

Article

# Sustainability Strategies in German Small and Medium-Sized Companies

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## ABSTRACT

*Background:* Small and medium-sized enterprises are believed to have a significant impact on the environment and yet are not as engaged in increasing their environmental performance as research suggests should be done. The study examines sustainability strategies of German small and medium-sized enterprises by performing an inductive and deductive qualitative content analysis of 29 (filtered from a total of 58) sustainability reports.

*Methods:* The deductive and inductive content analysis is implemented sequentially to categorize sustainability strategies and to structure action- or achievement oriented content accordingly. After a preparatory content analysis of the entire reports, a deductive content analysis was performed to identify strategy types. Subsequently actions of achievements were identified and structured with an inductive content analysis.

*Results:* The result is a structured analysis of strategy typologies as well as their operationalization. Offensive, extroverted strategies are identified as being the most common. Corporate activities towards sustainability are dominated by environmental topics such as environmental and biodiversity protection as well as resource conservation and efficiency.

*Conclusions:* While the sustainability strategies contrast previous empirical research in part, the activities of the analyzed enterprises depict a mature and proactive sustainability management within small and medium-sized enterprises. Yet under the premise, that the voluntary publishing of a sustainability report may imply a purpose and passion and thus an appropriate sustainability engagement and performance.

**KEYWORDS:** sustainability strategies; corporate sustainability; strategy typologies; content analysis; small and medium-sized enterprises

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## Open Access

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## INTRODUCTION

Small and medium-sized enterprises are mostly disregarded in the discussion on corporate sustainability or only considered marginally. The importance of these companies is however reflected in the structures of most economic systems. In 2017, 99.4% of companies in Germany belonged to the category of small and medium-sized enterprises. They employed about 52% of the population working in Germany and generated 33.9% of the economies turnover [1]. On the one hand the legal framework for small and medium-sized enterprises differs as of yet from large companies in the sense of legislative concern *i.e.*, restrictions, environmental legislation or reporting obligations. On the other hand there is no reliable coverage of data regarding the sustainability performance of small and medium-sized companies, which is in part explainable by the aforementioned lack of obligations or the complexity of such obligations. Estimations on the environmental impact of small and medium-sized enterprises of the recent years all point towards a dramatic scenario in terms of energy consumption [2,3] or industrial emissions, waste and pollution [3–5]. Arguably the estimations have to be viewed critically as the data does not allow for undifferentiated extrapolations. However, based on the structural and economic importance of small and medium-sized enterprises, collectively a significant environmental impact is implied [6–8]. Some studies found that small and medium-sized enterprises often fail to recognize negative environmental impact [4–6,9], regard it as insignificant [9,10] or are reluctant to address these for several reasons [7,11]. The rather somber outlook on corporate sustainability with a passive, reactive behavior of small and medium-sized enterprises [12] is addressed in this contribution by analyzing sustainability strategies of small and medium-sized enterprises as formulated in sustainability reports published in recent years.

### Corporate Sustainability

The topic of corporate sustainability as an operationalization of sustainable development in the business sector has seen a significant increase in attention of the scientific community in the early 2000s [13]. Yet the materialization of this operationalization in terms of the actual contribution of enterprises to corporate sustainability is yet to be investigated in detail [14,15] and a standardized and widely accepted definition is yet to be developed [13]. Large enterprises have increasingly adapted sustainability in some extent as a core concept within their vision, translating their environmental or social impact into corporate objectives and strategies [16], where the implementation of corporate sustainability is becoming increasingly incremental and often failing to meet the defined objectives [17].

