

**“GERMAN BANKS' OPERATIONALISATION OF
SUSTAINABILITY – DECISION-MAKING
FRAMEWORKS IN GERMAN BANKS' CORPORATE
CLIENT DEPARTMENTS”**

by H. Duderstadt

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by H. Duderstadt

*A thesis submitted in partial fulfilment of the University's requirements for the Degree
of Doctor of Business Administration*

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DECLARATION

I, Henning Duderstadt, declare that the DBA thesis entitled “German banks' operationalisation of sustainability – decision-making frameworks in German banks' corporate client departments” is no more than 60,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes.

The thesis was carried out according to the University of Worcester regulations and is original except where indicated by specific reference in the text. No part of the thesis has been submitted as part of any other academic award. The thesis has not been presented to any other education institution in the United Kingdom or overseas.

Any views expressed in the thesis are those of the author and in no way represent those of the university.

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LIST OF ABBREVIATIONS

BaFin	-	Bundesanstalt für Finanzdienstleistungsaufsicht / German financial market supervisory authority
CR	-	Critical realism
CSR	-	corporate social responsibility
CTA	-	Cognitive Task Analysis
DNK	-	Deutscher Nachhaltigkeits Kodex/German Sustainability Code
EIA	-	Environmental Impact Assessment
EP	-	Equator Principles
GRI	-	Global Reporting Initiative
HB	-	heuristics and biases
ISO	-	International Organization for Standardisation
NDM	-	naturalistic decision making
OECD	-	Organisation for Economic Co-operation and Development
QDA	-	qualitative data analysis
RQ	-	research questions
SDG	-	Sustainable Development Goal
SLR	-	systematic literature review
SRI	-	socially responsible investments
TBL	-	triple bottom line
UN	-	United Nations

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Henning Duderstadt

ABSTRACT

Society's interest in sustainability is growing rapidly, and the accompanying demands are placed on companies. At the latest since the financial crisis at the end of the 2000s, banks have also moved the issue of sustainability into their strategic focus. This strategic implementation is highly significant, as banks and the financial markets are an important hub for the success of global sustainable development. The allocation of capital and liquidity has a decisive driver function for corporate sustainability and sustainable investments and projects. Therefore, the impact of a sustainable orientation of the financial sector in terms of economy, ecology, and social issues goes far beyond its own internal sphere of influence.

This thesis presents a deep insight into the operational implementation situation of German and savings banks' sustainability strategies. Due to its high indirect steering effect through the financing flows in potentially sustainable companies and their investments, the research focuses on the corporate lending sector of banks. Thus, this thesis closes a gap in this still young research field and shows a new perspective beyond the strategic decision-making level or reporting-oriented studies of previous research.

The research was carried out as a case study in 2019 on various banks of all three banking groups. It consists of 6 expert interviews and a content analysis of 130 non-financial reports for data triangulation. This approach intends to illustrate the impact of corporate rules and culture on operational decision-makers and whether potential framing concepts, as well as heuristics and biases, exist. The thesis shows discrepancies still exist between communicated strategy and operational implementation. Furthermore, differences and similarities between the banking groups and potential direct and indirect influences from the entrepreneurial framework of the management, target systems and corporate culture are revealed. The results indicate that the existing operational objectives decisively determine the extent to which sustainability aspects are reflected in practice. As a result, the approach to financing decisions in all banking groups is exclusively based on economic aspects in business practice.

Regarding corporate culture, the regional institutions refer to their historical brand core as a sustainability-oriented corporate value, even if the research indicates that these corporate values have no influence on sustainability orientation in lending practice. Overall, the data collection shows that the high importance of the indirect impact power of financial institutions through capital allocation is recognised by the majority of institutions, but this only leads to actual implementation in a minority of the banks studied. The results can help banks question measures taken, re-evaluate the importance of various frameworks and thus to improve the implementation quality of existing strategies further.

1 INTRODUCTION

The underlying theme of this work is corporate sustainability, the main principle of which is to integrate social and environmental goals alongside economic ones. Within this central topic, the thesis puts its focus on banking. To be precise, the German banking market. Even if banks are not in the focus of direct responsibilities concerning sustainability, especially concerning the consumption of resources, the banking industry has received significant interest over the past decades through businesses, academics, and the press (World Bank Group, 2007; Sundin, Granlund and Brown, 2010; Asel, Posch and Speckbacher, 2011; Keay, 2011). Within this framework, the thesis focuses on the operationalisation of sustainability in the core business area of corporate lending. In addition, it examines the factors arising from the given corporate frameworks and decision-making influences, such as heuristics and biases.

In this introductory chapter, an overview of the thesis, providing background information to the research setting, and explaining context clarifies the researcher's motivation for the research content. Furthermore, it presents the importance of the banking industry for sustainable development, the research gap to date and the need to catch up in practice before it closes with the problem statement to clarify the necessity of this research work.

1.1 CHAPTER OVERVIEW

This first chapter provides an introduction to the thesis, outlines the organisation of the thesis, explains the research topic and background, and the research gap to give a short overview of the research problem in practice and theory, the researcher's motivation, and the thesis' foundation and aims.

Chapter two of this thesis contains the detailed foundations of the research topic of sustainability through a literature review. It outlines the definitions used in this research, the evolution of sustainability in banking, its impact on the global economy and the current drivers and regulations. In addition, it will describe both the review process and the specific research area's previous research, and the research gap in the inherent research focus are shown.

In the third chapter, the thesis dives deep into the research environment of the German banking market. With its tripartite structure and three market-relevant banking groups (private banks, cooperative banks and savings banks), this national market occupies a unique position in an international comparison. The different banking groups have led to a less consolidated market with clearly differentiated objectives, background structures and owners, thus leading to a particular national market setting with high competition and correspondingly low margins in a largely saturated market environment.

The fourth chapter describes the research paradigm of the critical realist's approach. Additionally, the research questions, aims, objectives, approach and strategy are described in detail before the research method, sampling and data analysis process are unfolded. Finally, the chapter concludes with an assessment of validity and reliability and a presentation of the underlying research ethics.

Chapters five and six contain the results' presentation and discussion of the expert interviews and the evaluated sustainability reports' content analysis. In addition to the general results, it also provides subdivisions according to the bank groups investigated.

The last chapter highlights the evaluation of the results and their significance for the research work and shows its contribution to knowledge and professional practice. Additionally, it reflects on the research results, personal outcomes for the researcher and his development steps. In addition, the limits of the research work and further research recommendations are discussed and presented. In the appendices, further research related documents and appendices are shown.

1.2 BACKGROUND

The thesis' thematic background is sustainability. The roots of sustainability go back over centuries to 1713, in which Carl von Carlowitz, a Saxonian mine captain, defined a preservative approach for forest management (Müller-Christ, 2014). It targets a maximisation of the long term profit with a resource orientated concept by adjusting the clearance to the trees' growth rate to preserve the resources (Carlowitz, 2000).

Despite this origin, the term sustainability stays vague, and the contour of the concept of sustainability is indistinct. It is, or became, a buzzword, which is also caused by the growing interest in sustainability attracted during the 20th century (Weber *et al.*, 2012; von Hauff and Kleine, 2014). While it sometimes presents itself as a solely economic sustainability concept with just lasting maximal profits (Weis, 2010), it more often comprises further aspects, like climate and biodiversity protection as well as equality and human rights (Weis, 2010). The political and economic ideas of the World Commission on Environment and Development (1987, p. 47) describe sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

In addition, the World Summit on Sustainable Development's definition from 1992 of the so-called triple bottom line (TBL) approach with an economical, ecological and social dimension (Tremmel, 2003) and their report's principle of intergeneration fairness (United Nations, 1992; Müller-Christ, 2014) build the corner posts of the modern sustainability definition.

Within the last decades, sustainability developed into a mega-trend (Weber *et al.*, 2012). Especially sustainable banking is no new concept, but its awareness and importance also experienced an upswing in the last decade due to the financial crisis, its outcomes and attending regulations. Besides, banks' business concept of leveraging liquidity and credits is a critical driving force for the sustainable development of the economic systems (Weis, 2010). Especially in the German banking market, in which corporate credits are a significant financing instrument, particularly for small and medium-sized enterprises (SMEs), the credit-granting decision rules influence SME'S corporate strategy and investment decisions concerning sustainability aspects. And it is precisely these credit-granting decisions and the related processes and influences on the decision-makers that this research addresses. It is carried out from an insider perspective as the researcher is a former corporate credit consultant. This perspective, combined with the outcome of the financial crisis of the late 2000s, determines the researcher's motivation. The first fundamental analysis of the initial situation also revealed a lack of scientific research work in the specific operational environment.

Moreover, increasing political and regulatory pressure over the past years, which manifested in clear recommendations for implementation at the end of 2019, has made the topic and research area more topical and relevant than ever.

1.3 CONTEXT AND MOTIVATION

For this thesis, the researcher acts as an insider researcher, who has work experience as a consultant for savings and cooperative banks of more than a decade. This professional role determines the researcher's motivation, helps define the research gap and gives trust to get access to the participants and conduct this exploratory research.

The researcher's motivation for this topic arises from a combination of different factors concerning corporate sustainability in the banking sector. First of all, an ongoing discussion about the need for sustainability in the financial industry. In this context, the definitions and mindsets evolved since the financial crisis began in the late 2000s. Therefore, the social interest in sustainability grew and was accelerated through the financial crisis' outcomes during this century's first decade and became a social expectation for financial institutions (von Hauff and Kleine, 2014). Furthermore, governmental proclamation supported its importance for the global economy and society, e.g. through the United Nations Environment Programme Finance Initiative's proclamation (2006). It states that banks are a driving force, sensitiser and navigator for sustainable development through the leverage effect of credits or liquidity as a transmission medium for economic systems (Weis, 2010). Hence, banks proclaimed sustainability within the last years and integrated into a broad range of institutions' strategies. Notably, the specific position of cooperative and savings banks, which are personally experienced in practical implementation through the researchers' professional career, sought the researcher's attention. Both banking groups have differing strategic foundations compared to the private banking sector. The cooperatives' member value and self-help concept and the savings banks' public interest orientation are at least communicational differentiators. They have long been arguments for their concept-inherent sustainability orientation, which now have to face and prove themselves to the construction, execution and communication of sustainability's growing regularity.

Second, corporate sustainability is a complex construct. The usual applied corporate management logic does not sufficiently represent its implementation and is mainly due to a lack of clear definition criteria. But what is mostly agreed on in the often-indistinct field of corporate sustainability is the triple bottom line concept, which describes the complexity. It was coined by a business consultant called Elkington and relates to three pillars: an economic, an environmental and a social one (Elkington, 1999; Dyllick and Hockerts, 2002; Bos-Brouwers, 2010; Haugh and Talwar, 2010; Schaltegger and Wagner, 2011; Hampl and Loock, 2013; Oberhofer and Dieplinger, 2014; Huber and Hirsch, 2017). TBL is a rather important aspect for practical businesses and gained recognition by many incorporations (Wu and Pagell, 2011; Kiron, Kruschwitz and Haanaes, 2012; Huber and Hirsch, 2017). The three elements of corporate sustainability have to be addressed simultaneously, which makes it particularly challenging for companies (Dyllick and Hockerts, 2002; Figge *et al.*, 2002; Tremmel, 2003; Pullman, Maloni and Carter, 2009). Together with the principle of intergenerational fairness, they build sustainability's corner posts (United Nations, 1992; Müller-Christ, 2014).

Third, the given sustainability concepts still lack translation into concrete operationalisation (Weis, 2010; Wu and Pagell, 2011; Müller-Christ, 2014; Wiengarten *et al.*, 2017). While prominent sustainability guidelines are concentrated on the strategic level, the operationalisation of these strategic goals and approaches is far from being trivial. Simultaneous consideration of TBLs dimensions is almost unmanageable for most companies' decision-making processes (Müller-Christ, 2014). The dilemma arises from trade-offs and challenges of operational complexity in the TBL relationship. Furthermore, there are hardly any approaches to this theoretical gap (Wu and Pagell, 2011; Müller-Christ, 2014; Wiengarten *et al.*, 2017), as outlined later in this chapter.

The practical outcome of this situation consisting of presumed concept inherent sustainability, complexity, lack of clear definition and missing guidance was directly observed and researched in German cooperative banks. They describe themselves as sustainable by assuming that the cooperative design is sustainably rooted by its original foundation (Klein, 2014a), referring to the Cooperative Societies Act's first paragraph, which states the fundamental purpose of a cooperative as the member's economic,

social or cultural advancement (Theurl, 2002, 2009). Therefore, Klein undertook further research regarding cooperative banks' sustainability efforts. His findings show a clearly formulated will to be sustainable, but he also evaluated that the actual implementation is lagging (Klein, 2015).

Thus, the question emerges, what are the critical drivers for this noticeable gap in operationalisation? On the one hand, there is a given commitment to sustainability with a communication concept towards the stakeholders and a strategic implementation. But, on the other hand, one can find an observed lag in implementation after an already given period of time between strategic decision and point of observation. Thus, what are the restraints within the organisation causing this gap?

1.4 THE IMPORTANCE OF SUSTAINABILITY IN BANKING

Corporate sustainability's fundamental principle is the integration of social and environmental objectives alongside financial aims. Especially the banking sector's sustainability efforts have gained interest due to the financial crisis, their outcomes and attending regulations in the last decades (Weber *et al.*, 2012). Moreover, the several generations lasting ability of banks to exist depends to a large extent on social acceptance. Therefore, this ability is linked to their pursuit of environmental and social aims beyond purely economic goals, as sustainability became a social expectation for financial institutions (Kleine and von Hauff, 2009).

Already in 1992, in the course of the first World Summit on Sustainable Development, the United Nations Environment Programme Working Group for Investment Management set down that the financial sector will play a decisive role toward sustainable development (United Nations Environment Programme Finance Initiative, 1997). The United Nations Environment Programme Finance Initiative (2006) proclaimed banks' significant role in sustainable development, which is indeed crucial, as the financial sector is a driving force, sensitiser and navigator due to its leverage effect. Whether as credits or as liquidity, money is a lubricant of the economic engine and, therefore, a transmission medium for sustainability (Weis, 2010). Thus, sustainability may become the financial business' central concern (Kreuzkamp, 2011). Due to the importance of social acceptance for banks and the described important

function for the development of sustainability, it is already a necessity in the communication strategy of banks to position their sustainability orientation. Therefore, it is integrated into a broad range of institutions' strategies relating to an economic, environmental, and social dimension in the TBL approach (Elkington, 1999).

1.5 THEORETICAL GAP

Different authors claim that the given concept of sustainability still lacks transition from strategy to concrete operationalisation. Noticeably, most guidelines relate to strategy, while there are only a few approaches for operationalisation (Weis, 2010; Wu and Pagell, 2011; Müller-Christ, 2014; Müller, Janetschek and Weigelt, 2015; Wiengarten *et al.*, 2017; Eustachio *et al.*, 2019).

The initially reviewed research concerning banks sustainability showed a severe gap between the high strategic relevance and actual practical integration of sustainability (Müller-Christ, 2014; Klein, 2015). Klein's empirical study pinpoints this gap between the willingness to become more sustainable and the present state of realisation (Klein, 2015). Klein's (2015) findings show that the actual implementation is lagging behind sustainability's communication. In addition, the parameters of the TBL concept are determined by two factors: they are very uncertain and complex (Wu and Pagell, 2011). Both factors have implications for human rationality as they may cause psychological deviations that limit the rationality in human thinking and, therefore, the ability to make optimal choices (Kahneman and Klein, 2009; Powell, Lovallo and Fox, 2011; Meissner and Wulf, 2017). Decision-making in complex situations and under uncertainty provokes intuitive judgments rather than effortful, controlled, and attention needing decisions and is affected by the tendency to use given knowledge from past events and bring them in context with new situations (Kahneman and Tversky, 1979; Evans, 2007; Kahneman and Klein, 2009).

As sustainability has a broader, more ethical, and multifaceted decision focus than just mere economic gains, it can be a good breeding ground for intuitive judgments and thus irrational decisions. Research shows that comparable behaviour is often unconscious (Bazerman and Moore, 2009). Therefore, approaches other than knowledge transfer are necessary because a management board that calls itself sustainable, for example, but

unconsciously acts in the opposite way, cannot derive any added value from pure knowledge transfer (Bazerman and Moore, 2009). Nudging choice architectures or rule-based frameworks are possible approaches that could address this behavioural failure (Khalili-Damghani *et al.*, 2013; Pilaj, 2017).

Deciding means reducing complexity, for example, through selection (Müller-Christ, 2014). However, according to many economists, such simplification strategies, whose time savings compensate for the loss of quality, are problematic in this given and needed complexity (Bazerman and Moore, 2009). For example, the concept of "bounded rationality" describes a constraint on willpower by overweighting current concerns over future concerns and highlights potential violations of sustainability principles (Bazerman and Moore, 2009). These biases can thus unconsciously harm the quality of sustainable decision-making and are due to limited attentiveness and cognitive process capability (Bazerman and Moore, 2009).

Systematic errors can also arise from assuming that the memories we call up and their weighting represent the data required for a rational decision (Bazerman and Moore, 2009). It is questionable whether we can conclude from the events we experience that those represent a statistically normal distribution or even a statistical average. (Bazerman and Moore, 2009).

Previous research contextualised those decision-making problems in numerous concepts and underlined the adverse effects on decision quality by psychological deviations (Gerard P. Hodgkinson *et al.*, 1999; L. Milkman, Chugh and Bazerman, 2008; Blenko, Mankins and Rogers, 2010; Meissner and Wulf, 2017). But only a few decision-making research projects concentrate on the TBL approach, and even fewer address business models and the needs of professionals and practitioners (Wu and Pagell, 2011; Hammer and Pivo, 2017), as highlighted in the second chapter. Considering the knowledge gap, an initial literature review on sustainability management lead to Müller-Christ's (2014) statement that previously conducted research on sustainability management shows a decision making a related gap. He states that all decisions are risky and irritating for corporates when they do not form as yes-or-no alternatives, clear-cut

considerations or dilemmatic decision alternatives, which define most sustainability concerns (Müller-Christ, 2014).

Starting from this blind spot in research, the further literature research and findings show that neither management studies nor subsidy practice adequately considered this thought for sustainability management. Thus, there are hardly any systematic approaches, just a few concepts towards the TBL approach regarding the needs of and usability for professionals and practitioners (Hammer and Pivo, 2017). However, prior research did not address business models and decision-making (Wu and Pagell, 2011). Especially the individual and operational framework proposed by this research was previously not focused on (Eberhardt-Toth and Wasieleski, 2013).

Although, it is generally agreed that more research about decision-making in complex systems and under uncertainty is needed to provide practical guidance for decision-makers. Previous research also showed that this blind spot in management studies has far-reaching consequences. The lack of guidance and understanding of TBL inherent trade-offs has already resulted in sub-optimal business performance (Wu and Pagell, 2011; Wiengarten *et al.*, 2017).

Besides, the defined research environment in the banking setting has distinct practical relevance. The empirical analysis of Klein (2015) shows a severe gap between the high strategic relevance and actual practical integration of sustainability. His empirical study on 230 German cooperative banks regarding different key points of sustainability pinpoints this gap between cooperative banks' highly communicated will to become more sustainable and the current state of realisation and, therefore, underlines the research's practical importance. After more than a decade of extensive strategic guidance and consulting from governmental, non-profit and commercial organisations, the operationalisation of sustainability in the daily work environment of many companies still lags behind with far-reaching consequences for implementation and its efficacy. There is a lack of tools, methodologies and implementation systems. Even if the implementation gap is a well-known fact and previous research on identified flaws for successful implementation has suggested further research, it has not been undertaken yet.

