



**Opportunities and Limitations of implementing
Sustainable Development Goals in SMEs in Germany**

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Abstract

Title: Opportunities and Limitations of implementing Sustainable Development Goals in SMEs in Germany - from a company's perspective

The importance of sustainability, which integrates social, environmental, and economic objectives, is inevitable and crucial for the profitability and competitiveness of companies. The 17 SDGs defined by the United Nations in 2015 provide a solid framework to support the implementation of a sustainability strategy. In doing so, Small and Medium Enterprises (SMEs) face different challenges and opportunities. Expert interviews were conducted to analyze and identify the main motivations of SMEs to engage sustainable as well as the biggest opportunities and constraints for them. One of the main motivations for sustainable engagement, besides personal interest, is the profitability of a company. The greatest limitation is the scarcity of funds and resources for SMEs and the bureaucracy in Germany. The biggest opportunity for companies is the positive company reputation and the resulting impact on customers, sales, employees, skilled workers, and motivation. This dissertation presents the theoretical and managerial implications, including limitations and the contributions for future research. The results support the existing data and confirm present knowledge. Actual examples and insights, that were gained through primary data collection aid a comprehensive understanding of the subject matter.

Key words: sustainability, small and medium sized enterprises, sustainable development goals, opportunities, limitations

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Sumário

Título: Oportunidades e limitações da implementação dos Objectivos de Desenvolvimento Sustentável nas pequenas e médias empresas na Alemanha - da perspectiva de uma empresa

A importância da sustentabilidade, que integra objetivos sociais, ambientais e económicos, é inevitável. É crucial para a rentabilidade e competitividade das empresas. Os 17 Objetivos de Desenvolvimento Sustentável definidos pelas Nações Unidas em 2015 fornecem uma estrutura sólida para apoiar a implementação de uma estratégia de sustentabilidade. Ao fazê-lo, as Pequenas e Médias Empresas (PMEs) enfrentam diferentes desafios e oportunidades. Com base em entrevistas, foram analisadas e identificadas as principais motivações para as PMEs serem sustentáveis, bem como as maiores oportunidades e restrições para as empresas. Uma das principais motivações para o engajamento sustentável, além do interesse pessoal, é a lucratividade de uma empresa. A maior limitação é a escassez de fundos e recursos para as PMEs e a burocracia na Alemanha. A maior oportunidade para as empresas é a reputação positiva da empresa e o impacto nos clientes, vendas, colaboradores, trabalhadores qualificados e motivação. Esta dissertação apresenta as implicações práticas e gerenciais, incluindo limitações e contribuições deste estudo para pesquisas futuras. Os resultados apoiam os dados existentes e confirmam os conhecimentos actuais. Exemplos e conhecimentos reais, que foram obtidos através da recolha de dados primários, ajudam a uma compreensão abrangente.

Palavras-chave: sustentabilidade, pequenas e médias empresas, objectivos de desenvolvimento sustentável, oportunidades, limitações

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Table of Abbreviations

CSR	Corporate Social Responsibility
EBITDA	Earnings before interest, taxes, depreciation, and amortization
ESG	Economy Social Government
GDP	Gross Domestic Product
KPI	Key Performance Indicator
MDG	Millennium Development Goals
OECD	Organization for Economic Co-operation and Development
SDG	Social Development Goals
SME	Small and Medium sized Enterprise
SPI	Social Progress Index
UN	United Nation
USP	Unique Selling Proposition

1. Introduction

“Sustainability is the integration of environmental health, social equity, and economic vitality in order to create thriving, healthy, diverse and resilient communities for this generation and generations to come” (UCLA Sustainability Committee, 2016).

SMEs have an enormous specific weight in the economy of Germany. In the global context, SMEs represent around 95% of all businesses worldwide and are responsible for over half of employment globally (Rubio-Mozos et al., 2019; United Nations, 2021; World Bank, 2021). They therefore play a significant part in the development and implementation of the 17 SDGs. Nonetheless so far there is not much literature about the crucial role of SMEs for the achievement of SDGs (Rubio-Mozos & García-Muiña, 2019). This thesis tries to investigate the opportunities and limitations that SMEs face by implementing the goals defined by the United Nations for the Agenda 2030. The aim of this work is to find out to what extent SMEs in Germany can move forward on the 2030 Agenda of the UN and thus contribute to the development of a more sustainable and inclusive economy, and to what extent they face difficulties and obstacles in doing so.

1.1 Academic and Managerial Relevance

With the enormous economic magnitude and financial strength, the importance of SMEs for economies is undeniable (von Schlenk-Barnsdorf, 2020). Additionally, the urgency and importance of sustainable engagement and the need for business to rethink its approach is no longer an unknown topic (Hülsbeck et al., 2020). The introduction of the 17 SDGs by the UN has brought the necessities into a framework. In order to achieve these goals holistically, comprehensive and extensive investments, change in processes and the will for transformation are required. It is important to find out to what extent SMEs play a role and what are the crucial limitations and greatest opportunities they face. There has already been a lot of research in the academic literature on the subject of economic sustainability, especially in connection with CSR (Park, B., Xioa, S., 2022; Schmidpeter, R., 2021; Diez-Cañamero, B., et al. (2020). However, despite existing preliminary studies in this area, a certain research gap can be identified in connection with commitment to sustainability with the help of the SDGs and SMEs in Germany. There is no precise overview of the main difficulties and opportunities. An investigation of the main motivations will bring more information and understanding. In order to ensure a successful implementation of the SDGs, investments in personnel, technology,

production, development and research are necessary (Fabio Natalucci, et al., 2021; (von Schlenk-Barnsdorf, 2020).

1.2 Problem Statement

The problem this thesis strives to understand is what are the main opportunities and limitations that medium sized companies in Germany face by implementing SDGs. The dissertation focus on the following research question: *What are the main opportunities and limitations that SMEs in Germany face by implementing SDGs?*

To determine the relevance of this work and receive the desired answer for the research question, an overview of the relevant literature and the current state of research on SDGs and SMEs in Germany is developed in form of a literature review.

1.3 Methodology and data collection

The approach to get a better understanding of the research question both primary and secondary data was gathered. To identify reliable explanations for the main opportunities and limitations for SMEs relevant literature was reviews to get a better understanding of the current status.

This secondary research method was followed by primary data collection with the use of expert interviews. The interview partner was asked several questions related to the topic with open ended questions, to get a deep and actual insight. Lastly the main findings are presented, followed by limitations of the study and potential for future research.

2. Literature Review

As our society continues to constant change, new opportunities and obligations arise to reshape the future (Ernst & Young, 2020; OECD, 2017). Due to the constant growth of the population, increasing middle class and immense waste and use of resource, a change in consumption and way of living is inevitable (Prescott, 2022). Companies must therefore take the right course to create and maintain a successful business model in today's environment that addresses not only personnel, customers, and competition strategy, but also the way growth can be shaped sustainable in the long term (Ernst & Young, 2020). Therefore, there is an urgent need to implement more sustainable business models. These models must include social and environmental metrics and should be aligned with the Sustainable Development Goals (SDGs) (Constanza, 2016; Ernst & Young, 2017; OECD, 2022). The OECD states that a balance must

be struck between socio-economic progress, maintaining all our planet's resources and ecosystems, and addressing global warming in order to successfully implement the SDGs (OECD, 2017).

2.1 SDGs

2.1.1 Definition and Concept

In the year 2015, 193 member countries of the United Nations committed to the 2030 Agenda for Sustainable Development (United Nations, 2022). Therefore 17 Sustainable Development Goals were designed as part of a holistic approach to follow the principle of “leaving no one behind” (United Nations, 2022). The 17 commonly developed SDGs can be seen as an urgent appeal for efforts by all countries, whether developed or developing and independent of the countries needs and characteristics (Nielsen, 2019; Kumar et al., 2016). Some of the goals such as Goal 2 “end hunger” are quite specific, while some of the goals are way vaguer, such as “peaceful and tolerant societies”, referring to goal 16 (TED, 2015). As a call to action, they require companies to develop business models and strategies that end poverty and other deprivations while addressing health and education issues, protecting the environment, reducing inequality, and stimulating economic growth (Nielsen, 2019; Elkington, 2018). To achieve the goals, it requires all member countries to cooperate in global partnership (Nielsen, 2019; United Nations, 2022). Even before the SDGs were established, the UN had set development goals to achieve global sustainability. In 2000, they adopted the Millennium Development Goals (MDGs) (Sach, 2012). Despite far-reaching aspirations, meanwhile the goals were considered as insufficient and outdated (Sach, 2012). Therefore, in 2015, the 17 SDGs were published as part of the 2030 Agenda (United Nations, 2022). They partially include the goals of the MDGs, but are more comprehensive, far-reaching, and broader in scope (Sach, 2012). Global issues such as climate change, innovation, sustainability, and peace have been given greater consideration (Kumar, 2016). It is undoubtedly indispensable that the business sector makes its contribution to achieving the goals. But the goals defined by the United Nations are not only ambitious, but also complicated and complex to achieve (TED, 2015). The 17 goals are oriented towards 169 targets and divided into hundreds of indicators (TED, 2015). In particular, goal 8 (decent work and economic growth) and 9 (industry, innovation and infrastructure), which relate to economic issues, cannot even be implemented without the contribution of business (Szennay, 2019). A constant growing investment into sustainability was recognized by the Organization for Economic Co-operation and Development (OECD)