## Sustainability Strategies

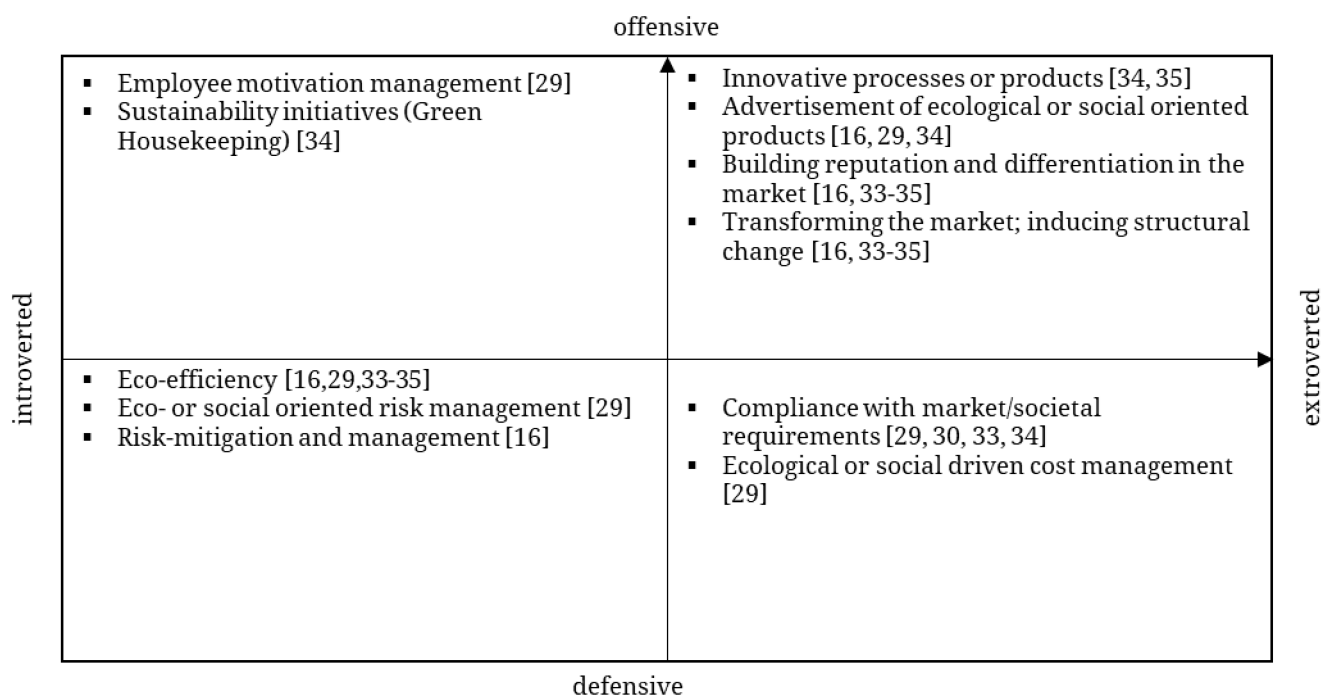
The term *Strategy*, originally established in a military context [18,19], was conceptualized into strategic planning and later strategic management in the corporate context over the span of over half a century by scholars from varying fields [20]. While competitiveness and differentiated corporate strategies [21] are the current conception, early consideration were focused on efficiency [22]. A basic definition of strategy as the long-term oriented behavior of the corporation to achieve defined objectives [23] can be expanded, to account for meeting the corporation's (and its internal and external stakeholders) objectives.

The operationalization of the guiding principle of sustainable development in an entrepreneurial context [24], *i.e.*, the derivation of concrete requirements and tasks from the premises of sustainable development [25], can take place fundamentally from two perspectives to be differentiated [16]. On the one hand, the challenges, goals and transformative measures described at the societal level can be examined for their possible contribution by companies. On the other hand, the relevant sustainability impacts of the companies can be identified and, based on these, strategic and operational goals and measures can be developed [16]. Still, while sustainability is widely accepted as an important factor, sustainability strategies are not yet developed in a clear majority of enterprises [26].

Although there are some structural differences in the typologies of corporate sustainability strategies in current research, a widely accepted structure includes the differentiation between defensive and offensive as well as introverted and extroverted (market and society oriented) strategies [27–31]. Further detailed differentiations are made by detailing or adapting this structure in part [16,29,30] or on the other hand basing the structure on utilized methodologies [32]. The following Figure 1 gives an overview of this differentiation giving a few examples based on existing research into this matter [16,29,30,33–35].

The design and content of corporate sustainability strategies has been the focal point of past empirical studies. Schaltegger *et al.* give a comparative review of past studies with their own findings [29], which summarizes that introverted strategies, both defensive and offensive are the most adapted in (mostly larger) enterprises.

In a way, certain business model archetypes are able to differentiate corporate sustainability strategies as well. Business models define the way in which companies create value. Developing and implementing sustainable business models may be interpreted as the operationalization of sustainability strategies, where a sustainable business model is one that ensures competitive advantage and contributes to sustainable development [36] This furthermore entails an expansion of the business model scope beyond green [37], product-service-systems [38] or social issues [35,39].