1.6 PROBLEM STATEMENT

The considered knowledge gap is observed as an insider researcher in both the savings and cooperative banking group but still misses proceeding research as chapter 1.5 and, building on this, chapter 2 show. Nevertheless, the concrete and actual empirical findings highlight the existence and need for the considered research environment in German banks and is furthermore a research topic crucial for all business research (Kothari, 2004).

This research focuses on the operational level decision-makers in corporate credit departments and explores the existence of potential frameworks in the daily decision-making processes. The aim is to gain a deeper understanding of sustainability strategy's operationalisation status, the operational implementation and potential obstacles to integrating sustainability in German banks' core business – the corporate credit divisions.

Therefore, this research focuses on the given corporate frameworks and possible countervailing influences for sustainable management approaches in credit lending decision-making processes. It seeks to identify underlying patterns and explores their significance and potential countermeasures.

This thesis

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is conducted via an expert case study in German banks' corporate client departments and considers the influence of multifaceted strategic aims related to sustainability. The main objective is to identify system-immanent deviations, causing a gap between strategic and operational implementation of sustainability in corporate credit business and building a systematic approach to overcome these deviations, ensuring an operationalisation of sustainability in German banks core business.

The research questions are:

1. How do the guidelines of corporate banking consultants frame the operationalisation of sustainability strategies?
2. Can framing concepts be identified as potential origins for decision-making errors that contradict sustainability?
3. Are systematic cognitive biases prominent on the operational management level?
4. Which management tools could overcome the potential identified heuristics and biases countervailing sustainability goals?

The given research and previous findings lead to exploratory research and, therefore, concentration on in-depth research. Thus, the researcher acts as an insider researcher. The main research focuses on semi-structured interviews with corporate client consultants to narrow down the case to the credit business department. Those departments have the most substantial impact on sustainable development through the leverage effect of credits or liquidity towards the economic system (Weis, 2010) and the most frequent operational decision-making processes regarding long-term related business concerns.

Interviews gathered the multi-case study approach's primary data. The transcripts were analysed with the constant comparative method (Harding, 2013) with a priori codes based on a prepared common logic adjusted and regrouped within the ongoing analysis. Especially for research questions 1 and 2, as well as an overview of the work environment, strategy and framework, a quantitative content analysis (Walliman, 2010) of non-financial reports is used for data triangulation. The research is then conducted deductively along with the interviews (Walliman, 2010). Finally, it uses the findings for an inductive generalisation via the quantitative analysis of the non-financial disclosure documents.

2 LITERATURE REVIEW

In the first part of this chapter, the literature review provides the background for the research and the research environment of the thesis to give an orientation and overview of the context, definitions, terminologies, current debates and trends in the research field under discussion. It, therefore, illustrates the evolution of the thematic and conceptual foundations and definitions of corporate sustainability and their social, political, and regulatory developments and expectations, the underlying terminologies and relevant aspects of decision-making and shines a spotlight on sustainability in the banking context.

In the second part, the methodology of the literature review, its implementation as well as the discussion of this review's findings and its results are presented. In addition, this second part gives a structured overview of previous research regarding this thesis' research focus. It thus seeks to identify gaps in the existing body of work as well as evidence of relevance and significance in the researched area (Tranfield, Denyer and Smart, 2003; Ridley, 2012). Moreover, it provides an overview of existing research to avoid redundancy and defines the contribution of this thesis in terms of novelty and originality to the topic by identifying the gap in management practice and theoretical studies and pointing out how the concept of this thesis aims to fill this gap conceptually.

The groundwork thus laid serves to describe and frames the research topic and its foundations so that the underlying concepts, their scientific basis and regulatory and practical developments are comprehensively analysed to present a relevant knowledge base for the research work. Then, building upon this, the research questions are developed, validated and redefined.

2.1 SUSTAINABILITY

The leading topic related subject is the determining term sustainable development. For the further context focusing on the managerial usage and the herein observed concept, it is essential to focus on the definition of corporate sustainability to emphasise the economic context, especially towards the specific industrial sector and the regional and contemporary context. In this thesis, the focus is on corporate sustainability in the

banking sector in Germany. The literature review includes its development, its effects on societies and economies and the current and potentially upcoming drivers and regulations.

2.1.1 SUSTAINABILITY CONCEPTS - OVERVIEW AND DEFINITION

Sustainable development is a long-lasting and indistinct concept. Starting from the 1713 definition of a preservative approach for forest management (Carlowitz, 2000; Müller-Christ, 2014) to today's most commonly used definition of sustainable development based on the World Commission on Environment and Development's "our common future" report, also known as the Brundtland Report (World Commission on Environment and Development, 1987). According to Kok et al. (2019) sustainable development is defined in numerous ways. It emphasises the interaction and balancing of 3 factors: Economy, Society and Environment.

This emphasis is defined as the so-called TBL approach at the World Summit of Sustainable Development in 1992 and seeks to achieve the accompanying societal and environmental equity goals alongside economic gain (World Commission on Environment and Development, 1987; Tremmel, 2003; Wilson, 2003; Bansal, 2005; Ngwakwe, 2012; Kok, de Bakker and Groenewegen, 2019). The Brundtland Report defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development., 1987, p.47).

Furthermore, the principle of intergenerational fairness is a relevant aspect that the Brundtland Report adds to balance the economic, societal and environmental factors for a complete modern sustainability definition (United Nations, 1992; Müller-Christ, 2014). Many authors refer to this aspect, whether it is the consideration of sustainable growth without sacrifices for future generations in general or resource-based, as the linkage of resources which are used by the current generation and those who are spared for future generations (Pezzey, 1989; Sathiendrakumar, 1996).

Since the World Commission on Environment and Development's Brundtland Report was published in 1987, representatives of businesses, academics, and the press are

discussing, quoting, and publishing a large variance of sustainable development's aspects, thus causing increasing attention. Therefore, it became a buzz-word (Weber *et al.*, 2012), which leads to a variety of problems and hinders the interpretation, implementation and operationalisation in business practice (Bansal, 2005; Faber, Jorna and Van Engelen, 2005; Kok, de Bakker and Groenewegen, 2019).

To strengthen this agenda and clarify the definition and implementation in the face of the need for action, the United Nations defined 17 specific Sustainable Development Goals (SDGs). They should serve as a guideline for humanity's benefit and apply to social, economic and ecological systems (United Nations, 2015, 2018). The SDGs development was carried out "by working groups ('doers') relating to their work/practice ('doing'), rather than by individual leaders or national or regional representatives in an abstract and intellectual mode." (Burford, Tamás and Harder, 2016, p. 3). Those groups form an integrated vision for sustainable development, in which the UN member states began to adopt them jointly in 2015. These SDGs express a global understanding of the achievements to accomplish for sustainable development (Müller, Janetschek and Weigelt, 2015). However, despite their general international and political adoption and their elaboration in practice-oriented circles, it does not seem to be clear in practice how to transfer, apply, or monitor SDGs for the individual national and regional requirements (Müller, Janetschek and Weigelt, 2015). Therefore, further particular targets for each goal in a UN resolution followed this goal-setting, and a monitoring system of achievement promotes social justification and accountability at the national level.

However, the Brundtland Report also highlights companies' environmental and societal impact and grows significant awareness for this approach (von Hauff and Kleine, 2014). In this context, figure 1 summarises the milestones and provides a chronological overview of the topic area's associated development globally.

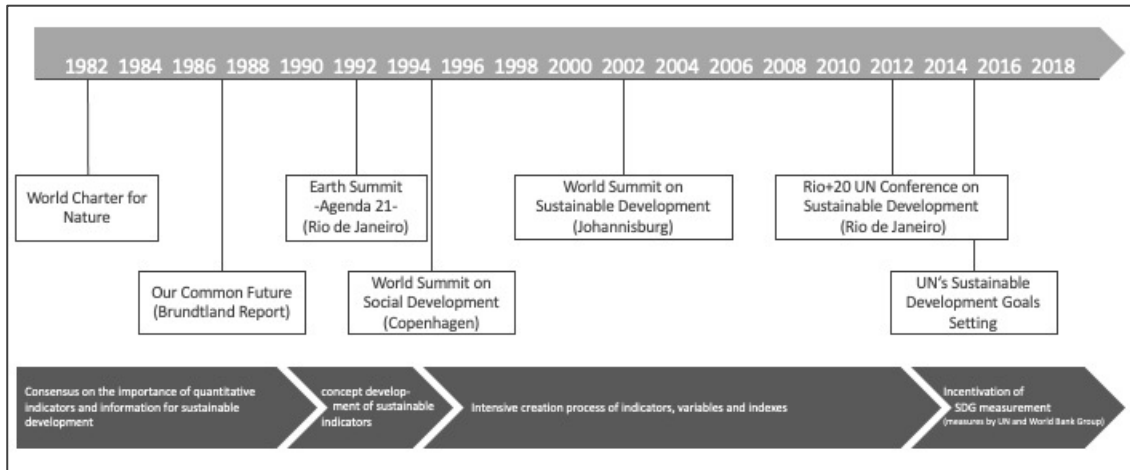


figure 1: Steps towards a sustainability development (Modified from source: Eustachio et al., 2019)

2.1.2 CORPORATE SUSTAINABILITY

In the context of companies and organisations, sustainable development is described as corporate sustainability. Here, too, several definitions and terms are not always clearly distinguishable but have a common foundation. Howard Bowen's early attempt to formulate a definition of Corporate Sustainability in the 1950s book "The Social Responsibilities of the Businessman" is often cited. It defines corporate sustainability as "the obligation of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of objectives and values of our society." (Bowen, 1953, p. 6). It underlines the achievement of long-term economic success without the ignorance of environmental and social responsibility and therefore defines a corporate strategy that incorporates the TBL concerns into a sustainable business approach (Eweje, 2011; Caprar and Neville, 2012).

Therefore, corporate sustainability requires an integration of social and environmental objectives in corporate's financial aims and the willingness to be accountable for their actions, e.g. through reporting and therefore not only against their shareholder but also against a wider group of stakeholders (Gao and Zhang, 2006; World Bank Group, 2007).

The terms corporate sustainability and corporate social responsibility (CSR) are often used as similar and interchangeable terms in studies (Waddock, 2004; Mensah, Agyapong and Nuertey, 2017). Nonetheless, the definition of corporate sustainability or related terms as CSR differ over time and place. Key factors, parameters, definitions and characteristics are influenced by time and location and specific legal, political and social

systems (Pava, 2008; Mio and Venturelli, 2013; Venturelli *et al.*, 2017). Various authors therefore point out the heterogeneity of the existing definitions in the literature (Atkinson, 2000; Dahlsrud, 2008; Matten and Moon, 2008; Venturelli *et al.*, 2017). A unifying and comprehensive definition of corporate sustainability describes it "as meeting the needs of a firm's direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities etc.), without compromising its ability to meet the needs of future stakeholders as well." (Dyllick and Hockerts, 2002, p. 131). It describes the pursuit of the company's interest while addressing the employees and many relevant stakeholders in the society in which the company operates (Mensah, Agyapong and Nuerter, 2017). Furthermore, those definitions share the inclusion of voluntary nature and commitment beyond existing and applicable legal requirements. They borrow thematically from the concept of intergenerational fairness and the TBL approach and argue for the need to preserve the economic, environmental and social capital stock (Dyllick and Hockerts, 2002; von Hauff and Kleine, 2014).

2.1.3 SUSTAINABILITY DEFINITION FOR THIS RESEARCH

For this thesis' purposes, corporate sustainability is defined as a conceptual framework that decouples from resource consumption and combines economic, environmental and social demands in the short and long term. By narrowing it down to this thesis' banking or financial perspective, it can be transferred as harmonisation of a company's current growth with its usage or consumption of resources in every potential form to be sustainable (Huang and Liu, 2009). Therefore, it contradicts Milton Friedman's headline of his New York Times article (1970): "The social responsibility of business is to increase its profits," revealing the clear-cut separation of responsibilities.

The definition of corporate sustainability used for this thesis is based on the TBL definition of sustainability combined with intergenerational fairness. In this way, the consideration of ecological, social and economic aspects in terms of sustainability is taken into account. Furthermore, future generations and their possibility for a sustainable life and economy in the long term are also considered. Therefore, corporate sustainability implies corporate governance and corporate social responsibility concepts under the core element of intergenerational fairness (World Commission on

Environment and Development, 1987). It is used as an umbrella term like many other authors suggest (Wilson, 2003; Waddock, 2004; Signitzer and Prexl, 2007; Mensah, Agyapong and Nuertey, 2017). This chosen definition also goes hand in hand with the definitional bases of the relevant standards developed in the course of the research work and underlies the legal and supervisory framework conditions, named in chapter 2.3. The definition is especially relevant for evaluating the results and the resulting implications for implementation issues. Concerning the participants in this case study context, a specific understanding of the corporate sustainability definition is not required.

2.1.4 CRITIQUE ON CORPORATE SUSTAINABILITY AND ITS EVALUATION

The discussion about corporate sustainability's strategic relevance and implementation is as varied as the definitions and approaches. Particularly against the backdrop of Friedman's corporate responsibility formula, criticism is voiced about economic efficiency, conflicting goals and concerns of dampened economic growth. Environmental protection is a central point of discussion for an extended period (Fisher, Krutilla and Cicchetti, 1972; Krautkraemer, 1985; Barrett, 1992; Choi, 1994). In the following, many research questions and models focus on the relationship between economic and environmental benefits (John and Pecchenino, 1994; Jones and Manuelli, 1995; Hartman and Kwon, 2005).

Overall, the literature on studies from the past shows that the economic evaluation of sustainability efforts leads to mixed results. In general, the trade-off between sustainability aspects and performance can be differentiated into three argumentative relations. First, it is argued that companies that act responsibly towards a larger number of stakeholders suffer economic losses through additional costs, at least compared to actors that act differently (Ullmann, 1985). Arguments pointing in the same direction are the distracting aspect of satisfying different stakeholder interests while concentrating on making a profit and the associated limitation of one's own strategic alternatives (Scholtens and Zhou, 2008). Secondly, and in contrast, it is argued that the costs of behaving in stakeholders' interest are minimal. There are even indirect benefits from sustainable behaviour, such as employee retention, productivity, and customer

satisfaction (Moskowitz, 1972). In between, a third perspective describes direct costs in sustainability activities, but which are offset by costs saved elsewhere (McWilliams and Siegel, 2001).

Over the last two decades, interest in corporate sustainability has increased, and with this increased societal demand comes to broader visibility and thus a more positive value-driving assessment (Friedman and Miles, 2001; Epstein and Roy, 2003; Schaefer, 2004). In conclusion, the literature on corporate sustainability suggests that companies should integrate sustainability and its rules into their strategy and be treated and integrated like any other strategic asset. The main argument is its long-term positive profitability with regard to the triple bottom line (Elkington, 1999; Gao and Zhang, 2006).

Thus, awareness of strategic integration flourishes, as Bonn and Fisher (2011, p. 9) point out, “there has been a recognition by an increasing number of organisations that (...) the impact of activities will need to be analysed not only in terms of economic growth but also in terms of their environmental and social consequences.”. Nonetheless, sustainability’s integration within the core business is not an easy task. The execution of a sustainability embedding strategy also increases complexity. Thus, the general conclusion of the late 1990s, that only a small proportion of companies have integrated sustainability into their strategy (Hart, 1997). The lack of integration is still accurate years later. On the one hand, companies set sustainability on their agendas. On the other hand, it has not yet been fully integrated into their business strategies and confirms that sustainable orientation has a corporate value. Still, they only drive the actual implementation to a limited extent (Marrewijk, 2003; Galbreath, 2009). The increase in complexity due to the multiple and dilemmatic dimensions of a TBL approach requires the consultation of decision-making theories that address the underlying considerations of decisions.

2.2 DECISION MAKING

In addition to the topic of sustainability, the underlying concepts of decision making, especially regarding heuristics and biases, including their influence on those researched operational decisions, are also particularly significant as a basis for the research work.

Two factors determine the parameters of sustainability in accordance with the TBL concept: they are very uncertain and complex (Wu and Pagell, 2011). Uncertainty and Complexity influence implicitly human rationality. The high volume of data and ambiguity may cause psychological deviations limiting the rationality and may lead to suboptimal choices (Kahneman and Klein, 2009; Powell, Lovallo and Fox, 2011; Meissner and Wulf, 2017). Therefore, decision-making in those settings and situations provokes intuitive judgments rather than effortful, controlled, and attention needing decisions (Kahneman and Tversky, 1979; Evans, 2007; Kahneman and Klein, 2009). As sustainability has a broader, more ethical and multi-faceted decision focus than just mere economic gains, it can be a good breeding ground for intuitive judgments and thus irrational decisions.

This distinction between decision-making processes refers to the concept of system 1 and system 2 thinking. Whereas intuitive judgments are referred to as system 1 thinking and effortful, controlled, and attention needing judgements are attributed to system 2 (Kahneman and Tversky, 1979; Kahneman and Klein, 2009).

Facing these deviations, two major concepts can be considered: heuristics and biases (HB) (Kahneman and Tversky, 1974) or naturalistic decision making (NDM) (Klein, 1993). The NDM concept is based on a positive success-focused approach to expertise and intuition, while the HB concept takes the sceptical part of the decisions' judgment (Kahneman and Klein, 2009).

Moreover, system 1 thinking is affected by the tendency to use given knowledge from past events and bring them in context with new situations (Kahneman and Tversky, 1979; Evans, 2007; Kahneman and Klein, 2009). This tendency is particularly problematic because systematic errors can also arise from assuming that the memories we call up and their weighting represent the data required for a rational decision (Bazerman and Moore, 2009). It is questionable whether from the events we experience ourselves we can draw conclusions about the statistical normal distribution or even about a statistical average (Bazerman and Moore, 2009). A given context is an experiment to forecast long-term strategic and economic events by Tetlock. It shows the large impossibilities that do not allow an expert advantage, as historical data does not allow a clear forecast

(Kahneman and Klein, 2009). This is comparable to the situation of sustainability decisions, as the TBL-concept involves a lot of uncertainty and complexity and thus affects human rationality (Wu and Pagell, 2011). Thus, psychological deviations that limit the rationality in human thinking occur, and therefore, the decision maker's ability to make optimal choices (Kahneman and Klein, 2009; Powell, Lovallo and Fox, 2011; Meissner and Wulf, 2017). Optimal choices and decisions also mean reducing complexity, for example, through selection (Müller-Christ, 2014). Due to the given and necessary complexity inherent in the TBL concept, such simplification strategies, whose time savings compensate for the loss of quality according to many economists, appear problematic here (Bazerman and Moore, 2009).

There are numerous variants of heuristics and biases that influence the quality and rationality of decisions. Many of them relate to unconscious behaviour (Bazerman and Moore, 2009). For example, the concept of "bounded rationality" describes a constraint on willpower by overweighting current concerns over future concerns and highlights potential violations of sustainability principles (Bazerman and Moore, 2009). Furthermore, positive illusions describe a tendency to cast a more positive light on the self-image and possibly lead to overestimating one's sustainability. These biases can thus unconsciously have a negative impact on the quality of sustainable decision-making and are due to limited attentiveness and cognitive process capability (Bazerman and Moore, 2009). These illusions can be found especially in characteristics that are not objectively comparable. Thus the topic of sustainability, with its many facets and definitions, offers sufficient room for these illusions (Bazerman and Moore, 2009).

