



Corporate Digital Responsibility - Does it Pay to be Good? Understanding how active CDR can lead to a Competitive Advantage for Firms

A mixed-methods study

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Abstract

English Version

Title: Corporate Digital Responsibility - Does it Pay to be Good? Understanding how active CDR can lead to a Competitive Advantage for Firms

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The objective of this research is to determine, using a mixed-method approach with pre-filled surveys and interviews, to what extent active corporate digital responsibility can lead to a competitive advantage for companies. To this end, the following three research questions were posed: Can active CDR lead to a competitive advantage for businesses? What factors have an influence on the impact of CDR on business performance? What impact will CDR have on future business?

Initially, a survey for companies was created based on the literature research and filled with secondary research. Also, to answer the research questions, a guided interview was conducted with seven respondents. The survey showed that mainly performance benefits can arise for the companies through active CDR. Presumed advantages could be identified that have a positive impact on access to certain markets, differentiation, stakeholder involvement or compliance. Furthermore, factors were identified that could have an influence on the impact of active CDR on performance. The company size is suspected to influence the impact of CDR on business performance. The study also explored the future impact of CDR on future business. Significant impacts from legislative changes and a change from "voluntary" to "mandatory" are captured. Based on this foundation, it is advisable to conduct further investigations and studies to evaluate and assess the issue on a company-specific basis.

Keywords: Corporate Digital Responsibility, Sustainability, Digitalisation, Business Performance

Sumário

Portuguese Version

Título: Responsabilidade digital das empresas - compensa ser bom? Compreender como a RDC activa pode conduzir a uma vantagem competitiva para as empresas

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O objectivo desta investigação é determinar, utilizando uma abordagem de método misto com inquéritos e entrevistas pré-preenchidos, até que ponto a responsabilidade digital empresarial activa pode conduzir a uma vantagem competitiva para as empresas. Para o efeito, foram colocadas as três questões de investigação seguintes: Pode a RDC activa conduzir a uma vantagem competitiva para as empresas? Que factores influenciam o impacto da RDC no desempenho das empresas? Que impacto terá a RDP nos negócios futuros?

Inicialmente, foi criado um inquérito às empresas com base na pesquisa bibliográfica e preenchido com pesquisa secundária. Além disso, para responder às questões de investigação, foi realizada uma entrevista orientada com sete inquiridos. O inquérito mostrou que, através de um RDC activo, podem surgir principalmente benefícios para o desempenho das empresas. Foram identificadas presumíveis vantagens que têm um impacto positivo no acesso a determinados mercados, na diferenciação, no envolvimento das partes interessadas ou na conformidade. Além disso, foram identificados factores que podem influenciar o impacto do RDC activo no desempenho. Suspeita-se que a dimensão da empresa influencie o impacto do RDC no desempenho da empresa. O estudo também explorou o impacto futuro do RDC nas actividades futuras. São registados os impactos significativos das alterações legislativas e da mudança de "voluntário" para "obrigatório". Com base nesta fundamentação, é aconselhável efectuar mais investigações e estudos para avaliar e analisar a questão numa base específica para cada empresa.

Palavras-chave: Responsabilidade Digital Corporativa, Sustentabilidade, Digitalização, Desempenho Empresarial

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I Abbreviations

AI – Artificial Intelligence

CDR – Corporate Digital Responsibility

CR – Corporate Responsibility

CSR – Corporate Social Responsibility

ESG – Environmental, Social, and Governance

IoT – Internet of Things

p. – Page

R – Respondent

RQ – Research Question

SM – Social Media

SME – Small and Medium Enterprises

SR – Social Responsibility

SRQ – Sub Research Question

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1 Introduction

1.1 Problem Statement and Relevance

The public debate on ethical corporate behaviour in the digital age has gained momentum (Thorun et al., 2018). Companies and the economy are undergoing extraordinary changes because of data and digital technologies (Dörr, 2020). A public discourse which currently is emerging focuses on the uncertainties and risks of digital technologies and ignites social dissent, analogous to the ecological issues and globalisation that ignited the discourse on corporate social responsibility and changed the meaning of corporate responsibility (Joynson, 2018). While many companies highlight the new opportunities that digitalisation and the use of digital technologies bring to business models, goods and services do not address the related difficulties and negative impacts to the same extent. There are only a few examples where companies do more than meet the normative requirements in terms of digital responsibility (Thorun et al., 2018).

On the one hand, the use of digital technologies and digitalisation can improve sustainability and can be used to act responsibly. On the other hand, digitalisation itself poses a challenge to fair, equitable and sustainable development. The digital economy also has negative effects and can pose risks to society and businesses in the areas of pollution, resource consumption, data protection, ethics or even generate cybercrime (Dörr, 2020; Dörr, 2021). With a view to the requirements of the microenvironment, companies are therefore faced with the challenge of redefining their service offering, their revenue model, and their value creation (Schreiner & Kenning, 2018). In terms of the macro environment, digitalisation also challenges corporate responsibility (Billen, 2018). Although the connection between digitalisation and CSR seems obvious, the concept of corporate digital responsibility has not yet gained much importance in the academic discussion. Either aspects of digitalisation are only marginally dealt with in current publications or the connection between CSR and digitalisation is reduced to the communication of CSR in digital media (Adi, Crowther & Grigore, 2015; Basil & Erlandson, 2008; Ingenhoff & Kölling, 2009).

The topic of this dissertation is relevant as it explores how active CDR can enable companies to gain a competitive advantage in the marketplace while promoting sustainability. The academic work can help companies understand the associated benefits with CDR from different angles and can help promote sustainable behaviour. In addition, the study can contribute to the existing literature on CDR and sustainability, which is limited.

1.2 Research Objectives and Research Questions

The topic of corporate responsibility has been at the centre of attention of academics and practitioners for a long period of time. Nevertheless, the exponential increase in the use of digital technologies by companies has created a new dimension of CR: Corporate Digital Responsibility (CDR). This master thesis aims to understand whether and how active CDR can lead to a competitive advantage for firms.

The overall research objective of this master thesis is to investigate the relationship between active CDR and firm performance, specifically the potential for active CDR to lead to a competitive advantage for companies. The research will focus on the following research questions:

1. Can active CDR lead to a competitive advantage for businesses?
2. What factors influence the impact of CDR on business performance?
3. What impact will CDR have on future business?

1.3 Thesis Outline

The thesis consists of six chapters, which will be briefly discussed below. The introduction chapter provides an overview of the research topic and the rationale for the study. It presents the problem statement and problem relevance, research objectives, research questions, along with the dissertation outline. Chapter two provides a literature review for the research. It explores the concepts of sustainability, defining sustainability, discussing the triple-bottom-line framework, and exploring corporate responsibility, corporate social responsibility as well as the benefits from being sustainable as a business. In addition, the chapter defines digital technologies and their characteristics, explores relevant digital technologies, and digital maturity. The concept of sustainability in the digital context is also discussed, exploring CDR, the dimensions of CDR, responsible digital innovation, and digital ethics, as well as the benefits for businesses of being digital responsible. Finally, a conceptual framework is proposed that links the theoretical concepts to the research questions. Chapter three discusses the methodology, including the research approach, design, and process as well as the secondary and primary data collection and the data analysis. Chapter four presents the empirical findings of the research. It includes the company samples, quantitative and qualitative results. The chapter discusses the results in the context of the research questions. Chapter five evaluates the findings and implications of the research. It explores the academic and managerial implications of the research, identifies limitations, and suggests areas for future research. The final chapter summarizes the research findings, evaluates the research objectives, and answers the research

questions. It concludes with a reflection on the implications of the research for academia and industry.

2 Literature Review

2.1 Sustainability

This chapter aims to explore the multifaceted concept of sustainability and its implications for businesses regarding corporate responsibility. To establish a knowledge foundation, chapter 2.1 delves into various aspects of sustainability and corporate responsibility. Firstly, the definition of sustainability is provided. Secondly, the theoretical framework of the Triple-Bottom-Line Model is presented, which provides a comprehensive lens to evaluate sustainability from different angles. Thirdly, the concepts of corporate responsibility and corporate social responsibility are discussed, highlighting the role of businesses in promoting sustainable practices. Lastly, this chapter sheds light on reasons why companies should engage in corporate responsibility.

2.1.1 Definition Sustainability

The literature offers a wide range of definitions of the term sustainability, which varies depending on the area of application. Nonetheless, most definitions are based on an underlying concept of sustainability, which is the realization that decisions made by individuals or groups have an impact on current and future generations through the allocation of scarce resources (Myers, 2016). Following, a variety of definitions of the term “Sustainability” will be presented for further understanding. The United Nations Brundtland Commission (1987, p16) defines sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.”. This definition is widely accepted, but some authors criticize it for not being able to specify what the needs of future generations are, and that the needs of those responsible for this definition may be different from those of others in the world (Taylor, 2002). A broader definition is presented by Ben-Eli as follows (2018, p. 1339):

“Henceforth, the term “sustainability” will be used in the context of our whole planet, the integrity and health of its biosphere, and the future wellbeing of humanity. In general, it can be regarded as a type of stability characterized by some quantity that remains invariant. The condition that remains invariant is defined by a specific kind of dynamic equilibrium in the interaction of a population and the carrying capacity of its environment.”.

Furthermore, Matten and Wagner (1998) differentiate the concept of sustainability into static and dynamic sustainability. "Static Sustainability" means that the use of resources is in balance with the regenerative capacity of the environment and that current needs should be met without

compromising future needs. "Dynamic sustainability", on the other hand, refers to ensuring the continuation of the yields from these resources (Matten & Wagner, 1998). The focus and subject matter of this scientific work also requires a definition of the concept of sustainability in relation to entrepreneurial action. Landrum and Edwards (2009) describe corporate sustainability as a course of action that incorporates stakeholder interests and ensures the continuation and improvement of the company while maintaining social and environmental systems. In the further course of this scientific work, the definition of Landrum and Edwards (2009) will be used as a definitional basis for the term sustainability, as corporate benefits and actions are the focus of this study. The triple-bottom-line model is explained further to establish other dimensions of sustainability as basic knowledge in addition to the ecological aspect of sustainability.

2.1.2 The Triple-Bottom-Line Model

The following chapter will provide a basic understanding of the dimensions of sustainability and how companies can create sustainable value. To create value for a company in the form of sustainability, strategies and action patterns are relevant that can be applied to the company in concrete terms. To enable a differentiated understanding of the topic, the triple-bottom-line model is explained below (Elkington, 1997).

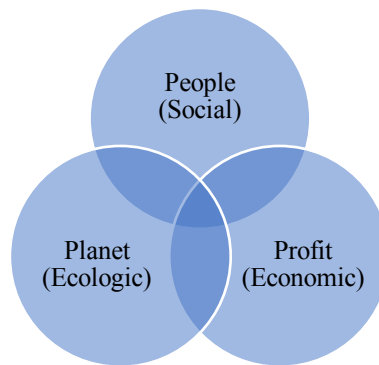


Figure 1: Triple-Bottom-Line Model by Elkington 1997.

According to this model, the concept of sustainability is made up of three components (Figure 1), an ecological, an economic and a social sustainability, which can be abbreviated to the terms 3P (People, Planet, Profit). The economic component refers to the sustainability of economic growth and profitability, the social component to societal development, and the ecological component to issues of natural resource use and conservation. This interplay is initially based on equal importance, although in the long term only an ecologically intact environment can be the prerequisite for social and economic stability. The multidimensional model offers a holistic view of sustainability (Elkington, 1997). Sustainability thus describes the linking of economic,

ecological, and social goals. While the term three-pillar model is used more in the general context of the normative concept of sustainability or the guiding principle of sustainable development, the term triple bottom line also refers to the three dimensions of the three-pillar model but is used more in the corporate context. It is currently being applied more widely by businesses, non-profit organizations, and governments. Moreover, this concept aims equally at implementing measures to promote environmental protection and reduce resource consumption, as well as to promote the stability and growth of the economy, considering its positive impact on society (Hauff & Kleine, 2009). One issue that arises in this context, which can be caused by a lack of understanding of the constellation of the three pillars, is the prioritization of one of the three components, noting that the economic component is increasingly seen as the most important component (Salvia et al., 2019). Similarly, there is evidence in the literature that the environmental and economic components are increasingly seen as competing (Sitnikov, 2013; Söderholm, 2020). It is also evident that a holistic view of the three components promises greater success for companies at different levels (Savitz & Weber, 2006).

2.1.3 Corporate Responsibility and Corporate Social Responsibility

The following chapter aims to create an understanding of how corporate responsibility has developed and which dimensions of corporate social responsibility are relevant for companies. The way society and businesses think has changed drastically since the 1960s and continues to change. Companies that have not abandoned the basic capitalist idea of maximizing profits are finding it much more difficult to survive in the marketplace today (Camilleri, 2017). In the context of limited natural resources, growing social awareness and ESG risks, sustainability, and the pressure to be sustainable are becoming increasingly important (Lüdeke-Freund et al., 2020). As a result of this change, a discourse has developed in many companies about the responsibility they must take for the impact of their operations on the environment and people. Many companies already have concluded that they need to take responsibility and call it corporate responsibility (Thorun et al., 2018).