mainly through to the rising number of funds and investors that have added ESG approaches to their overall agenda (Boffo & Patalano, 2020). ESG is nowadays a mostly integral part of any business. ESG stands for Environmental, Social and Governance. The ESG criteria are guidelines and comprehensively measures to help create sustainable business models that incorporate all three dimensions (Kang & Wee, 2017). The E in the ESG criteria includes issues such as energy consumption, waste production, resource use, carbon emissions and their impact on life and nature (Henisz et al., 2019). The S refers to all social criteria and is concerned with the way a company is treated and the reputation it has in society and among its employees (Henisz et al., 2019). Working conditions, employee protection and support, including training opportunities, fall under this heading. The G stands for governance, which means the management and leadership, including compliance with laws and regulations and meeting the needs of an organization (Henisz et al., 2019). The UN 2030 Agenda for Sustainable Development is considered the most comprehensive and far-reaching approach to sustainable development to date and can be described as an evidence-based framework for planning future sustainability development (Ye et al., 2020). The agenda includes a total of 17 goals, 169 related targets and 230 indicators, which are intended to set and achieve universal standards in the environmental, social and economic spheres (Rockström, 2016; United Nations, 2022). The role of the private sector is emphasized by the United Nations as being important for achieving the SDGs. In particular, the Corporate Social Responsibility (CSR) approach plays an important role, along with creativity and innovation from the private sector (Elkington, 2018). CSR is the implementation of sustainable measures and adapting responsibility in management and decision-making process along a company's own value chain (Weber & Weber, 2021). CSR can be understood as a link between the business activity and an orientation of the company towards the common good (Park et al., 2014). Since sustainability can be explained as the management of environmental, ecological and social issues (McKinsey, 2019), social engagement of companies plays an important role in sustainability achievement. Social engagement can help SMEs maintaining a positive image, build strong relationships with stakeholders, mitigate external risks and strengthen the company's long-term viability (Hülsbeck et al., 2020). CSR measures describe corresponding activities that go beyond a legally binding framework and can become visible in companies in various ways (Park & Xiao, 2022). Many companies are increasingly setting up their own CSR departments. These departments are then specifically responsible for implementing all ESG criteria within the company and communicating this to the outside world (Webber & Weber, 2021). CSR is

without doubts crucial to a company and to society, and enterprises need to decide wisely to what extent they leverage their CSR activities (Park & Xiao, 2022). CSR can be understood as part of the SDGs. The CSR approach plays an important role for the achievement of the SDGs, along with creativity and innovation from the private sector (Elkington, 2018). By implementing CSR and applying the SDGs, companies can embed their strategy and vision in the context of global sustainability (Kingo, 2018). The implementation of SDGs in the daily business can support a company’s sustainability strategy. This makes it easier to promote accountability for the company's operations both internally and externally. The more intensively the SDGs are applied, the more transparently CSR and SDG performance can be communicated (Kingo, 2018).

2.1.2 Characteristics

The 17 SDGs are the following:



Figure 1: 17 SDG from the United Nations. Source: United Nations, 2022.

In order to achieve all 17 SDGs, six overall transformations are necessary, which require a high financial investment. These are high quality education (SDG 4); universal access to high affordable health care with high standards (SDG 3); the use of renewable energy and a functioning circular economy (SDGs 7, 12, and 13); sustainable management of land and oceans (SDGs 2, 14, and 15); sustainable urban infrastructure (SDGs 6, 9, and 11); and universally functioning access to digitization (SDG 9) (Sachs et al., 2021; United Nations, 2022).

2.1.3. Feasibility and measurability through Indicators

To measure, report and monitor the progress on the SDGs, it requires time, resources and capacity (United Nations ESCAP, 2021). In order to conduct a measurement of SDG implementation, indicators and appropriate metrics are necessary. They need to be universally valid and known to make meaningful comparisons (Diez-Cañamero et al., 2020). Measuring and scaling the implementation of the SDGs therefore require comprehensive data for analysis and evaluation. For this, data and statistics from regional, national, and global official statistical offices are needed (Timoulali, 2020; United Nations, 2022). This high-quality data is required for governments, the private sector, international organizations, and society in order to properly measure and assess the implementation of the 2030 Agenda (Timoulali, 2020).

To achieve the goals of the Agenda 2030 within the next remaining years, there is still no commonly identified criterion for how companies can credibly achieve the SDGs (Rubio-Mozos et al., 2019). The role of the private sector is emphasized by the UN as being important for the achievement of the SDGs (Elkington, 2018). For SMEs the implementation of SDGs is significant, as they can benefit positively if the goals are implemented correctly (Frey, 2018) since sustainability measures influence the reputation and efficiency. Adapting sustainability measures can lead to cost saving in energy, resources, and manpower as well as competitive advantages on the market regarding customer and employees (Kumar, A., et al, 2022; Prescott, 2022). Nevertheless, even though SMEs account for ninety-nine percent of the businesses in OECD countries (OECD, 2017), there is still no decisive indication of its clear input to the UN's 2030 Agenda (Pomare, 2018; Rubio-Mozos et al., 2019). SMEs are without doubt experiencing positive impacts from the implementation of the SDGs for themselves, such as reputation and cost saving (Kumar, A., et al, 2022; Prescott, 2022), but facing difficulties in applying and tracking to the goals, especially when trying to do so individually (Rubio-Mozos et al., 2019) since first of all the design of a monitoring system is up to each member country to decide, which is why there are many different monitoring approaches rather than a standardized one and secondly the reporting of feasibility and implementation is voluntary and therefore not binding and giving strong benchmark (Forum Umwelt & Entwicklung, 2022). To the displeasure of the UN, progress in implementing the SDGs has been slower than expected, due to different factors such as funding and lack of political support. The UN Conference on Trade and Development declared that additional investments of over \$2.5 trillion per year are required to achieve the goals by 2030 (UN Conference on Trade and Development, 2019). There is no

significant evidence yet of SMEs making a meaningful contribution to the UN 2030 Agenda yet (Rubio-Mozos et al., 2019). A verification mechanism and follow-up and for reviewing the implementation of the 2030 Agenda for Sustainable Development requires measurable and comparable indicators and statistical data to monitor progress, inform policy and society, and ensure accountability of all stakeholders (Business for 2030, 2022). The feasibility and measurability of the contribution to the SDGs of companies in general, and hence for SMEs is complex and not easy to determine (Diez et al., 2020; Forum Umwelt & Entwicklung, 2022). SDG monitoring is needed, to measure where United Nations member countries stand in implementing the SDGs. Therefore, the United Nation have developed 231 international indicators for all SDGs to measure progress called the SDG Monitoring (Forum Umwelt & Entwicklung, 2021; Forum Umwelt & Entwicklung, 2022). Also the complexity comes partly because a large part of the targets and indicators developed to monitor the implementation of the SDGs are based on a macro approach (Diez et al., 2020). The macro approach considers the economy as a whole. Similar economic entities are grouped into sectors. In contrast to microeconomics, the macroeconomic approach examines economy-wide issues (Wohltmann, 2018). Therefore, different tools for measuring corporate sustainability of SMEs have been adapted to a certain extent. For this purpose, corporate activities have been linked to their contribution to the achievement of the SDGs. Nevertheless, these tools are very complex and not easy to implement and pose challenges for SMEs (Lu et al., 2020). Reliable and up to date data is urgently needed to monitor progress on the SDGs (Sachs et al, 2021). In 2017, the UN adapted therefore an indicator framework for voluntary monitoring of the 17 SDGs, consisting of 169 SDG targets that are tracked by 232 unique indicators to measure and identify the progress of SDGs. The so named SDG-tracker is a free, open-access publication that enables everyone to track the global progress towards the SDGs observe the progress (Timoulali, 2020; SDG Tracker, 2022). The general linking of data sets within and between different countries also helps with measurability and evaluation (Timoulali, 2020). Since each state can decide for itself which indicators to be used for monitoring the SDGs, they also carry out the collection of the data for themselves. Therefore as mentioned before, there are many different monitoring approaches. To report each other's progress, each year, the United Nations convenes the High-Level Political Forum on Sustainable Development in New York, a UN forum to coordinate global sustainability policy. Member states can voluntarily report on their implementation status (Forum Umwelt und Entwicklung, 2021). Tremendous political commitment and investment in resources is needed for comprehensive data collection. This will require research