Significantly, the assumptions of HB and system 1 thinking are in this research's focus, as it is used for fast decision making and focuses on the negative effects on intuition-based judgments (Tversky and Kahneman, 1983; Denes-Raj and Epstein, 1994; Dane and Pratt, 2007; Bazerman and Moore, 2009). Researching this aspect is crucial as optimal decision-making becomes more critical concerning the growth of knowledge-based industries and economies. A chance of being biased increases, too. The amount of given and needed information and time pressure rises whilst the simultaneousness of choices and constraints emerges. Thus, many empirical studies underline the negative effects

on decision quality by psychological deviations (Gerard P Hodgkinson *et al.*, 1999; L. Milkman, Chugh and Bazerman, 2008; Blenko, Mankins and Rogers, 2010; Meissner and Wulf, 2017). Especially on the operative level, the trade-off between the accuracy of a decision and its speed has to be considered (Eisenhardt, 1989; Dane and Pratt, 2007). Therefore, approaches other than knowledge transfer are necessary because a management board that calls itself sustainable, for example, but unconsciously acts in the opposite way, cannot derive any added value from pure knowledge transfer (Bazerman and Moore, 2009). This behavioural failure could be addressed by different approaches, like nudging choice architectures or rule-based frameworks (Khalili-Damghani *et al.*, 2013; Pilaj, 2017).

2.3 SUSTAINABILITY IN BANKING

However, the lack of integration of sustainability is still pronounced within the banking sector, as a survey of international bank managers (Lacy *et al.*, 2010) and in the German cooperative banking group (Klein, 2015) shows. This lack of sustainability's integration is an observation shared by many researchers. It is precisely for this reason that this sector should be predestined for a sustainable image after the financial crisis and the resulting loss of confidence through irresponsible behaviour and business models.

At the end of the 20th century, significant efforts were undertaken in various sectors to achieve sustainability but assessing the banking sector's role was indifferent. While critical research categorises the banking sector as somewhat reticent and comparatively timid (Jeucken and Bouma, 1999; Jeucken, 2002), others cite the financial industry as one of the early sectors to engage with and in CSR (Scholtens, 2009; Soana, 2011; Gangi, Mustilli and Varrone, 2019). The financial industry is intensely driven and propagated by classical market logic. This market logic focuses on two things: competitive advantage and shareholder value thinking. Thus, the focus is on profit maximization (Friedland Robert, 1991; Thornton, Ocasio and Lounsbury, 2015; Kok, de Bakker and Groenewegen, 2019).

This prevailing culture in the banking sector serves predominantly to generate shareholder value (Wiek and Weber, 2014). According to many market observers, this corporate culture combined with inadequate regulation and profit maximisation

ambitions is the key factor behind the global financial crisis of the late 2000s (Moshirian, 2011; Maggetti, 2014). Since then, critics have pointed to the need for a change in the market, corporate culture, and political and institutional change requirements in the regulation and management of banks (Levine, 2012; Kok, de Bakker and Groenewegen, 2019). Nevertheless, the logic of sustainability has increasingly found its way into the financial industry, not least since the end of the 2000s, and guides behaviour that is shaped by a concern for both social and environmental responsibility. It could therefore lead to more sustainable personal engagement (Kok, de Bakker and Groenewegen, 2019).

While in a cross-sectoral view, research in the more distant past on the compatibility of sustainability and economic success has produced mixed results (see 2.1.4 Critique on Corporate Sustainability and Its Evaluation). However, recent research findings in the financial and banking sector show unambiguous results regarding sustainable banks' financial performance. Those banks that beneath profit also take the needs of people and the environment into account and thus base their decisions on the TBL approach, perform comparatively better than traditional banks in terms of financial growth and performance (Rebai, Azaiez and Saidane, 2012; Fatemi and Fooladi, 2013; Stephens and Skinner, 2013; Wu and Shen, 2013; Canas, Ferreira and Meidutė-Kavaliauskienė, 2015; Shen *et al.*, 2016; Esteban-Sanchez, de la Cuesta-Gonzalez and Paredes-Gazquez, 2017; Carlucci *et al.*, 2018; Gangi, Mustilli and Varrone, 2019). These results have been recognised and play an essential role in bringing sustainability in business practice into bank management's focus and making economic and sociological research on sustainable banking a necessity. The implementation of sustainability aspects in the management of financial institutions essentially takes two forms:

First, the pursuit of socially and environmentally responsible initiatives, such as facilitating cultural events, various charitable donations, increased recycling quotas. They are combined with general measures to improve their energy efficiency and integrate other sustainability objectives beyond the economic level in environmental and social considerations. The second form of implementing sustainability strategies refers to integration into the original banking business. It considers sustainability

objectives in product design, mission and business strategies, especially by integrating sustainability criteria into the central elements of banking's core business: credit and investment strategies (Jeucken and Bouma, 1999; Kopp, 2015).

The latter strategy illustrates that the strategic and decision-making process integration of sustainability at banks has considerable impact potential on a broader level through the transfer and steering function (Carlucci *et al.*, 2018). Financing environmentally and socially responsible projects and steering investors and investments into sustainable businesses can indirectly lead to changes across the entire economy. Moreover, companies that act sensibly and sustainably have better prospects of success (Stephens and Skinner, 2013).

Beyond that, many authors state that sustainable banking brings direct and indirect advantages to financial institutions, like an improved reputation among stakeholders and customers, differentiation from competitors, reduced credit portfolio risks and strengthening of brand and trust (Lacy *et al.*, 2010). In particular, the risk-reducing effect and the business model's general strengthening became visible by the financial crisis. Thus, sustainable banks with a stronger focus on social, environmental, and cultural benefits are those who were able to avoid or reduce the financial crisis' impact on their business model and continued to grow (Kopp, 2015).

After the last financial crisis, many examples of research show that sustainability-orientated banks prove to be more resistant to their outcomes during and after the crisis. Therefore, more banks should consider environmental and social aspects in lending and investment products (Kopp, 2015). Indeed, these factors are relevant and were already recognised before the financial crisis. The United Nations Environment Programme Finance Initiative (2006) proclaimed that banks have played a significant role in a holistic, sustainable development ever since. First of all, this is due to the sheer size of the banking sector, which is also the reason for its ability to influence the monetary and capital markets as an intermediate for investments or direct investments (Sims, 2010). Combined with banks' ability to create money, it leads to a leverage effect and causes the banks' core business to become a powerful transmission medium for sustainability in companies in all sectors (Kreuzkamp, 2011; Weis, 2010).

The World Bank Group (World Bank Group, 2007, p. 24) stated towards banks that “the way in which their clients manage the impacts of their business activities can pose risks to the bank’s assets and reputation”, leading to a relevant downward spiral. Therefore, banks should be able to identify the harmful effects of their customers' actions on the environment or society, at least to assess their impact on their own business model's sustainability (World Bank Group, 2007). Thus, social and environmental dimensions entails considerable risks on many levels (Dixon and Coulson, 1995; Keidel, 1997; Thompson, 1998; Coulson and Monks, 1999; Barthruff and Sander, 2012). Reputation and trust are the decisive values for banks, on which the continuity of the business model crucially depends. For sustainable development, banks must therefore consider ecological and social added values in addition to economic added values (German Council for Sustainable Development, 2016).

The recent years' development has not shown any significant developments in their risk systems in this respect. Unfortunately, though, banks and the financial sector as a whole still lag behind other sectors regarding the management of environmental and social impact (Müller-Christ, 2014; Klein, 2015). Banks responded to societal and institutional pressures in particular with measures to manage their reputational risks (Mulder and Koellner, 2011; Furrer, Hamprecht and Hoffmann, 2012) and to regain lost trust and legitimacy after the financial crisis (Hargie, Stapleton and Tourish, 2010; Fassin and Gosselin, 2011; de Graaf and Stoelhorst, 2013; Herzig and Moon, 2013). This is also reflected in the fact that more and more institutions have started to report sustainability related initiatives in the last decades (Kolk, 2004; de Lange, Busch and Delgado-Ceballos, 2012; Global Reporting Initiative, 2013). Nevertheless, research by various authors found that reporting and improving sustainable performance do not necessarily correlate positively (Weaver, Trevino and Cochran, 1999; Lyon, 2004; Gray, 2010; Milne and Gray, 2013). The value of the banking business's reporting is discussed in more detail in chapter 2.3.2.2 Reporting.

Overall, the shift towards greater sustainability poses significant challenges for banks, as for all other organisations, in breaking down internal and external barriers in

institutional and cultural change (Olsen and Boxenbaum, 2009; Linnenluecke and Griffiths, 2010; Kok, de Bakker and Groenewegen, 2019).

Of course, there are also explicit sustainability or environmental banks, which often have a sustainability orientation designed into the company's founding. Their business models are based on sustainable, ethical and ecological principles and the intention to make profits is equal to or even subordinate to all other areas (Kopp, 2015). However, those sustainability banks are mostly niche providers and do not have a dominant position in terms of balance sheet total, credit and investment volume, or customers served (oekom research AG, 2011; Kopp, 2015). Due to the leverage effect, bancassurance or universal banks with a more comprehensive business model have a significantly higher macroeconomic impact of implementing their sustainability measures. Therefore, they are also the focus of this thesis.

Nevertheless, sustainability banks are highly regarded as innovators for sustainable development in finance and in general (Kopp, 2015). Referring to these banks forming the market majority and according to recent studies, their sustainability efforts and implementation status can still be improved (World Bank Group, 2007; oekom research AG, 2011). According to Munich-based oekom research's study (2011), this criticism is undoubtedly anchored in operationalisation. Apart from inadequate advice on private and corporate customers, the lending business, in general, is recognised by oekom research as a central lever for promoting sustainable management. For this reason, in particular, it is charged that too little attention is paid to ecological and social impacts. These findings represent an important measure for the banking sector's further development and confirm this thesis' research focus (oekom research AG, 2011; Kopp, 2015).

2.3.1 SUSTAINABILITY IN CORPORATE CREDIT BUSINESS

Corporate credit business, which is one of two banking business' core tasks, is focussed by this research. The second core business is the investment of own and client funds. Therefore, the financial and banking industry, as a customer-oriented sector, should support and thus further develop their corporate responsibility strategies in financing sustainable economic activities in particular through lending policies and sustainable

investments (Simpson and Kohers, 2002; Hermes, Lensink and Mehrteab, 2005; Scholtens, 2009; Relano and Paulet, 2012; Ullah, Jamali and Harwood, 2014; Menassa and Brodhäcker, 2017; Ewer, Carver and Minotti, 2019).

In particular, concerning the function of providing credit and liquidity through investments, whether direct or indirect, for all types of polluting industries, it is crucial to achieving sustainable development in banks (Sims, 2010). The combination of these aspects highlights and summarises the importance of this research topic. The other banking's core task regarding so-called social responsible investments (SRI) is much more present in practical implementation and scientific observation. It is a reaction to a growing demand by an increasing number of investors, including foundations, insurance companies and wealthy families, who integrate the companies' behaviour towards the environment and society in their investment decisions and attach more importance to this aspect. In addition to financial returns, they want their investments to consider criteria such as social quality of life, environmental awareness, transparency, honesty, public spirit and security. There are various mechanisms, standards, and valuation rules to be followed in this area of business and investment in regulated markets. Sustainable indices with an open set of decision-making rules, sustainability ratings, individual investment models such as the best-in-class approach and many other instruments can be used (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b).

When approaching sustainability in the credit and lending business segment, a fundamental strategic question arises: Which segments, customers or projects are financed? Furthermore, once the effects of a potential borrower sector, specific borrower or project have been identified, the question arises whether it should be avoided, reduced or mitigated (Kopp, 2015).

A possible decision is to exclude certain business areas or sectors. However, if these areas or sectors are considered problematic for the company's sustainability strategy and social or environmental goals, there are certainly possibilities beyond the legal requirements. These will be described in more detail in chapter 2.3.2 current drivers, regulatory processes and outlook.

Particularly for larger financings, especially in project finance, more detailed assessments can be carried out. The Equator Principles (EP) for ecological, social or ethical risks have established themselves as an international standard and were introduced in 2003 (United Nations Environment Programme Finance Initiative, 2006; The Equator Principles Association, 2020). They form a voluntary set of rules for banks regarding environmental and social standards in project financing. In particular, the EP provides detailed requirements on the environment, health and safety in companies and communities, and the construction and dismantling of industrial plants.

With the integration of the EP, banks are subject to a regulation that only allows them to finance projects where it is ensured that the respective borrower fulfils the international minimum criteria in the areas of environment and social affairs. (Kopp, 2015). Over the past decade, the banking sector's growing interest in project finance's ecological and social risks can be derived from the growing number of banks acting according to the EP standards. Since October 2020, 112 financial institutions worldwide have applied these principles in their lending business (The Equator Principles Association, 2020). It was therefore foreseeable that the widespread use of these standards is an important building block for global sustainable development (Lawrence, 2009). However, the EP standards are under criticism, primarily by non-governmental organisations (NGOs), for not achieving what it is trying to do, such as enabling more sustainable projects to be implemented locally (O'Sullivan and O'Dwyer, 2009; Macve and Chen, 2010). Due to lacking experience and knowledge, the question arises, whether the Environmental Impact Assessment (EIA) can meet EP users' expectations and provide the required data so that banks can use both the results of the assessment process and project finance approaches (Esty, 2004; Banhalimi-Zakar and Larsen, 2015). Furthermore, suppose one considers the total volume of corporate lending. In that case, the EP plays only a subordinate role for average lending in Germany's most relevant credit market, the SME sector. EP standards are applied in project financing with a volume of USD 10 million or more (The Equator Principles Association, 2020). Compared to the EP-applying banks, the number of financial institutions whose lending business is

affected by this research topic is many times higher and thus has a pronounced practical relevance.

2.3.2 CURRENT DRIVERS, REGULATORY PROCESSES AND OUTLOOK

Many economists describe the financial crisis of the late 2000s as the worst financial crisis since the Great Depression, which began with "Black Thursday" in 1929. The financial crisis emerged after years of deregulation and led to a rethinking and counter-steering by policymakers (Blundell-Wignall and Atkinson, 2010; Hurley, Gong and Waqar, 2014; Esteban-Sanchez, de la Cuesta-Gonzalez and Paredes-Gazquez, 2017; Gangi, Mustilli and Varrone, 2019). However, many studies have concluded that irresponsible lending and excessive risk-taking produced unsustainable growth backed by shareholder value-driven acceptance. In particular, long-term risks are not adequately balanced and lag behind the requirement for expected short-term returns (Hilsenrath, Ng and Paletta, 2008; Asel, Posch and Speckbacher, 2011; Keay, 2011). Therefore, the shareholder view on profits should be adjusted with the stakeholder view (Sundin, Granlund and Brown, 2010). The World Bank describes the request as follows: "only by effectively managing social and environmental opportunities alongside risks can banks create long-term value for their businesses." (World Bank Group, 2007, p. 7).

At the latest by the financial crisis, sustainability is a social expectation for banks and other financial institutions. The most influential groups and driving forces on sustainability are society and politics. Social responsibility is now expected of the financial market by society as a whole, as shown by the strong growth of SRI and other statistical data (see figure 2: European SRI Investments (Modified from source: Statista Research Department, 2021b)).

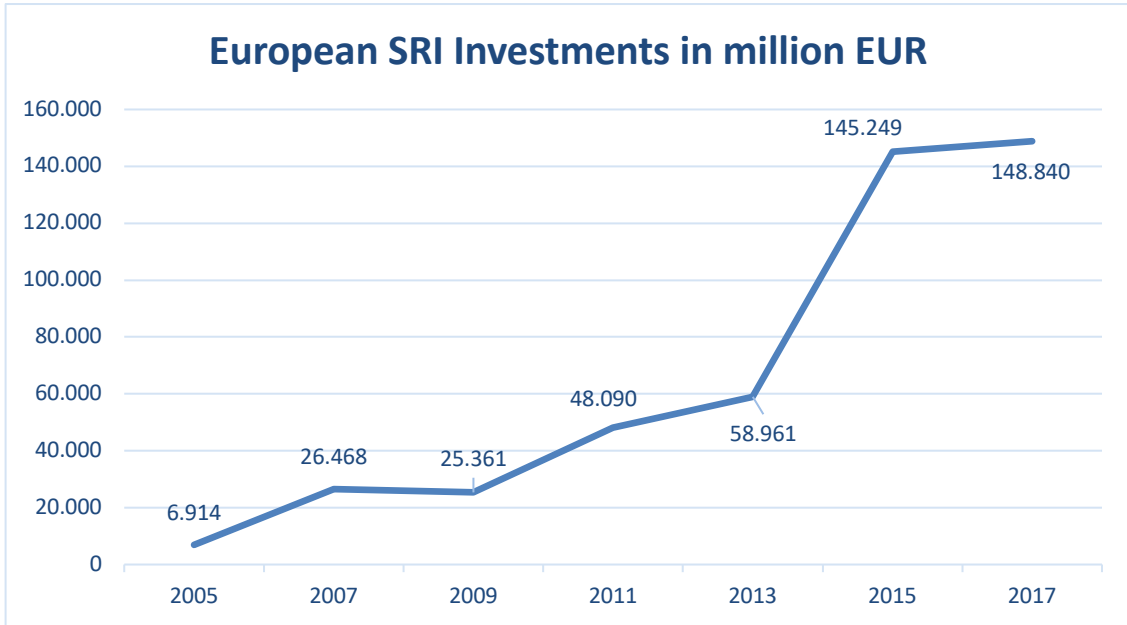


figure 2: European SRI Investments (Modified from source: Statista Research Department, 2021b)

Politics also underline the necessity of sustainability by increasing regulation (Hurley, Gong and Waqar, 2014; Esteban-Sanchez, de la Cuesta-Gonzalez and Paredes-Gazquez, 2017; Gangi, Mustilli and Varrone, 2019). Tools like controls, transparency, taxes and subsidies implement governmental guidance in the field of sustainability. These regulatory enhancements focus on the financial sector. Due to this, sustainability is implemented in banking supervision.

In the last years, significant events have increased sustainability awareness in this thesis' context. In the previous years since the United Nations Climate Change Conference in Paris in 2015, climate strikes have arisen and given ecological sustainability a tremendous public awareness. Especially pupils and students participated in this movement. In 2018 Greta Thunberg's publicity accelerated the climate movement. It made the Fridays for Future movement a household name and an international movement demanding political and economic leaders to strictly adhere to the 1.5-degree target (IPCC, 2014; United Nations, 2015). The growing expectations of society have been addressed by the market surveillance authorities and policymakers for some years now. The political, regulatory powers in the European Union settled already in 1999 to superordinate targets for sustainable development and politicised the corporate responsibility within the contract of Lisbon (European Union, 2007). The

societal expectations are implemented by many laws, regulations, and guidelines, which are successively applied on a broader field and gradually reaching the breadth of the corporate and banking world and are discussed in the following.

Under this pressure, many banks sought to explain their sustainability concept or search for revealable sustainability elements in their existing strategies. In combination with competitors' upcoming drafts, a demand for a diverging or unique approach appears that cannot quickly be adopted or imitated.

2.3.2.1 Development of Standards

In the meantime, there are widely recognised standards that serve as guidelines for corporate sustainability management. Such institutionalised structures serve companies to secure and improve their legitimacy (Boiral, 2011). The relevant standards organisations are also strong institutional actors with high market and standardisation power (Bansal, 2005; Ramus and Montiel, 2005; Aguilera *et al.*, 2006; Campbell, 2007; Epstein *et al.*, 2014). This power structure suggests that their standards have a lasting impact on the choices made for practice (Windolph, Harms and Schaltegger, 2014).

Standards provide reference points for entire industries and their managers through widely recognised institutions' formal documents. Formal standards are issued and certified by standards bodies, such as ISO 9000 and ISO 14001, published by the International Organization for Standardization (ISO). Furthermore, there are recognised international guidelines, such as the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines and governmental, international reference documents, such as the European Union's CSR Policy (European Commission, 2011). These contain guidelines and standards for applying instruments or are themselves management systems or instruments (Windolph, Schaltegger and Herzig, 2014). German enterprises can meet the EU's disclosure requirements for non-financial information via the German Sustainability Code (DNK), based on the Global and EU standards. Its 20 performance indicators are mainly based on GRI or EFFAS guidelines (German Council for Sustainable Development, 2016).