**Figure 1.** Types of corporate sustainability strategies.

### Sustainability Reporting

Sustainability reports are corporate communications, providing stakeholders qualitative and quantitative information on sustainability-relevant issues and the sustainability performance of the enterprise [40]. While enterprises started to disclose such information on a voluntary basis, stakeholder requirements and legal obligations have been a key in the increase of sustainability reporting [41]. There are several frameworks for sustainability reporting [42], yet here only the ones used by the enterprises within the study are portrayed.

In Germany, one of the accepted and frequently adopted frameworks for sustainability reporting under the Directive of the European commission is the *sustainability code* by the German council for sustainable Development. It focuses materiality and transparency and is structured into 20 criteria. It provides enterprises with a framework and guideline to prepare non-financial reports [43].

The Global Reporting Initiative developed one of the most accepted and applied frameworks for sustainability reporting. As a result of a discussion between representatives from the economy, science, public institutions and non-governmental organizations in 2000 the first set of guidelines was launched. The provided guidelines and standards have been adapted over time and the Global reporting initiative global standards for sustainability reporting are the fifth and current version. The objective of the global reporting initiative is to establish the comparability of sustainability reports through a unified, standardized structure and format for the disclosure of environmental, economic and social impacts [44].

## MATERIALS AND METHODS

This study is designed as a qualitative content analysis of sustainability reports published by German small and medium-sized enterprises. The following describes the material used and how the qualitative content analysis was implemented.

Based on available databases for sustainability reports published by German (small and medium-sized) enterprises, a raw data set was compiled containing basic information in order to filter the data according to the following requirements. The reports are limited to one individual per enterprise and in case of recurring reporting the latest report is considered for analysis. The enterprises investigated fall within the definition of small and medium-sized enterprises as defined by the European Commission [45]. As some organizations adapt the definition of small and medium-sized enterprises significantly (e.g., a factor of 20 regarding the number of employees; a factor of 10 regarding turnover is basis for the *ranking of sustainability reports 2018* [46]), the initial number of reports was reduced drastically by this initial filtering. In this study 29 sustainability reports by German small and medium-sized enterprises are analyzed, covering the years 2016–2018.

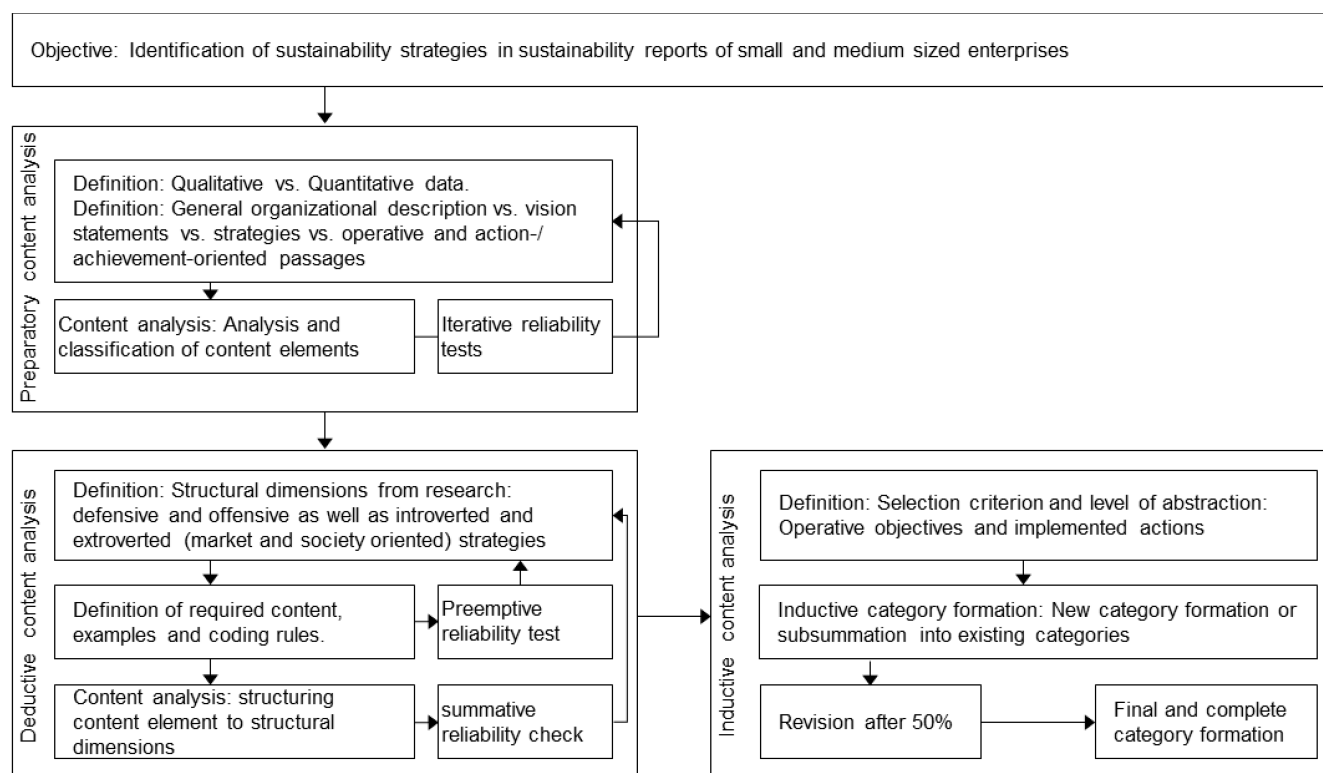
The method applied can be interpreted as a sequentially combined qualitative content analysis, following the deductive and inductive category development [47]. The main processes of this combined method are first a deductive (structuring) content analysis of the sustainability reports in accordance with the framework of sustainability strategies, followed by an inductive content analysis within each of the types of strategies. As there is a lack of evidence that would support an applicability of corporate sustainability strategies of larger enterprises, the deductive content analysis focuses the typology of strategies. Only then, the content is analyzed in terms of a more detailed typology of sustainability strategies, allowing for the development of thematic clusters. For a more detailed description the method is described in three phases: (1) Preparatory content analysis, (2) deductive content analysis and (3) inductive content analysis.