One component of CR is the social aspect (Hilty & Henning-Bodewig, 2014). Corporate Social Responsibility (CSR) has steadily gained importance in recent years, especially since the introduction of mandatory CSR reporting for certain companies. This affects not only large companies, but also small companies in the supply chain (Gelbmann & Baumgartner, 2012). Due to a very broad and situation-dependent definition base of the term CSR, a compilation of 37 CSR definitions by Dahlsrud (2008) is used below as a basis for the further course of this

scientific work. The analysis of the definitions revealed five core dimensions of CSR to explain CSR as a concept (Dahlsrud, 2008):

1. **The economic dimension:** the financial aspect that defines CSR as a business decision.
2. **The environmental dimension:** the ecological aspect, which defines the protection of the environment as a goal of CSR.
3. **The voluntary dimension:** includes the accountability aspect of CSR, which is increasingly defined as voluntary.
4. **The stakeholder dimension:** includes the interaction with stakeholders.
5. **The societal dimension:** encompasses the interaction between the company and society.

Addressing metrics, targets, policies, and responsibilities for non-financial information also has an important effect for companies, as it requires CSR to be integrated into many areas of day-to-day operations. For example, the German Commission has identified six areas where CSR should at least be applied: Human Rights, Labour and Employment Practices, Diversity, Environmental Protection, Resource Efficiency and Anti-Corruption (BMAS5, n.d.). Companies should take social, ecological, and economic aspects into account and orient themselves towards stakeholders and integrate them into the supply chain (Gelbmann & Baumgartner, 2012). To attract investors, companies must not only perceive their social responsibility, but also prove it. Convincing sustainability reporting requires that the goals and priorities of the CSR strategy are identified and that market realities are considered (Gelbmann & Baumgartner, 2012). If companies do not meet these expectations or do not implement them carefully enough, this can lead to a loss of acceptance in society and affect their ability to cooperate. The CSR concept is therefore of relevance because companies that fulfil their social responsibility well can secure a strong position in society and thus lay the foundation for their long-term success (Lin-Hi, 2019). Authors such as Gănescu and Dindire (2014) argue that consumers prefer products from sustainable organisations because they believe they come from resource-efficient production.

2.1.4 Does it Pay to be Green

The basic assumption is that sustainable efforts are costly and reduce the financial success of a company (Ambec & Lanoie, 2008). To what extent this assertion is still correct today is questioned by some authors, as sustainable business efforts can lead to improved performance and finances (Porter & van der Linde, 1995). Nevertheless, the widespread belief that sustainable behavior distracts from profit maximization is still present (Friedmann, 1970).

Ambec & Lanoie (2008) describe the beneficial reasons for companies to act sustainably and to take responsibility for their actions. A distinction is made between revenue-generating and cost-reducing aspects (Ambec & Lanoie, 2008):

Increasing turnover:

1. Better access to certain markets: The choice of companies to be represented in a supply chain increasingly falls on companies that act sustainably (Ambec & Lanoie, 2008).
2. Differentiation: By acting sustainably, a niche market is served, as consumer preferences change (Johansson et al. 2001).
3. Selling Pollution control Technology: First movers in the sustainable direction can sell their technologies or strategies (Ambec & Lanoie, 2008).

Decreased costs:

1. Risk management: Avoidance of costs arising from non-compliance with legislative changes and the possibility to push for stricter regulations to gain competitive advantages (Lankoski, 2006).
2. Cost of materials and energy: more rational use of materials and energy leads to lower costs through lower consumption (Porter & van der Linde, 1995).
3. Cost of capital: Better access to capital markets can reduce the cost of capital.
4. Cost of labor: Cost reduction through better morale, which leads to increased productivity and less absenteeism and turnover (Ambec & Lanoie, 2008).

Taking the literature into account, arguments for improving corporate performance by integrating sustainability into business operations can be identified. Taking this into consideration, the question arises as to how these advantages can have an impact on the performance of companies in the age of digitalisation. The digitalisation has transformed the way we live, work, and interact with each other. However, this transformation has led to an increase in environmental impacts and sustainability challenges. As a result, there is an increasing interest in exploring the intersection between sustainability and the digital context (Helbing, 2015). The digitalisation of our society in all areas has fuelled the discourse on responsible corporate governance. There are increasing calls for an ethical shaping of digitalisation from the political as well as the economic and social sides. The aim of these demands is to cushion the negative consequences of digitalisation. The changes in the ethical concerns of society show that a normative examination of the topic is also relevant. This raises the question, especially for companies, of what corporate responsibility in the digital world means in concrete terms (Thorun et al., 2018).

2.2 Digital Technologies

2.2.1 Definition and Characteristics of Digital Technologies

In today's world, digitalisation is a core aspect of the transformation of value creation in companies. The central actors in digital processes are both people and digital technologies (Fleischmann et al., 2018). Digitisation stands for the transformation and representation of information as well as the transformation of communication from analogue to digital (Gabler Wirtschaftslexikon, 2022). Due to the constant and ongoing development of digital technologies through innovation and advancement of existing technologies, digital technologies are the drivers of digitalisation. It is important to note that digital technologies not only have a supporting function, but are a fundamental component of services, processes, and products (Urbach, 2020). The cross-contextual use of the term “digital technologies” in the scientific literature leads to a heterogeneous understanding of the terminology (Lipsmeier et al., 2018). Lipsmeier and colleagues (2018) define digital technologies as solutions that combine knowledge, skills, and know-how to support value-added processes in industrial practice. In this context, digital technologies are used to generate, process, transfer and use digital data and information (Lipsmeier et al., 2018). Consequently, suitable architectures are required for the implementation of digital approaches as well as suitable technology carriers (Schatz & Bauernhansl, 2017; Kolberg et al., 2017; Spath, 2013; Müller, 2017). Loebbecke (2006, p.360) defines digital technology as follows: "Digital technologies generally refer to the totality of technologies used for the creation, transmission or dissemination of digital solutions". Digital technologies can be, for example, artificial intelligence, the Internet of Things, or technologies such as social media, mobile computing, or cloud computing (Urbach et al., 2019). In principle, digital technologies can be seen as facilitators of digital transformation. Nevertheless, companies must consider the risks of digital technologies and, likewise, the non-observance of corresponding relevant digital technologies because the benefits are not recognised early enough (Hanschke, 2018; Kreutzer, 2021).

The effects of digital technologies are usually referred to as disruptive, whereby it is not the technology itself that is disruptive, but the characteristics of the technology that are disruptive. In academia as well as in the media, characteristic aspects such as automation, networking, virtualisation, and real-time processing receive a lot of attention (Doleski, 2017). In the currently available literature, on the one hand, characteristics of the respective digital technology are discussed (Huber, 2018; Paschen et al., 2019), and on the other hand, authors

focus on a general characteristic of digital technologies. For example, Yoo (2010) refers to seven characteristics of digital technologies:

1. Programmability
2. Addressability
3. Perceptibility
4. Communicability
5. Memorability
6. Traceability
7. Predictability

2.2.2 SMACIT and Artificial Intelligence

The following chapter explains and describes digital technologies, using the SMACIT model and literary sources on Artificial Intelligence, to narrow down the broad topic of digital technologies and to form the basis for the empirical part of this dissertation.

The SMACIT model stands for Social, Mobile, Analytic, Cloud and Internet of Things. The model explains why and how these five technologies play a relevant role in today's digitized world and offers companies an approach to respond to changing consumer preferences and develop business opportunities (Ross, 2014). The five technologies are explained below (Ross, 2014):

1. **Social:** Refers to the use of social platforms and networks. These technologies can be used for both internal and external actions and offer the possibility of interactive communication with the target group.
2. **Mobile (Mobile Technologies):** Refers to the use of mobile devices such as smartphones and tablets as well as mobile applications (apps) to provide services and information. Mobile technologies enable users to access information and conduct business anywhere, anytime.
3. **Analytics:** Refers to the use of data analytics tools and techniques to gain information that provides a competitive advantage.
4. **Cloud:** Refers to the use of online services and infrastructure to store, manage and deliver data and applications.
5. **Internet of Things:** A network of physical objects equipped with sensors, software, and connectivity to collect data and communicate with each other.

In addition to the digital technologies considered in the SMACIT model, various literature sources also refer to the current and future relevance of artificial intelligence for companies.

Artificial intelligence is defined as a computer program or system that can perform tasks that require human intelligence. The benefits for companies lie in the automation of tasks, the analysis of data and the further optimization of business processes (Enholm et al., 2022; Huang & Rust, 2018; Wamba-Taguimdje et al., 2020).

2.2.3 Digital Maturity

“Digital Maturity” as a terminology arose with the industry 4.0 and the associated digital transformation and refers to the maturity of a company or organisation in terms of its digital transformation (Kane et al. 2017). It encompasses the ability to integrate and use digital technologies in all aspects of the business to gain competitive advantage and respond to changing market conditions (Canina et al., 2022).

There are many models that attempt to explain digital maturity in one concept. In the following the Digital Maturity Framework (DMM) is explained. The DMM framework includes six different dimensions that cover different aspects of an organisation's digital maturity (Thordsen et al., 2020):

1. **Strategy:** A clear digital strategy that is aligned with business goals and priorities.
2. **Governance:** An effective governance structure and processes to guide and control digital initiatives and projects.
3. **Management:** Effective management practices and processes to plan, implement and monitor digital initiatives and projects.
4. **Technology:** Right technologies and infrastructure to support digital business processes and applications.
5. **People:** Right skills and competencies to successfully implement digital initiatives and projects.
6. **Data:** Robust data strategy and architecture to make data-driven decisions and meet data privacy and security requirements.

By using the DMM framework, organisations can assess their digital maturity, identify vulnerabilities and areas for improvement, and enhance their digital capabilities to succeed in the digital age (Thordsen et al., 2020).

2.3 Corporate Responsibility in the Digital Context

2.3.1 Corporate Digital Responsibility and CDR Dimensions

The term CDR is being examined more and more frequently in the literature, but it is still a relatively new term in the field of corporate responsibility and sustainability, which is why the

term is used in different ways (Herden et al., 2021). The area of corporate responsibility traditionally deals with the topics of the environment as well as labour standards. The importance of these topics has been proven and opens the question of what additional responsibility companies should take on in the digital world (Thorun et al., 2018).

Herder and colleagues (2021, p.17) define CDR as "(...) an extension of corporate responsibility that takes into account the ethical opportunities and challenges of digitalisation.". This definition focuses on the manifestations of CDR in the economic, legal, ethical, and discretionary dimensions. Here, the economic dimension is about finding new business models and staying competitive. The legal dimension is about operating within the legal framework. The ethical dimension is about minimizing harm to stakeholders and meeting their high expectations. The last dimension, discretionary, is about philanthropic efforts that add value to society. Within these dimensions, the focus should be on issues such as energy and carbon footprint, digital inclusion, and data transparency (Herden et al., 2021).

Thorun and colleagues (2018) also talk about CDR as an additional responsibility of companies in the digital context. This responsibility is described as twofold. On the one hand, topics of corporate responsibility are to be advanced and developed through digitalisation. In this context, digital technologies can be used to respond preventively and reactively to threats to CR objectives. On the other hand, the fundamental responsibility of companies is expanding due to the increase in the pure use of digital technologies and the associated risks such as data insecurity, job loss and discrimination. Thorun and colleagues (2018) also focus on dimensions of CDR, but they differ from those of Herden and colleagues (2021). The dimensions included in this definition are (Thorun et al., 2018):

1. Data Ethics
2. Future of Work
3. Digital Literacy
4. Customer Sovereignty
5. Participation
6. Digitization for Sustainability
7. Governability in a global digital economy

Lobschat and colleagues (2021), on the other hand, do not necessarily see CDR as an additional responsibility, but rather as a framework. Specifically, CDR is a set of shared values and norms that should guide a company in four main categories. These four categories relate to (1) creation of technology and data capture, (2) operation and decision making, (3) inspection and impact assessment, and (4) refinement of technology and data (Lobschat et al., 2021).

The goals of CDR vary depending on how the term is interpreted. Dörr (2020) describes one goal of CDR as strengthening the trust of various stakeholders in digitization. In doing so, CDR is guided by the guiding principle of sustainability (Dörr, 2020). Similarly, goals of CDR can be to minimize negative societal and social impacts, to use digital business models responsibly for employees, suppliers, or customers, or to achieve public goals through the opportunities of digitization (Thorun et al., 2018).

2.3.2 Responsible Digital Innovation and Digital Ethics

Innovation is more relevant to businesses than ever before and differentiates successful companies from unsuccessful ones. Innovation can be described as a driver of economic growth on a macroeconomic level and, in the face of many societal challenges, as an all-encompassing solution. However, in all efforts to innovate, often only the positive aspects of innovation are seen and the ambivalence of the effects of digital advancement are forgotten (Baumann & Martignoni, 2011; Grunwald, 2019). The positive aspects of innovative progress in economic, social, and other areas are widely known. Negative aspects of digital innovations, such as job losses due to AI, privacy issues due to the Internet of Things or overconsumption due to smartphones, are often ignored and have a relevant impact on the success of companies (Dörr, 2020; Dörr, 2021; Schwab, 2016).