An important voluntary standard and guideline is ISO 26000, which came into force at the end of 2010. The Corporate Social Responsibility Guide provides a detailed overview

of key terms, core topics and fields of action, and advice on integrating socially responsible measures in companies. As the guide's objective states, it is not a certifiable management system standard: "This International Standard is not a management system standard. It is not intended or appropriate for certification purposes or regulatory or contractual use. Any offer to certify, or claims to be certified, to ISO 26000 would be a misrepresentation of the intent and purpose and a misuse of this International Standard. As this International Standard does not contain requirements, any such certification would not be a demonstration of conformity with this International Standard" (ISO Central Secretariat, 2010).

Although recommendations for action exist, there is no generally accepted overview of corporate sustainability indicators to assess their performance for concrete implementation. Based on this lack of standards banks develop individual criteria. Banks usually seek support in this process from an ethics committee or a sustainability rating agency, which help them to build their own catalogue of criteria. In most cases, these individual criteria catalogues are based on the international guidelines and standards presented below (Kopp, 2015):

- OECD guidelines for multinational organisations
- Kyoto Protocol
- ISO 26000 Guidelines for Social Responsibility
- UN Declaration of Human Rights
- GRI (mainly Financial Service Sector Supplement)
- UN Global Compact

2.3.2.2 Reporting

These guidelines listed in the previous chapter also apply as a basis for reporting. The term "Sustainability reporting" is used synonymously with others (e.g. corporate responsibility reporting) and describes a reporting on economic, environmental, and social impacts (Global Reporting Initiative, 2017).

The critique of traditional financial reporting to neglects external environmental and social factors has risen. The demand for reports regarding social and environmental performance increases as stakeholders impose more and more pressure on banks regarding their impact on the environment and society, proceeding directly or indirectly from their core business activities. The call to expand existing reporting follows numerous accounting scandals, such as Enron or the fundamental Risiko and valuation of receivables and other assets before the last financial crisis. Critics argue in particular that the existing scope of accounting standards does not adequately represent the company and its business (Yongvanich and Guthrie, 2006). Since the financial crisis and the growing interest in sustainability reporting, the number of banks that published sustainability reports has risen, too. An international survey of environmental reporting displays a massive increase in large companies' reportings. In 1999 only 35% of the Fortune Global 250 companies produced separate reports, and it increased steeply to 95% in 2011 and held that level to 2020 with 96% (KPMG International, 2020).

With the European Parliament's directive on disclosing non-financial and diversity information in 2014, companies with at least 500 employees must disclose relevant environmental and social information in their annual reports. The implementation needs to be implemented at least in 2018 regarding the financial year 2017 (European Commission, 2014b). This is an enhancement to the previously existing legislation to improve and develop a more transparent expectations catalogue. The disclosures and reports should be constructed using existing guidelines, e.g. UN Global Compact, ISO 26000, the standards of the Global Reporting Initiative or the German Sustainability Code (European Commission, 2014a). As a result, from now on, also SMEs refer their sustainability reporting to those unsolicited codes of conduct due to the lack of their own legal definitions.

The need for reporting is just the call for disclosure of the objective necessity of sustainable development. Therefore, it shows and supports the governmental will for corporate sustainability or CSR, which is based on voluntariness and goes beyond mere compliance with requirements (German Council for Sustainable Development, 2006). Its voluntariness shall support being a good example rather than punishing misbehaviour

(German Council for Sustainable Development, 2006). For that purpose, the reporting works after the principle of "comply or explain" (German Council for Sustainable Development, 2016). In that account, companies report how they meet the criteria, what is meant by "complain", or they need to explain the lack of its adherence. Therefore, the codes should work as "soft laws" to self-regulate companies.

Further research underlines that sustainability reporting is an essential building block for the initiation and dissemination of sustainability efforts and the process towards corporate sustainability (Gao and Zhang, 2006). Even long before the critical events of the recent past significantly increased pressure from society and stakeholders, there was already a clear opinion about non-financial reporting as a veritable communication medium with banks' stakeholders. It is viewed as a strategic concept to ensure an excellent informatory relationship with stakeholders about all aspects of the TBL in policies and business activities (Kolk, 2004; Gray, 2006; Lundholm and Van Winkle, 2006).

2.3.2.3 further regulatory steps in risk management

To follow the vision of the Brundtland Report, institutions need to readjust their business logic. These need to be aligned with sustainable and global governance and require a management approach that considers all three dimensions of sustainability: Economic, Ecological and Social (World Commission on Environment and Development, 1987; Elkington, 2007; Biermann *et al.*, 2012; Griggs *et al.*, 2013). For this purpose, the previously introduced SDGs set clearly formulated goals for this task of society as a whole at the national level (United Nations, 2015, 2018) and express a global understanding of the concrete implementation of sustainable development (Müller, Janetschek and Weigelt, 2015). A comparable regulatory framework with clear fields of action is also set up on the industry side.

The Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) is the German financial market supervisory authority. It published a fact sheet on handling sustainability risks in December 2019 (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b). In its evolutionary process, a consultation paper from September 2019 (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019a) led to 39 comments from representatives,

particularly associations from the financial industry. In the author's opinion, it sparks a relevant impact and, in many respects, takes the factual situation presented beforehand into account and uses the supervisory authority's impact options. The BaFin defines the sustainability risks under consideration as events in the areas of environment, social affairs, or corporate governance that can potentially negatively impact the net assets, financial position and results of operations, and the reputation of a financial company (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b).

According to various projections, ecological risks' economic effects alone are potent and correspondingly relevant for banks. Based on current developments, the damage from climate change could total up to US\$ 550 trillion worldwide (CRO Forum, 2019).

Furthermore, the loss to agriculture from the loss of pollinators and biodiversity can also amount to up to US\$ 577 billion annually (Díaz *et al.*, 2019). The BaFin defines four risk areas:

1. Physical risks are consequences from acute climatic conditions, such as floods, storms or avalanches, and long-term changes such as sea-level rise, changes in ocean and air currents, or increase in average temperatures with regional extremes. Furthermore, those physical risks' indirect consequences may cause the collapse of supply chains as a result of climate-induced migration and armed conflicts (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b).
2. Transition risks from the shift to a low-carbon economy with the disruptive effect of new technologies as well as changes in demand due to changing preferences and social expectations and their accompanying circumstances, such as the increase in price and shortage of fossil fuels and emission certificates as well as accompanying investment costs due to necessary renovations (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b).
3. Sustainability risks in social affairs and corporate governance might negatively affect the assets, financials, and earnings. Claims for damages due to harmful products, fines for tax or other offences have a direct financial loss potential (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b).

4. Reputational risks result from the handling and occurrence of direct risk events that endanger the reputations of companies and stakeholders. In addition, this category includes other indirect and persistent risks and their potential for damage resulting from changes in external and internal perceptions, which can lead to a loss of confidence among contractual partners and employees and a generally negative social assessment (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b).

The BaFin (2019b) clarifies that this is a non-binding compendium. It contains practical approaches but does not formulate audit requirements in its leaflet. However, it refers to “the legal requirements for a proper business organisation and an appropriate risk management system”(Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b, p. 9), which are also part of the supervisory audit. It describes how sustainability risks can be implemented in these regulations' spirit. By naming the risks from sustainability as material, BaFin indirectly calls for attention to be paid to them within the framework of the legal requirements. This is done by formulating that “all material risks must be identified, assessed, monitored, managed and communicated” (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b, p. 10). The sustainability risks are applied to the known types of risk in their impact context and assessed for materiality. Explicit reference is also made to the Network for Greening the Financial System recommendation to include sustainability risks in supervision (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b; Network for Greening the Financial System, 2019). The translation into known risk types means at the same time that a separate risk type, "sustainability risks", is rejected (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b). Thus, it appears to be conclusive, as a delimitation does not seem to make sense conceptually for a holistic and interacting system as sustainability.

A risk type relevant to this thesis is strategic risk in the business field, at the individual and portfolio level credit risk/counterparty risk and the encompassing reputational risk. A strategic risk in this area is the lending focus. For example, a credit institution focused on financing coal mining or a regional institution in a region with a strong mining industry loses its lending business base due to the changing energy structure. Therefore,

it must adapt to maintain its existence and profitability (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b). Investment and borrower risk can also affect reputational risk. For example, a financed production site of a garment manufacturer could burn down, and hundreds of workers die because of insufficient national specifications regarding safety standards. The case goes through the media with reference to the house bank (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b). An example of a concrete credit and default risk is a loan to a company whose business model is significantly impaired by a political decision on carbon dioxide pricing. Thus, profitability and the ability to service the capital are potentially permanently burdened and possibly insufficient (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b).

The BaFin, therefore, expects banks and financial companies to deal with the corresponding risks. They should develop an independent strategy for this or adapt existing ones. In doing so, this proposed system aims at the points of criticism already mentioned in the analysis. On the one hand, the BaFin takes the proportionality principle into account. On the other hand, the assessment and weighting have to be considered by the individual institution according to the analysed relevance. Furthermore, risk assessment and risk management are included as central points. Both refer to the financial crisis results and the systemic relevance of banking institutions, whose stability takes precedence in supervision over any growth and competitive advantages of sustainability implications. Furthermore, this approach takes up the risk identification, management and controlling processes as traditional bank management disciplines and repeatedly relates the sustainability aspects to existing legislation. In the thesis' specific topic, this includes the German Banking Act (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b).

BaFin takes up the criticism from the consultation paper and admits that sustainability risk measurement and management is difficult due to the frequently insufficient historical data basis, the high complexity of the various factors to be considered and the calculation uncertainties about future climate and political scenarios. On the other hand, it also sees this as an incentive to develop new, innovative control instruments. Besides, the BaFin refers to the concrete operational integration and takes a decisive step for

practical implementation. It also refers to existing supervisory requirements in the recommendation (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b). Thus, in the business area relevant to this work, the necessary procedure for taking sustainability risks into account must first be examined in the existing processes and the lending processes and risk management and control in the sense of MaRisk. If necessary, these must then be created and responsibilities defined according to the organisational guidelines.

For the operational staff and their activity instructions, it is recommended for the initial review of investment and lending decisions to obtain relevant information on possible sustainability risks for identification and analysis and integration into the decision-making process. This can be done, among other things, through exclusion criteria. For example, criteria can be drawn up for companies, sectors, regions or countries, defining which investments are not made or only made to a specific limit. An alternative is positive listing, which determines a positive credit or investment decision based on the fulfilment of specific sustainability criteria. A norm-based screening is also recommended here, in which reference is made to sustainability criteria of internationally recognised institutions, e.g. UN Global Compact (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b).

A relevant decision-making medium is also the rating classification, which determines and limits risk and credit decisions. According to the EU Rating Regulation, credit ratings only consider the factors necessary for assessing a company's creditworthiness. These may well include sustainability factors but do not have to. Special sustainability ratings already exist on the market by various providers, including registered rating agencies. However, these sustainability ratings are often irrelative to credit risk and should be differentiated from credit ratings. It also appears problematic for the operational implementation that uniform definitions and standards for sustainability ratings do not yet exist (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b).

Overall, BaFin refers to many relevant factors and forms a sensible implementation recommendation and underpins this with sufficient pressure to act based on its powers. Therefore, this implementation recommendation is referenced several times in this

thesis's exploratory research context to highlight the relevance and the target-oriented operationalisation.

2.3.2.4 Critique

Sustainability is viewed in many ways within corporate strategies. Some companies, boards and executives see it as a burden in terms of regulatory compliance or as an additional cost to be minimised, while others find it a competitive advantage (Galbreath, 2009; Hubbard, 2009). However, even though the primary direction for more sustainable economic development is to document social and political will through disclosure of activities and standards increase overall comparability and readability, the standards set are not free from criticism.

A worldwide standard-setting guidelines framework is issued by the Global Reporting Initiative (GRI). The GRI was founded by the non-profit organisation CERES (Coalition for Environmentally Responsible Economies), the Tellus Institute, a non-profit research and policy organisation and the United Nations Environment Programme (Global Reporting Initiative, 2017). It was established with a consortium of the following companies: Alcoa, Enel, GE, Goldman Sachs, Natura, Shell, Deloitte, Ernst&Young, KPMG and PWC (Global Reporting Initiative, 2013). By comparing this list with the "Toxic 100" list made by Researchers at the University of Massachusetts Amherst Political Economy Research Institute (PERI), Alcoa and GE are in the Top 5 of air polluters (Political Economy Research Institute, 2016).

Critics may claim that their participation might be rather an act of greenwashing or attempting to influence the standards to an easily adaptable concept than an honest concern for more sustainable governance. Furthermore, the largest accounting firms are also part of the consortium. On the one hand, even if they are non-negligible experts with specialised knowledge in the auditing and reporting business, they are, on the other hand, also in an undeniable conflict of interest. While KPMG published an article regarding the lack of consistency in non-financial reporting and implies a need for consulting (McCarthy, 2016), Deloitte indicates even more precise that the further requirements of non-financial reporting and disclosure led to significantly increased revenues for their business (Deloitte, 2016).

The GRI G4 guidelines also provide further industry-related disclosures that particularise the specific sector's inter-branch standards. A look in the G4 financial services sector's working group members reveals a list of companies in which large banks and insurance companies are the majority. The list of 49 companies consists of 32 companies, majorly large financial institutions listed on a stock exchange (Global Reporting Initiative, 2013). It shows a lack of SMEs influence. Therefore, mainly German regional cooperative banks and their specific needs and relevant criteria may become unheard, and its impact in comparison to its market share stays underrepresented.

Regarding the researched banking setting in Germany, a further look at the German sustainability code seems reasonable. It is taken responsibly by the German council for sustainable development and was coined by the German federal government. The council's majority consists of political or academic members (German Council for Sustainable Development, 2017). Furthermore, its 20 performance indicators are based on GRI or EFFAS guidelines (German Council for Sustainable Development, 2016), making the German sustainability code a concept based on other standards, which are not necessarily adequate for the observed banking groups. It seems to be a further standard that fits global acting companies with the workforce for extensional reporting and the ability to hire top-ranking consultants and accountants of the previously mentioned "big four accounting firms". In summary, the enacted standards are highly prone to biased influences of pressure groups and therefore contestable.

Furthermore, integrating sustainability reporting does not necessarily mean that companies act more sustainably (Weaver, Trevino and Cochran, 1999; Lyon, 2004; Gray, 2010; Milne and Gray, 2013; Kok, de Bakker and Groenewegen, 2019). For example, companies report on their increased recycling rates, emission changes and participation in community engagement initiatives. However, without changes to their underlying business practices that cause significant environmental and social damage. Conversely, companies may not publish a sustainability report but make substantial progress towards sustainability. Thus, sustainability reporting per se is not a valid indicator of good sustainability performance and is neither a necessary nor sufficient condition for companies to achieve sustainability. However, reporting on sustainability progress

serves to influence stakeholder perceptions and is, therefore, a commercially sensible tactic, but it is not demonstrably a significant driver of sustainability (Stubbs and Cocklin, 2008).

2.4 SYSTEMATIZED LITERATURE RESEARCH

Chapters 2.1 to 2.4 cover the entire field of research and the relevant factors for the thesis' subject. The literature shows that the research focus has scientific and macroeconomic significance. It also indicates that topics such as reporting, investment standards, and corporate strategies are focus points of the still young research field of sustainability development. Especially the first screening of literature in the early research stage and discussions with managers from the respective industry disclosed that research in sustainability is primarily focused on the strategic level (Weis, 2010; Wu and Pagell, 2011; Epstein *et al.*, 2014; Müller-Christ, 2014; Wiengarten *et al.*, 2017; Kok, de Bakker and Groenewegen, 2019). As a result, it is challenging to find best practices in the literature which can be transferred into management implications and operationalisation (Weis, 2010; Wu and Pagell, 2011; Müller-Christ, 2014; Müller, Janetschek and Weigelt, 2015; Wiengarten *et al.*, 2017; Eustachio *et al.*, 2019).

2.4.1 RATIONALE FOR A SYSTEMATISED APPROACH

It has become increasingly challenging for decision-makers and practical decision-making in complex worlds such as sustainability to make systematic deductions from the mass of often contradictory evidence. The quality of evidence underpinning decisions and actions is critical to both the quality of decision-making and its enforceability not to be challenged by an inadequate or incomplete presumption of knowledge (Tranfield, Denyer and Smart, 2003). However, management research has been the subject of considerable analysis and discussion over the past decades, focusing mainly on its fragmented and divergent nature. Thus, the presentation of problems and their formulations are evaluated according to diffuse and divergent standards (Whitley, 1984a, 1984b). If fragmentation continues, this may even displace academics as leading actors from the management research process (Whitley, 1985).

There is still comparatively little consensus on the most relevant research questions in the addressed research area, especially since it is relatively young. Therefore, there is

rarely a unified research base regarding the addressed sample, agenda and research questions (Tranfield, Denyer and Smart, 2003). Furthermore, literature research in management research is usually narrative and criticised for this approach, as descriptive accounts and purposive selection can introduce the researcher's potential unconscious and conscious biases (Hart, 1998; Tranfield, Denyer and Smart, 2003; Fink, 2014). The complexity of an ever faster-changing world and the requirements of a comprehensive TBL-based sustainability approach demand a well-structured and systematic way of working from decision-makers in the banking industry in order to coordinate and implement processes in a target-oriented manner. A combined and qualitative approach of a systematic literature review coupled with a case study is considered a suitable tool to address the research questions and explore the status quo of operationalising sustainability in banks. A systematic literature review research is beneficial here for the following reasons: In the context of the topic of sustainability discussed here, its changing and ongoing definition process and the importance of regional specificities, characteristics, and focus topics, it is crucial that the consulted and analysed research studies are following modern developments and standards and thus consider, among other things, the vision and definition of the common SDGs in 2015, which are an important milestone for a global understanding (Müller, Janetschek and Weigelt, 2015). Moreover, sustainability has gained in importance and complexity worldwide in recent years, and current literature, in particular, can make a valuable contribution to research. Systematic literature research enables an unbiased and diverse overview appropriate to the decision-making topic (Tsafnat *et al.*, 2014; Williams *et al.*, 2021). The sources relevant to the research field are to be identified from the growing number of articles and publications to take account of the specificity in the vague sustainability context and the topicality. In particular, the relevant sources are those that relate to operationalisation, concern the financial and banking sector, refer to the relevant cultural and political region of study, and are of appropriate peer-reviewed quality. Therefore, this thesis refers to and borrows from the systematic literature review used in the medical sciences.

2.4.2 BASICS AND CONCEPT OF SYSTEMATIC LITERATURE REVIEW

A systematic review of existing literature was applied for the first time in 1973 by Archie Cochrane in the field of medical research (Briner and Denyer, 2012; Fink, 2014; Durach, Kembro and Wieland, 2017; Pati and Lorusso, 2018). At that time, the research found that used practice was dependent on studies with inadequate assessment quality. The corresponding medical advice could therefore be prone to error. The systematic literature review (SLR) led to significant improvement in transparency, reproducibility and synthesis quality (Mulrow, 1994; McDermott, Graham and Hamilton, 2004).

Depending on the field of research, several definitions can be found that are largely consistent (Tranfield, Denyer and Smart, 2003; Brereton *et al.*, 2007; Siddaway, 2014; Pati and Lorusso, 2018). The SLR is specific in the addressed question, shows transparent its methodology and thus provides a comprehensible and repeatable result of what is currently known and discussed about the given topic (Briner and Denyer, 2012) (Williams *et al.*, 2021)

Independent of discipline and research philosophy, SLRs usually follow six steps (Higgins and Green, 2019):

- I. Formulation of the problem
- II. Studie selection and locating
- III. quality assessment of studies
- IV. data collection
- V. data analysis and result presentation
- VI. result interpretation, including improvements and updates on the reviews

The definitional sovereignty and standardisation of procedure are attributed mainly to the following researchers and institutions. The original structure of an SLR, which became the basis of the emerging guidelines in many research areas, was presented by Mulrow (1987). The Cochrane Collaboration (Higgins and Green, 2019) updates SLR guidelines in the medical area based on new evidence and the Campbell Collaboration, a sister initiative aiming to promote SLR in the social, behavioural and educational

disciplines, issues regular methodological adaptation recommendations (Chandler *et al.*, 2013). Building on this, Tranfield *et al.* (2003) set out to adapt SLRs to the management field. Use in the scientific field of business and management has been growing significantly in recent years. From 2014 to 2019, there was a massive percentage increase in the use of SLR in management studies. However, the increase of around 47% annually is also due to the comparatively low number of research papers in this research area (Williams *et al.*, 2021).