### Preparatory Content Analysis

The preparation of the material was conducted to separate qualitative from quantitative information and to filter the qualitative information for strategy formulations as outlined in the following Figure 2. First the objective was formulated to shape the further steps of the study. In order to create a coding agenda, the main categories were defined as qualitative and quantitative data, the latter referring to plain tables or lists of indicators and their values. The sub-categories of qualitative data were defined as general organizational description, vision statements, strategies as well as content regarding operative narratives and action- or achievement oriented content. In addition, a brief definition, examples

and criteria were defined for each category and merged in a coding agenda. The content analysis was performed by screening the material, classifying content and storing it separately according to the coding agenda. Iterative reliability checks were executed to evaluate the definitions.

The procedure resulted in a structured list of content elements for the further processing.



**Figure 2.** Model of the performed content analysis. Adapted from [47], an open access article distributed under the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>).

### Deductive Content Analysis

Taking up the types of sustainability strategies and examples described in the introduction, the structured list, generated in the preparatory content analysis was used in a deductive content analysis. Based on the definition of the structural dimensions from previous research (defensive, offensive, introverted and extroverted) required content was defined and examples were used from the referenced literature to enable a first overview. The coding rules were in this case are limited to the basic element of an explicit reference of the respective definition of the categories (see Table 1). The first 3 reports were used to perform a preemptive reliability test, analyzing whether or not the content was configurable according to the coding agenda. As there were no content elements that could not be structured accordingly or gave reason to adapt the structure the content of all reports was analyzed and categorized.

**Table 1.** Coding agenda for the deductive content analysis.

Category	Definition	Examples	Coding rules
defensive	Strategies focusing legal, financial and organizational risks	Risk-mitigation and management as well as cost-reduction and efficiency strategies data	Explicit defensive orientation
Offensive	Strategies focusing the development or exploitation of potential	Differentiation and innovation strategies with a transformative character	Explicit reference to potential (positive effects)
introverted	Strategies focusing on internal effects	Strategies towards the efficiency of production processes or productivity and motivation of employees	Explicit reference to internal processes or effects
extroverted	Strategies focusing external effects in markets or society	Strategies towards image and reputation	Explicit reference to markets/consumers or society

The content was prepared by generalizing the strategy statements (eliminating all direct company references), paraphrasing (Restoration of the original statement by reconstructing the sentences) and finally translation for the purpose of publishing. The results are illustrated in Figure 3.