Despite the clearly indicative empirical evidence, most companies do not establish ethical strategies in their business operations. One reason for this could be the lack of normative rules for companies to innovate responsibly digitally (Jarmai et al., 2020). This non-commitment of companies only motivates them to make voluntary autonomous decisions to act ethically digitally (Thierer, 2016). However, as the relevance of innovation is all-encompassing and has drastic impacts on society, companies should integrate a digitally ethical direction into their scope of responsibility (Böhm, 2019). In addition to intelligent regulation and responsible consumers, technological development also requires self-orientation on the part of private-sector actors. The goal must be to support companies in the digital transformation in such a way that they not only behave in a consumer- or customer-friendly way, but also in a socially responsible way (Esselmann et al., 2016).

2.3.3 Does it Pay to be Digital Responsible

Introducing digital responsibility strategies into business operations can offer immense benefits and minimize risks for companies. Ethical discourse on digital technologies in the current social environment often occurs after the launch or release of new digital technologies and subsequently leads to remediation costs or damage to the company's image. Similarly,

opportunities may be missed due to non-ethical practices, due to cooperation-shyness of other companies or the company profile not fitting (Thorun et al., 2018). Likewise, risks can arise for companies when using digital technologies due to violations of privacy, immoral use of described technologies and human rights violations. By integrating CDR into corporate processes, these risks could be prevented predictively (Gärtner, 2021; Harlan & Schnuck, 2021; Raidl & Tyborski, 2020). Dörr (2021) further advocates the benefits of CDR, arguing that companies promote equality, fairness, privacy, and protection of personal rights, and Esselmann and colleagues (2016) that the synergy between sustainability and innovation leads to an early involvement of stakeholder interests and thus ensures more satisfaction. Diethelm (2021) also points out that by acting responsibly with their digital technologies, companies can respond better to future normative changes or, in the best case, are already prepared for them. This is highly relevant due to the topicality of the issue and the growing social discourse Diethelm (2021).

2.4 Conceptual Framework

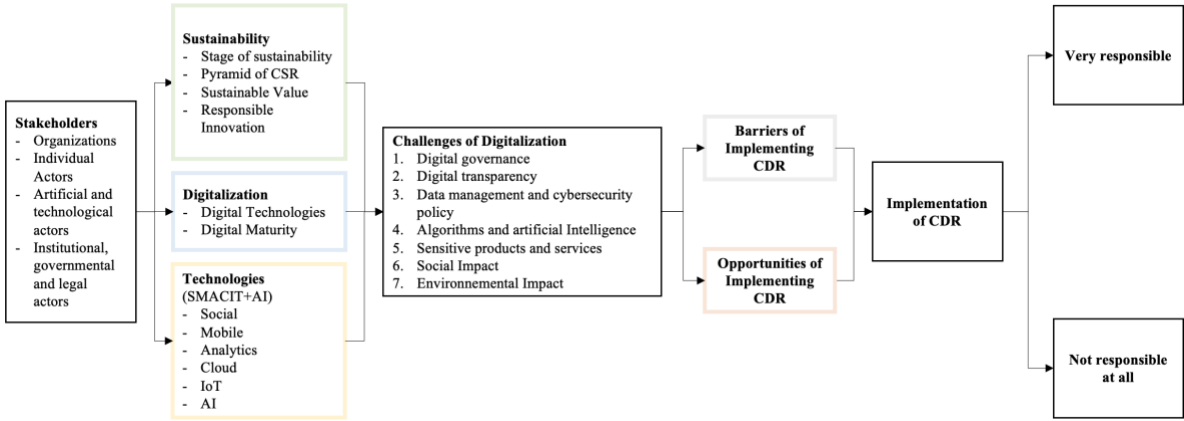


Figure 2: Conceptual Framework.

The conceptual framework summarizes the theoretical background and explains the main thread of this thesis. The first step is to identify key stakeholders that have an impact on the issues of sustainability, digitalisation, and digital technologies. These issues result in challenges for companies and consequently barriers and opportunities for CDR that ultimately justify its implementation. The ultimate manifestation of CDR is responsible behaviour (Figure 2).

3 Methodology

3.1 Research Approach

In recent decades, the mixed methods approach has emerged as a promising method for investigating complex research questions as it offers the advantage, that an in-depth understanding of a research question can be developed by combining quantitative and qualitative methods (Creswell, 2018). This is particularly relevant when the research question has multiple dimensions or facets that cannot be adequately explored with a single method. Through the combination of quantitative and qualitative approaches, a comprehensive picture of the research object can be developed. Furthermore, a mixed methods approach exploits the complementary strengths of both. Quantitative methods allow for broad data collection and provide statistically significant results, while qualitative methods allow for a deeper analysis of individual experiences, motivations, and contexts. Combining both methods minimises the weaknesses of each approach and combines their strengths (Sreejesh & Mohapatra, 2014). Also, the mixed methods approach allows for the application of triangulation, an important research principle that aims to ensure consistency and validation of findings. By combining different data sources and analytical methods, the reliability and accuracy of results can be improved. The use of triangulation in the mixed methods approach increases the credibility of the research and allows for a broader interpretation of the results. Also, the mixed methods approach opens the possibility of broadening the field of research and gaining new insights. By combining quantitative and qualitative approaches, questions can be answered that cannot be fully explored using only one method. This can lead to a better understanding of complex phenomena and open new perspectives on already established research questions (Creswell, 2018; Sreejesh & Mohapatra, 2014).

3.2 Research Design and Process

The research process and research design for this master's thesis involves a comprehensive approach to investigating various aspects related to digital technologies, digital maturity and digitalisation, corporate ethics and responsible innovation, sustainability, corporate social responsibility, the competitive advantage surrounding CDR, digital sustainability, and CDR. The topic "The challenges and barriers of implementing CDR" is also integrated into the survey, but is not dealt with in the literature review or results part, as the topic of CDR is focused on in two dissertations and this dissertation focuses on the competitive advantage through active CDR. The research design is visualized in figure 3.

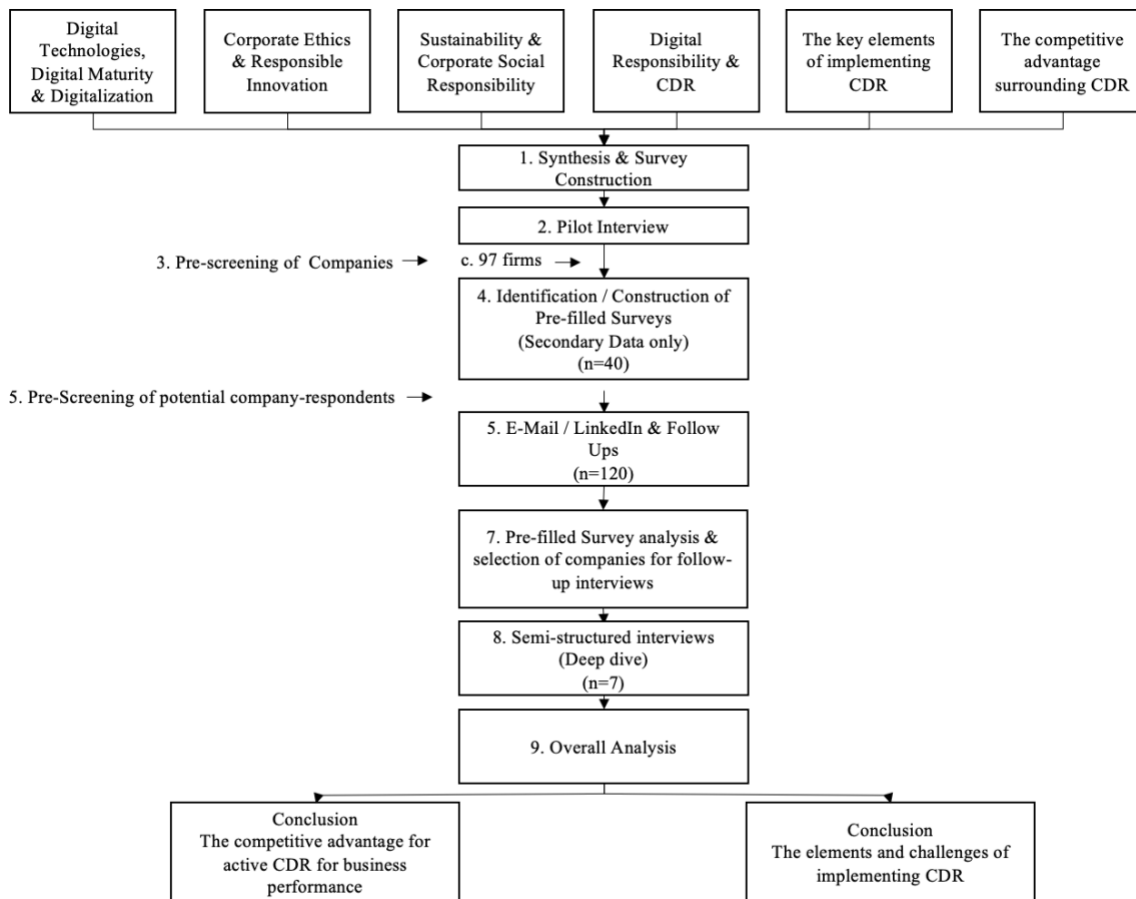


Figure 3: Research Design.

In-Depth Literature Review: The first step of the research process involves conducting an extensive literature review on the topics mentioned above. This literature review aims to gain a thorough understanding of the current state of research, theories, models, and best practices in the field.

Synthesis & Pre-filled Survey Construction: Based on the insights gathered from the literature review, a synthesis of key concepts, theories, and frameworks is performed. This synthesis provides a structured overview of the research field and helps in the construction of a pre-filled survey.

Pilot Interview: To ensure the effectiveness and validity of the survey, a pilot interview is conducted. This interview involves testing the survey with a person who possess relevant knowledge and expertise in the research domain.

Pre-Screening of Relevant Companies: To select companies that align with the research objectives, a pre-screening process is carried out. This process involves identifying and shortlisting companies that have a significant presence in the industry and are likely to provide valuable insights into the research topics. The pre-screening focused on companies that use or

offer digital technologies that are covered by the SMACIT framework and artificial intelligence. Furthermore, companies in the Startup, Scaleup, SME and Corporation categories were selected, so that a differentiated understanding of the topic is offered.

Construction of Pre-filled Surveys with Secondary Data: Using secondary data sources such as company reports, financial statements, and industry publications, pre-filled surveys are constructed for the selected companies.

Pre-Screening of Potential Company-Respondents: Further screening is performed to identify and select potential company-respondents who will be contacted for the research study. This involves assessing the suitability of each respondent through LinkedIn research. Our selection criteria included that the individuals are currently working at a pre-selected company and are considered decision-makers. In addition, we specifically searched for individuals who are involved in the topics of CDR, responsibility, digital responsibility, sustainability, CSR, digitalisation, and business ethics.

Contacting Company Respondents: The identified company contact persons are contacted via email and LinkedIn. The initial contact includes a clear explanation of the research objectives and a request to validate the pre-filled survey.

Pre-filled Survey Analysis & Selection of Companies for Follow-up Interviews: The collected pre-filled surveys are analysed to extract meaningful insights and identify patterns or trends through an Excel analysis. Based on this analysis, a selection of companies is made for follow-up interviews.

Semi-Structured Interviews: Semi-structured interviews are conducted with representatives from the selected companies.

Overall Analysis: The data collected from the pre-filled surveys and interviews are analysed using appropriate qualitative and quantitative analysis techniques. The findings are then synthesized to address the research objectives and answer the research questions.

Separate Conclusion of Both Thesis Topics: Finally, separate conclusions are drawn for each thesis topic based on the analysis and findings.

3.2.1 Secondary Data Collection

The secondary data collection focuses on the utilization of secondary research methods for conducting the literature review and gathering data for the pre-filled survey administered to the company respondents. The data collection process involved a comprehensive examination of relevant empirical literature, including scholarly articles and books, to establish a theoretical foundation and gain insights into the chosen research area. Additionally, various secondary

sources such as company reports, company websites, company research, financial statements, and publicly available online information published by the companies themselves were extensively utilized. The collection of secondary data allowed for a thorough exploration of the subject matter from multiple perspectives. By analysing existing literature key concepts, theoretical frameworks, and empirical studies related to the research topic have been identified. This comprehensive review of literature serves as a basis for formulating research questions and hypotheses, enabling a well-informed and structured investigation. Furthermore, the examination of secondary sources related to the participating companies provided valuable information about their operations, strategies, and practices. Company reports, financial statements, and online information offered insights into the organizations' activities, performance, and public stances on relevant topics. This data not only enriched the understanding of the companies but also facilitated the development of tailored survey questions to elicit specific and relevant information from the respondents.

