit analysis could be used to inform the development of measures for individual companies, with the objective of maintaining an appropriate cost-benefit ratio.

Finally, our findings indicate that large companies tend to exhibit greater levels of sustainability than their smaller counterparts. This suggests the potential for the development of tailored approaches to sustainability for SMEs, with the goal of assisting them in integrating sustainability into their business operations. In the future, it would be beneficial to further investigate the manner in which large companies and SMEs deal with the increasing dynamics in the area of sustainability. The development of SMEs should be considered in particular, as they play a key role in the German corporate landscape. It is essential for the transformation to a sustainable economy and society that all companies are equally included and involved.



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