SLRs advantages are based on its focus on identifying, assessing, selecting and synthesising the literature in the relevant area in a systematic and explicit form to be reproducible (Cook *et al.*, 1997; Cook, Mulrow and Haynes, 1997; Wolf, Shea and Albanese, 2001; Tranfield, Denyer and Smart, 2003; Fink, 2014). Furthermore, Cook, Mulrow *et al.* (1997) underline that an SLR may improve the overall research process by detecting discrepancies and validating information. Thus, as Williams *et al.* (2021) depicts, it represent a powerful method for researchers that has since spread to different areas as management (Tranfield, Denyer and Smart, 2003; Briner and Denyer, 2012; Fisch and Block, 2018), information technology (Brereton *et al.*, 2007), international development (Mallett *et al.*, 2012; Durach, Kembro and Wieland, 2017), supply chain management (Durach, Kembro and Wieland, 2017) and many more (Mulrow, 1994; Oxman, 1994; Petticrew, 2001; Siddaway, 2014; Tsafnat *et al.*, 2014; Pati and Lorusso, 2018; Siddaway, Wood and Hedges, 2019).

An SLR is retrospective according to its definition. It will only consider studies that have been published. The review process itself should maintain a practical perspective, be as rigorous and clearly defined as possible to limit any form of bias and enable the researcher to gain more reliable results, which serve as a basis for conclusions (Higgins and Green, 2019). This stands in contrast to narrative or traditional literature reviews, which typically aim to provide a foundation for the hypotheses and might lead to biased focus by limiting the literature searched and used (Petticrew, 2001; Brereton *et al.*, 2007). The selection of articles that essentially support the hypothesis, a process is known as "cherry-picking", can occur, particularly in traditional reviews (Petticrew, 2001; Briner and Denyer, 2012). In contrast to this approach, SLRs attempt to answer

the research questions by looking holistically at the published literature. In doing so, the SLR aims to synthesise all applicable research and previous work (Brereton *et al.*, 2007). Thus, the research base from what previous research has shown should be replaced by a small number of studies with a more detailed literature review with replicable processes to avoid especially the retrieval bias (Tranfield, Denyer and Smart, 2003; Siddaway, 2014; Durach, Kembro and Wieland, 2017; Pati and Lorusso, 2018; Siddaway, Wood and Hedges, 2019). Replicability and traceability are significantly enhanced by disclosing and presenting the search methods used to identify relevant articles (Tranfield, Denyer and Smart, 2003). However, systematic research is not without its weaknesses and drawbacks (Shojania *et al.*, 2007). Moreover, management science is a volatile field of research, as several authors manifested (Fink, 2014; Higgins and Green, 2019). Especially in such fast-changing research fields, SLRs that require a significantly longer elaboration time may quickly become outdated or already need to be actualised at the same time as they are published (Shojania *et al.*, 2007). The use of SLR also requires a critical consideration of potential biases due to the researcher's own prior knowledge and actions, as it must be kept in mind that knowledge acquisition and its interpretation is done by people and these research steps also depend on the method used (Archer *et al.*, 1998; Durach, Kembro and Wieland, 2017). Therefore, different researchers can reach various conclusions even if the aim, framework and data are the same (Alvesson and Kärreman, 2007).

As management theory forms a relatively new field of science, the comparability of the research questions is not always given, and the measurement of the researched phenomenon is not always comparable: "Therefore, it is unlikely that aggregative approaches to research synthesis, such as meta-analysis will be appropriate in management research as the heterogeneity of studies prevents the pooling of results and the measurement of the net effectiveness of interventions" (Tranfield, Denyer and Smart, 2003, p. 212). Nevertheless, especially for this research topic, SLRs form a beneficial review process for research that addresses explicitly day-to-day management tasks (Tranfield, Denyer and Smart, 2003). However, they are still little orientated towards the practitioners (Williams *et al.*, 2021). Possibly, however, the number

continues to grow. For example, a recent study revealed a growing number of SLRs published in practitioner journals (Adams, Smart and Huff, 2016).

2.4.3 FRAMEWORK, STRATEGY AND CRITERIA

The researcher's initial literature review highlighted that previous sustainability research focused on industries with a significant environmental effect. Only a manageable number of articles focus on this thesis's research field of sustainability practices in the banking sector (De La Cuesta-González, Muñoz-Torres and Fernández-Izquierdo, 2006; Branco and Rodrigues, 2008; Chih, Chih and Chen, 2010; Müller-Christ, 2014; Klein, 2015). The author's intention of this thesis and its literature review is to gain an overview of the existing literature and research activities in the specific research setting and especially the research gap. Therefore, the literature search was conducted widely via research databases to gain access to most published research.

To achieve comprehensive and verified search results, the researcher uses the advanced search of the following databases:

- business source complete via EBSCOhost
- the web of science core collection
- Bielefeld academic search Engine (BASE).

EBSCO is a US provider that offers search services in its extensive library, especially in business and management research. It provides access to 1,315 journals (EBSCO Information Services, 2021). Web of Science core collection is a search interface that allows access to several citation and literature databases and thus reaches 1.9 billion cited references from over 171 million records (Clarivate, 2021). BASE is an open-source search engine for educational documents operated by the University Library and connected via an open-access interface. It offers access to 240 million documents from over 8,000 data providers (Universitätsbibliothek Bielefeld, 2021).

The basic quality standards for the search relate to the search engine and the search features set within it. To find all relevant publications, the search was narrowed down as follows:

1. search databases and quality standards
2. language
3. terms and synonyms
4. period of publication

1. As far as the search settings allow, only peer-reviewed research are included to ensure quality (Ridley, 2012; Adams, Smart and Huff, 2016) and book review articles are excluded.

2. The selected languages are English and German. From the researcher's perspective, these selected languages represent the majority of relevant and published work in this particular field of research. The entire topic of sustainability has been characterised by growing interest among academics and practitioners in recent years and is of global significance. The regional focus of research is Germany. Research papers for this regional focus can be expected in both German and English. Articles on comparable markets are mostly published in English, as the German banking market is most similar to European or Western markets in terms of macroeconomic and regulatory framework. The researcher is aware that these selection criteria exclude many research papers written in, for example, Chinese, Portuguese and Spanish. However, the relevance of such research papers in these languages will be below average for this thesis's specific topic, as research papers in these languages will mostly not address the relevant regional area.

3. A combination of many features defines the search terms. First of all, the boundaries of the research field and the topic areas relevant to the research questions. Furthermore, keywords of the already initially identified and relevant articles and sources. In addition, synonyms resulting from the literature research and relevant spellings in German as well as American and British English are included. For this purpose, the search was conducted using the Boolean search phrases described in table 1.

criteria	type	inclusion criteria	exclusion criteria
Language	publication language	English and German	any other languages
Timeline	publication date	2008 until today	literature older than 2008
Type of work	research design		review articles
quality of work	type of publication	scholarly (peer reviewed) journals	unpublished work
search terms (English)	content	sustainability / CSR / corporate social responsibility / ESG	communication / reporting
		banks / banking industry / banking sector / financial institution	
		decision making / decision-making	
		(application for equivalent subjects activated in search)	
Search terms (German)	content	Nachhaltigkeit / CSR / ESG	Kommunikation / Report* / Bericht*
		Bank / Finanz*	
		Entscheidung*	

table 1: Criteria for SLR (Modified from source: Fink, 2014)

The core term "sustainability" is used in the first level. The term is supplemented by the synonyms "CSR" and "corporate social responsibility" as well as the often-referred term in banking, investment and finance "ESG" (short for the environment, social and governance). The previously introduced equivalent "corporate sustainability" is not necessarily added, as it is included in the search for "sustainability". For the German search, "Nachhaltigkeit" as the translation of sustainability is the most relevant definition. The previously chosen English vocabulary is also used untranslated, as it is the common language in the field of research as well as in the industry speak. For further delimitation in the research field, the financial sector is supplemented by "banks" and the synonyms "banking industry", "banking sector", and "financial institutions" for the thematic delimitation. For the German search, "Bank" and "Finanz*" are the translated equivalent to those delimitations. Within these boundaries, the application reference is added. For this purpose, "decision making" as well as the alternative spelling "decision-making", are added the translation equivalent "Entscheidung*" respectively.

Furthermore, many search results do not refer to the thesis' topic and thus indicate that further exclusion is necessary. Therefore, the terms "communication", "reporting", and "disclosure" were excluded. These terms relate to a segment of high academic publication relevance in the field of sustainability and do not necessarily provide a causal or correlating result for the research questions posed here (Weaver, Trevino and Cochran, 1999; Lyon, 2004).

4. In the business studies field, the time frame for a literature review is usually five years (Wilson, 2014). However, since the total number of results in the first searches was relatively low, the range relevant for this work was expanded. Furthermore, due to the research topic, the period since the last financial crisis in 2008 is appropriate, as it marks a relevant change in the sustainability orientation of financial institutions.

The search results are filtered in a multi-stage process, as not all literature sources are relevant to the selected topic (Siddaway, 2014). First, all articles' titles are recorded and assessed as to whether they are perceived as applicable. If the decision is positive, the abstract is read through; if it is relevant to the research questions, the entire paper is read through. All relevant information and data are then extracted and analysed. In particular, an evaluation is carried out based on qualitative standards to take the results into account appropriately and, for example, exclude methodologically flawed studies. The sources finally assessed as relevant can also be searched for further literature using the so-called snowball technique based on their bibliography (Tsafnat *et al.*, 2014).

Date (last)	Database		search term(s)		
28.01.21	EBSCOhost/business source complete	AND AND NOT	sustainability or csr or corporate social responsibility or esg banking industry or banking sector or banks or financial institution decision making or decision-making reporting or communication or disclosure	170	
28.01.21	Web of Science / Web of Science Cofre Collection	AND AND NOT	sustainability or csr or corporate social responsibility or esg banking industry or banking sector or banks or financial institution decision making or decision-making reporting or communication or disclosure	86	
28.01.21	EBSCOhost/business source complete	AND AND NOT	Nachhaltigkeit or CSR or ESG Bank or Finanz* Entscheidung* Kommunikation or Report* or Bericht*	1	
28.01.21	Web of Science / Web of Science Core Collection	AND AND NOT	Nachhaltigkeit or CSR or ESG Bank or Finanz* Entscheidung* Kommunikation or Report* or Bericht*	1	
28.01.21	BASE	AND AND NOT	Nachhaltigkeit or CSR or ESG Bank or Finanz* Entscheidung* Kommunikation or Report* or Bericht*	22	
					280
duplicate sources that exist in several databases				20	
Articles not correctly archived from exclusion criterion (book review)				1	
					259

table 2: Databases, search terms and results (Modified from source: Fink, 2014)

Table 2 shows the literature review's results. Two hundred fifty-nine articles and book chapters from the selected databases are used in the literature review. The search process started with initial research on the literature databases in November 2018. It was repeated in February of 2020 and January of 2021 as part of this thesis with the given search terms. The first searches were conducted on the EBSCOhost database and led to the exclusion of the terms "communication", "report", and "disclosure", which was based on the results list's first analysis from the first search results. This narrowing down reduced the list of results not relevant to this thesis by 23%. The search was performed on Web of Science and EBSCOhost on the same days with identical search criteria. The search led to 170 results in the EBSCOhost business source complete database and 86 results in the Web of Science core collection database for the English term set and the given specifications of peer-reviewed articles and the language English and German with 15 duplicated results. The German search term combinations in the two databases described returned only one result each. The search for German literature was, therefore, extended to the BASE database. The Boolean search phrases yielded 22 results, 5 of which were duplicated, so that a total of 17 results were generated. In summary, the databases showed 280 results with 20 duplicates and a book

review, which was not covered by the exclusion criteria set. Therefore, the systematic literature review led to a total of 259 results, as outlined in table 2.

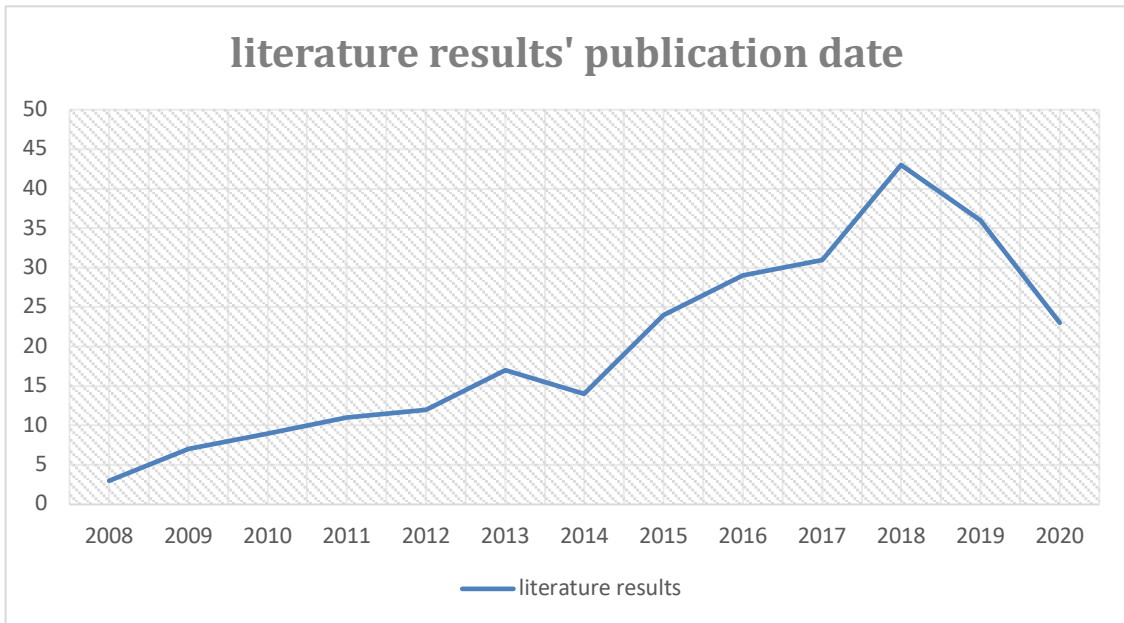


figure 3: Distribution of publication data (2008-2020)

The last search was conducted on 28 January 2021 to update the literature search, as search queries have led to increasing results in the recent past. The first initial search at the end of 2018 already showed an increasing number of publications from 2008 to 2018. The search in January 2021 showed that there were the most publications on the search parameter in 2018, with 42 results or 17 % of the total results, and that this was the highest value in the period under consideration, see figure 3: Distribution of publication data (2008-2020). In total, 162 sources, or 62% of the literature found, came from the past five years (2016-2020). During the observation period from the end of 2018 to the beginning of 2021, a further 59 sources were added.

2.4.4 RESULTS AND SUMMARY OF THE INITIAL ANALYSIS

In this literature review about decision-making in the financial and banking industry regarding sustainability, the results are based on specific search terms. The research

terms have been chosen based on the identified keywords of the already initially identified and relevant articles and sources, the synonyms resulting from the literature research related to the research questions. Overall, previous research has tackled sustainability in banking and the decision-making process in various aspects. Despite this, sustainability decision-making has not focused on bankings' corporate credit decision processes on the operational level (Weis, 2010; Wu and Pagell, 2011; Müller-Christ, 2014; Müller, Janetschek and Weigelt, 2015; Wiengarten *et al.*, 2017; Eustachio *et al.*, 2019). Overall, based on the multiple-use terms, the results show a high range of topics that could be identified through the initial analysis process in which the titles and summaries were analysed.

For a closer look at the relevant sources, an analysis is first made based on the abstracts. This shows the diversity of topics and research fields based on the search terms as well as the research gap. A total of 30 sources relate to the banking industry and a comparable market. In the area of credit business, 24 relevant sources were identified, of whom only seven studies show a comparable regional setting to the German market and similar European or Western countries. In comparison, 185 of 259 sources concern the "non-banking" sector. They can mainly be classified by the term search in the topic area "finance". Furthermore, 49 sources deal with sustainability at a country level and in a political context, 2 of which explicitly refer to the SDGs. This set of sources reflects the previous analysis result that the research fields in the area of sustainability are still at a strategic level, and the measures and agreements made exist at a macroeconomic level and are discussed and researched there. Furthermore, 16 sources refer to infrastructure, and 9 to the energy sector. In addition to several (8 sources) cross-sectoral papers, the main sectors outside banking and finance in this search grid are transport (10 sources) and construction (9 sources).

There is also a clear research focus on strongly growing markets and markets with a comparatively low regulatory basis or catch-up potential. A large group of articles focuses on the Asian market. Forty sources refer to this region, 11 of them to China and 8 to India. The second-largest regional cluster concerns developing countries, as 24 sources refer to sustainability aspects in developing countries; 12 sources explicitly deal

with microcredit and microfinance institutions. The third-largest group discusses the concept of Islamic banking with five additional sources based mainly in the Middle East.

32 sources deal with the topic of sustainable investment (SRI) and sustainability assessment from an investor's perspective. Another 22 sources illuminate the subject of sustainability from the client's perspective. Furthermore, 29 sources relate to business performance in the context of corporate sustainability criteria or efforts. This comparatively high number of sources does not seem unusual. Sustainability investment products for customers and the management of banks' and insurance companies' investments are relevant research fields with high practical relevance. Furthermore, they are as well underpinned by a corresponding range of regulations.

24 sources focus exclusively on the environmental dimension of sustainability, and another 17 are located in purely economic sustainability. This number of results shows a relevant research branch in ecological sustainability, which is highly relevant, especially in the cultural circle and social structure of developed societies. Furthermore, it points out that the term "sustainability" is not necessarily synonymous with the definition of the "triple bottom line" but can also be assessed purely ecologically, socially or economically.

Comparing the sources relevant to the research questions, 63 of the sources found are banking-related, 38 others concern niche topics, such as microfinance (12 sources), Islamic banking (5 sources), investment banking (17 sources) or payment transactions (4 sources). The main areas of research in the field of sustainability in the finance and banking industry, including niche areas relevant to the banking business, are sustainable investment and rating (40 sources), the customer perspective on sustainable banking (20 sources) and performance measurement of sustainable corporate behaviour (13 sources).

Overall, the findings revealed the relevance of the research topic, relevant previous research in related subjects, confirmation and specification of the research gap, methodological recommendations and practical approaches. The selected research for detailed analysis frames the research field, its focus, existing gaps, and relevant

influencing factors. Therefore, the following section deals with the discussions of papers and critiques in more detail.

2.4.5 GENERAL FINDINGS AND CRITIQUE

Based on the initial analysis, it was already possible to statistically highlight the topics of the previous studies and thus the research gap. The content-related results are now presented in more detail in the complete analysis of the topic-relevant search results. Thus, the relevant focus topics in the area of sustainability in the banking and finance sector are elaborated on the basis of which this research work is positioned accordingly.

First of all, the literature review confirmed the previously described relevance of the research topic, as sustainable banking strategies often lead to better business performance than those of traditional banks (Rebai, Azaiez and Saidane, 2012; Fatemi and Fooladi, 2013; Stephens and Skinner, 2013; Canas, Ferreira and Meidutė-Kavaliauskienė, 2015). Therefore, sustainability became more and more popular regarding banks' managerial concerns and led to more research in sustainable banking (Carlucci *et al.*, 2018). Scholtens *et al.* (2019) highlighted that banks as intermediaries have no clear operational cause on sustainability, but banks' performance regarding sustainability is reflected in their primary business concepts, as lending operations.