3.2.2 Primary Data Collection

Various methods were used to collect the necessary primary data, including validation of the completed questionnaires by company representatives and interviews to gain exploratory data and validate survey results. To ensure the relevance and accuracy of the pre-prepared questionnaires, they were first submitted to company representatives. This validation process allowed potential errors or inconsistencies to be identified and corrected. Furthermore, the validation process allowed us to identify possible gaps in the questionnaires and make appropriate adjustments to ensure comprehensive data collection. In addition to the validation of the pre-filled questionnaires, interviews were conducted to validate exploratory data and survey results. The interviews provided an opportunity to gain further insight into the topic and gather additional information that could complement the survey results. Through targeted questions and open-ended discussions, we were able to better understand the background and motivations of the interviewees. This allowed for a more comprehensive interpretation of the data and helped explain any inconsistencies or outliers in the results.

3.3 Data Analysis

Statistical methods were used to analyse the data, with Microsoft Excel as the main tool. The use of Excel provided us with a flexible and intuitive way of organising and preparing the data collected. We first imported the raw data into Excel to structure it and check for missing values. This process helped us to create a consistent database for further analysis. Once the data was

consistent, simple descriptive statistics were used to get an overview of the distribution of each variable. Excel histograms, bar charts and scatter plots were used to identify patterns and relationships between variables.

Qualitative content analysis was used to evaluate the qualitative data. The literature offers different methods of qualitative content analysis. Due to the interview design used and the nature of the data collected, content structuring analysis was chosen. This method focuses on the categorisation of information and the subsequent linking of categories to answer the research question. Within this method both a deductive and an inductive approach can be used. It offers the evaluator the possibility to develop categories and then to analyse them in a more differentiated way through further subcategories. The categories were developed both deductively and inductively. Both theoretical foundations and information generated during the interviews were included in the development (Kuckartz & Rädiker, 2019). The programme "MAXQDA" was used to analyse the collected information. This offers the possibility to organise and specifically analyse qualitative data. The systematic evaluation process described above was used for this purpose. According to Kuckartz and Rädiker (2020), systematic evaluation means that all relevant information for answering the research question is included and that the interviews are analysed in the same way. Furthermore, the evaluation should be transparent and intersubjective so that all analysts receive the same results. The categories and subcategories created were coded within the analysis and then links and differences in the data were presented (Kuckartz & Rädiker, 2020).

4 Empirical Findings

The following chapter presents the empirical findings of the analysis of the surveys and interviews. Initially, descriptive values from the survey analysis are presented. For the analysis of the interviews, main categories and subcategories were created in which the statements of the interviews are categorized and presented in a value-free way (Appendix A; Kuckartz & Rädiker, 2020).

4.1 Company Samples

Google (Drive)	Corporation	Mobile
O2 Telefonica	Corporation	Mobile
Zalando	Corporation	Data
Gridscale	Startup	Cloud
Hetzner	SME	Cloud
Scaleway	Scaleup	Cloud
Speechmatics	Scaleup	AI
Palantir	Corporation	AI
LinkedIn	Corporation	SM

Microsoft Yammer	Corporation	SM
Apple	Corporation	IoT
Netflix	Corporation	Mobile
Spotify	Corporation	Mobile
Barmer	Corporation	Data
Microsoft	Corporation	Cloud
Otto Group	Corporation	Data
Salesforce	Corporation	Data
SAP	Corporation	Data
Cisco	Corporation	IoT
IBM	Corporation	IoT
ING	Corporation	IoT
Intel	Corporation	IoT
Oracle	Corporation	IoT
Nvidia	Scaleup	IoT
Complero GmbH	Startup	AI
DeepL	Scaleup	AI
Konux	Scaleup	AI
OpenAI	Scaleup	AI
Slack	Scaleup	Mobile
EMC	SME	Cloud
Ionos	Corporation	Cloud
AmazonWeb Services	Corporation	Cloud
Telekom	Corporation	Mobile
Meta Workplace	Corporation	SM
Tinder	Corporation	SM
Elopage	Startup	IoT
Weleda	Corporation	Data
Xing	Scaleup	SM
Instagram	Corporation	SM
TikTok	Corporation	SM

Table 1: Company samples used for the empirical research.

Table one shows the companies that were used for the further results and as a basis for the empirical research. The companies are differentiated according to their size and the defined relevant technologies that have been assigned to the company due to their business practices.

4.2 Quantitative Findings

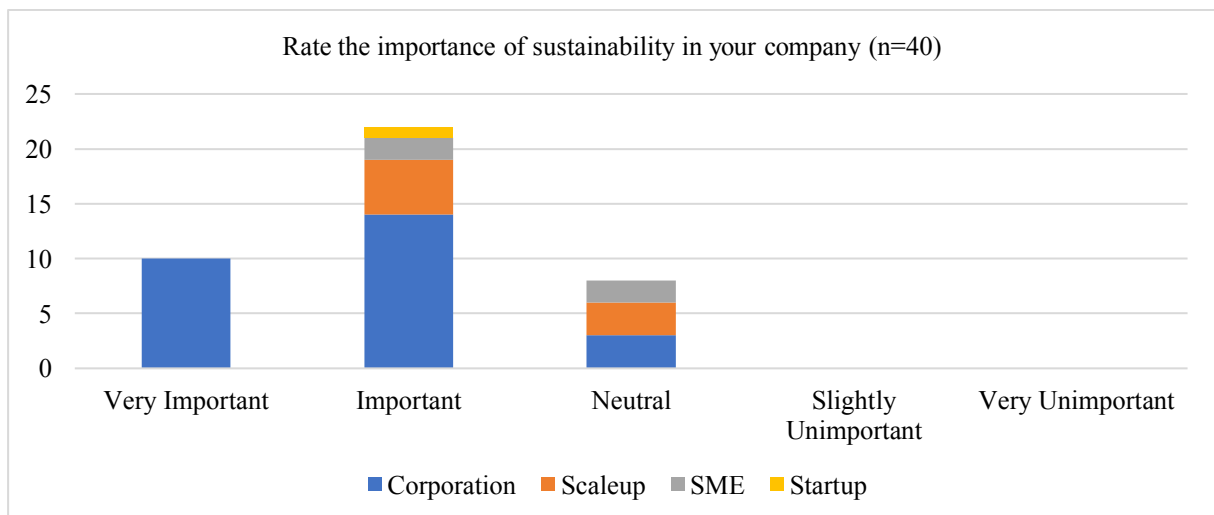


Figure 4: Rate the importance of sustainability in your company (n=40).

Regarding the importance of sustainability, the pre-completed survey shows that more than one third of the companies' rate sustainability as "Very Important" or "Important" and only eight companies rate it as "Neutral". All companies that indicated the highest importance are corporations (Figure 4).

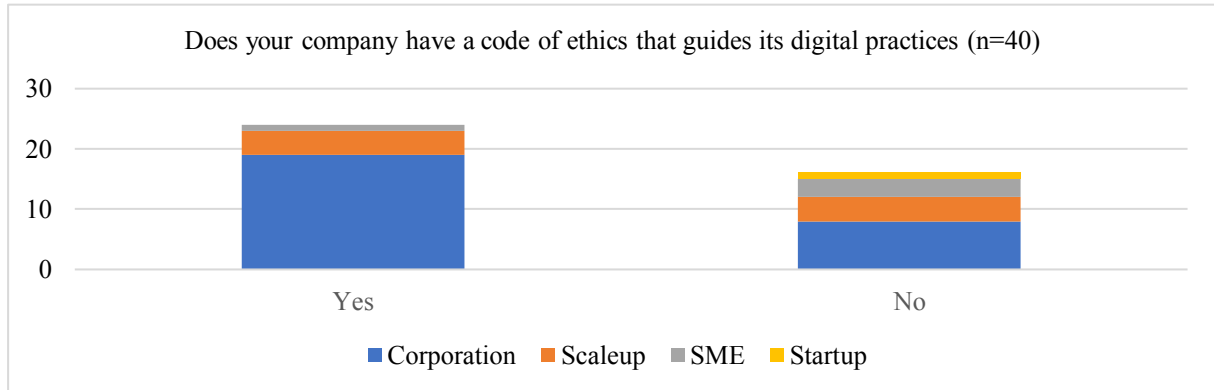


Figure 5: Does your company have a code of ethics that guides its digital practices (n=40).

A code of ethics that guides digital practices is demonstrated in 24 companies. Of these, 19 are corporations, four are scaleups and 1 is an SME. In 16 companies, such a code of ethics is not identified (Figure 5).

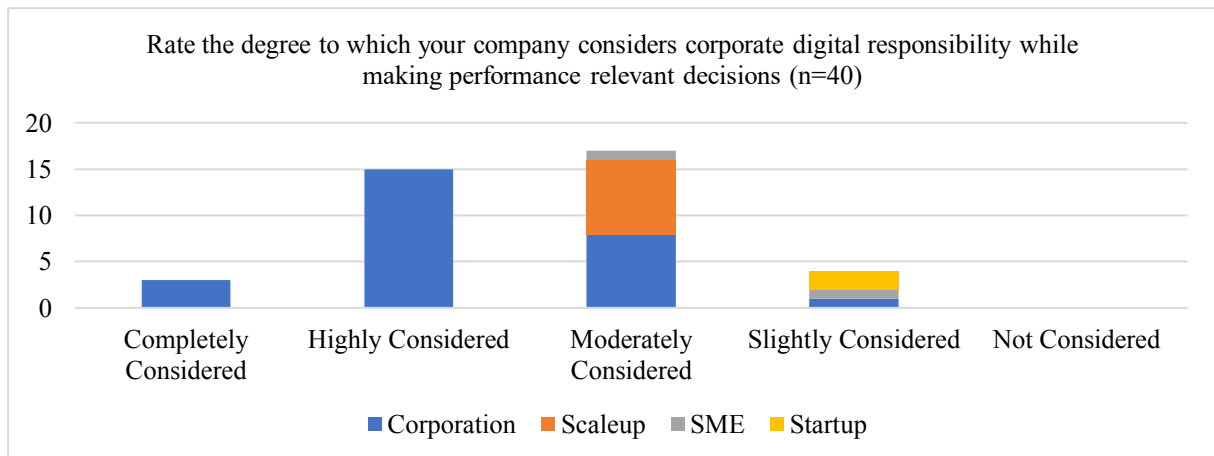


Figure 6: Rate the degree to which your company considers CDR while making performance relevant decisions (n=40).

When evaluating the degree to which companies consider CDR while making performance-relevant decisions, it was found that three corporations indicate a complete consideration, and fifteen corporations reported a high level of consideration in this regard. Furthermore, 22 companies moderately or slightly consider CDR. Most of these companies are Scaleups or Startups (Figure 6).

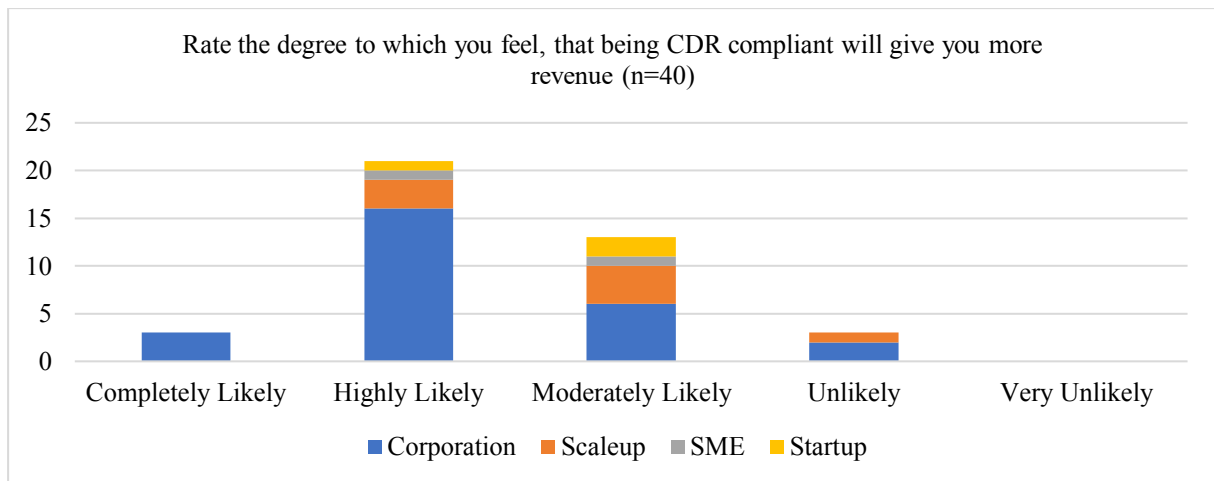


Figure 7: Rate the degree to which you feel, that being CDR compliant will give you more revenue (n=40).

According to the research, most corporations show that CDR can lead to at least a moderate increase in turnover. This is also the case for start-ups, scaleups and SMEs. Very few companies see an increase in turnover through CDR as unlikely (Figure 7).