into new data collection technologies and data sources. Collaboration between academia, the private sector and civil society is needed (Leadership Council of the Sustainable Development Solutions Network, 2015; Sustainable Development Sustainable Network, 2015). To measure the implementation of SDGs, information such as geographic location is of great importance to better evaluate when an activity has taken place. Integrating geospatial information and statistical data is important for creating meaningful indicators to measure the SDGs. Established indicators can then serve as a solid benchmark for SDG development and implementation (Leadership Council of the Sustainable Development Solutions Network, 2015; Sustainable Development Sustainable Network, 2015). Therefore, the Member States of the United Nations developed 232 global indicators to assess the SDGs (Timoulali, 2020; United Nations, 2022). The global indicators are based on data from national statistical and data systems. To implement sustainable development through SDGs, indicators should be disaggregated at best by characteristics such as income, gender, age, race, ethnicity, migration status, disability, and geographic location (Committee for the Coordination of Statistical Activities, 2017). The indicators will be reviewed and adjusted annually by the UN General Assembly and supplemented by cooperation from Member States. The most recent comprehensive review was in 2020 (United Nations, 2022). For example, one goal of the 2030 Agenda is the eradication of extreme poverty for all people everywhere by 2030, currently measured as people living on less than \$1.25 per day. The indicator for this goal is the proportion of the population below the international poverty line, disaggregated by gender, age, employment status, and geographic location. Based on the tendency of these indicators, it can be assessed whether certain targets are approaching realization or worsening. In Germany, the SDGs are accompanied with the German Sustainability Strategy. The first National Sustainability Strategy was adopted by the German government in 2002. Since 2004, the German sustainability strategy has been updated and continued every 4 years. With the introduction of the SDGs in 2015, the National Sustainability Strategy was also revised and transferred to the German Sustainability Strategy. This is now oriented and aligned with the 17 SDGs. The German Sustainability Strategy was aligned and oriented from then on to the Agenda 2030. In order to measure implementation and progress towards the goals, 72 national indicators have been defined by the German government for measurement. Data collection is carried out by the Federal Statistical Office, which regularly produces an indicator report summarizing the results and measures of national SDG monitoring progress (Forum Umwelt & Entwicklung, 2022).

In addition to measure the UN goals, since some of them are very specific and others are much vaguer, a metric like the Social Progress Index (SPI) can be used (Social Progress Imperative, 2022). The SPI tries to give an overview about the people’s quality of life globally and, independently of wealth, the wellbeing of society (Deloitte, 2022). The SPI aims to measure all the achievements that the SDGs seeks to achieve by aggregating them into a single number and tracking progress so that it can be used as a benchmark. Nevertheless, it does not include economic indicators such as the GDP or general economic growth but is developed as a complement to the GDP (Deloitte, 2022; TED, 2015). The GDP is defined as a “total monetary or market value of all the finished goods and services produced within a country’s borders in a specific time period” (Fernando, 2022). It is an overall measure of domestic production that provides a composite indication of the economic health of a country (Fernando, 2022). Hence it is a metric, that constitutes the economic growth, it does not necessarily consider the social and environmental externalities generated by business activities (Max-Neef, 2016; Kumar, 2018). The SPI is applying 53 indicators in order to develop an overall scale of 0 to 100. It is divided into three basic categories:

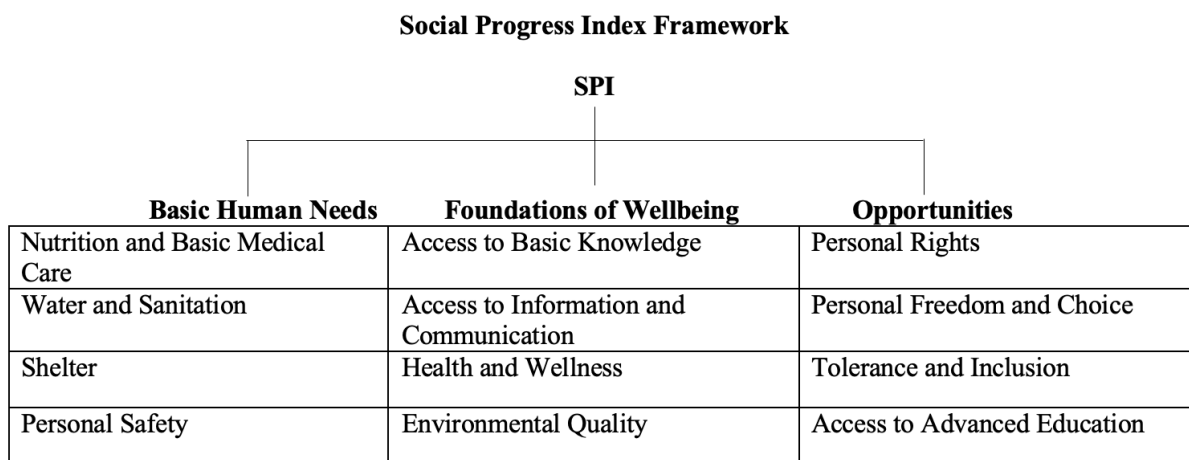


Figure 2: Social Progress Index Framework. Source: Social Progress Imperative, 2022; Deloitte, 2022.

Different levels of performance can be recognized by that index. The world average SPI score is constantly increasing and since 2011 it raised from 60.63 to 64.24 (Deloitte, 2022). Countries such as Norway with a high score of around 88 perform better than countries like the Central Africa with a score of solely 31 (Green, 2015). There is a significant relationship between a country's level of economic health and development and its level of social progress, however the relationship between these indicators is very distinct (Deloitte, 2022; TED, 2015, Social

Progress Imperative, 2022). A country's income does not necessarily correspond to its level of social progress, but it gives us information about the relationship of economic growth and social progress (Social Progress Imperative, 2022; Green, 2015). As countries get richer through economic growth, "each extra dollar of GDP is buying us less and less social progress" (Green, 2015, minute 06:30). A country's income does not necessarily correspond to its level of social progress (TED, 2015). But even though the score has been rising for years, it is not sufficient to achieve the SDGs by 2030. At the current pace, the SDGs would not be achieved until 2082. The covid 19 pandemic and the current economic crisis are negatively impacting development and significantly slowing implementation (Deloitte, 2022; Social Progress Imperative, 2022). The SPI does not include the GDP in their calculations (Green, 2015). But the GDP as a metric might be falsely used for the alleged significance of a company in the context of sustainability is the Gross Domestic Product. Numerous initiatives emphasize the importance of a metric other than GDP, which is as mentioned already, based mainly on continuous economic growth, without taking into account other factors such as overall sustainability (Rubio-Mozos et al., 2019). So to measure and trace the effects through implementing SDGs the GDP can be taken into consideration for the Agenda 2030, since it is a valid macroeconomic magnitude but nevertheless too insufficient and not valid enough to consider it as main magnitude for the fulfillment of the SDG (Ernestina Rubio-Mozos et al., 2019). Also, most public policies are mainly focused on maximizing economic growth, without considering social and environmental external factors generated by any business activities (Max-Neef, 2014).

2.2 SMEs

2.2.1 Definition and Characteristics

The definition of SMEs varies slightly in several countries but are mostly determined by the three dimensions of employment, sales, or investment (Institut für Mittelstandsforschung, 2020). In Europe, two official authorities - namely the German Institut für Mittelstandsforschung and the European Commission - provide two deviating and slightly different definitions of SMEs (European Commission, 2022). The distinction between SMEs is expressed in quantitative terms concerning their annual turnover and their number of employees. In Germany, the so-called Institut für Mittelstandsforschung classifies companies as SMEs if their annual turnover does not exceed a maximum of 50 million euro and their number of employees is less than 500 (IfM, 2016). According to the second definition formulated by the European Commission, a company can be classified as a SME, if it consists

of less than 250 employees and has an annual turnover less than 50 million euro or an annual balance sheet below 43 million euros, it is defined as a SME (European Commission, 2022; Lozano, 2022). In some people's mind-sets, SMEs and family firms are more generally set apart from their corporate or public counterpart through particular closeness to their employees as well as special relationships with their customers and suppliers, which is seen as one of their essential characteristic elements. Furthermore, especially in Germany most family businesses are still located in rural areas due to their historical regional roots, rather than in the urban areas of high population density (PwC, 2012). For the purpose of this study, SMEs follow the definition of the Institut für Mittelstandsforschung.

2.2.2. Economic Relevance in Germany

SMEs and family businesses have great importance to the German economy (Gedajlovic, Carney, Chrisman, & Kellermanns, 2012; Salvato, Chirico, Melin, & Seidl, 2019). Over the past decades, SMEs have distinguished itself as the backbone of the domestic economy and claim to develop business over the long term and across generations (Weber & Weber, 2021). Family businesses for example are the oldest form of business management in the world (De Massis et al., 2016). Small and medium size enterprises generate about 60% of employment in most economies (Lozano, 2022). Small and medium size companies represent about 99% of all businesses in the Organization for Economic Cooperation and Development (OECD, 2022; Lozano, 2022). The OECD is an international unique organization where the governments of 37 democracies with market-based economies work together to create and support sustainable economic growth and aim to shape policies that ensure equality, fair opportunities, prosperity, and well-being for all humans (OECD, 2022). In Germany SMEs are besides of economic importance also of great social relevance (von Schlenk-Barnsdorf, 2020; Weber & Weber, 2021). "Mittelstand", "family business", "owner-managed company" and "family-managed company" are considered by the German Institute for SME Research as synonyms that define companies united primarily by qualitative characteristics of unity of ownership and management (Weber & Weber, 2021). They make up with around 90% the majority of companies in most national economies (Gedajlovic, et al., 2012; Salvato, et al., 2019; Rubio-Mozos et al., 2019). They thus form the economic foundation of many countries around the world, for example by contributing to the gross domestic product. More precisely, SMEs constitute for half of the GDP worldwide and taxes (UN Nations, 2022) and additionally are important employers (von Schlenk-Barnsdorf, 2020). The German Research Institute of the

German Mittelstand in Bonn reported that around 99.5% of all companies in Germany are small and medium sized companies (German Research Institute, 2020). SMEs employ a huge part of the population in Germany. Almost 60% of workforce are employees in mid-size companies and contribute therefore immensely to the total turnover in the country (von Schlenk-Barnsdorf, 2020; BMWi, 2014). In Germany, SMEs account for almost 55% of total economic output and comprise around 99% of all German companies (BMWi, 2014; OECD, 2017). In 2011, these companies generated EUR 2.1 billion or 36 % of total sales in Germany (BMWi, 2014). Their international sales have also grown over time and amounted to EUR 195.2 billion in 2011. In Germany, SMEs are among the largest employers, employing over 16 million people. In terms of social security contributions, this number represents 60% of all workers nationwide (von Schlenk-Barnsdorf, 2020; BMWi, 2014). As a result, the low youth unemployment in Germany can also be explained. Especially in the industrial sector, the so called “Mittelstand” in Germany is comparatively very strong. Over 20% of the total SME workforce is employed in this sector (BMWi, 2014).