Thus, the literature identified underlines that the banking and finance industry has a unique position in the field of sustainability and of their own sustainability assessment should focus less on their own operational impacts and more on their indirect effects through lending and investment decisions (Scholtens and van't Klooster, 2019). Financing environmentally and socially responsible projects and steering investors and investments into sustainable businesses can indirectly lead to changes across the entire economy. Moreover, companies that act sensibly and sustainably have better prospects of success (Stephens and Skinner, 2013).

Research and applied concepts for sustainable banking are crucial for achieving global sustainability goals (Carlucci *et al.*, 2018). Thus, the financial sector plays a critical role in international societal sustainable development (Green, 1989; Harvey, 1995; Fatma, Rahman and Khan, 2014; Weber, Diaz and Schwegler, 2014; Wiek and Weber, 2014;

Forseth, Røyrvik and Clegg, 2015; Ferreira, Jalali and Ferreira, 2018; Kemp-Benedict, 2018; Krause and Battenfeld, 2019; Scholtens and van't Klooster, 2019). Assessing and mitigating risks is a core task of bank management and the basis for the long-term success of banks. Therefore, sustainable factors are of particular importance in the decision-making process of financial institutions (Atakan-Duman and Ozdora-Aksak, 2014; Zheng and Ashraf, 2014; Ferreira, Jalali and Ferreira, 2018; Scholtens and van't Klooster, 2019; Ziolo *et al.*, 2019). Ethicality, sustainability and subcategories such as consumer, employee and human rights affect the company's reputation as an employer and demonstrate sensitivity to the impact of long-term phenomena, such as changing preferences and purchasing behaviour, which are also influenced by social media and the values of future generations (Rosen, Sandler and Shani, 1991; Graham and Kumar, 2006; Bailey, Kumar and Ng, 2011; Bauer and Smeets, 2011; Diouf, Hebb and Touré, 2016; Ferreira, Jalali and Ferreira, 2018; Ziolo *et al.*, 2019).

The literature review confirms that general research towards sustainability and social responsibility is still a relatively young scientific research discipline. Hence, even if the research fields of corporate sustainability became one of the most popular (Kudratova *et al.*, 2020), many studies deal with CSR's external reporting (Bento, Mertins and White, 2017), which is why these were also explicitly excluded in the search grid. In addition, the research gap addressed here is highlighted, as the operationalisation of sustainability in the banking sector has been addressed by only a few research papers so far. Previous research has focused on fundamentals, applications, and scientific models, while industry and sector studies are only gradually emerging. Concerning the banking sector, there are studies dedicated to selected areas: regional as well as sector-specific settings are occupied, as the clustering of the results already shows (Gutiérrez-Nieto, Serrano-Cinca and Camón-Cala, 2016; Scholtens and van't Klooster, 2019), i.e. US-related (Bolton, 2013; Cornett, Erhemjamts and Tehranian, 2016; Lins, Servaes and Tamayo, 2017).

Moreover, only a few articles deal with the credit and lending business, even if this business line is the main task and the primary source of income of banks and the quality of decision-making in this lending process has a relevant impact on the successful

operation of the bank (Tsai *et al.*, 2016). The found research on lending focussed on credit score and rating systems (Gutiérrez-Nieto, Serrano-Cinca and Camón-Cala, 2016; Chen *et al.*, 2018) or financial performance concerning sustainability-related business principles (Bhagat and Bolton, 2008; Neal and Cochran, 2008; Levine, Toffel and Chatterji, 2009; Nelling and Webb, 2009; Schmid, Sabato and Aebi, 2011; Lioui and Sharma, 2012; Ducassy, 2013; Zopounidis and Doumpos, 2013; Essen, Engelen and Carney, 2013; Ferrell, Liang and Renneboog, 2016; Ziolo *et al.*, 2019; Scholtens and van't Klooster, 2019). Finally, it has been observed during the literature research that the articles are missing research on internal use for corporate management and decision-making (Cho *et al.*, 2015; Bento, Mertins and White, 2017). Stubbs and Cocklin (2008) underline this gap; there is undeniably a large amount of literature on sustainability's frameworks and models. However, literature on understanding sustainable business models and operationalising them in firms is still marginal (Sharma, 2002; Bansal, 2005; Stubbs and Cocklin, 2008). The existing research "is yet speculative, due to a shortage of standard definitions and relevant data" (Kauko, 2010, p. 191; Carlucci *et al.*, 2018).

The literature review revealed a scarcity of research. It shows a need for exploratory research that supports this thesis's approach. Many researchers of comparable previous research used case study approaches (Stubbs and Cocklin, 2008; Kahreh, Mirmehdi and Eram, 2013; Arenas and Ayuso, 2016; Diouf, Hebb and Touré, 2016; Gutiérrez-Nieto, Serrano-Cinca and Camón-Cala, 2016; Liang *et al.*, 2018; Kleanthous, Paton and Wilson, 2019; Kudratova *et al.*, 2020). Moreover, they followed the idea of theoretical understanding rather than generalisation (Eisenhardt, 1989; Stubbs and Cocklin, 2008; Blaikie and Priest, 2019), since theory building and explorational research are the primary means of deciphering a complex phenomenon (Stubbs and Cocklin, 2008; Arenas and Ayuso, 2016).

The identified literature highlights the complexity of sustainability's integration of multiple stakeholders, including the environment, and considers it a "very challenging undertaking" (Carlucci *et al.*, 2018, p. 1305). Moreover, the integration in lending and investment decisions to increase the more powerful indirect effects is far more complex. Thus, banking has focused on socially and environmentally responsible initiatives, such

as donations, recycling programs, and energy efficiency support (Jeucken and Bouma, 1999; Scholtens and van't Klooster, 2019).

Besides, scholars point out that the components and drivers of sustainable banking have neither been identified nor defined and understood (Bansal, 2002; Vanclay, 2004; Stubbs and Cocklin, 2008; Kauko, 2010; Searcy, 2012; Global Reporting Initiative, 2013; Ferreira, Jalali and Ferreira, 2016; Gutiérrez-Nieto, Serrano-Cinca and Camón-Cala, 2016; Carlucci *et al.*, 2018). The consequence is that several industries relate to sustainability differently due to their respective type, role and power relations in the value creation (Dafermos, Nikolaidi and Galanis, 2018; Scholtens and van't Klooster, 2019). Therefore, this thesis explores and analyses the prevailing sustainability practices in banking, as sustainability concepts and research from other industries or sectors can not easily be adapted. Furthermore, the complexity, lack of understanding and standardisation frame the issue and provide the basis for the hypotheses underlying research questions (RQ) 2 and 3: "Can framing concepts be identified as potential origins for decision-making errors that contradict sustainability?" and "Are systematic cognitive biases prominent on the operational management level?", as identified by other authors.

Most of the previous studies on sustainable decision-making focused on a) the criteria selection when corporate sustainability goals are integrated into the decision-making process, b) are impact-related on the financial system as a whole or c) are focusing on project finance or microfinance (Ziolo *et al.*, 2019). Even if these special and niche credit markets are not necessarily comparable with the German SME sector's credit market, they have some similarities. Particularly in SMEs, similarly fast and cost-efficient decision-making processes are required, like in the microcredit business (Chen *et al.*, 2018). This economic requirement for decision-making speed is confirmed by previous research and points to the relevance of this time component and its impact on decision-making. Quick decisions are a fruitful basis for biases and heuristics, and this review has revealed the importance of addressing them in the current research problem, as this thesis does in RQ 2 and 3.

The literature on the assessment of decision-making showed that managerial reviews with mixed and not purely economic performance records create a decision-making process for the assessor characterised by bounded rationality. Thus, the decision is made based on information that may be contradictory, e.g. social and environmental indicators move in a different direction than economic ones (Bento, Mertins and White, 2017; Ferreira, Jalali and Ferreira, 2018). Ferreira et al.(2018) emphasise that balancing the different and often conflicting interests in banks' decision-making processes is a complex and challenging undertaking. Bento et al. (2017) found that an additional aspect of relevance assessment and associated lack of operational implementation can be attributed to the high cognitive load on decision-makers that arises when a large number of performance measures have to be managed. The multitude of cues that need to be combined for the overall judgement creates a complex, multi-attribute decision field that meaningfully exceeds cognitive processing capacity (Dilla and Steinbart, 2005; St-Hilaire, 2013). The available information can therefore be overwhelming in its number and, at the same time, incomplete. As sustainability increases variability and lowers understandability, it is therefore comparable with nonroutine tasks. It brings together uniqueness, exceptions, complexity of impacts and contexts (Cornelissen *et al.*, 2001; Tan *et al.*, 2017). Therefore, experience and intuition are essential underpinnings of decision-making (Arenas and Ayuso, 2016). Authors, therefore, underline that the anchoring bias, which always occurs when judgements are made under uncertainty, plays a crucial role in this setting. The anchoring bias describes how people make an initial judgement based on the evidence relevant to them and then insufficiently adjust this assessment after receiving further relevant information, thus basing judgements on a preliminary calculation (Kahneman and Tversky, 1974; Bento, Mertins and White, 2017).

Under these conditions, judgements are often made favouring financial criteria (DeBusk, Killough and Brown, 2005; Bento, Mertins and White, 2017). Research shows that people tend to give more weight to criteria that they consider important (Slovic, 1975; Neumann, Roberts and Cauvin, 2011; Bento, Mertins and White, 2017).

Cardinael and Van Veen-Dirk's (2010) experiment even shows that evaluators ignored non-financial metrics altogether. Furthermore, Bento et al. (2017, p. 773) claim that "some authors have also noted a lack of knowledge and familiarity with nonfinancial measures", which underpins the rationale.

In a social environment where shareholder value maximisation's ideology continues to prevail, decisions that incorporate social responsibility and other sustainability factors into financial decision-making reasons, while possibly pointing in different directions, are challenging to implement (Bento, Mertins and White, 2017). Corporate culture and governance structures are considered relevant tools to reduce uncertainty and build a secure foundation to make decisions of this kind. Therefore, authors claim that measurement and indicators to assess SDGs as well as internal structural and cultural capabilities on a firm-level need to be improved and researched (Stubbs and Cocklin, 2008; Ziolo *et al.*, 2019). Consequently, many previous studies have considered structures and corporate culture as relevant factors for a successful sustainability implementation into business (Hambrick and Manson, 1984; Hambrick, 2007; Chin, Hambrick and Trevino, 2013; Bento, Mertins and White, 2017). This is addressed in RQ 1: "How do the guidelines of corporate banking consultants frame the operationalisation of sustainability strategies?". It is supported by some authors' calls to develop and optimise settings of financial incentives and the performance evaluation of decisions in such a way that the balance of goals also encourages sustainable behaviour (Bento, Mertins and White, 2017).

These structural and corporate cultural anchors also ensure that the individual decision-makers value systems align with the company values. This is particularly important because several behavioural theories, i.e. Ajzen's (1985) or Homer and Kahle (1988), assume that people tend to behave based on their values, which is particularly relevant with regard to the anchoring tendency discussed earlier (Krause and Battenfeld, 2019). Therefore, previous research has shown that the complex and multi-layered decision elements, in particular, require an appropriate framework (Cornelissen *et al.*, 2001; Ness *et al.*, 2007; Diouf, Hebb and Touré, 2016; Gutiérrez-Nieto, Serrano-Cinca and Camón-Cala, 2016; Tan *et al.*, 2017). This gap is addressed in RQ 4: "Which management tools

could overcome the potential identified undesirable, unintended or unconsciousness related factors countervailing sustainability goals?”.

Research on sustainability's operationalisation is scarce, and there is no clear picture of SDGs translation and implementation (Eustachio *et al.*, 2019). According to Müller *et al.* (2015), theoretical and practical demand emerges on integrating sustainability demands and balancing those with their policies and practices (Bondy, 2012; Arenas and Ayuso, 2016; Eustachio *et al.*, 2019). Carlucci *et al.* (2018) added that a better understanding of this underdeveloped part of sustainability research is in academic interest and essential for corporate decision-makers.

On the one hand, toolsets for sustainability's decisions and assessments have been studied. The focus of these tools is currently set to methods and tools for country-wide sustainability assessment (Phillis and Andriantiatsaholiniaina, 2001; Phillis, Grigoroudis and Kouikoglou, 2011; Santana *et al.*, 2014; Veldhuizen *et al.*, 2015; Coteur *et al.*, 2016; Iribarren *et al.*, 2016; Dor and Kissinger, 2017; Karami *et al.*, 2017; Strezov, Evans and Evans, 2017; Tan *et al.*, 2017; Eustachio *et al.*, 2019). On the other hand, previous research focuses on the results of sustainable banking practices rather than explaining their emergence or improvement (Carlucci *et al.*, 2018; Krause and Battenfeld, 2019; Kudratova *et al.*, 2020). Especially statistical analyses on the outcomes are a common research field, and the results are criticised for having little practical impact on sustainability management (Garland and Gendall, 2004; Ferreira, Santos and Rodrigues, 2011; Carlucci *et al.*, 2018). For example, Li *et al.* (2018) researched the amount and cost of loans to China's polluting industries. They found that credit decisions were made at the expense of this industry over time but did not explore their reasons (Li, Yin and Liu, 2018). Kudratova *et al.* (2020) also point out that practical research focuses on large corporations and leaves SMEs aside that have a different corporate structure, with varying decision-making processes, less financial scope for additional specialised persons or departments, and data collection and analysis.

Other authors also point in a similar direction. Processes underlying decision-making should be addressed by future research. In their view, it is crucial that not only if one's own values and emotions influence judgements and thus also include behavioural

intentions in the consideration, but also at what point in the process and by what influences, to show how they affect the decisions (Lekakos, Vlachos and Koritos, 2014).

2.5 CONTEXT AND SUMMARY

This literature review gives an overview of the thematical setting, discovers and contextualises already existing knowledge, and provides a deeper understanding of the underlying concepts and theories applicable and relevant. From a managerial perspective, sustainability in the core business is a relevant and complex challenge that financial institutions face. Furthermore, the development of banks and savings banks into at least more sustainable banks is a modern trend and a politically desired and regulatory underpinned evolution.

The financial sector under review plays a unique role in this sustainable development, both in its importance for the overall economic development towards more sustainability and its implementation specificity, as the literature review underlines. Furthermore, research at the operational level is still at an early stage and is highly explorative. The literature review clearly indicates the relevance of further research, and a research gap exists, to which this thesis' research contributes. There is little evidence about the connections, influences and triggers, and research on operationalisation, so the particular emphasis is given to the identified and reconfirmed aspects in this review. Especially biases and bounded rationality due to complexity are common concepts that researchers consider in the context of sustainable decision-making (St-Hilaire, 2013; Carlucci *et al.*, 2018; Liang *et al.*, 2018). Thus, the RQs focus on frameworks and values (RQ 1), biases and heuristics (RQ 2 & 3) and concepts for operationalisation (RQ 4).

The previous research's explorative nature and the need for further explorative insights confirm the requirement to apply the case study as the prevailing methodology. Consequently, this study follows numerous suggestions on using further explorative case study research when analysing the status of sustainability operationalisation (Sharma, 2002; Bansal, 2005; Stubbs and Cocklin, 2008; Kauko, 2010; Lekakos, Vlachos and Koritos, 2014; Müller-Christ, 2014; Cho *et al.*, 2015; Klein, 2015; Bento, Mertins and White, 2017; Carlucci *et al.*, 2018). Thus, an exploratory case study supports the

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underlying research philosophy and allows to gain insights into the practitioners' perspectives.

3 RESEARCH SETTING

This thesis explores the operationalisation of sustainability in the lending business in the German banking market. Germany is the fourth largest economic region globally in terms of gross domestic product. Thus its domestic banking market is also one of the largest in the world (see figure 4: GDP top 10 countries in 2020 (Modified from source: Statista Research Department, 2021a)).

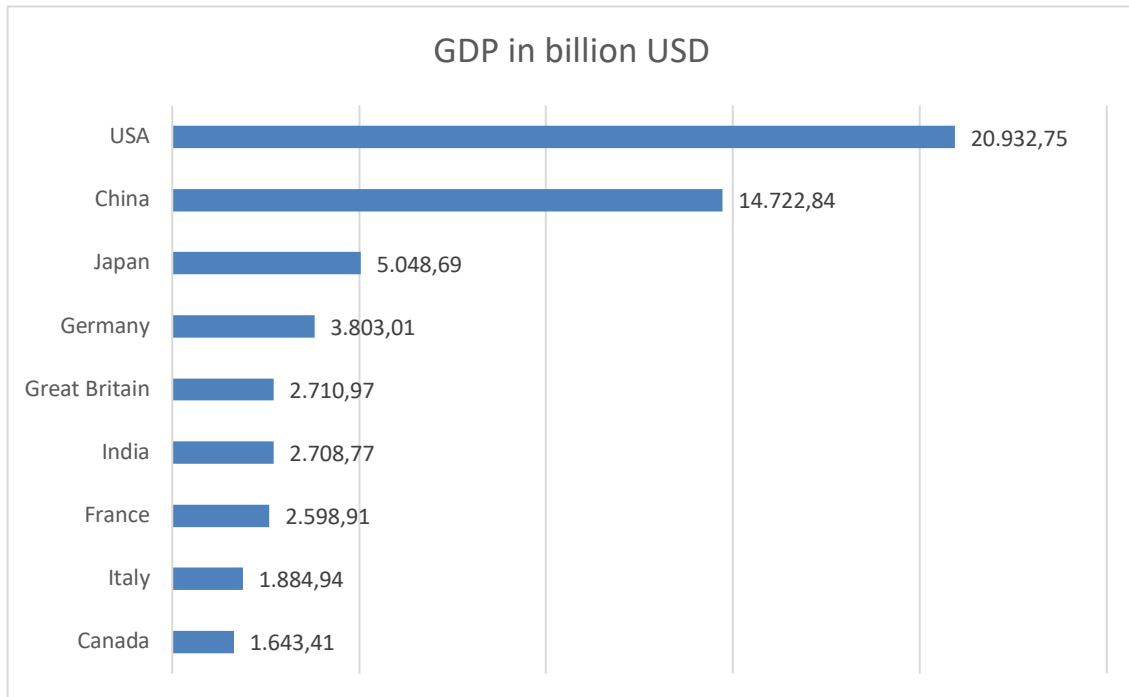


figure 4: GDP top 10 countries in 2020 (Modified from source: Statista Research Department, 2021a)

This national banking market has some peculiarities that are worth explaining in an international context concerning market concentration, the competitive situation, and a uniform European approach to regulation and market harmonisation. Therefore, this chapter presents the German banking market and its three bank groups, the so-called pillars, with their sustainability efforts to classify the research parameters and interpret the results. For this purpose, the granularity of the German banking market with many small institutions is presented, the origins of the existing system, the structures of the individual banking groups, the respective sustainability presentation in the brand image, and relevant special features of individual industry sectors are presented.

3.1 SPECIALITIES OF THE GERMAN BANKING STRUCTURE

Two levels and a three-pillar structure characterise the German banking system. On the one hand, the level of the European System of Central Banks (ESCB), which includes the Deutsche Bundesbank and its head offices, which pursue economic policy, macroeconomic objectives, regulate the circulation of money and ensure the supply of credit and price stability as regulated by §3 BBankG (European Union, 2016).

On the other hand is the level of the customer-oriented credit institutions, which are the subject of this study. Furthermore, a distinction is made between universal and specialised banks, with bancassurance institutions typically prevailing in Germany, which conduct all banking transactions and offer these to their clientele. In addition, there are specialised banks, such as mortgage banks.