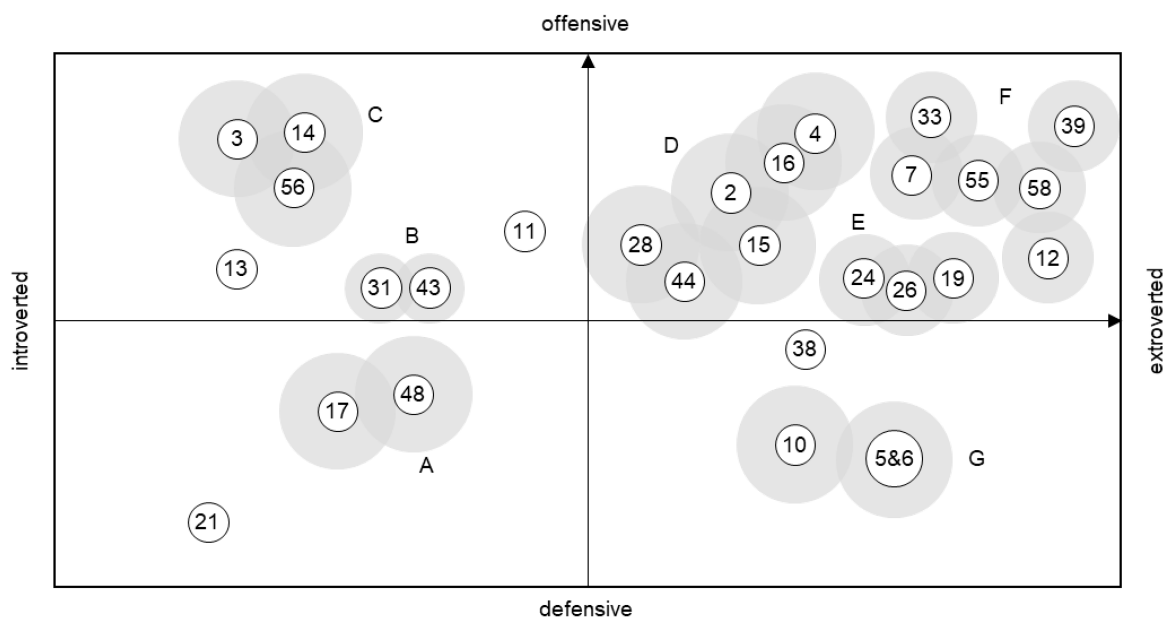
### Inductive Content Analysis

The inductive content analysis was performed to identify operative focal points of small and medium-sized enterprises in terms of following a sustainability strategy. Initially the selection criteria and level of abstraction was defined, so that operative objectives (future-oriented) and corresponding implemented actions (past reference) were filtered from the text. Within the sorted list each item was categorized into a corporate field of activity towards increasing the sustainability performance. The list was processed by either forming a new category or sub summation of items in existing categories. A revision of the established categories and the allocated objectives/actions was performed after 50% of the list was processed, where minor differences in formulation were corrected.

### RESULTS

In analyzing the sustainability strategy content elements the following portrays the results as a summary of the allocation to the strategy categories. To do so the portfolio shown in Figure 3 illustrates clusters within the category combinations. The numerical identifiers are taken from the initial dataset and therefore are not numbered consecutively. The clusters were constructed by first allocating the enterprises according to the category definition and in a second step distributing them with a comparative analysis. The clusters were then constructed based on

content similarity. Arguably, the rather small sample size of this study does not allow a profound cluster analysis. In light of the theoretical implications however, similar strategic foci of two or more enterprises may hint towards clusters and are therefore discussed despite the limitation. It should be noted that some strategy content elements of the sustainability reports have been found to be similar if not identical (e.g., enterprise ID 5 and 6 as illustrated).