The data mentioned above emphasize the immense influence of SMEs in Germany on the economy as well as the high social impact of SMEs make a strong contribution to the sustainability transformation (Orbik & Zozulakkova, 2019) and to the implementation and achievement of the SDGs (Frey, 2018). The German government is emphasizing the potential for environmental management and energy efficiency of SMEs (Weber & Weber, 2021). In addition to energy and climate policy, politics is increasingly drawing attention to topics such as digitalization and demographic change (Weber & Weber, 2021). Hereby sustainability plays a special role in this regard, because ecological and social action is of particular importance in a long-term perspective (Ernst et al., 2020). In order to remain competitive as SMEs, they exhibit a high degree of future orientation, resilience and agility (Schmidpeter, Prof., Dr, 2021). In the innovation process, medium-sized companies often benefit from the high level of trust they enjoy among employees, the regional environment and business partners. This social capital helps to build new value chains, opens up new regional markets and maintain globally trusting business relationships (Weber & Weber, 2021). In addition to the call to action for businesses, the United Nations emphasizes with their sustainable development goals the important role of private businesses as having great potential for the development of sustainable products and services (United Nations, 2022). They are forecasting market opportunities for sustainable products and services development of up to \$12 billion per year by 2030 (Elkington, 2018).

Since most of the companies in all economies, and thus in Germany, are SMEs, they are and further on will be very important to achieve the Agenda 2030. Therefore, it is important to understand their opportunities and limitations, in order to take them into consideration.

3. Methodology

3.1 Research Design

The aim of this chapter is to present the empirical research methodology of this work and to shift the focus from the purely theoretical background through the literature review to the method of analysis in order to find out to what extent the implementation of SDGs in SMEs in Germany can take place. This section presents the research method. This study employs a qualitative method, based on primary data. Regarding the primary data, the interview approach with a qualitative protocol was chosen as the basis for data collection, because as it allows respondents' answers to be recorded in real time, resulting in a spontaneous valuable conversation about the topic under research. This opportunity is not given by using a structured survey, because there the respondent is not tempted into spontaneous and comprehensive conversation. An interview protocol was built which will be explained in more detail in section 3.2, and the interview participants were not aware of the interview questions before. The purpose was to collect qualitative information about the sustainability engagement towards SDGs and related activities of the companies interviewed. The interview partners were chosen according to their professional industry and position. The majority of the interview partners are CEOs of medium-sized companies in Germany. The interviewees come from different industries and different sized companies, which allows for a broad and extensive collection of data. The interviews were conducted between November and December 2022 and analyzed in January 2023. Each interview took between 20 and 45 minutes, depending on the interviewee. The interviews were recorded and subsequently transcribed. In the following section, it is presented how the data collected with the interviews is analyzed. This is done according to the main categorized topics within the SDG frameworks and considering the SME characteristics.

3.2 Primary data collection

The qualitative data collection is conducted in the form of a semi-structured interview protocol with open-ended questions. The final version of the interview questions is divided into three main categories. All interviewees are asked to answer all questions in as much detail as possible in order to gain the greatest possible insight and understanding of their assessment and approach

to the SDGS and all the opportunities and difficulties associated with it. At the beginning, there is a brief introduction of each interview partner, with an explanation of the respective industry affiliation, management, markets or most important business areas, products or services offered, turnover and employee numbers. The second part investigates the sustainability activities of the company. It will be analyzed in detail how sustainability plays a role for the company. The respondents are asked about the general sustainability activities of the company. The scope of these activities will be described in detail. Costs that hereby incur and investments required such as manpower should also be assessed. Respondents should provide explicit examples of their social projects or initiatives and indicate whether they are related to their actual day-to-day business. The third section is about SDGs. It is divided in four main categories: general knowledge, perception and implementation, followed by motivation, opportunities, and limitations. The first section is intended to show the perception of the SDGs of the UN in particular of the company. The respondents should reflect their level of knowledge about the SDGs and their overall perception of these goals including feasibility. It should be explained to what extent the 2030 Agenda is understood by people in leadership positions or at least decision-making positions. It could also be interesting to know whether if SDGs are deliberately sought to be achieved, this is done alone or in networks and partnerships that are cultivated for this purpose. The next questions are to identify the key motivations for the entrepreneur's pursuit of the SDGs and measures their impact on employees, society, the ecological environment, and the company's overall performance. For example, the extent to which the company's own employees respond to the SDGs and how the company is perceived externally compared to its peers in the labor market and to what extent respondents see the economic health of the company as a deciding factor in adopting SDGs. It is also asked to what extent companies perceive the SDGs as a voluntary good deed and would like to integrate them further as voluntary or believe in a mandatory introduction of the SDGs for companies to actually achieve them. It is among others to find out whether sustainability engagement is seen as a purely altruistic approach or determined by real motivation. The next category of questions examines the extent to which scalability or measurability plays a role. What do the respondents consider to be the achievement of goals or their measurability? The perception of each respondent on the monitoring of the SDGs will be discussed in detail. The main opportunities and limitations that SMEs face by implementing SDGs is the last and main point of investigations. The overall data collection period took place between November and December 2022.

3.3 Data analysis

The data analysis is based on the qualitative content analysis according to Mayring (Fenzl, T., & Mayring, P. (2017), a structured and qualitative method for the evaluation of text-based data. The evaluation of the content analysis is done by creating a category system into which the data is classified. The categories would have to be determined and exactly defined, which components of the data fall into which categories. After conducting all interviews, the categories were determined. These categories helped to identify the main motivations, opportunities, limitations and overall knowledge of all companies.

In the following table, all interview partners are listed and structured regarding ID, their academic background, the industry they are working in, the type of company they are working for and their annual turnover including number of employees. The order is randomly chosen and has no further meaning.

ID	Position	Academic Background	Industry	Company	Company size / annual turnover
1	CEO	PHD	Publishing house	Typofactory Marketing GmbH	35 million turnover 200 employees
2	CEO	B.SC.	Manufacturing technology	Manufacturer of technology for solar and covering materials	50+ employees
3	CEO	B.A.	Building industry	Handcraft Holding	120+ employees
4	CEO	MBA	Building industry	Mining company	50 million annual turnover 300+ employees
5	CEO	M.A.	Automotive industry	Manufacturer of molds for body sealing systems	200+ employees
6	CEO	B.A.	Food industry	B2B Food supply	14+ employees
7	CEO	B.A.	Building industry	Interior construction	150+ employees
8	CEO	M.A.	Consultancy	Sports agency and Consultancy	10+ employees
9	Senior development engineer	M.A.	Innovation and Technology Industry	Technology for autonomous driving and robotics applications	150+ employees

10	CTO	M.A.	Telecommunication industry	Telecommunication infostructure	450+ employees
11	CMO	M.A.	Gaming industry	Software company	200+ employees
12	CMO	M.A.	Automotive supply industry	Distributor of automotive supply	93 employees
13	Director Sales International	M.Sc.	Medical technology industry	Manufacturer of closed transfer systems for toxic drugs such as chemotherapies in oncology	450+ employees 250+ Countries (Global Presence)
14	Expert family firms	PHD	Consultancy	Innovation and Founding Hub	350+ employees

Figure 3: Interview Partner

4. Main findings

The main findings of the interviews are categorized in three main categories: sustainability, SDGs and opportunities and limitations. A table can be found in the appendix, for a detailed but compact overview.