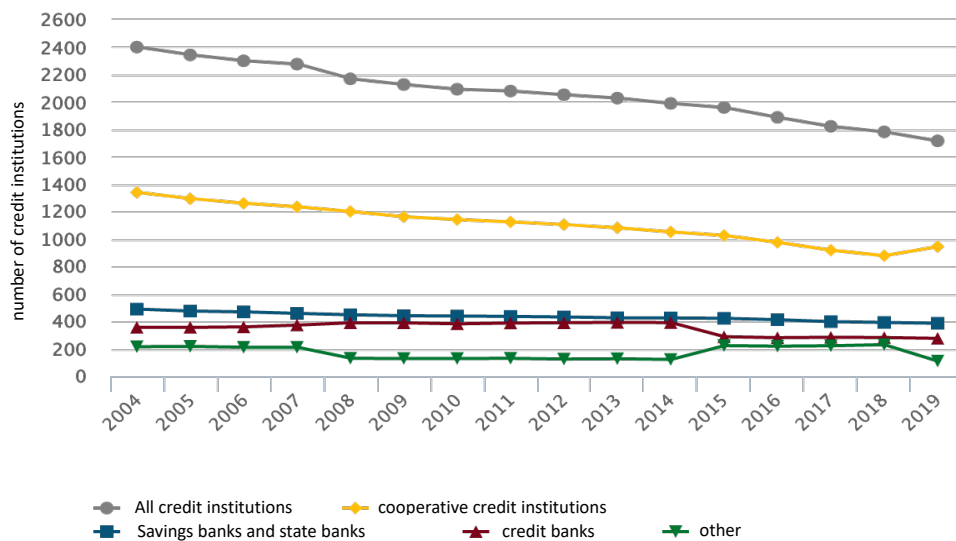


figure 5: German credit institutions (2004-2019) (Modified to source: Deutsche Bundesbank, 2020)

The German banking sector has been undergoing continuous consolidation for years. In the year of the primary research data collection, the total number of credit institutions fell by 66 to 1,717 (Deutsche Bundesbank, 2020). Those banks can be broken down as follows (as of 31 December 2019): 1398 universal banks (without foreign bank branches) and 102 specialised banks, as Securities clearing and deposit banks, building societies or

guarantor banks (Deutsche Bundesbank, 2020). As can be seen, the universal banks occupy by far an absolute majority of the banking landscape.

The distribution among the three pillars is as follows (Deutsche Bundesbank, 2020):

- 157 large private banks and regional private banks
- 386 savings banks and associated state banks
- 845 cooperative institutions

In addition, there are the real estate credit institutions, building societies, guarantee banks and securities collective banks and banks with special tasks. This diverse distribution leads to a low degree of consolidation and a high level of fragmentation compared to other countries. To put the German market in comparison: The total of banks in the EU countries at the beginning of 2020 was 5,963 banks. 1,531 banks, or a quarter of all financial institutions, are located in Germany. Therefore, the density of banks compared to the population is almost 40% higher than in the EU. Thus, Germany is by far the most fragmented market. Poland follows in second place, with 627 banks and a 24% higher bank density than the EU level (Norrestad, 2020).

This results in many independent or standalone banks and only a small number of large banks with global market relevance (4). Furthermore, the market shares are roughly equally divided between cooperative banks, savings banks, the major German banks and the other private banks. Together these groups account for about 69 % of the total market (Finanzgruppe deutscher Sparkassen- und Giroverband, 2020). With the highest number of institutions, the cooperative banks also have the smallest average balance sheet totals and thus the highest granularity. Therefore, the cooperative banking group is highly decentralised, regional, and consists of a high number of micro-institutions, which is reflected in the comparatively low number of non-financial reporting publications due to the undercutting of the obligation limits.

3.2 THREE-PILLAR MODEL

The three-pillar structure traditionally characterises the German banking market. According to the three-pillar design, credit institutions are assigned to a pillar according to their objective and legal form: savings, cooperative, and private banks. These pillars have evolved historically. After initially only private bankers existed, the authorities created savings banks and land banks to meet the needs of money transactions for less affluent sections of the population (Wandel, 1998). In the context of industrialisation and globalisation, financial needs became more significant, and joint-stock banks were created (Wandel, 1998).

Public credit institutions are organised under public commercial law. They include the savings banks and other banks in the legal form of public law, such as the Landesbanken, which perform the central banking function for the local savings banks. Savings banks have a public law mandate and are organised under public law. Therefore, they act following the principles of public mission, business restrictions and the regional principle (Gabler Wirtschaftslexikon, 2018).

Cooperative banks are organised under the Cooperative Societies Act and pursue the legal idea of the economic association, i.e., of helping people to help themselves. This group includes the local cooperative banks (Volksbanken and Raiffeisenbanken) and the two cooperative central banks: Westdeutsche genossenschaftliche Zentralbank (WGZ-Bank) and Deutsche Genossenschaftszentralbank (DZ-Bank). Credit cooperatives have a promotional mandate for their members and form the cooperative financial group.

Private commercial banks are organised under private law and include large, internationally active banks, such as Deutsche Bank AG, regional banks and private bankers. Private commercial banks pursue a focused commercial principle as a public limited company, strive for profit, and follow the shareholder value principle. Whereas the business model of the other two banking pillars is oriented towards the common good via the public mandate of the savings banks or the interests of their members, most of whom are also their customers, as the promotional mandate of the credit cooperatives.

3.2.1 PRIVATE BANKS

The largest private banks primarily represent the private banking pillar: Commerzbank AG, Deutsche Bank AG, including the Postbank AG and UniCredit Bank AG, which together account for the majority of the market share of the private banking sector (Deutsche Bundesbank, 2020). However, in international comparison, these large German private and commercial banks play a subordinate role. Among the world's 100 largest banks by balance sheet total, Deutsche Bank ranks 21st and Commerzbank 62nd (S&P Global Market Intelligence, 2020). Those two banks also represent the totality of all private German institutions in the top 100. Furthermore, both have lost several places since the previous year, and their balance sheet totals are less than one third or one-tenth of the world's largest institutions (S&P Global Market Intelligence, 2020).

It is worth mentioning that both institutions present themselves as sustainably operating banks. Commerzbank presents itself as a responsible bank with CSR as its guiding principle (Commerzbank AG, 2017). The bank claims that environmental, social and ethical aspects have a crucial role in its management. Commerzbank is willing to influence sustainability within its core business and reduce its ecological footprint, as it is published in the GRI-Report and Corporate Responsibility Magazine (Commerzbank AG, 2017, 2018). The bank also set 100 goals to become Germany's most sustainable commercial bank. The Deutsche Bank reported non-financial aspects and sustainability efforts in annual publications since 2002 (Deutsche Bank AG, 2019). In their 2018 presentation on Strategy, the Deutsche Bank focuses on sustainability and ESG Criteria (Borysova and Stobbe, 2018). However, with the focus of this thesis on the corporate lending business, it becomes apparent that these efforts do not necessarily translate into high operationalisation quality, as studies and surveys show. The "Fossil fuel finance report 2019" shows that from 2016 to 2018, Deutsche Bank was the 17th largest financier of fossil fuels worldwide, with a total of \$54 billion (Rainforest Action Network *et al.*, 2019). As the leading financier of the coal-fired power plant operator RWE, the 6th largest coal mine financier and the 2nd largest Arctic gas and oil financier, the sustainability strategy must be viewed in a differentiated manner, at least in the area of

environmental sustainability and operational adaption in credit business (Rainforest Action Network *et al.*, 2019).

3.2.2 COOPERATIVE BANKS

The emergence of cooperative banks, also called Volks- and Raiffeisenbanken, dated back to the 19th century and came into being after large parts of the population suffered from crop failures and famine. Craftsmen, farmers and small businesses had no access to banks but had to rely on private money lenders, with whom many fell into debt and lost their economic existence (Bundesverband der Deutschen Volksbanken und Raiffeisenbanken e. V., 2018).

At about the same time, but independently of each other, Friedrich Wilhelm Raiffeisen and Hermann Schulze-Delitzsch came up with an idea to change this situation and end the crisis, especially for small businesses and farmers. The principle was self-help through voluntary cooperation, which is an idea that was declared an Intangible Cultural Heritage of Humanity by UNESCO in 2016 (UNESCO, 2016; Bundesverband der Deutschen Volksbanken und Raiffeisenbanken e. V., 2018).

To date, these banks are mainly owned by their members. Their main objective is thus not to make a profit in the first place, but to fulfil the goals and interests of their members. Its concept bases on the Cooperative Societies Act's first paragraph. This paragraph states that the member's economic, social or cultural advancement is the cooperatives' key purpose. The combination of the created values, which correspond to the first paragraph, forms the cooperative's benefit and is called Member-value (Theurl, 2002, 2009).

The majority of institutions in the cooperative banking group use the legal form of eG (registered cooperative). They are also traditionally rooted in their region and offer a full range of financial services similar to universal banks (Bundesverband der Deutschen Volksbanken und Raiffeisenbanken e. V., 2018). The German cooperative central bank "DZ Bank" ranks 49th among the largest international banks (51st in the previous year), making it Germany's second-largest bank (S&P Global Market Intelligence, 2020)

The German cooperative banks describe themselves as sustainable due to their cooperative foundation (Klein, 2014b). They state that the cooperative's fundamental purpose is the member's economic, social or cultural advancement (Theurl, 2002, 2009). According to a recent survey, the three central motives for all credit cooperatives' commitments are "regionality" (95 %), "customer proximity" (84 %) and "sustainability" (73 %) (Bundesverband der Deutschen Volksbanken und Raiffeisenbanken e. V., 2017). Therefore, their sustainability orientation is based on the Member-value concept, which is communicated as the cooperative's heritage, mission, and foundation of sustainability in the used definition. Theurl (2013a) states that the natural competitive advantage of cooperative banks in creating a sustainable strategy is based on the fact that they already follow a sustainable approach due to this Member-value principle. The cooperative banks claim that the founding mandate contains a commitment to sustainability, as the paragraph's content follows sustainability principles (Kopp, 2015). It can also be compared to the three dimensions of the TBL approach:

1. Ecologically, a long-term Member-value may only be maintained if the consumption of the needed resources undercuts the resource's reproduction rate.
2. The economic dimension of sustainability focuses on the preservation or enlargement of the capital stock to enable a continuing ability to pay a dividend, invest and maintain banking services and thus provide a direct and sustainable Member-value.
3. The dimension of social sustainability relates to the human resources and their preservation or enlargement to strengthen the banking services and products for the Member-value enhancement (Theurl, 2013b).

Furthermore, the majority of cooperative banks act decentralised and local. Therefore, the inherent social balance by reinvesting in their local social, environmental and economic capital also corresponds with the concept of sustainability (Roth, 2006; Theurl, 2013a).

3.2.3 SAVINGS BANKS

The beginnings of savings banks date back to the 18th century, with the founding of the first "Ersparungsclasse" in Hamburg (Deutscher Sparkassen und Giroverband e. V., 2020a). Today, most of the institutions in the Savings Banks Group operate as public institutions ("Anstalt des öffentlichen Rechts"). Their owners are usually cities, municipalities, federal states or countries (Gabler Wirtschaftslexikon, 2018).

The "public guarantor liability" and the "maintenance liability of the municipalities" were abolished in 2005 at the request of the European Commission (Deutscher Sparkassen und Giroverband e. V., 2020a). This decision was made because of the potential competitive advantage. The advantage for savings banks results from the excellent state credit rating of the co-guaranteed shareholder. This enables lower refinancing costs and thus price or margin advantages. It was also a competitive advantage because savings banks, like many other private or cooperative banks, have aligned themselves as universal banks and generally focus on SME clients and private clients from the middle class. To describe the business even more precisely, savings banks, with their usually clearly regionally limited group of owners and corresponding regional character of the customer business, build up a strong regional bond and thus have a strategically anchored local focus even more than other regional institutions.

As a banking group, they state to follow sustainable principles (Deutscher Sparkassen und Giroverband e. V., 2020a). The savings banks take a unique position due to their strategic goal. They serve the common good, which is the savings banks' means of existence (Gabler Wirtschaftslexikon, 2018). According to § 1 of the savings bank regulations, the task of the savings bank is, among other things, "to provide all sections of the population and the economy, in particular small and medium-sized enterprises, with credit services". It bases on § 40 passage 1, number 3 of the banking law and is the umbrella term for all functions and missions transferred to savings banks by state laws and acts. The savings banks' communication strategy regarding sustainability is based on the equalisation of sustainability and the public contract. The commitment to ensuring the common good is, as a thought of responsibility, part of sustainability. Furthermore, their long history of community- and social commitment and lack of

demand for profit maximisation is their foundation for sustainability (Krummrich and Forndran, 2006).

3.3 BRIEF SUMMARY OF THE CHAPTER

The chapter has outlined how the German banking market compares to other national markets, especially in the comparable EU environment. In particular, the exceptional market granularity with a very Polipole structure was presented, which constitutes one of the essential special features. The second notable feature is the equal distribution of market shares among the three pillars of the German banking market and the cooperative and public-law institution groups operating in it, which act with a unique understanding and corporate objective and thus contrary to the shareholder-value focus typical of the sector described in Chapter 2. In addition, the company-specific argumentation and self-images for sustainability were critically analysed. Therefore, the group-specific characteristics are also taken up again in the further analysis and the presentation of results.

4 METHODOLOGY

The methodology chapter describes and critically appraises the applied research approach. In the following, the foundation in the chosen research philosophy is set out, which implies significant assumptions about the researcher's worldview. Furthermore, the classification of critical realism for the research work is evaluated, and its characteristics and particular suitability are presented. For this purpose, the methodological choices and the fit with the research questions and the research objective are precisely outlined. Furthermore, the methodology and the experimental design are explained and justified. Additionally, the chosen case study methodology is critically examined, and the data collection methods are disclosed in detail. Finally, ensuring research validity and quality and the underlying ethical considerations are discussed.

4.1 RESEARCH PHILOSOPHIES

The research philosophy reflects how the researcher sees the world and identifies its major underlying assumptions (Gray, 2004; Easton, 2010). Thus, the research paradigm is an approach or a guidance model for conducting research (Collis and Hussey, 2013). Furthermore, the research philosophy shapes the framing of the problem and research questions, the search approach for information to answer these questions, how data are collected and analysed and how findings are written up (Collis and Hussey, 2013; Creswell, 2013). Thus, its choice serves a critical function. Finding an appropriate methodology clarifies the philosophical perspective to achieve a distinct research design pattern (Gray, 2004). First, the ontological view and, in addition to that, the assumed number of realities has to be aligned to the researcher's beliefs (Gray, 2004). Second, the epistemological perspective has to be harmonised. Epistemology relates to the objectivity and testability of knowledge, the utility of facts and figures and generalizability (Crotty, 1998; Creswell, 2013).

There are three significant schools of thought on research philosophy: Epistemology, Ontology, and Axiology. According to Guba (1990), ontology deals with the nature of reality and knowledge. While the choice of adequate knowledge in a field of study is

considered in epistemology and the study of value judgments is described by axiology (Ormston *et al.*, 2003; Creswell, 2013).

"Positivism" and "interpretivism" are widely used in business and management research and also represent the extreme positions of the philosophical continuum (Easterby-Smith, Thorpe and Jackson, 2012; Collis and Hussey, 2013). The positivist approach is based on the central proposition that the social world is independent of our mind and understanding (Easterby-Smith, Thorpe and Jackson, 2012; Collis and Hussey, 2013). According to Easterby-Smith *et al.* (2012), its properties can be measured by objective methods independent of reasoning or intuition. In this approach, the positivist approach seeks causes without significantly considering the individual's subjective state (Collis and Hussey, 2013). Therefore, research in this philosophy uses existing theories as a basis for developing hypotheses and then tests them to confirm or refine the theory (Saunders, Lewis and Thornhill, 2012). This approach dominates management research (Parker, 2012).

On the other hand, the phenomenological approach conceives reality not objectively but as a social construct that gives meaning (Easterby-Smith, Thorpe and Jackson, 2012). This approach aims to gain knowledge about human behaviour and how they understand the world (Collis and Hussey, 2013). The research seeks to understand and explain rather than identify causes. It is the search for "why" different experiences are made and how to explain behaviour (Easterby-Smith, Thorpe and Jackson, 2012). Thus, this approach's focus is data interpretation and generation of a theory (Creswell, 2013). In addition to these extreme positions, other research philosophies exist between positivism and interpretivism and have been presented and discussed in detail by several scholars (Gray, 2004; Saunders, Lewis and Thornhill, 2012).

Regarding this thesis' research topic and its underlying assumptions, the underlying reasoning for decisions is affected by perceptions based on different realities or views. Within the research concept stands the implicit assumption that biases and unconscious decision patterns based on personal views and reasoning may vary in other settings as they might be individual to the subject. It builds on the concept that research is about people, not things, and all of them act in their social roles. Therefore, every individual's

interpretation of the world influences its acting, behaviour, values and beliefs (Bhaskar, 2010). It also means that the historical and cultural context leads to an individual interpretation of each mind (Crotty, 1998). Bhaskar (2010) stated that a phenomenon raised by social structures could only be truly understood if the underlying social world is understood. This world and its differing views are based on a single true reality independent of the mind and is experienced as a series of sensations that go through a mental process and build interpretative images of the real world (Bhaskar, 2010). His philosophical view relates to critical realism, which pictures a world of truth and accuracy in a science-like way and adds that some so-called facts are solely an illusion (Chia, 2002). Our senses delude us. Therefore, the following section introduces critical realism and explains the principles that differentiate it from others, considering ontology and epistemology.

4.1.1 CRITICAL REALISM

Critical realism (CR) is a certain form of realism founded and shaped by Roy Bhaskar in the 1970s and 1980s (Archer *et al.*, 1998; Sayer, 2000; Fletcher, 2017). It was developed as an alternative to traditional positivism and its limitation towards the empirical provability and postmodernist and constructivist approaches and theories (Fletcher, 2017). Thus, critical realism tries to find a 'middle way' between positivistic and constructivist extremes while simultaneously challenging common understandings. Furthermore, it seeks to combine naturalist and realist objectivities with an interpretive understanding of the meaning (Sayer, 2000). Therefore, it represents an alternative that neither models laws on socio-scientific questions along the lines of natural science methodology nor reduces social sciences to the interpretation of meaning (Sayer, 2000). Therefore, a critical realist's philosophical engagement can be described as objective and socially constructed. According to CR, phenomena and research process have to consider the social actors involved (Dobson, 2002; Easton, 2010). In this regard, CR follows several principles as the foundation of a layered and differentiated ontology: a generative causality model rather than a successive model and a preference for intensive research strategy and design rather than extensive one (Zachariadis, Scott and Barrett, 2013; Bygstad, Munkvold and Volkoff, 2016). It concludes that critical realism is

based on a realist's ontology and, in contrast, an interpretivist's epistemology (Sayer, 2000). It assumes that the world exists independently, our knowledge of the world is concept-based, between objects exist necessity, between events and structures, exist powers and phenomena are concept-dependent and interpretative (Sayer, 1992). Critical realism's research aims are causal mechanisms that are traceable in the third level of its reality concept. Its focal point is not countability or measurability but deep understanding (Easton, 2010).

Thus, critical realism encourages managerial decision-makers to consider the linkage between decision and outcome and the aforementioned causal mechanisms (Easton, 2010). Causality relies on our justification of what is assumed to be its cause (Easton, 2010). Hence, the causal language is advised and crucial, as knowledge transfer is linguistic and, therefore, bound to communication's rules and error-proneness (Sayer, 1992; Easton, 2010). Lastly, critical realism's judgment is pragmatic as its language and justified by its performative usage (Easton, 2010). Keeping in mind that the world view is theory-laden but not theory-determined (Fletcher, 2017), all explanations are considered fallible (Archer *et al.*, 1998). The cause will mostly be the most possible. In other words: the current best interpretation is always in competition with rivalling explanations (Easton, 2010).