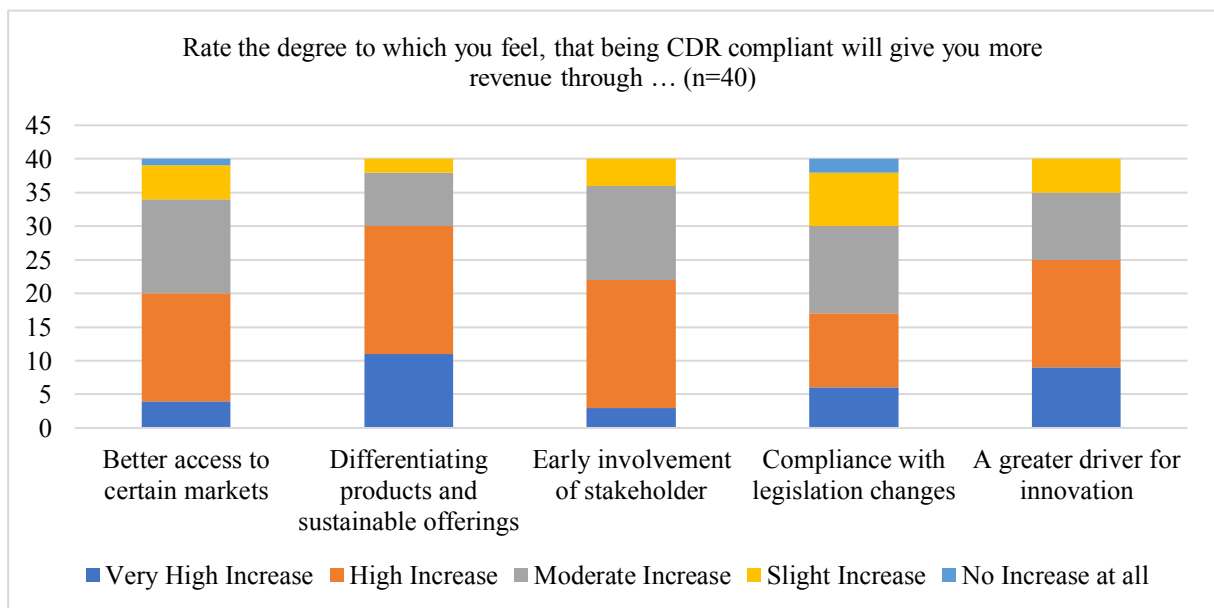


Figure 8: Rate the degree to which you feel, that being CDR compliant will give you more revenue through ... (n=40).

The pre-filled survey results show that the three main reasons for companies to increase turnover through CDR are "Differentiating products and sustainable offerings", "A greater driver for innovation" and "Early stakeholder involvement". Nevertheless, half of the companies also suggest at least a high increase in sales through "Better access to certain markets". Most of the companies indicating a very high or high increase are corporations in all five categories. The companies that indicated a moderate or slight increase are corporations, startups, SMEs and scaleups (Figure 8).

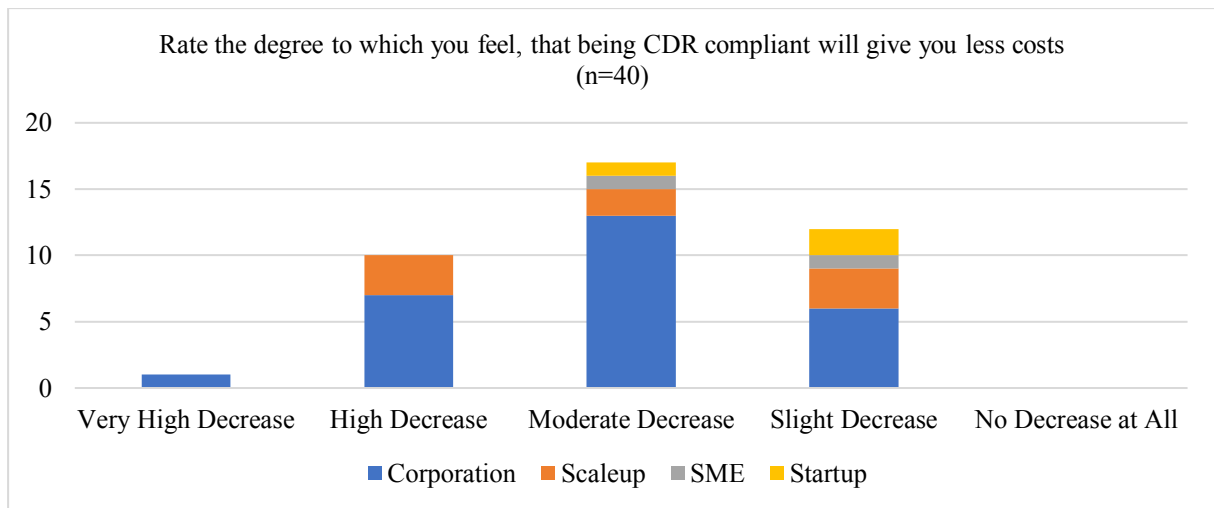


Figure 9: Rate the degree to which you feel, that being CDR compliant will give you less costs (n=40).

Based on the research findings, it can be assumed that most companies expect a moderate decrease in costs through active CDR. Very high or high decreases are assumed for corporations and scaleups. All companies show that at least a slight decrease occurs. All startups indicate a moderate or slight decrease of costs (Figure 9).

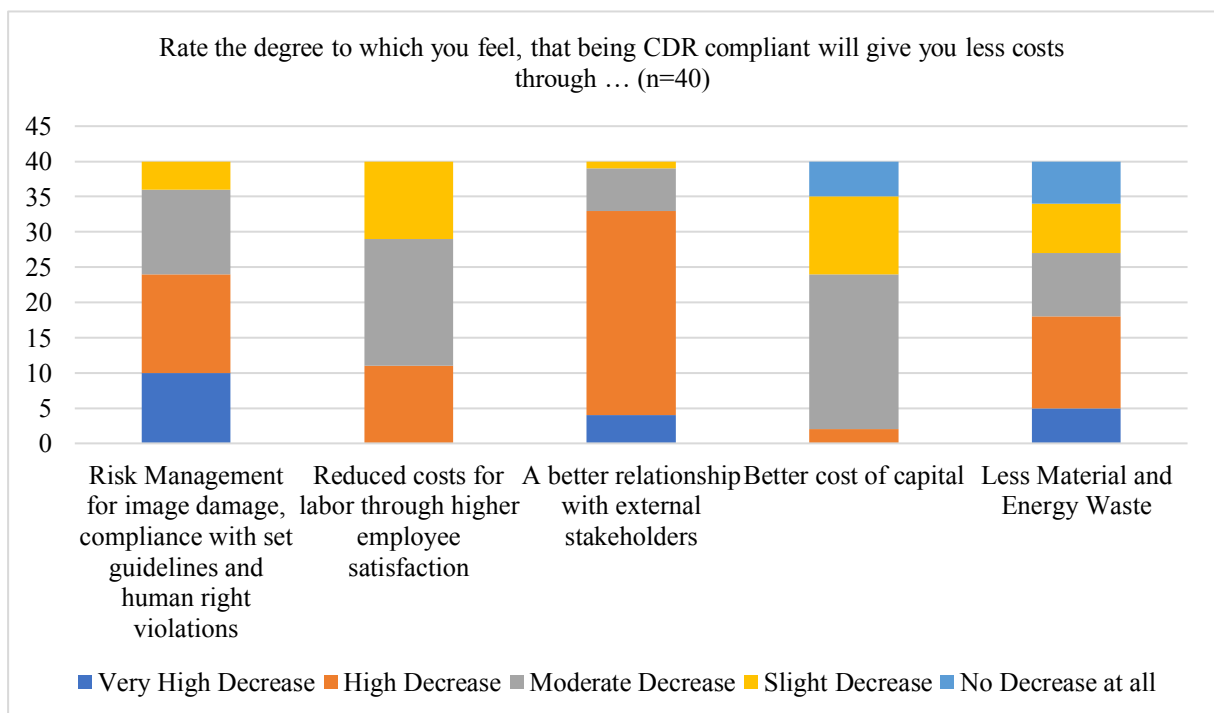


Figure 10: Rate the degree to which you feel, that being CDR compliant will give you less costs through ... (n=40).

The highest likelihood of reducing costs through active CDR was indicated by companies through "A better relationship with external stakeholders", as well as a cost reduction through "Risk Management" and "Less Material and Energy Waste". Most of the companies indicating

high reductions are corporations. A better cost of capital seems to offer only a moderate decrease (Figure 10).

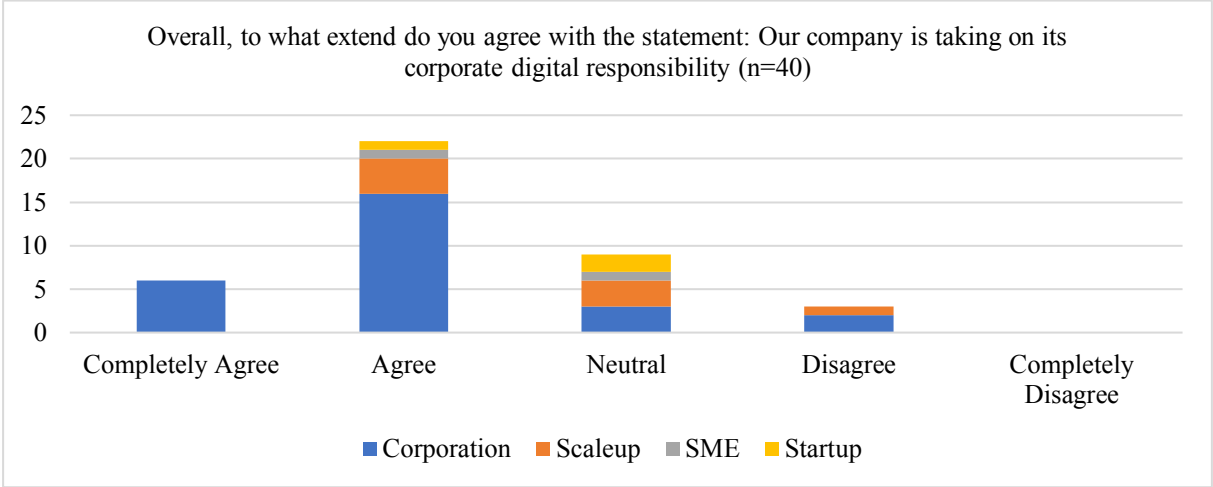


Figure 11: Overall, to what extent do you agree with the statement: Our company is taking on its CDR (n=40).

The research on the question "To what extent do you agree overall with the statement: Our company takes its digital responsibility." shows that six companies were categorized as "Completely agree". 22 are categorized at "Agree", of which 16 are corporations, 4 are scaleups, 1 is an SME and 1 is a startup. At "Disagree", 2 Corporations and 1 Scaleup were categorized. No company indicates a "Completely disagree" in this context (Figure 11).

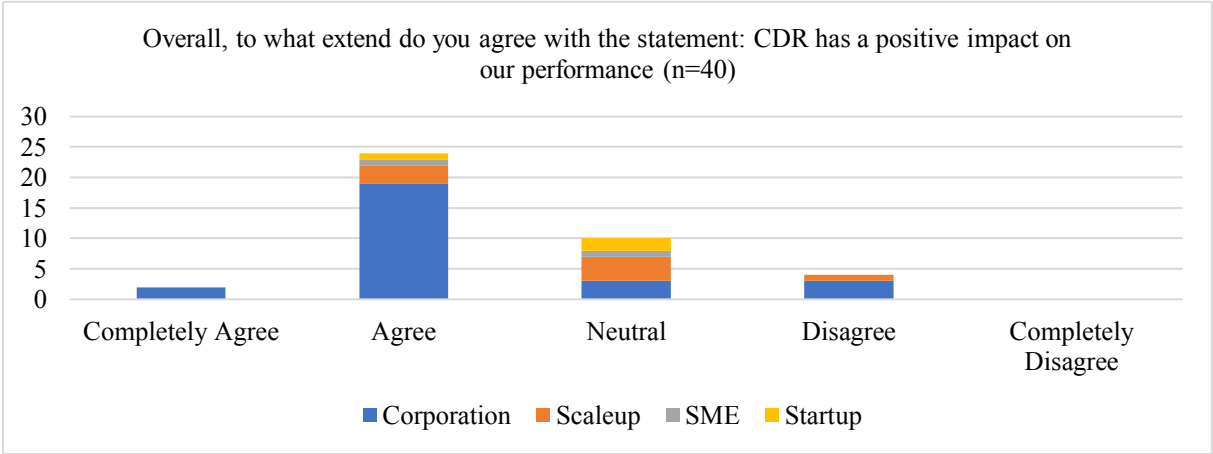


Figure 12: Overall, to what extent do you agree with the statement: CDR has a positive impact on our performance (n=40).

The research on the question "To what extent do you agree overall with the statement: CDR has a positive impact on our performance" reveals that 2 corporations were categorized as "Completely agree". Twenty-four companies, including 19 corporations, 3 scaleups, 1 SME, and 1 startup, were categorized as "Agree". Ten companies, consisting of 3 corporations, 4 scaleups, 1 SME, and 2 startups, expressed a "Neutral" stance. Four companies, including 3

corporations and 1 scaleup, were categorized as "Disagree". No company indicated a "Completely disagree" standpoint in this context (Figure 12).

4.3 Qualitative Findings

"Can active CDR lead to a competitive advantage for companies through less material and energy waste":

R1: "Starting with our data centres we only use renewable energy. And that's been the case since 2017. And we're always looking for the least energy and water intensive ways to cool our data centres for sustainability and cost reduction."