4.1 Sustainability

4.1.1 Perception and meaning

The insights from the expert interviews illustrate that sustainability is an integral part of most businesses. Only a minor part of selected interviewees stated that sustainability isn't at least somehow part of their agenda. Some companies even include sustainability in their mission and vision with the message: *We act in the long term for future generations*, as Interview 5 stated. What is mainly understood and perceived by the concept of sustainability is the importance of the long-term component. *Sustainability for an entrepreneur means to continue successfully operating a few decades from now in terms of social, environmental, and economic goals* (Interviewee 2). Entrepreneurs stated that they want to act in a way that conserves resources

and takes future generations into account. For a company it requires the creation of long-term values for the business, the society, and its stakeholders by minimizing negative impacts on the environment as far as possible. In order to act sustainable, it demands foresight. *Sustainability means not just to work on the symptoms, but to work on development*, argued Interviewee 1. Symptoms refers to the consequences that may occur due to unsustainable behavior (such as inefficient production in a company for example) and development refers to the conscious implementation of motivating and process optimizing measures. So, for example if the efficiency in a production is rather low, and turnover therefore decreases, it might not help just to dismiss some employees to save costs but to investigate why their work is so inefficient. It might help to motivate the employees to work more productive with the right incentives. If a business is just focusing on short term goals, at first sight it will probably work well in terms of profitability. But if social aspects are left behind completely, sooner or later this will have an impact on economic goals. Because if, for example, an employer shows completely antisocial behavior towards its employees, eventually he might not achieve the sales target as employees become unmotivated, frustrated and ultimately less productive. A sustainable business model means that a company has to be financially viable over the long-term. Besides the long-term component, the “Three pillar model” is considered as an underlying concept of sustainability. The interviewees illustrate that following this model gives them the ability to create and maintain a business that is economically viable, environmentally friendly, and socially responsible. The majority stated that sustainability consists of ecological, economic, and social aspects equally and one can't be prioritized over the other. Interviewee 11 explained: *Since all three pillars are interrelated, all goals are equal*. Especially when referring to the long-term goals as a component in doing business, then one pillar can't be favored over another. Since social, economic, and environmental aspects influence each other, a balance between those aspects needs to be considered in order to create a long-term, viable business that also contributes to the well-being of society and environment. From a social perspective it can be said, the more sustainable a company behaves, the greater the productivity and motivation of employees might be. All respondents agreed to that statement. If a business wants to act sustainable it must be socially responsible, promotes the well-being of its employees, customers, and community, including implementing fair labor practices, promoting inclusion and diversity, and in the best case even engaging in corporate social responsibility (CSR) initiatives. Since all interviewees are familiar with ecological sustainability, they agreed that from an environmental perspective, that sustainability means creating a business that minimizes

negative impacts on the environment by implementing sustainable practices such as reducing waste and emissions, using or investing in renewable energy, using sustainable materials and products. One interviewee especially pointed out the right disposal and argued “sustainability starts at the development of products and does not end before the right disposal. This can be described as “circular economy”.

Another main component of sustainability is innovation. *Investment in new innovations can help to fasten forward sustainable practices*, explained Interviewee 14. Reduction of costs and increase of efficiency, such as energy-efficient equipment or renewable energy sources, can raise positive advantages in the long term of high investments. Furthermore, for a company it helps if there is a digital basis given in order to become more sustainable. Data is extremely relevant in the context of improvement in sustainable practices. So, to implement a CO2 strategy for example, companies first need the transparency about their CO2 emissions, which requires the respective data. *Companies must record where and how many CO2 emissions occur, so that this can be made transparently measurable in order to then identify possibilities where savings can be made in order to then derive measures*, described Interviewee 5. One third of the interviewees emphasizes that the data required needs to be used properly so it can lead to more sustainability. There are quite some sustainability ventures build on new technological possibilities in combination with digitalization that depend on respective data.

4.1.2 Examples of sustainable engagement

The interviewees, which are active in various industries, mentioned several examples of their sustainability engagement. There is a special emphasis on the correlated circulation of production, product and lastly the disposal. Regarding the production it can be seen that many companies decided to move forward with a more sustainable and greener way of energy consumption. Over 90% of the respondents declared that they somehow use partly renewable energy. Investment in renewable energy sources, reducing energy with such things as machine and light plans in the manufactures or offices, retrofits regarding energy efficient building can lead to immense cost saving. The installation of photovoltaics on buildings or the shift towards a green electricity provider isn't an unknown measure. For most companies the saving of energy is the number one mentioned example of sustainability engagement. Those companies that are even further committed in terms of sustainability, scale their carbon footprint or annual CO2 emission, with the explanation that they first need to know what they emit before taking actions.

Not just in terms of the required energy for any kind of production, also the possible materials therefore are chosen wisely among most companies. That's why some companies decided to switch to 50% or even 100 % recycled materials in production, even though in some industries this makes them to a pioneer. The use of recycled materials still gives a long service life to most products. Besides the production, also the disposal can have an impact. Interview partner 2 explained, that they consciously dispose everything at the recycler in their region. Having an emphasis on sustainable production and disposal obviously influences the sustainability of a product. But a product itself can be sustainable, especially in terms of social sustainability. That is what Interviewee 1 explained in detail. *As a local media house we are an integral part of local life in the region. Our mission "we love living here" gives our company ultimately social status in its fundamental existence, since they are capable of bringing people together and provide the cement of local society, without excluding anyone.* In this example social sustainability is given through providing a platform for discussion and freedom of speech. Generally, the product portfolio can represent sustainability in any terms. Even though few companies are not mainly focused on a sustainable product portfolio or production, the social aspects are given nevertheless with all respondents.

Besides production and product portfolio, all interviewees declared to support various initiatives or to be part of partnerships with sustainable orientation. Some companies participate in local campaigns or social initiatives in their region. Others support green sponsorship in their city or donate to various organizations. Sustainability through donations and partnerships could be seen in all companies. But sustainability also refers to the inner workings of an organization and the wellbeing of its employees. All companies describe that they place particular emphasis on employee development, by offering things such as sport activities, discounts for fitness clubs, table football, redesigned lunch areas or even mobility points for those who come to work by foot or public transport. Only one company is offering a four-day week for employees. They found out that productivity on Fridays was very low and it is more resource-efficient if the company does not turn on the machineries for one day a week. The CEO of the company (Interview partner 2) explained that: *a four-day week means the employees have one more day off, one more day for relaxation, one more day for the family, for hobbies and is accordingly more motivated to work on Monday, Tuesday, Wednesday, to do a better job on Thursday because they want to get everything done by Thursday evening.* This shows the importance of emphasizing employee development to achieve more motivation and therefore productivity and

efficiency. Additionally, companies can convey more credibility and expect more commitment when representing a long-term viable company, which often goes along with family firms. Having motivated employees comes along with good leadership. That is why most respondents explained that their main focus is on good leadership. It is about developing strengths and individual progress of people. The better the managers are coached, the better they can reach out to the employees. Being an apprentice company for young workers also brings the focus to social sustainability actions. Another example of social responsibility that was mentioned is guaranteeing the security of supply in a region. *Being independent in production of the availability or price fluctuation of electricity can provide safety for customers in times of energy crises and war*, explained Interview Partner 4. Another possibility to receive acknowledgment for sustainable achievements or compensate lack of sustainability in some terms is the use of compensation certificates or reward certificates. Interviewee 2 mentioned the use of an “Energy Pass for pools” that they use as a USP, and others compensate their CO₂ emissions with certificates. Nevertheless, this requires a voluntary payment, which is the reason why it is done so far just by a few of the discussed companies.

4.1.3 Motivations

The reason why SMEs engage in sustainable activities underlies different motivations. One of the key drivers is the economic motivation. Sustainable practices can lead to cost reduction by saving energy, gas or water through renewable energy sources or examples mentioned such as photovoltaic installation. Even revenue can increase through sale and providing of sustainable services or products. All respondents agreed that the main motivation of any entrepreneur is to generate profit. *SMEs are not implementing sustainability solely because they want to improve the world, but because they are under economic pressure*, argued Interview partner 14. From an employer point of view being sustainable can give a competitive advantage. Being perceived as a sustainable company, SMEs can differentiate themselves from their competitors and gain an edge in the marketplace. This positive reputation can build trust with their customers, stakeholders, and employees. If a company can exhibit a sustainability strategy it will very certainly face advantages at the job market. Sustainability and topics such as CO₂ compensation are also an employer branding topic. These are relevant criteria’s for recruiting when it comes to new skilled workers or young professionals who are extremely sensitive for such topics. Interviewee 14 explained they offered an own daycare center at their company, for employees children. This is to make it easier for employees to combine work and family life. But this

wasn't done exclusively because of social welfare, but the competitive advantage of the company on the labor market, since they could easier retain their employees for longer. In this case social goals and long-term economic goals are perfectly combined. The competitive strategy refers also to the customer. Companies must occupy places in the mind of the customers, so they will continue to demand the same standards with sustainable production. Sustainable actions such as CO2 saving is even though quite common, since it is a measure that is still the most likely to have a visual impact, which can be used perfectly for communication purposes. But being sustainable also refers to the financial sustainability of a company, and by not milking the cow now, it can be assumed that there is substance in five year's time. Besides the economic motivation for many entrepreneurs. sustainability achievements are also a personal and emotional issue. Many entrepreneurs feel a sense of social responsibility to contribute to a sustainable development and make a positive impact. There is a high personal interest especially in family firms. They face the self-reflection: What kind of company do we want to be? Enterprises run by families have mostly long-term success orientation and higher personal motivation to run a company in the long term. They feel social responsibility for their employees, are emotionally committed to the company, are often part of an association or initiatives and known in the city or area where they are located mostly for many years or decades. A high motivation by employees and a general sensitization in society towards family firms can be observed. *It is just the personal interest as family firm to be long-term success orientated and have a higher personal motivation to run a company successful in the long term,* described Interview partner 7. On the contrary, companies that are not family-owned or that do not have a strong individual shareholder, often act much more in the short term and do not address the issue of social sustainability in terms of their purpose. They often are more active in short-term reach maximization than long-term investment. Besides, the economic and social aspects also the compliance with regulations play a role. Some governments have implemented regulations and policies related to sustainability, and SMEs may engage in sustainable activities to comply with these regulations and avoid penalties.