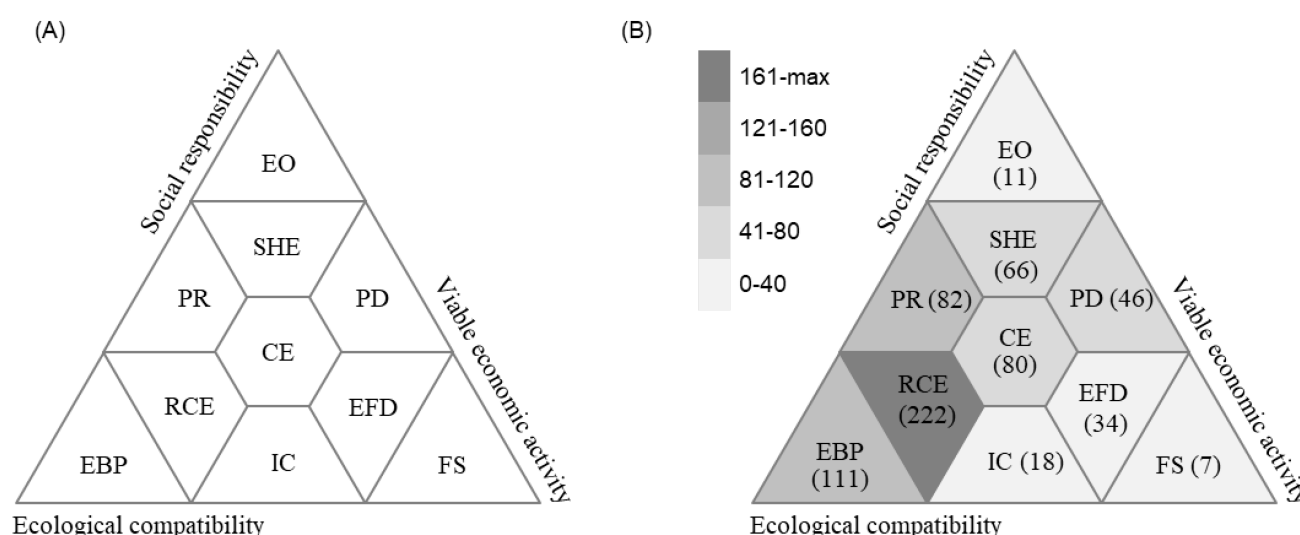
**Figure 3.** Categorized results of the sustainability strategy analysis. The portfolio shows the analyzed enterprises' strategy elements in relation to the classification to introverted *versus* extroverted and defensive versus offensive. Cluster A: The focus of the cluster is set on the conservation of (natural) resources and resource-efficiency. Cluster B: Sustainability as the basis for the operative work. A rather generic commitment to sustainability in the strategy. Cluster C: Active reduction of negative environmental impacts and positive influence on working conditions of employees. Cluster D: Conservation of the environment for the benefit of society as well as regional social and welfare projects. Companies emphasize their model character in promoting a sustainable transformation of society. Cluster E: Economic success through sustainable operations—business case for sustainability. Cluster F: Innovative and sustainable products for existing and new markets. Cluster G: Legitimation of the own operations in collaboration with partners and dialogue with stakeholders.

Notably the largest share of sustainability strategies was categorized as offensive, extroverted strategies. The clusters in this category combination can be differentiated by the main addressee (Society, market and general partners/stakeholders). In order to analyze the constructed sustainability strategy analysis, the following chapter analyses the operationalization of these strategies in terms of the actions taken by the enterprises.

### Inductive Content Analysis of Corporate Areas of Activity

Within the 29 reports, 676 individual actions were identified, backed by their respective objectives. A critical revision reduced the number of

categories from 16 down to ten, as the actions could not be allocated unambiguously. For this purpose an uncertainty indicator was used to indicate those actions that had an ambiguous scope. The most prominent examples were that actions implemented to increase employees' health, safety and motivation were mostly summarized or individual actions were implemented serving two or more purposes within these three categories. The categories were then compiled in a differentiated yet integrated model of corporate sustainability in the form of an integrated sustainability concentration triangle [48] (see Figure 4). For a start the three dimensions of sustainability, *ecologic, social and economic sustainability*, are interpreted in a corporate impact context. Corporate sustainability is thus interpreted as the achieved (or at least aspired) coexistent states of ecological compatibility, social responsibility and a prospectively viable economic activity. Contrasting these individual target dimensions, corporate ethics (CE) build a basis and prerequisite. On a more operational objective level the three fields of activity regarded as being strongly dedicated to one of the three dimensions are environmental and biodiversity protection (EBP), equity of opportunity (EO), as well as financial stability (FS). Defined as predominately dedicated to one of the three dimensions are resource conservation and efficiency (RCE), security, health and employee satisfaction (SHE) as well as equitable financial distribution (EFD). In between the three dimensions, fields of activity that can be classified as having a similarly strong dedication to two of the dimensions: product responsibility (PR), personnel development (PE) and innovation capability (IC). Figure 4 illustrates the categories along with the frequency across the data sample.