R1: "The way to measure energy efficiency of a data centre is called PUE. The global average is 1.57. We have an average of 1.4 for all our data centres and our most sustainable data centre, which is one of the most sustainable in Europe."

R4: "The second major issue, which is of course much more important, is the data centre, which is of course the absolute power guzzler. A data centre consumes between €3 and 400,000 in electricity per year, which means that there is a clear trend towards outsourcing. CDR can save electricity and money."

"Can active CDR lead to a competitive advantage for companies by involving stakeholders?":

R2: "Here, as an employer, you can also position yourself well with such topics in relation to digital responsibility and attract and retain better and more motivated staff."

R2: "The decision-makers often or perhaps have completely different interests than the employees or the company itself. And of course. Such strategies (CDR) could be used to position the company and to unite stakeholder interests."

R3: "And that is our goal, to be able to handle our entire business digitally and digital responsibly in the future. That is our clear business model, the goal of our future business model. And that will only work if we can bring people along with us."

R3: "For us, it is also an economic success factor that we have the trust and can take people with us. Otherwise, we will also have economic problems in the future."

R3: "And I think CDR is also an attractive factor for new entrants, etc., at least in the medium term. (...). In the battle for good young talent, etc., this is also an aspect that we keep in mind."

R4: "The risk is that you will be left behind, that is, in business terms, because more and more customers are attaching more importance to this."

R6: "And our customers want us to do this. They want responsible behaviours as a company."

R6: “So, it's not important from a business performance sense. It's important for us from an internal employee stakeholder engagement sense and we do lots of things with XXX volunteering and goodness and voluntary work.”.

R7: “I could imagine that it would offer an advantage at some point, and it can generally help in sales that any stakeholders who have concerns can be better picked up and involved.”.

R7: “CDR can help align stakeholders.”.

"Can active CDR through risk management lead to a competitive advantage for companies?":

R2: “So this could have a positive effect, especially because the employees would then be better trained and more competent regarding possible risks. (...). In the long term, this could significantly increase the company's output.”.

R3: "Legal but Harmful" (...). But the question is, in the end, aren't we harming ourselves by doing so? (...). And there are also not exactly small reputational risks involved when you do certain things that you perhaps shouldn't do, even if you could say it was legal.”.

R3: “For us as a bank, the topic of CDR is of course also linked to the topic of risk. So, if you look at our measures, what we have, yes for example a risk management policy, there is a whole framework for it at Group level (...).”.

R3: “The risk aspect is always involved in a bank and if we now sensitize our employees to topics like ethics or something like that, then that always has the aspect behind it. We must protect ourselves against reputational risks, for example.”.

R4: Risk management could be for example: Image damage or similar things that come up in the public if you don't act sustainably, digitally, or not, now. That could be a risk management issue, for example.”.

R6: “That's the reason why we see the business opportunity of digital corporate responsibility because we have no choice anymore. Technology wise we need responsible behaviour for business, environmental, global business, economic wise, and especially reputation wise.”.

R7: “Yes, it sends a positive signal. Definitely. It can offer a positive positioning.”.

"Can active CDR lead to a competitive advantage for companies through innovation?":

R2: “Yes, I think it (CDR) is basically a positive aspect, but on the other hand, it makes the implementation of new technologies and new ideas somewhat more difficult. It must be tested first and you lose time and efficiency when it comes to this topic.”.

R2: "That's exactly the problem, (...), people prefer to ban such technologies out of hand instead of learning how to deal with them responsibly. That's why I believe that a holistic concept like CDR, if you think in terms of the ethical use of AI, for example, is needed for companies to prevent the whole thing."

R6: "What matters is innovation. (...). What's important is the efficiency of our operations, the responsibility we take for our operations and our ability to innovate in line with, sustainability requirements."

R6: "So, it really requires its innovation, innovation, technology and innovation is the driver for sustainable and digital responsible behaviour (...)."

"Can active CDR lead to a competitive advantage for companies through better access to certain markets and differentiation?":

R1: "That's a factor that our data centres are only in Europe, but we do know that it's something that attracts a lot of clients. We do know that a lot of people come to XXX for the data sovereignty reason."

R1: (...) try and work out sort of green products you could sell. Because this is business after all. We're trying to move towards more sustainable business."

R1: "I think that clients of all sorts of services will demand more and more sustainable products. Whatever those products are, we can see that in sort of consumer space already."

R1: "If they can't offer sustainable products to their clients, they will lose clients."

R3: "I don't know yet whether that is so present with the customer (That the offer is differentiated). You must be realistic about that, too. (...). It's also a signal to the customer that you can trust us in the digital sector."

R5: "Yes. It allows our customers into the business. (...). Indirectly also for us, so if we say, "in the future there will be even more cloud demand in the market" and there is a regulation which means that the data must stay in the country according to the sovereignty or at least must stay in the GDPR space. Then it should be easier for our customers and therefore for us."

Respondents 6: "Yeah, you can say it like that (different product offerings in a sustainable direction and therefore more revenue)."

R3: Yes, I would say that is always the question of market position (More opportunities to cooperate with other companies). (...). And of course, we have very clear policies at the corporate level regarding purchasing and so on."

R3: "If we now offer services to companies, we are of course also the ones who are then checked. Ultimately, this could be a positive aspect, but I don't think it's relevant today."

R4: "The risk is that you will be left behind, that is, in business terms, because more and more customers are attaching more importance to this (CDR)."

R4: "Of course, the first ones are starting to say that you must fulfil a certain rating. Otherwise, we can't do business with you, because we also must prove the ratings to customers and other authorities."

R5: "So certainly, it's like that. If you are certified and act according to a certain logic, then you always look for someone who is on eye level. That's also true for CDR and business opportunities. So yes if CDR has relevance in the market."

R6: "(...) then there are more business opportunities here. Very quickly on that from our customer base we see very, very much that there's a very keen interest in sustainability. So, a lot of our customers and markets and key market actors, whether it's Amazon, Dell, HP, whatever it might be, are very, very, very insistent on CSR and your topic CDR from business partners and sustainability in form of being as zero net carbon as possible."

R6: "And our customers want us to do this (CDR). They want responsible behaviours as a company."

R7: "So opening new markets, I don't see that in your first point. No, rather not."

"Can active CDR lead to a competitive advantage for companies through changes in legislation and compliance":

R1: "Companies can now get fined for greenwashing and sort of making unjustifiable claims."

R1: "The way around that risk is to say it may be a cost now but so many experts say the cost of doing something now is going to be way smaller than the cost of doing nothing or trying to do something later. Because it might get be it might be much more expensive in the future if there are regulations coming in. "

R2: "The bigger the company, the more regulations it is subject to and the greater the CDR advantages for performance. Such a topic is always important to consider from a legal point of view (...)."

R2: "With CDR, this digital area will develop just as much and there will be even more legislation, for example, on mandatory CDR reports."

R5: "Sooner or later you could say that legal regulations in this CDR direction will come and that companies which do not adapt to it will clearly have disadvantages."

R6: "If you don't engage very early and very proactively and very openly in CDR, you will get regulations in 3- or 4-years' time at the very latest that are going to kill your business."

R7: "You're in a very good position if it's (CDR) integrated into the company's DNA and processes as early as possible - because now you're building it up. If it is possible within the framework, then you should do it and secure competitive advantages early on so that you can decide between left and right."

R7: "So if it's possible, definitely take CDR into account as early as possible and always include it, (...) then that's perfect and brings immense advantages."

"Factors influencing the business effects of CDR?":

R2: "Yes, it depends on the size of the company. The decision-makers often or perhaps have completely different interests than the employees or the company itself."

R3: "Yes (...). A large company is basically in a better position to initiate something like this because, for example, they already have a CSR-department, and they have the manpower to do something like this and they also often have more professional structures. However, that doesn't mean that a small company, which perhaps has a more focused business model, can't get involved in the whole thing. But of course, with a large company now with millions of customers, there is also the possibility of steering something to the customers. Not every customer will be interested, but there will always be a part of the customers and that's not just 100, but probably 10,000 or so who are interested. And that's why it's perhaps more of an incentive for a large company, because there are also more opportunities."

R4: "It has advantages and disadvantages. The bigger you are, the more difficult, so the more you must make sure that you follow the rules of course, because you have a different publicity, different obligations to customers. As a startup, you are not necessarily subject to all the rules."

R6: "No, I don't think that company size is a metric. I don't think that's a variable."

R6: "(...) innovation is the driver for sustainable and digital responsible behaviour, not the size of the company."

R7: "(...) the impact of large companies is of course completely different from that of small ones. In the case of the large ones, completely different things are demanded, both by customers and by the authorities. You can have more advantages, but also more disadvantages. Large companies are much more in the centre of attention."

"Impact of CDR for future business":

R1: "We are at an interesting tipping point between "nice to have" and now it's sort of moving towards "must have", so those companies who haven't already started some kind of CSR or CDR initiative are going to get left behind, I think."

R1: "Because it might get be it might be much more expensive in the future if there are regulations coming in. I was talking about ten, 20 years ago before things like climate deniers and that sort of thing would have been an obstacle. I don't think they are anymore."

R1: "I hope it will disappear. I hope it will be sort of diffused in the in the values of every company that. That no team will be able to do something unsustainable."

R2: "With CDR, this digital area will develop just as much and there will be even more legislation, for example, on mandatory CDR reports. Of course, there is still a relatively large focus on environmental issues, but I think that we are trying to include all other aspects much more."

R3: "I believe that every company, even if it only has a digital business model in part, will have to deal with this topic in the future."

R3: "On a political level, it will remain voluntary, and the goal is to get new relevant companies to join in and thus to keep expanding the circle and also to get a certain pressure in the market, to say you actually have to be there as a company, especially if you have a digital focus or something."

R5: "Sooner or later you could say that legal regulations in this CDR direction will come and companies that companies which do not adapt to it will clearly have disadvantages."

R7: "Yes, it will come and become more relevant. Important and overdue."

5 Discussion

5.1 Evaluation of the findings

Can active CDR lead to a competitive advantage for businesses?

When analysing the data regarding research question one, it was found that a total of 41 statements were made that suggest a positive effect of active CDR on business performance. 11 statements were categorised as neutral effect and 3 as no or negative effect. The statements are consistent with the survey results shown in figure 7 and partially consistent with the survey results shown in figure 8 and allows the assertion that CDR has a positive effect on company performance and could thus bring about a competitive advantage.

With 12 positive statements, an advantage through "better access to certain markets and product differentiation" can be assumed. Likewise, 10 positive statements were found that indicate a benefit from active CDR through stakeholder involvement. The benefits are in line with the empirical sources of Ambec & Lanoie (2008) and Dörr (2020). The survey also found that for both benefits more than half of the companies suggest a benefit (Figure 8). A better relationship with external stakeholders was identified as a benefit. The positive effects of stakeholder

involvement can increasingly be attributed to benefits from employee quality and motivation, as well as customer loyalty and fulfilled customer preferences. Negative coded statements from interviewees about better access to markets and differentiation suggest that new markets cannot be opened, and differentiation is not so relevant, as sustainable behaviour in the use of digital technologies is not yet sufficiently important to customers.

Furthermore, the advantage "A greater driver for innovation", which was also mentioned as an advantage by Esselmann and colleagues (2016), was only described as a presumed advantage three times by the interviewees. One respondent stated that CDR leads to more regulations and thus limits innovation. These diversified statements suggest ambivalent results from active CDR in this category. In the surveys, however, this category was explored as the greatest benefit (Figure 8). It can therefore be assumed that CDR can trigger an advantage through innovation, but this still needs to be validated by more experts.

Two interviewees made statements that were categorised as a benefit from active CDR in material consumption and energy efficiency. These suggest a cost reduction benefit and are consistent with the findings of Porter & van der Linde (1995) and Ambec & Lanoie (2008). No negative coded statements were found here and therefore suggest an advantage. This is consistent with the survey results, where only 6 out of 40 surveys do not suggest a benefit (Figure 10). Nevertheless, proportionally too few statements were made and would need further validation.

A benefit from legislation changes and compliance was mentioned seven times by the respondents. These allow the assumption of a benefit through preventive avoidance of legislative penalties and preparation for future disclosure obligations. It should be noted that this advantage will not yet have an effect but may offer an advantage in the event of future changes to the regulations. This is consistent with the results of the survey (Figure 8; Figure 10) and Diethelm (2021).

In addition to the possible benefits of active CDR already mentioned, the literature also shows benefits from risk management (Ambec & Lanoie, 2008; Lankoski, 2006). The interviews allow for six positive statements in this regard. The aspects involved within these statements are benefits from fewer employee errors, less image and reputation risks. Including the survey results, more than 50 Percent of the companies are also categorised as at least "High decrease" in terms of reduced costs through this category. In this respect, it can also be assumed that CDR can have positive effects on performance through risk management. Evaluating the underlying data for this research question suggests that active CDR can improve business performance and that there are relatively few negative consequences associated with active CDR.

What factors have an influence on the impact of CDR on business performance?