4.2 SDGs

4.2.1 Perception and feasibility

Measurability is an important topic from entrepreneurs' point of view. Those that are familiar with the term SDG have knowledge about their KPIs. The respondents that are not confident with the sustainable development goals, also did not know a lot about their measurability. As

most of the SDGs can be measured qualitatively and in numbers, all three pillars must be considered to measure sustainability properly. Some respondents explained that even the most complex goals can be measured by certain indicators in some form. The significance of achievement can be extremely influenced by disruptive factors such as high inflation, war, or energy crises. Social sustainability is observed by all respondents, even though they are not too familiar with SDGs. Employee and customer satisfaction can quite easily be measured by regular surveys. One interviewee mentioned that the number of subscriptions is their indicator for satisfied customers, even though this metric can become influenced by economic crises such as inflation. So even though customers are convinced by one's products, externalities such as economic crises can falsify this result. The respondents explained that internal social sustainability is achieved when employees confirm that they are satisfied, feel that they are in good hands, have possibilities to develop and have a contact person to talk to in case of problems. Also measured is the fluctuation rate, the sickness rate, the overall productivity of the individual, the utilization, or the distribution over the different days of the week.

Another SDG mentioned is gender equality and quality education, which can be measured very easily, by checking the proportion of men and women, the percentage of employees from other nations or ethnic backgrounds and offered trainings. Since economic sustainability is one of the main motivations of sustainable achievements, companies bother to track their efforts and progress there. It can be measured by dimensions such as the EBITDA margin (Earnings before interest, taxes, depreciation, and amortization), the overall profit and other KPIs. Regarding the environmental achievements the dominant measurand is the CO₂ emission, caused by the companies. This emission is quantifiable (namely via CO₂ tons) and gives essential information about the CO₂ footprint. As few respondents indicated, having a target without quantifying it in some way is completely meaningless and just a lip service then. Secondly the source of energy is simply to determine and assess. Knowing where the energy comes from and at how much the production needs, can lead to the interest of compensating with certificates.

The overall knowledge and perception about the Sustainable Development Goals is respectively low. For most of the respondents SDGs is a common frame but there are still SMEs that are not familiar with the term SDG. It was evident that companies, that have a broad knowledge about SDGs, also implement them to their agenda. About one third of the interview partners translate all 17 goals into their vision. So, knowledge about SDGs correlates positively with utilization and application. All interviewees that are familiar with the term, describe the SDGs as a helpful

matrix. It is perceived as a supportive guideline and great to show the breadth of sustainability. As most respondents confirm, sustainability is often understood only under ecological aspects. The SDGs extend the Three Pillars Model. About one third of the companies' missions are based on the UN's 17 Sustainable Development Goals and represent a supportive guidance. Since the SDGs are quite comprehensive, one interviewee recommended from an entrepreneur point of view to pick out those that a company can really implement and realistically achieve. One company can't implement all 17 SDGs to the full extent. Even though about one third is actively orientating along the SDGs, all interviewees agreed that there is still a huge lack of knowledge in society and along enterprises. All 15 interviewees agreed that probably just few people know about SDGs, and could really list all 17 SDGs. They all complained that there is way more information necessary and a better communication strategy by the government required. *SDGs are insufficiently communicated to the public*, explained Interview partner 2, 3 and 8. The government could start with information campaigns in schools, since that is where our next generations mature. The lack of knowledge about SDGs also leads to the fact that some companies aren't even aware of the fact that they already implement certain SDGs on a daily basis. One example are social aspects, such as offering regular trainings, support memberships for employees and hiring as many men as woman, are often not even recognized as social sustainability goals. Companies need more support and enlightenment to successfully progress their sustainability goals. Topics such as digitalization and new technologies demand more promotion on behalf of governments. Interviewee 1 explained, *for some companies' sustainability is only perceived as a political agenda and lip service, without real relevance.*

4.2.2 Economic health

To engage sustainable, the economic health of a company is very important. *Sustainability can only be done when there is economic fortitude* (Interviewee 1). If there's an economic hard time, then a company will act with the short term in mind and look for the cheapest solutions. Then the social and ecological issues are put aside for the time being. The fact that this doesn't necessarily lead to success is another issue. But it can be assumed, that reacting to economic hard times is already a sign that there wasn't proper sustainable management and not enough foresight. If companies make loss, then of course they must somehow try to get out of this uncomfortable situation in the short term. *Economic crisis and recession provide difficulties and can be a limitation but also an accelerator for change at the same time* (Interviewee 14). So due to economic regression and energy crises many companies decide to continue with green

electricity for example but not just because they wanted to become more sustainable but because it's more economical. This shows that crisis is not just a pure limitation, but a possibility to push things through faster. Nevertheless, that can be connected with high investment in the first moment but pays off in the long term. At the end of the day for an entrepreneur it is the cost-benefit question that determines decisions. If the sustainability goals match the corporate goals, then it's perfect and synergy is created. But primarily, the goal of an entrepreneur is always to work economically. And for sustainability to be considered, it needs to add value to the company in some way.

4.2.3 SDGs as an obligation

The respondents were asked what they think about the obligatory implementation of SDGs for companies and penalties in case of disregard. Besides two respondents (Interviewee all interviewees refused this idea and agreed that it would be very counterproductive. The main reason therefor is the immense bureaucracy that would come along with such an obligation. It would require a high investment of money, time, and manpower by the German state. The German state is already determined by a tremendous amount of bureaucratic cost in every way. An obligatory SDG implementation seems for all respondents not enforceable and incredibly expensive. In order to achieve the goals faster and more determined, it would certainly make sense, but from a business perspective, it would cause many difficulties. And also, the fact that in Germany a lot still works analog, would make it even harder. Besides the amount of bureaucracy that would be caused, the lack of feasibility was mentioned as an obstacle. Above all, it would be necessary to define what exactly sustainability is and what includes. Would a company be allowed to compensate for certain ecological shortcomings with social sustainability, for example with a great external purpose? Otherwise, a manufacturing company might disappear from the market that is dependent on driving around with gasoline trucks, but otherwise fulfills great social sustainability complained to respondents. All interviewees agreed that the implementation is factually not possible and accompanied by a lot of negative externalities, which reduces sustainability in other pillars. It is practically impossible to make the implementation comparable and quantifiable for every business and every industry. Fair competition would be severely constrained because every new venture would first have to be checked to see what SDGs are to be measurably implemented, was argued by over 50% of the respondents. An alternative to obligatory implementation is the possibility of relocation. It could be advisable to use possibility of movement. If one company can significantly reduce

CO₂ and another can't, perhaps with certificate trading, companies could compensate their disparity. Since the German state wants to become CO₂ neutral within the next years / decade, and there always will be industries and companies that emit a certain output, it might be an idea to allocate to companies or other areas with negative emissions. *Instead of penalties or bans, CO₂ could be priced, just as it exists with certificate trading, which is an established mechanism. Furthermore, to levy a CO₂ tax could be an option*, argued Interviewee 1. The consumer will decide at the end which product they go for. And if a product gives a certain identification about, for example, environmental sustainability, social goals, and represents a great product at the same time, consumer will decide to continue with that product and not obligation. Since the increasing demand for sustainability and transparency from the consumer, at the end of the day, they will tend to go to sustainable products rather than others, which means that the market will decide. Even though few respondents argued that for the planet an obligatory implementation of SDGs would be good, the majority agreed that for the companies on the market it would be severely counterproductive.

Communication and informing about ventures and decisions is quite important within an organization. That is why most companies emphasize the importance of transparent communication towards employees, stakeholders, and customers to get trust, loyalty, understanding and support. As part of their communication strategy, one respondent explained that they simply communicate all financial figures transparently, communicate their profit margin, how much they would need to invest properly and explain what is left at the end after all the investments. It was criticized that in Germany profit maximization is often considered as shabby. But by communicating profit and loss transparently, more understanding and positive sentiment can be evoked. The company vision and mission are suited to communicate to the outside. Those companies that consciously deal with the term of sustainability also delegate employees especially for sustainability issues. Sustainability manager or communication manager are exemplary mentioned positions but as one respondent especially emphasized lack of time and manpower makes it harder to communicate and inform employees regular about the sustainability engagement.

4.2.4 Importance of SMEs

All companies interviewed are SMEs. The importance of SMEs to the German economy is not to deny. The specialty about SMEs is that many of them are sustainable by nature due to long-

term existence and workforce guaranty, but in the past they did not really communicate it consciously. *In family businesses and SMEs, there are sometimes employees, who have been with a company all their lives, or fellow employees who have been working there for the third generation*, Interviewee 14. Simply because the SMEs are companies in the region where there are not many alternatives. The special thing about owner-managed companies is that the employees remain with the company mostly for a long time. And as a result, the values of the owner family of the company are also transferred to the employees and then indirectly back to the family of the employees. In other words, there is a cross-generational social impact. So, passing on the social values from the owner family to employees symbolizes social sustainability. In terms of financing, SMEs are mostly much more sustainably positioned in terms of employees since they have longer employee retention rates. SMEs make up over 60% of the workforce in Germany, which of course also has an impact. SMEs play a major role along the value chain in many industries, which means that they have a great influence. The more sustainable the suppliers become, the more sustainable the value chain becomes. And the more local and regional the suppliers are, the more sustainable the products or services of the big company or group will be. In Germany, most manufacturing companies are medium-sized companies, which do not have the financial force to implement sustainability quickly but in cooperation with corporates, they can reach a lot.