**Figure 4.** Categorized results of the sustainability actions. (A): Identified fields of activity, based on categorization. (B): Quantitative analysis of the associated actions; sum per field in parentheses. The study underlines the strong focus on Efficiency and environmental topics with *environmental protection and biodiversity* as well as *resource conservation and efficiency* ranking at almost 50% of all actions identified.

Interestingly these actions can for a large part be categorized as introverted in contrast to the findings within the strategy analysis. The exception being some actions within corporate ethics (mostly compliance and society oriented) and product responsibility (Value chain/suppliers and customer oriented) that are considered extroverted.

## DISCUSSION AND CONCLUSION

Sustainability reports are in a way an enterprises way of addressing stakeholders, customers or society in general and therefore it can be assumed that the formulation will most likely be influenced by the purpose itself. While the communicated sustainability strategies are for the most part offensive (76%) and 52% are considered to be offensive and extroverted. However, the pursuit of these strategies builds a slightly different outlook as a high proportion may considered offensive but rather introverted. This matches empirical findings from Germany and the UK [49], where defensive, introverted operational activities predominate. It is conceivable that for the enterprises analyzed, a mature stage of sustainability in accordance with [34] can be assumed, as action taken are in most cases beyond compliance. Although there is as of yet no legal obligation for small and medium-sized companies to publish a sustainability report an increasing number of enterprises does so. Whether this is on account of requirements by their customers or a sense of purpose for sustainability stands to argue.

Overall there is evidence towards the adaption of a sense of responsibility within small and medium sized enterprises. As there is no legal obligation to report on non-financial issues for companies with less than 500 employees, the reason behind the voluntary reporting can be differentiated into three main motivational factors. First of all there is evidence that traceability in global supply chains has gained significant importance [50] and that small and medium sized enterprises are acting largely as suppliers or are integrating into global value chains [51–53]. Secondly we found that within the sample there are some enterprises that manufacture products for end consumers and the sustainability strategy and actions taken can be sub-summarized under product responsibility and reputation. Without further investigation the last motivational factor cannot be supported by the empiric evidence, however, in some cases a philanthropic motivation or at least an orientation towards the common good could be supposed as there was no link to economic or social pressure to be found.

In light of the theoretical background we find that there is a significant need to further investigate the motivation and typology of sustainability strategies in small and medium sized enterprises. The data sample used does not allow for generalization, but is however limited due to the limited publication of sustainability reports. Taking potential, *i.e.*, cultural, economic, legal differences into account a European study into this subject might be of great benefit. Even greater emphasis needs to be directed

towards the development and operationalization of sustainability strategies, especially in smaller firms. While the overall concept of corporate sustainability is being accepted even by the smallest enterprises, a gap between sustainability strategies and the operationalization was identified. Future research and business practice needs to focus on identifying concrete recommendations for action, while addressing potential trade-offs.

This study serves as a basis for an enlarged analysis of small and medium-sized enterprises regarding their sustainability strategies, activities and performance. The evaluation of sustainability strategies and activities can however only be an indication for the sustainability performance. Quantitative information is needed in the form of performance indicators to evaluate the actual sustainability performance and necessity for action of the enterprises. This information however needs to fulfill the following requirements to be able to increase the informative value:

- *Target orientation and materiality:* The totality of the indicators should measure and compare those performances that are geared to improvement potentials and goals. Furthermore, materiality in this case is a prerequisite for thematic orientation towards sustainability aspects and goals.
- *Balanced approach:* The totality of the indicators should represent the sustainability performance (negative impact and positive contribution) in a balanced relationship and should also be similarly distributed across the various dimensions and aspects.
- *Comparability:* Due to their purpose, the key figures must be comparable temporally and across companies. Absolute values such as consumption or emission quantities must therefore be viewed in relation to an output-oriented reference value. The sector- and size-dependent factors influencing the company's performance should be absorbed by the formation of comparison groups.

In this way the benchmarking methodology may be applied to evaluate the sustainability performance and link the respective strengths and weaknesses with targets and actions to be implemented.

#### **DATA AVAILABILITY**

The dataset of the study (in German) is available from the authors upon reasonable request.

#### **AUTHOR CONTRIBUTIONS**

MG designed the overall approach to the study with feedback by the other authors. MG and RO compiled the dataset and performed the analysis. MG and HK elaborated the discussion and conclusion. MG wrote the paper with input from all authors.

## CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

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