The surveys found that company size can have an impact on the impact of CDR on company performance. It can be assumed that larger companies can benefit more from active CDR than smaller companies. It can be assumed that this is due to greater exposure to the public and to more far-reaching and stronger regulations. The interviews indicate that the interests of decision-makers in a big company may differ from those of the employees or the company itself. This suggests that company size could influence the business effects of CDR, as larger organizations with more diverse stakeholders may face greater challenges in aligning interests and implementing effective CDR initiatives. The answers also acknowledge that company size can be a determining factor in the success of CDR efforts. It is argued that larger companies, equipped with resources such as dedicated Corporate Social Responsibility (CSR) departments and professional structures, have an advantage in initiating and sustaining CDR initiatives. Additionally, the size of a company enables it to reach a larger customer base, increasing the potential impact of CDR efforts. However, they also note that smaller companies with a focused business model can still participate in CDR and engage a portion of their customer base. In contrast, one answer points out that the size of a company can have both advantages and disadvantages regarding CDR. Larger organizations are subject to more regulations and public scrutiny, necessitating compliance and responsiveness to customer expectations. Conversely, startups may enjoy more flexibility and freedom from certain regulations. This perspective suggests that the influence of company size on CDR effects may be nuanced and context dependent. A contrasting view is also presented by dismissing the importance of company size as a metric for evaluating the business effects of CDR. It is argued that innovation is the primary driver for sustainable and digital responsible behaviour, emphasizing that it is the quality of ideas and initiatives rather than the size of the company that determines the outcomes. One respondent also acknowledged that the impact of CDR differs significantly between large and small companies. It is indicated that larger organizations face different demands from customers and authorities, both in terms of expectations and regulatory requirements. While larger companies may have more advantages due to their scale, they also face greater scrutiny and potential disadvantages. This perspective suggests that company size influences the business effects of CDR by shaping the level of attention and expectations placed on the organization. In summary, the statements provided by the respondents present different viewpoints regarding the influence of company size on the business effects of CDR. Some argue that larger companies have inherent advantages, such as resources and customer reach, while others emphasize the importance of innovation and idea quality over company size. The contrasting

perspectives highlight the complexity of evaluating the impact of CDR and suggest that the relationship between company size and CDR outcomes may be contingent upon various factors, including industry, regulatory context, and stakeholder expectations. Further research and analysis are necessary to gain a comprehensive understanding of the interplay between company size and the business effects of CDR.

What impact will CDR have on future business?

A transition from "Nice to Have" to "Must Have" is highlighted by the evolving nature of CDR, stating that we are at a tipping point where companies that have not initiated CSR or CDR initiatives may fall behind. This perspective suggests that CDR is transitioning from being perceived as a "Nice to have" aspect to a "Must have" requirement for businesses. This implies that companies must prioritize and integrate CDR practices into their operations to remain competitive in the future. In conjunction with this, the statements of respondents suggest that the potential future costs of not embracing CDR will create problems for companies and a necessity of proactive CDR adoption. This is in line with the findings of (Thorun et al., 2018). It is also anticipated that as CDR develops, there will be an increased focus on including all aspects, not just environmental issues. This implies that CDR will evolve to encompass various dimensions of responsibility beyond the environmental sphere. As businesses adapt to CDR, more legislation and mandatory CDR reporting may come into effect, emphasizing the significance of a comprehensive approach to corporate responsibility. Herden and colleagues (2021) and Thorun and colleagues (2018) also mention these aspects in their work. The answers suggest that regardless of a company's business model, even those predominantly operating in the digital realm, will have to address CDR in the future. This viewpoint highlights the universal relevance and applicability of CDR, suggesting that no business can escape the need to engage with this topic. Companies, including those with a digital focus, are likely to be affected by the evolving expectations surrounding CDR. R3 explains that on a political level, CDR initiatives will likely remain voluntary, aiming to encourage new companies to participate and expand the circle of CDR adopters. The respondent further suggests that this voluntary approach may generate market pressure, making it increasingly important for companies, particularly those with a digital focus, to embrace CDR practices to avoid disadvantages. Also, legal regulations related to CDR are likely to emerge in the future, and companies failing to adapt may face disadvantages. This perspective suggests that non-compliant businesses may encounter various drawbacks, such as reputational damage, loss of customers or partnerships, or even legal consequences. Compliance with CDR principles is seen as crucial for maintaining competitiveness in a changing business landscape. Diethelm (2021) also pointed this out. Based

on the six statements and the consistent sources, it can be assumed that CDR will have a significant impact on the future of business and that the current state of CDR is only the beginning of a more far-reaching process.

5.2 Implications

5.2.1 Academic Implications

The topic of responsibility in a business context is increasingly found in the literature. However, the existing literature often is limited and does not include the use of digital technologies and their consequences. Consequently, the topics of digital technologies and corporate responsibility are linked. This research provides a basis to link the two topics and to identify possible current and future topic providers within this topic.

5.2.2 Managerial Implications

These underlying findings have revealed key managerial implications and validated them from the literature. It can be assumed that companies should pay more attention to CDR in the future and integrate it into core strategies to remain competitive in the long term. Furthermore, changing consumer preferences can be identified, which can have an influence on business operations in sales and marketing. Likewise, the reputation of employees is becoming increasingly important in this context and thus also has an influence on the human resource area of companies. In conclusion, it can be assumed that a separate implementation of CDR is not necessary now but could make sense for future competitiveness and is probably indispensable.

5.3 Limitations

The limitations of this scientific work are consequently presented. The chosen mixed method approach can be distorted by subjectivity aspects. The self-completion of the surveys based on company information may have falsified information subjectively and is therefore not truthful. Although the validations obtained allow the assertion that the surveys are very detailed and correct, with three validations too few have been achieved to form an overall picture. Furthermore, possible psychological aspects of surveys cannot be excluded, such as the tendency towards the middle in the case of missing information or a bias due to heuristics.

Companies from various sectors were selected, which leads to different starting points and thus cannot be specifically generalised. With a total of seven interviews, trends can be identified, but there are no further interviews to gather specific information. This would also help to explore the topic area that still needs to be categorized and to find new relevant topics.

5.4 Future Research

This academic paper provides an overview of the potential benefits of active CDR on business performance. The development of technologies is increasing exponentially, and CDR is apparently becoming more and more important. Theoretical research has shown that an increased number of companies are becoming aware of this importance, but the majority have not taken any action in this direction yet. This master's thesis can be used as a guide for companies to assess the benefits of active CDR for company performance and at the same time to evaluate relevant factors for the success of CDR measures. Nevertheless, further research should be conducted to deepen this knowledge. Due to the rapid and far-reaching development of digital technologies, a constant examination of the topic and further studies are necessary. Company-specific advantages and disadvantages could be further defined, which could possibly be generalized across sectors. Sector-specific best-case studies would be useful and interesting here. Additionally, a special focus should be placed on concrete measurement figures to numerically represent the theoretically founded advantages of active CDR and to create forecast models. Both the theoretical background and the statements of the interviewees make it clear that dealing with the topic is relevant. Thus, it can be assumed that dealing with CDR can be useful for companies.

6 Conclusion

The present study is dealing with the competitive advantages that companies can gain through active CDR. The aim of the study was to evaluate to what extent active CDR can lead to an improvement in corporate performance. While sustainability is a widely studied discipline, corporate responsibility in the digital domain is a relatively new topic for companies. To map the topic in an as differentiated manner as possible, three research questions were formed. In view of the increasing use of digital technologies and the development of these, the examination of the topic is relevant. The well-founded research of the topic area revealed that there are various advantages to be gained from active CDR on the performance of a company. The research was based on current studies that have investigated comparable issues and provide reference examples for the results of this study. The results of the study conducted are in line with these findings. Active CDR seems to bring predominantly advantages for the companies in various corporate aspects. Disadvantages were only marginally recorded within the study. It can be assumed that active CDR can lead to an improvement of the company performance and thus to a competitive advantage if it is implemented in a targeted manner and included in strategies. Nevertheless, this depends on the company's size, service offering, the industry, and

the general implementation capability. For this reason, further studies should be conducted that deal with the effect of active CDR in a more differentiated and company-specific manner. The theoretical background, the statements of the interviewees, and the survey make it clear that dealing with the topic is relevant and will have a significant impact on businesses in the future. Thus, it can be assumed that dealing with CDR can be useful for companies.

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V Appendixes

A - Definition of the main interview analysis categories with anchor example

Name main categories	Description of content	Anchor example
Can active CDR lead to a competitive advantage for businesses through less material and energy waste	All statements that allow conclusions to be drawn about possible benefits of CDR through less material and energy waste.	“Starting with our data centers we only use renewable energy. And that's been the case since 2017. And we're always looking for the least energy and water intensive ways to cool our data centers for sustainability and cost reduction.”.
Can active CDR lead to a competitive advantage for businesses through the involvement of stakeholder	All statements that allow conclusions to be drawn about possible benefits of CDR through the involvement of stakeholders.	“CDR can help align stakeholders.”.
Can active CDR lead to a competitive advantage for businesses through risk management	All statements that allow conclusions to be drawn about possible benefits of CDR through risk management.	“For us as a bank, the topic of CDR is of course also linked to the topic of risk. So if you take a look at our measures, what we have, yes for example a risk management policy, there is a whole framework for it at Group level (...).”.
Can active CDR lead to a competitive advantage for businesses through innovation	All statements that allow conclusions to be drawn about possible benefits of CDR through innovation.	“So, it really requires its innovation, innovation, technology and innovation is the driver for sustainable and digital responsible behavior (...).”.
Can active CDR lead to a competitive advantage for businesses through better access certain markets and differentiation	All statements that allow conclusions to be drawn about possible advantages of CDR through better access to certain markets and differentiation.	“And our customers want us to do this (CDR). They want responsible behaviors as a company.”.
Can active CDR lead to a competitive advantage for businesses through	All statements that allow conclusions to be drawn about possible benefits of	“(...) all companies over 250 employees must have an impact report by next-

legislation changes and compliance	CDR through legislation changes and compliance.	by-next year, which means they need to start collecting the data now. (...) they could get in trouble if they're not.”.
Factors influencing the business effects of CDR	All statements that allow conclusions to be drawn about possible influences that could affect the business effect of CDR.	“It has advantages and disadvantages. The thing is, the bigger you are, the more difficult, so the more you must make sure that you follow the rules of course, because you have a different publicity, different obligations to customers. As a startup, you are not necessarily subject to all the rules.”.
Impact of CDR for future business	All statements that allow conclusions to be drawn about the impact of CDR on future business.	“Yes, it will come and become more and more relevant. Definitely important and overdue.”.

B – Pre-filled Survey and Preface



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Invitation for a pre-filled survey within the scope of the master dissertation on the topic of “Corporate Digital Responsibility (CDR)”

The objective of the dissertation is to understand the drivers and barriers of CDR across various industries.

Preface

Dear Sir or Madame,

We hope this message finds you well. As part of our master’s thesis at the Digital+Sustainable Innovation Lab at Católica-Lisbon, we (Niklas Angermann and Carlos Marengo) seek to uncover the opportunities, risk and implementation of Corporate Digital Responsibility and are looking for experts to participate in our survey. Our aim is to gain a better understanding of how companies use digital technologies and what impact this has on their responsibility towards society and the environment. Your expertise in the field of corporate responsibility would give our research highly valued insights.

We already studied [COMPANY NAME] with regards to its Corporate Digital Responsibility Efforts based on publicly available data and pre-filled the attached CDR Profile. It would be great if you could verify our research results. As there are still a few blind spots, it would be great if you could check the CDR Profile, adjust it where needed and possibly fill in parts we could not find online. As a participant, you will receive the results of the survey and thus benefit from the insights of other companies.

Please find attached the pre-filled CDR Profile and either approve it or adjust accordingly. Furthermore, it would be great if you would also have the time for a short 30-minute interview in which we discuss in person [COMPANY NAME] CDR efforts. Your expertise and insights would give us valuable in-depth knowledge. Nonetheless, we would already be grateful for your validation.

Thank you in advance for your support and feel free to contact us regarding further questions.

Yours sincerely,
Niklas Angermann & Carlos Marengo

Problem Statement: Corporate Digital Responsibility – The next challenge for companies?

The digital revolution has brought significant changes to the way we live, work and interact with each other. However, this transformation has also led to an increase in environmental impacts and sustainability challenges. As a result, there is a growing interest in exploring the intersection between sustainability and the digital context (Helbing, 2015). The digitalisation of our society in all areas has fueled the discourse on responsible corporate governance. There are increasing calls for an ethical shaping of digitalisation from the political as well as the economic and social sides. The aim of these demands is to cushion the negative consequences of digitalisation. The changes in the ethical concerns of society show that a normative examination of the topic is also relevant. This raises the question, especially for companies, of what corporate responsibility in the digital world, i.e., corporate digital responsibility (CDR), means in concrete terms (Thorun, Kettner & Merck, 2018).

“Corporate Digital Responsibility (CDR) is a set of practices and behaviours that help an organisation use data and digital technologies in ways that are perceived as socially, economically, and environmentally responsible.” (Price et al., 2021).