4.3 Opportunities

Implementing SDGs underlies significant boundaries but also brings a lot of opportunities. All companies agreed that SDGs can lead to great success, for companies and for the planet. One of the most mentioned opportunities is the impact on reputation of a company. By demonstrating their overall commitment to sustainability, companies can improve their reputation and attract new employees, customers, and stakeholders. Implementing SDGs can bring a company many benefits on the labor market, since being sustainable and responsible makes an employer more attractive. From an employee's point of view, it is relatively easy to explain that the more sustainable a company interacts, the more appealing it is as an employer. *Due to a shortage of skilled workers in most markets, especially in the craftsman's trade, companies need to be competitive and stand out positively as an employer next to their competition*, explained Interviewpartner 2. In this case, the opportunity overcomes a limitation at the same time. It is mutually beneficial, to be a sustainable company and get new skilled employees on board, who bring new knowledge and experience, with which the company can

tackle and accelerate the next stage of sustainable automation. The positive image or reputation of a company does not solely influence the employees but also customers. Adopting sustainable practices can help companies appeal to consumers who are increasingly interested in buying products and services that align with their values and sustainability. Besides the good reputation on the market, companies implementing sustainable practices can lead to cost savings. Using renewable energy saves a lot of costs for SMEs, especially at the moment due to an energy crisis. Through the use of photovoltaic power systems, enterprises can produce their own energy (or at least partly) and therefore save a lot of expenses. Conscious use of materials, further process of recycled resources saves money, water, energy, and waste. This influences the company's profit as well as the environment positively. New technology is mentioned from almost all respondents as another big opportunity for SMEs and their progress towards sustainability. Implementing sustainable practices can lead to new products, services, and business models. Sustainability goes along with innovation and new technology which brings new possibilities for companies to operate more efficient and more sustainable. *Again crises, are not just an unambiguous limitation, but can also be an opportunity to push innovation and development in a company*, repeated Interviewee 14. Nevertheless, this is mostly connected with an investment in the first moment but pays off in the long term. The German economy is built on SMEs. All respondents agreed on that point and described the immense importance of the so called "German Mittelstand" as the main driver for Germany's economic power. SMEs create the majority of the workforce in Germany and contribute significantly to the GNP. Nevertheless, SMEs are not the main emitters of CO₂ emissions. Germany is a strongly industry-driven country, from where most emissions originate. *The CO₂ balance of small and medium-sized businesses is disproportionately low compared to that of larger corporations, because the larger corporations naturally emit tremendous emissions*, was commented by Interview partner 1. Nonetheless SMEs are often supplier to larger companies and therefore influence the whole supply and production chain. They have the power to contribute to a certain sustainability strategy or to change it. Another opportunity mentioned from many counterparts is the opportunity of creating more incentives for SMEs to accelerate the process of SDGs. With appropriate rewards and support, it would certainly be easier to encourage many companies to engage in sustainable activities. 100% of respondents argued that the Government and politicians could work a lot more on supportive initiatives and actively create incentives. Humans simply respond to rewards and entrepreneurs are thankful for support since they often face lack of time or manpower to dedicate themselves to topics such as sustainability. There are

a wide variety of topics, and it would help to create more incentives. Only collecting money by certificates is useless, was criticized by one of the interviewees, because then if a company is liquid enough, they could compensate everything with money and would not get a punish for misbehavior in terms of CO2 pollution for example. One example mentioned, was a huge fund, one of the largest pure climate-technology Venture Capital (VC), which has collected a record sum to invest it together with another European Investment Fund into sustainability projects and sustainable startups, since they declare that they believe in terms of sustainability the big global problems need technological solutions, and every young company needs a lot of capital for that. This exemplary investment is one of the highest investment sums that the European Union has ever invested in a completely new fund with the focus on sustainability. But not only investments may support; also partnerships can bring large and smaller enterprises together. SMEs often work in cooperations in order to obtain know-how from external parties. They can obtain expertise from outside to bundle resources. In the model of Circular Economy for example, various stakeholders, such as corporates, startups, the public sector and SMEs, work together on new business models to create a positive impact together. Especially strategic issues can be a big chance for sustainability. Since SMEs are predominantly the suppliers of large companies, they also have a huge stake in the future. The cooperation between large cooperations and SMEs can help to create access to technology and innovation and create exchange formats, so that the gap of smaller companies is bridged with the appropriate know-how. Besides the contextual lack, the financial gap needs to be supported by cooperations to support such investments as well. But many smaller companies don't even know what kind of funding programs are available. More information needs to be communicated, hence with the appropriate support programs and initiatives, small companies should work together with larger ones. This is also an indication for startups, but many startups are in fact also SMEs measured in terms of employee numbers and revenue. The integration of SDGs has an impact on leadership to create big visions with small steps. But of course, some goals must become visible in a short period of time, to stay motivated and gain trust. It is advisable not to dream too big. Lastly de-bureaucratization can be understood as a chance and limitation at the same time. Many countries have implemented laws and regulations to promote sustainable practices, and SMEs can benefit from being compliant with them. It helps them to follow given regulations and not being on one's own with the topic of sustainability.

4.3 Limitations

On the other hand, small and medium-sized enterprises also encounter various limitations when implementing the SDGs to their business model. Some of these limitations include financial constraints. *SMEs are mostly self-financed, which means that they are limited in what they can do*, declared Interviewee 14. They base their investments focused on what is relevant for the day-to-day business. A limited access to information and data makes it even harder to identify and implement sustainable practices. Many SMEs have only limited financial resources to invest in sustainable practices and technologies and even limited access to financial support. For many of them digitization is a relevant topic besides sustainability, which requires additional capital expenditure. Their limited access to technology obstructs the implementation of sustainable practices such as renewable energy systems or energy efficient equipment. Many SMEs are still lagging behind when it comes to digitization, and it would help to at least know where the weak points are. Due to a lack of financial resources, SMEs also often face a lack of knowledge and expertise. The common shortage of competencies and know-how hinders the implementation. SMEs usually do not have special employees or managers for a sustainability strategy and do not have the required knowledge or expertise to identify and implement sustainable practices and technologies. Most of the interviewees stated, that many companies have no idea about the existence of SDGs and what they contain. Since sustainability is often reduced to ecological issues, companies aren't even aware that they might implement social goals already and how easily they could change small things with a big impact. The lack of information can be affiliated to the government and local media. Regional media could be a helpful tool for communication. Information is also required about possible support and incentives. If a company knows its weak point, for example digitalization and lack of sustainability, and know where they could find experts and the necessary support, it could help a lot. Lack of financing, data and knowledge brings along a limited access to markets, networks, and partnerships. SMEs often face barriers to accessing networks needed to implement a sustainability strategy. Above and beyond they do not have the resources or capacity to participate in policy-making processes related to sustainability. Due to size and financial constraints the influence and impact on change by SMEs is relatively low criticized half of the respondents. As named earlier, the main emissions come from the large cooperations of the manufacturing industry, such as the steel manufacturers, energy companies, airlines, which are all not SMEs. Besides the lack of financial resources as the main obstacle for SMEs in processing the SDGs, bureaucracy was mentioned distinctive from all respondents. The high

level of bureaucracy in Germany is currently an extreme obstacle for many medium-sized companies to devote themselves to the things they consider sustainable in the long term, since it causes incredible amount of energy, time and money. *There are even entrepreneurs who are really considering emigrating from Germany, because in their mind it is simply no longer acceptable, what the regulators and bureaucracy is determining in Germany,* stated Interviewee 2. Politicians sometimes decide over the heads of the entrepreneurs, which hits the middle class extremely as two respondents criticized. Some interviewees mentioned, that the product itself, depending on what a company offers or produces, may already be a limitation. For example, if a SME is a manufacturer of plastic bags, then the product is the limitation itself. One respondent mentioned the example of their industry. The swimming pool industry has been heavily attacked by politicians in recent months, due to energy crises and war. The product offered by the company was denigrated by the politicians as redundant and overrated. This influenced of course the image of the industry while positive effects, especially social ones such as the relaxation and stress relief, were ignored. Externalities and circumstances that can not be influenced also represent a limitation for the implementation of SDGs. Consequences of the pandemic, difficulties in supply chains, energy crises and war effects at least indirectly most companies. For companies that are affected by crises, there might be more important decisions that need to be made than becoming more sustainable, stated one third of the interviews. That's why sustainability is mostly a topic when it adds value to a company in terms of profitability.

5. Conclusion

The goal of this thesis was to understand what the main opportunities and limitations are that SMEs face when implementing SDGs to their business. Therefore main motivations and general perception of sustainability was investigated. To the purpose a study was conducted in form of in-depth interviews. A semi-structured interview with open ended questions was designed and applied for the interviews. The interviews were transcribed and analyzed under the process of Mayrings (1983) content analysis. For each of the investigated categories, main results were determined.

The answer to the research question “What are the main opportunities and limitations of implementing SDGs in SMEs in Germany” is that the biggest limitation for SMEs is their size, limited financial resources and the related lack of influence. This is in line with previous research, because most respondents answered that they feel limited in what they can do because

of financial restraints. In addition, bureaucracy is a major difficulty for SMEs in Germany to successfully implement the SDGs. The respondents feel constrained through German regularities. Lack of communication and information is another obstacle for SMEs with regard to their sustainability commitment. As all respondents complained they miss informative and helpful communication from the government. One of the main opportunities that SMEs experience is the positive company reputation they might gain, which influences customer, stakeholder and employees. They can obtain a competitive advantage with their competitors, attract employees on the fiercely disputed job market and improve their stakeholder network. Another significant advantage is the possibility of saving costs through energy and resource reduction, productive and motivated employees and efficient use of technology and innovation. The opportunities, limitations and main motivations that come up with this study are based on the interviews and are in line with previous research. The primary data collection confirmed the obtaining information, that was gained through the literature review.

5.1 Theoretical implication

There are quite some previous studies on the topic of sustainability and ESGs in Germany. The present study contributes to theory because profound understanding about SDG implementation especially for SMEs in Germany was gained. Even though there is already previous research on the SDGs and their impact but concrete examples and actual data help to understand the motivations and restraints better. There is not a lot of current study that focus specifically on SMEs in Germany. The study reflects the importance of the topic and provides explanation for the findings. Through detailed examples of the respondents, current insights of actual sustainability engagement are given. The correlation of a general interest in sustainability in corporate governance and the related knowledge about SDGs could be identified and allows for further deeper investigations. The generalizability of findings of a single company is limited, as well as the assumption of the findings any individual SME.

5.2 Managerial contribution

The results of the study may help companies and business executives to consciously identify the greatest opportunities and difficulties in the implementation of SDGs at an early stage so that they can deal with them in the best possible way. When difficulties are identified, it is easier to manage them. Since the financial limitations of SMEs are considered a major difficulty, companies could try to counteract this problem in the implementation of SDGs with the right

cooperation or incentives. For the biggest opportunities, such as the positive impact on the corporate image, business executives can communicate consciously issues such as employer branding and conscious brand reputation. This study also help executives to identify where they are positioned in terms of sustainability engagement by comparing themselves with the responses and examples mentioned of the interview partners.

5.3 Limitations and potential for future research

This dissertation underlies a number of limitations. Among these is the quantity of experts interviewed. The investigation of the research question with the use of 14 carefully selected interview partners provided interesting insights but is only of limited significance due to the quantity. Since most of the interviewees gathered through mutual acquaintances, a possible bias and an effort to positively represent the company can't be ruled out. In order to answer the research question, only expert interviews were conducted, which were not tested and confirmed by a quantitative survey. The evaluation of the interviews followed the principle of content analysis according to Mayring (1983) (Mayring, 2000) At the center of this evaluation process is the systematic analysis of relevant texts. The qualitative interpretation of the data is in the foreground here, which at the same time does not exclude bias and misinterpretation. Further quantitative research might be used to confirm or refute the previous results. The motivations, limitations and possibilities mentioned could be examined more closely for background and possible influences.

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7. Appendix

Appendix 1: Interview Guide

1. Introduction - General company Information

- a. First of all, can you quickly give me some information about the company you are working for, your current position, your professional experience and your academic background?
- b. For how many years have you been working in the company you are working at now? Have you been in other positions in this company?
- c. What is the service or product your company is offering?

2. Sustainability of the company

- a. What means sustainability for you?
- b. In your vision, would you consider sustainability an integral part of your company? What activities does your company pursue as part of its sustainability commitment? Can you mention concrete examples?
- c. Are there employees in your company who are specifically responsible for sustainability? What is their role or position?
- d. In your vision, is the focus of your companies' sustainable achievements more on social, ecological economical ventures?
- e. To what extent is sustainability communicated in your company to the employees?

3. SDGs:

Knowledge, perception, and motivation

- a. Are you familiar with the term of SDGs? If so, what do you know about them?
- b. Does your company integrate the SDGs to their agenda and how? Which SDGs? Can you please identify them.
- c. Are all employees aware of the SDGs? Are you communicating the implementation of SDGs to the outside?
- d. Do you know why your company does implement them? Did your company always implement them or just recently?
- e. In case your company implements SDGs, have it always been the same or different ones at the beginning? Can you give examples.
- f. Does your company need financial resources to implement the SDGs?

- g. Can you tell me your opinion about the commitment of the SDGs of your company?
- h. What do you know or think about the measurability of SDGs?
- i. What could be motivations in your opinion to implement the SDGs? What are your motivations to do so?
- j. In what way would you consider the economic health of a company as a relevant impact on the sustainability engagement?

Opportunities and limitations

- a. What are the main opportunities and limitations of SDGs in your opinion?
- b. What do you think about SDG implementation as an obligation for companies and penalties in case of disregard?
- c. To what extent and why would you consider the SDGs as a potential way to prevent form global threats?
- d. Since the German Mittelstand accounts for almost 55% of the total economic output, incorporating around 99% of all German companies, the economical relevance of SMEs is doubtless. How would you evaluate the impact of SMEs to the real achievement of the SDGs? Do they have an influence?
- e. Would you consider Scalability's a limitation? Do you have suggestions how to scale or monitor the actions of companies?

Appendix 2: Interview Analysis

Category	Subcategories	Main results	Quotations
Sustainability	Meaning	Long term orientation and long-term component	<i>“Sustainability for an entrepreneur means to continue successfully operating a few decades from now in terms of social, environmental, economic goals” (ID 1)</i>
		Three pillar model	<i>“We are very much guided by the three-pillar model. You can't have one without the other and can't prioritize one over the other. All three pillars are interrelated”(ID 1)</i>
		Innovation, Technology and Digitalization	<i>“Sustainability is very innovation-driven” “Investment in new innovations and sustainable practices can help to reduce costs and increase efficiency, such as energy-efficient equipment or renewable energy sources” (ID 14)</i>
Sustainable engagement	Product	Production Disposal	<i>“It is not just about the sustainable production but also about the disposal. We dispose everything at a recycler here in the region” (ID 2)</i>
	Social engagement	Partnership an initiatives	<i>“We support several local campaigns and initiatives in our region” (ID1, 2, 4, 5, 6)</i>
		Employees and leadership	<i>“A four-day week means the employee has one more day off, one more day for relaxation, one</i>

			<i>more day for the family, for hobbies etc. and is accordingly more motivated to work on Monday, Tuesday, Wednesday, to do a better job on Thursday because they want to get everything done by Thursday evening” (ID 2)</i>
Motivations	Social responsibility	Personal interest	<i>“Sustainability is very important in family firms. They have a high social responsibility for their employees, are emotionally invested and often part of an association or an initiative” (ID14)</i>
	Economical interest	Cost saving, competitiveness, company reputation, employer branding	<i>“The main motivations as an entrepreneur is to generate profit” (ID1, 2, 14) “SMEs are not implementing sustainability solely because they want to improve the world, but because they are under economic pressure” (ID14)</i>
SDGs	Perception	Helpful matrix	<i>“It's a great matrix to show the breadth of sustainability, because many people only think of environmental sustainability”(ID 1, 4)</i>
		Lack of information	<i>“There's too little information and too little sustainability from the government, and too little pressure regarding implementation” (ID2, 3, 8, 11)</i>

	Impact of Economic situation	Economic health very important	<i>“If there's an economic fire, then I will look for the cheapest solutions, so in the short term try to put the fire out” (ID1)</i>
		Cost-benefit question	<i>„The primary goal as an entrepreneur is always to work economically. And if the sustainability goals match the corporate goals, then it's perfect, then everyone wins. But primarily, of course, it has always been a cost-benefit question” (ID2)</i>
	Obligation	Bureaucracy	<i>“The high level of bureaucracy is currently an extreme obstacle for many medium-sized companies to devote themselves to the things they consider sustainable in the long term” (ID1, 2)</i>
		Lack feasibility	<i>“I would feel betrayed if I implemented something as a company but was then only checked sporadically and not regularly. However, I imagine this to be quite difficult to implement in reality” (ID5)</i>
Opportunities		Advantages on labor market	<i>“We have to be attractive as an employer on the labor market”</i>
		Cost saving	<i>“Of course we save costs if we only produce four days a week and thereby also increase productivity” (ID2)</i>

<p>Limitations</p>		<p>Bureaucracy</p>	<p><i>“Bureaucratization is a major limiting factor, because an incredible amount of energy, time and money goes into it for SMEs” (ID1, 2, 11, 14)</i></p>
		<p>Financial limitation of SMEs</p>	<p><i>“The biggest limitation of SMEs is just the general varnish because the competencies or the know how are not there to take action and then also no experience in implementation” “We are limited in terms of power” (ID14)</i></p>
		<p>Lack of information and resources</p>	<p><i>“There is not enough communication and information about SDGs” (ID 2, 3) “The government has to put more emphasis on the communication of SDGs” (1, 2, 3, 11, 12)</i></p>