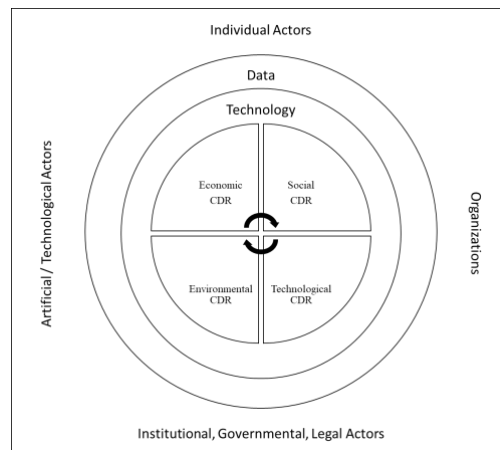


Figure 1: (Own illustration) Basic conceptual constituents of CDR, adapted from (Lobschat et al., 2021; Wade, 2020)

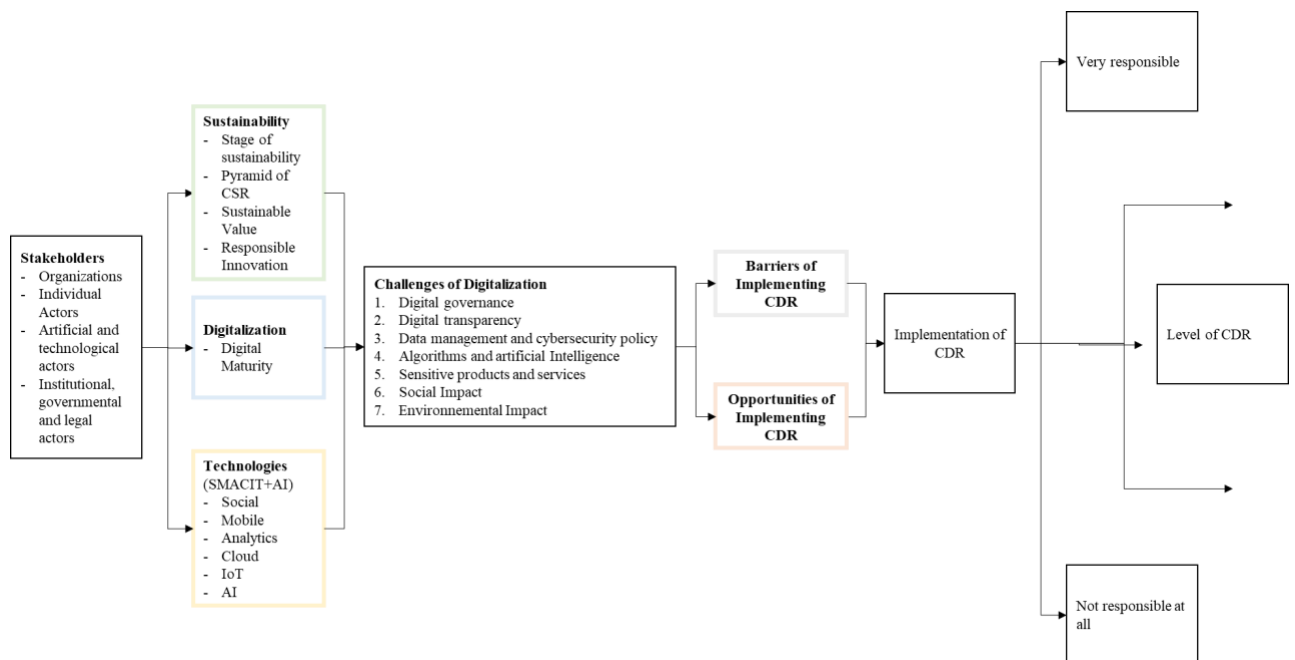


Figure 2: (Own illustration) Conceptual Model - Research Approach

Subtopic 0: Company Profile	
Date sent:	Click or tap to enter a date.
Date received:	Click or tap to enter a date.
Company Name:	Click or tap here to enter text.
Industry:	Click or tap here to enter text.
Target Customers:	Click or tap here to enter text.
Number of Employees:	Click or tap here to enter text.
Turnover:	Click or tap here to enter text.
Subtopic 0: Interviewee Demographics	
Name:	Click or tap here to enter text.
Position:	Click or tap here to enter text.
Age:	Click or tap here to enter text.
Highest educational degree:	Click or tap here to enter text.
Years of business experience:	Click or tap here to enter text.
Previous work experience:	Click or tap here to enter text.
Subtopic 1: Sustainability & CSR (15% Progress)	
Does your company publish a CSR report?	Choose an item.
Rate the importance of sustainability in your company	Choose an item.
Rate your company's efforts to reduce negative sustainability impacts?	Choose an item.
Rate your company's efforts to promote ethical and sustainable behavior?	Choose an item.
Does your company implement new innovations by using a "trial and error" strategy or do you carefully plan and compare risks and opportunities before?	Choose an item.
Rate the initial engagement of different internal stakeholders (different departments) when implementing new innovations.	Choose an item.
Rate the initial engagement of different external stakeholders (NGOs, experts) when implementing new innovations.	Choose an item.
Rate how agile your implementation process is and how flexible you are with feedback.	Choose an item.
<p>At which stage of sustainability is your company:</p> <ol style="list-style-type: none"> Compliance: Externally enforced or regulated activities, and defensive actions with regard to economic, environmental, or social concerns Business Centered: A "Business case" is the motivation and measure of success. Adoption and internal enforcement of activities. Incremental improvements to business-as-usual. May focus on one or more realms of sustainability (economic, environmental, social) Systemic: Collaboration with other stakeholders to create systematic change on all three dimensions (economic, environmental, social) Regenerative: In addition to systematic change, there is a focus on healing, rebuilding and reinforcing the environment. Coevolutionary: Work in balance with the environment and contribute to a thriving nature. 	<p>When founding the Company: Choose an item.</p> <p>Currently: Choose an item.</p> <p>In the future: Choose an item.</p>
Subtopic 2: Digitalisation & Digital Transformation (35% Progress)	
Rate the importance of each Technology for your business:	
1. Social Media (e.g., Instagram)	Choose an item.
2. Mobile (e.g., Wi-Fi, 5G, Bluetooth)	Choose an item.
3. Data (e.g., Cookies)	Choose an item.
4. Cloud (e.g., OneDrive)	Choose an item.
5. Internet of Things (e.g., Smartphones)	Choose an item.
6. Artificial Intelligence (e.g., Recruiting)	Choose an item.
From which technology do you create revenue?	7 - None of the above

<p>What Stage of Digital Maturity is your company currently in and in what stage does your company want to be in the future?</p> <ol style="list-style-type: none"> 1. Your company only uses more traditional digital applications such as e-commerce or e-mail communication. 2. Your company only tried a few ostensibly useful digital applications but without the strategic integration into the organization. 3. Your company focuses on their core strategy and strategic innovations but avoids implementing speculative digital applications. 4. Your company is aware of the chances that digital applications offer with respect to a competitive edge and therefore fully integrate the latest digital innovations into their strategy. 	<p>When founding the Company: Choose an item.</p> <p>Currently: Choose an item.</p> <p>In the future: Choose an item.</p>
<p>Subtopic 3: Corporate Digital Responsibility (50% Progress)</p>	
<p>Who is responsible for your company's CDR initiatives?</p>	<p>Choose an item.</p>
<p>If "other":</p>	<p>Click or tap here to enter text.</p>
<p>Does your company publish a CDR report?</p>	<p>Choose an item.</p>
<p>Does your company have a code of ethics that guides its digital practices?</p>	<p>Choose an item.</p>
<p>How would you rate your company's transparency and accountability in its digital practices?</p>	<p>Choose an item.</p>
<p>How would you rate your company's efforts to avoid negative impacts of your digital technologies offerings and own usage?</p>	<p>Choose an item.</p>
<p>How would you rate your company's efforts to implement any initiatives to promote digital literacy and responsible use of technology among its customers?</p>	<p>Choose an item.</p>
<p>How would you rate your company's efforts to respond to ethical dilemmas related to digital technologies offerings and their impact on society?</p>	<p>Choose an item.</p>
<p>Rate the degree to which your company considers corporate digital responsibility while making performance relevant decisions.</p>	<p>Choose an item.</p>
<p>Subtopic 4: CDR Opportunities (65% Progress)</p>	
<p>Can companies only improve their sustainable efforts while worsening their financial performance?</p>	<p>Choose an item.</p>
<p>Rate the degree to which you feel, that being CDR compliant will give you:</p> <ol style="list-style-type: none"> 1. More revenue 2. Less costs 	<p>Choose an item.</p> <p>Choose an item.</p>
<p>Rate how being CDR compliant increases your company's revenue through:</p> <ol style="list-style-type: none"> 1. Better Access to certain markets 2. Differentiating products and sustainable offerings 3. Early involvement of stakeholder 4. Compliance with legislation changes 5. A greater drive for innovation 	<p>Choose an item.</p> <p>Choose an item.</p> <p>Choose an item.</p> <p>Choose an item.</p> <p>Choose an item.</p>
<p>Rate how being CDR compliant decreases your company's costs through:</p> <ol style="list-style-type: none"> 1. Risk Management for image damage, compliance with set guidelines and human right violations 2. Reduced costs for labor through higher employee satisfaction 3. A better relationship with external stakeholders 4. Better cost of capital 5. Less Material and Energy Waste 	<p>Choose an item.</p> <p>Choose an item.</p> <p>Choose an item.</p> <p>Choose an item.</p> <p>Choose an item.</p>

Which other opportunities do you see for your business when applying CDR?	Click or tap here to enter text.	
Subtopic 5: Barriers for Implementing CDR (80% Progress)		
<p>Rate these five touchpoints of CDR for importance in your company:</p> <ol style="list-style-type: none"> 1. Digital stewardship (responsible use of data through privacy and security) 2. Digital transparency (transparency in the use of customer data) 3. Digital empowerment (empowering customers through guidance) 4. Digital equity (fair distribution of profits from the use of customer data) 5. Digital inclusion (making data sets available for research) 		<p>Choose an item.</p> <p>Choose an item.</p> <p>Choose an item.</p> <p>Choose an item.</p> <p>Choose an item.</p>
<p>Rate the importance of the following statements to your company:</p> <ol style="list-style-type: none"> 1. Ethical considerations when developing a new technology or choosing an existing one from external providers is important. 2. Constant monitoring of digital technologies to reduce the risks of outdated software, biased data or unethical development of autonomous behavior. 3. Transparency towards users & clients regarding unintended consequences, such as a negative environmental impact (energy consumption, etc.) and a costs / benefits analysis of them providing data (What do they get from sharing private information?) should be provided. 4. Long-term consequences after the deployment or sale of the technology should be kept in mind. Guidelines for data security, storage and overall, after-sales support are needed. 		<p>Choose an item.</p> <p>Choose an item.</p> <p>Choose an item.</p> <p>Choose an item.</p>
<p>When looking at the following examples, please rate the importance of solving those challenges at your company:</p> <ol style="list-style-type: none"> 1. Economic CDR: Replacing jobs done by humans in a responsible way. Ensuring that outsourcing of work to the gig economy is done in a responsible way. Respecting data ownership rights (e.g., by reducing piracy) 2. Social CDR: Ensuring data privacy protection for employees, customers and other stakeholders. Promoting digital diversity and inclusion. Pursuing socially ethical practices. 3. Environmental CDR: Following responsible recycling practices for digital technologies. Extending technology life span. Following responsible power consumption practices. 4. Technological CDR: Ensuring ethical AI decision-making algorithms. Not producing digital technologies that could harm society. Following responsible data validation and disposal practices. 		<p>Choose an item.</p> <p>Choose an item.</p> <p>Choose an item.</p> <p>Choose an item.</p>
<p>Overall, to what extent do you agree with the statement:</p> <ol style="list-style-type: none"> 1. Our company is taking on its corporate digital responsibility. 2. CDR has a positive impact on our performance. 		<p>Choose an item.</p> <p>Choose an item.</p>
Which other challenges or barriers do you see when implementing CDR in your company?	Click or tap here to enter text.	

Additional Notes

Click or tap here to enter text.

Sources

Click or tap here to enter text.

C – Interview Guideline

Introduction:

1. Have you had the chance to look through the survey?
2. Do you have any questions regarding the survey or the topic?

Subtopic 1-3: General Questions

What do you understand by the term “Corporate Digital Responsibility”?

1. Does your CSR strategy involve the responsible usage of digital technologies?
2. Does your company engage in CDR activities? (Such as digital ethics)
3. Where do you see the biggest challenges and opportunities when implementing digital technologies?

Subtopic 4: CDR Opportunities

4. What are / Would be your expectations from implementing CDR into your corporate strategy?
5. Which concrete opportunities do you see for your business when applying CDR?

Subtopic 5: Barriers for Implementing CDR

6. Which challenges or barriers do you see / would you see when implementing CDR in your corporate strategy?
7. Which Key Elements would you see as relevant to implement CDR successfully?

Additional Questions:

8. How do you see the future of CDR in companies?
9. What role should governments and society play in promoting CDR in companies?
10. What recommendations would you make to companies looking to implement CDR in their business environment?

Additional Notes	Click or tap here to enter text.
Sources	Click or tap here to enter text.