This research philosophy demands research questions concerned with the causes of a specific phenomenon (Easton, 2010). The explanatory research structure and will to find causality of events rather than empirical descriptions makes critical realism a helpful tool for analysing socially based problems and is a solution searcher and change enabler (Fletcher, 2017). It fits the research, as events and outcomes, defined as external and visible behaviour, are critical realism's research targets (Easton, 2010).

4.1.2 CRITICAL REALISM'S CONCEPT AND BUILDING BLOCKS

CR assumes that there is only one truth and it can not be proven or refuted (Easton, 2010). In comparison to realism, it can be seen as "a more nuanced version of realist ontology" (Zachariadis, Scott and Barrett, 2013, p. 856) and claims that even if we believe in a single reality, it does not mean that we can observe and realise it and the inherent mechanisms may not be findable or empirically confirmable (Zachariadis, Scott

and Barrett, 2013). Therefore, from the perspective of CR, two worlds exist: the intransitive world and the transitive world. The intransitive world describes a relatively unchanging, natural reality. On the other hand, the transitive world describes a socially constructed reality (Bhaskar, 1998, 2010). Identifying the so-called generative mechanisms, which are the structures that produce these events, is crucial to understand these events and to bring about change (Bhaskar, 2010). Critical realists, therefore, strive to uncover generative mechanisms (Dobson, 2002). Archer et al. (1998) defined mechanisms as the ways things act. Those generative mechanisms are not isolated from each other but interact with other generative mechanisms (Reed, 2009).

The combination of the mechanisms and the respective context leads to a certain outcome and phenomena. They can, therefore, not be predicted by mechanisms but only be explained by them (Sayer, 1992). Moreover, those underlying generative mechanisms are not observable but generate observable events. According to the CR, observed events are caused by generative mechanisms that are the underlying rationales of actions (Archer *et al.*, 1998).

For critical realists, ontology is crucial and takes precedence over epistemology and must be clearly distinguished (Reed, 2009; Easton, 2010). CR bases on “its unique stratified ontology of the three domains of reality, which links objective/unobservable social structure and subjective/observable human agency in its causal explanation” (Hu, 2018, p. 2). Thus, there are the domains of the real, the actual and the empirical (Bhaskar, 1979, 1998).

	Domain of Real	Domain of Actual	Domain of Empirical
Mechanisms	X		
Events	X	X	
Experiences	X	X	X

table 3: Stratified ontology (Modified from source: Bhaskar, 1998)

The ontology is referred to as the metaphor of an iceberg. Only the first level can be seen over the water surface, knowing there are more levels attached to it, and it builds a united body mostly unseen at first (Fletcher, 2017). In the domain of the empirical is the experience, perceivance and observation of occurring events (Bhaskar, 1998). The second level, the actual, lacks this filtering through experience, so events on this level take place independent of someone's interpretation. The third level, the real, regards the underlying mechanisms and their effects throughout all layers or levels (see table 3).

The real domain encompasses everything that exists, including the actual and empirical domain. Thus, the real domain consists of unobservable entities, structures and mechanisms (Reed, 2009). Structures in the domain of the real thereby exist they exist regardless of whether they have become manifested (Bhaskar, 1998). Therefore, the real world is made up of various structures and mechanisms that generate different events, regardless of whether they can be experienced or not. Occurring events are held in the actual domain. These events result from the occurrence of one or several mechanisms that are the focus of CR research (Easton, 2010; Wynn and Williams, 2012). However, they cannot necessarily be observed. Thus, observable or perceiveable events are part of the empirical domain. Thus, observation does not relate to a direct perception, but an abstraction or identification through human action (Bhaskar, 1998; Wynn and Williams, 2012).

Whilst events are the observable and unobservable result of the underlying mechanisms and structures, and their outcomes and interplay mechanisms and structures are ontologically distinct from events and are part of the domain of the real (Sayer, 1992; Edwards, O'Mahoney and Vincent, 2014). However, events can lead to new mechanisms being activated and thus contribute to new events. Therefore, a deep understanding of mechanisms, structures and interplay on different layers is relevant to fully understand the event. However, for the pragmatics of explanation, this does not mean that each level must be thought of for explanation (Bhaskar and Danermark, 2006).

Due to the limitations of the human mind and observation methods, not all events will be perceived. Events that can be observed are called experiences (Bhaskar, 1998; Wynn and Williams, 2012). Experience of events are observations in the empirical domain, the

tip of the iceberg, whilst the real or actual domains are not necessarily observable and, therefore, in the image of the iceberg below the water surface. The empirical domain is the layer in which experience is made and events are perceived (Sayer, 2000; Reed, 2009) even though events occur independently of perceived experiences (Bhaskar, 1998). It is often associated with common sense. At this level, there is room for individual interpretation. Reality is confronted by the observer with meanings, decisions and actions. In this domain, events can be measured and experienced and contribute to the actual and real domains' understanding. According to CR, observations are only a subsection of the events that take place in the domain of the actual world and their totality and their inherent mechanisms should not be underspecified by research (Bhaskar, 1998). CR's ontological perspective is conceived as a so-called entity that "can exist without someone observing, knowing and constructing it" (Fleetwood, 2005, p. 197).

Entities are critical realism's fundamental theoretical building blocks (Easton, 2010). Entities can take many forms. For example, they can have physical, social or even abstract forms, crossing domains and existing as a framework of different individual entities at a lower level (Easton, 2010; Hu, 2018). Therefore, the collection of data regarding the scientific basis of enquiry and the search for its understanding, considering the social actors, are essential (Dobson, 2002). In CR, researchers' observations are only part of a larger whole, and the methods used to explain reality are likely to be temporary (Dobson, 2002; Bryman and Bell, 2015). In their view, perceptions of reality are subject to constant adaptation and change, whereas the basic structures and mechanisms are stable (Dobson, 2002).

Based on the layered and thus differently interpretable generative mechanisms, there is a belief in the CR that credible data can be provided from observable phenomena. However, these observations are, in turn, generators of perceptions that allow for misinterpretation (Zachariadis, Scott and Barrett, 2013). As a result, the preferred epistemological principle relates to interpretivists and realists epistemologies (Reed, 2009; Easton, 2010). Understanding is prioritised over counting and measuring, and thus, there is always an interpretative momentum (Sayer, 2000).

Furthermore, it uses an intensive research design and retrodution (Reed, 2009; Easton, 2010). Reproduction is a process closely related to abduction (Dubois and Gadde, 2002). Retrodution proposes at shifting from the understanding of a phenomenon to a perception of a mechanism that might have led to the phenomenon (Lawson, 1997). Thus, retrodution asks what needs to be true to make the event possible. Axiologically, therefore, in CR, research is influenced by the researchers' values, as they interpret the results through their social background and cultural experiences and education and are thus biased (Archer *et al.*, 1998). Moreover, in CR, it is accepted that knowledge is fallible and is constantly renewed and outdated (Sayer, 2000). Thus, a study's results do not represent an unalterable result but show the best currently available outcome (Toomer, Bowen and Gummesson, 1993). This basis for the research implies that the primary attention is directed to underlying entities and structures defining the experienced phenomenon (Easton, 2010).

4.2 DESIGNING THE THESIS' RESEARCH

The research design provides a general plan for the conducted research. It includes research aims and objectives, collected data, its types, collection method and collection places. Furthermore, constraints and ethical issues to ensure validity are reflected (Saunders, Lewis and Thornhill, 2012; Collis and Hussey, 2013).

Especially in CR, a justification for the respective methodological choices is necessary, and the linkage between the ontology, the epistemology and the methodology is crucial (Zachariadis, Scott and Barrett, 2013). Moreover, discussing methodologies allows judging each method's relevance, their meaning and what they indicate. Thus, the methodology is necessary to decide which methods need to be applied for a systematic problem-solving process and how to evaluate the given results in the specific setting (Kothari, 2004).

Despite other prominent differentiations as quantitative and qualitative approaches, critical realists divide methodology into an extensive and intensive methodology, and it is compatible with a large number of methodologies (Sayer, 2000). Extensive means large scale surveys to find similarities and patterns for a generalisation, while intensive methodology relates to a causal explanation regarding a very limited set (Easton, 2010;

Zachariadis, Scott and Barrett, 2013). Concerning the ontological and epistemological foundation of critical realism, a mixed-method approach is commonly proposed, as the multi-angle view may reveal the contextually defined phenomena and the causality of the mechanisms (Wynn and Williams, 2012; Zachariadis, Scott and Barrett, 2013; Nastar, Boda and Olsson, 2018). Furthermore, the choice should depend strongly on the research objects and the aims (Sayer, 2000). As this thesis' research searches for in-depth answers and is not pursuing broad commonalities and generalisation (Gray, 2004), the main aim of the research is to get familiar with a phenomenon and to be able to portray its characteristics (Kothari, 2004). Therefore, exploratory research is advised if knowledge is scarce in the area under research combined with the industrial sectors setting, the regional market and the business area, which have not been investigated in previous literature.

Exploratory designs are often qualitative for the initial exploration and identification of the underlying patterns and structures. Thus, in this case, it is necessary to determine whether the strategic orientations in German banks exist in operational practice. Furthermore, existing research argues that other organisational factors likely influence the relationship between strategic orientations and operationalisation. Still, the literature has focused on singular frameworks and parts, like the environmental dimension of sustainability. It is, therefore, necessary to examine whether relevant influencing factors and underlying structures exist. Conclusively, the exploratory research contributes a much more profound understanding and finally helps developing more specific and focused questions for further research.

The research design can be characterised as follows: An explorative multi-case mixed-methods case study using retroduction. Case studies are prominent in analysing organisations and relationships, as those are complex and difficult to get access to (Easton, 2010). Some literature shows a tendency of critical realism towards case research (Easton, 2010), as it justifies the findings of the underlying situation with in-depth research of the underlying reasons. The methodological approach works within the philosophical spectrum as a critical realist, and by designing mixed-methods research, to gain a deeper understanding.

The thesis' research questions focus on organisational structures and influences on decision-makers. The knowledge development is based on a case study research design using primary and secondary empirical data. This in-depth research design allows understanding the underlying structures and phenomena. Furthermore, the data collection was influenced by the cross-organisational study design, which in particular determined the primary data collection, including its sample size. This is described in more detail in the following chapter sections.

4.2.1 RESEARCH QUESTIONS

Based on the thematic relevance of sustainability, the importance of banking and financial market players' role, the literature research's findings and the intrinsic motivation as an insider researcher, the following research questions guide this research work.

They aim to identify system-immanent deviations, causing a potential gap between strategic and operational implementation of sustainability and building a systematic approach to overcome these potential deviations to enhance operationalisation of sustainability in the corporate credit business, as one of the German banks' core businesses.

1. How do the guidelines of corporate banking consultants frame the operationalisation of sustainability strategies?
2. Can framing concepts be identified as potential origins for decision-making errors that contradict sustainability?
3. Are systematic cognitive biases prominent on the operational management level?
4. Which management tools could overcome the potential identified undesirable, unintended or unconsciousness related factors countervailing sustainability goals?

4.2.2 RESEARCH AIMS AND OBJECTIVES

The following research aims and objectives are aligned with the research questions. The fundamental aim is to explore sustainability strategy's operationalisation status and the

operational implementation of sustainability in German banks' core business – the corporate credit divisions. Furthermore, to gain a deeper understanding of the organisational and work environment-related factors amplifying the identified gap between the strategical willingness of implementing sustainability's complex goals and their practical realisation within the German banks (Weis, 2010; Müller-Christ, 2014; Klein, 2015; Eustachio *et al.*, 2019).

The underlying knowledge gap leads to the following research aims:

- First, identifying the banks' willingness to implement sustainability in their decision making processes in the corporate credit departments by implementing structures or rules in this core business area.
- Furthermore, identifying undesirable, unintended or unconsciousness-related factors that are potentially responsible for the limited operational implementation as indicated by the existing research literature.
- Based on these considerations' findings, to propose tools to overcome the factors that hinder the strategic goals of the defined sustainability.

4.2.3 RESEARCH APPROACH

Two common approaches are induction and deduction. Inductively building a theory is always associated with exploratory research, while studies that seek confirmation of previous research are deductive (Perry, 1998; Gray, 2004). Therefore, the choice of an inductive or deductive approach is strongly connected with the level of research's explorativeness (Perry, 1998). Additionally, abduction and retroduction are alternative approaches. Related to CR is the herein used reproductive approach. It leads the researcher from a phenomenon to a mechanism that could cause the phenomenon and is related to abduction (Easton, 2010). Therefore, identifying the underlying processes through specific mechanisms allows for generalisation. Consequently, the outcome of the case study must be based on a theory that is a causal explanation according to the CR philosophy, i.e. the best explanation that best fits the data (Easton, 2010). Also, triangulation of data collection methods is recommended. Therefore, this thesis' approach's explanation or generalisation is deduced from justified individual statements

and, as the research is exploratory, it aims to answer questions of reasoning with a scarcity of given sources and therefore little given theory to test (Easterby-Smith, Thorpe and Jackson, 2012; Creswell, 2013).

The research adopts an exploratory sequential strategy to emphasise qualitative data via expert interviews and generalises them to a larger sample via quantitative content analysis of the non-financial reports (Walliman, 2010). The applied sequential strategy underlines the research aims and objectives and seeks to generalise and confirm the findings (Creswell, 2013; Bryman and Bell, 2015).

4.3 RESEARCH STRATEGY

The choice for the underlying research strategy is made concerning the research questions, aims and objectives. The various research strategies are not to be classified as better or worse. Still, the choice is based solely on whether the research strategy best suits the research questions and achieves the research aims and objectives (Saunders, Lewis and Thornhill, 2012).

Combining this research topic's wide variety of aspects and the research phenomenon's high complexity calls for a methodology that allows deep understanding and makes flexible reactions to unanticipated findings. To reveal the contextually defined phenomena and the causality of the mechanisms, a multi-angle view and a reduction of complexity are crucial to unveil the underlying mechanisms and to overcome the real world's complexity, which could be problematic when the variety of facets and patterns distract from the causal foundation (Zachariadis, Scott and Barrett, 2013). Case studies can describe a phenomenon and focus on causal relations with an additional, prominent usage for analysing organisations and relationships, as those are complex and difficult to get access to. They offer high flexibility regarding sources and iterative processes (Easton, 2010). Furthermore, an explorative research setting with case study research is recommended against the background of this still largely unexplored area in research and managerial practice (McCutcheon and Meredith, 1993; Kothari, 2004; Branco and Rodrigues, 2008; Yin, 2009; Chih, Chih and Chen, 2010; Weis, 2010; Wu and Pagell, 2011; Epstein *et al.*, 2014; Müller-Christ, 2014; Wiengarten *et al.*, 2017).

As the research questions focus on 'why', 'what' and 'how' questions, a case study strategy is suggested (Gray, 2004; Yin, 2009) and applied for this research (Gray, 2004; Yin, 2009). In the case study research methodology, a phenomenon is examined in-depth in its present context. Therefore, it is particularly suited to studying phenomena where the distinction between phenomenon and its context is not apparent (Yin, 2009). Therefore, case studies are made to investigate a phenomenon in the real world and search for in-depth answers using multiple sources (Yin, 2009) and are exploratory (Kothari, 2004). Furthermore, they seek a rich understanding of the topic and its processes (Morris and Wood, 1991) and therefore focus on the causal relations more than descriptions of situations (Gray, 2004). In other words, intensive methodologies, as they are used in case study research, are more useful to describe a phenomenon (Zachariadis, Scott and Barrett, 2013).

Based on these factors and the research approach, a case study methodology was chosen and developed, focusing on multiple cases within corporate client departments of sampled banks in Germany. Moreover, a case study within banks corporate credit departments is straightforward, as it supports a detailed description of a phenomenon's existence (Eisenhardt and Melissa E. Graebner, 2007). As an exploratory qualitative researcher, the research's justification relies on offering an insight, which contrariwise could not be acquired via a quantitative approach. Considering the research strategy, building a theory from a case has a different assumption than most quantitative approaches relating to statistical generalisation (Sayer, 2000; Eisenhardt and Melissa E. Graebner, 2007).

For this concept, the usage of multiple sources is essential (Morris and Wood, 1991; Yin, 2009). One of the key factors is the ability to use various data sources, allowing multiple analysis levels within a case study (Eisenhardt, 1989; Eisenhardt and Melissa E. Graebner, 2007; Yin, 2009). Furthermore, the usage of multiple methods reflects the demand for various perspectives, as realism accepts multiple representations in contrast to positivism. Therefore it asks for the underlying reasons for events, and the research demands multiple perspectives (Porter, 2007). Second, it overcomes a potential "method effect" and the method-inherent influence on the reached results (Gray, 2004;

Saunders, Lewis and Thornhill, 2012). Therefore, to overcome the mentioned risks and crucial characteristics, data collection from multiple sources should be required (Gray, 2004). Its problem is the probability of distinguishing between phenomenon depending and research characteristics emanating findings (Larsson, 1993).

4.4 RESEARCH METHOD – CASE STUDY

The multiple-case case study was chosen concerning the inherent aims and objectives of the research design. Even though a single case might be sufficient, case studies are often extended to multiple cases to enlarge usability and benefit, even if there is a lack of epistemological justification for this widening (Yin, 2009). Without a doubt, does the sample size of a multiple case study still lack statistical validity (Easton, 2010). If interpretivism is not used as a defence for the case study methodology, a more positivist direction is to use multiple cases to predict regularities or find a generalisation (Easton, 2010). Nonetheless, generalisation is possible by using multiple cases and their potentially supporting findings for a theory (Yin, 2009). However, generalisation of case studies can only be made theoretically. It is neither a universal generalisation nor a statistical, as a statistical generalisation requires a larger sample size (Gray, 2004). It is a mere analytical generalisation (Yin, 2009; Easton, 2010). Concerning the research setting, the case study strategy aims to gain a deeper understanding rather than generalisation (Simons, 2009). Even if it does not focus on a specific organisation, it considers a restricted research environment: the German banking landscape. So, generalisation is only considered to a specific extension. Therefore, a multiple case study is preferable.

Despite the argument of generalizability, the heterogeneity and uniqueness of the event should define the number of cases. It aims to optimise the research to find the most plausible explanation (Easton, 2010). The mentioned "blind spot" characteristic of the research topic also implicates a lack of existing research and theory. Under these circumstances, more profound research and a smaller number of cases are advised (Easton, 2010). Concerning generalisation, the critical realist perspective discusses no empirical test that produces absolute confirmation (Vincent and Wapshott, 2014). Arguably, limited generalisation is encouraged, and a theoretical generalisation from the

case study is possible. The researcher's interest was fundamentally, and despite the possibility of creating a theoretical generalisation, to seek the best possible explanations and new knowledge. This intention is consistent with the argument of the fallibility of knowledge.

The underlying idea is the same as hypothesis-testing. By using multiple sources, data can be triangulated to provide a more robust hypothesis' construction (Eisenhardt, 1989). Unfortunately, case studies are less accepted (Yin, 2009). Therefore, achieving reliability and objectivity is crucial to address the main criticisms (Gray, 2004). Thus, the research relies on a broader amount of methods, like interviews and document analysis, to achieve a multi-angle view and combine this with a research setting of multiple entities as a viable source of data for added reliability and objectivity (Gray, 2004; Saunders, Lewis and Thornhill, 2012).

The research focuses on document analysis and semi-structured interviews with German banks' corporate credit experts. Therefore, the case study will combine multiple sources to a mixed-method approach, as case studies can use both quantitative and qualitative data but mostly rely on qualitative data collected by semi-structured interviews (Gray, 2004; Easton, 2010). Whilst statistical methods argue from correlation to causation, which typically countervails the ontology of critical realism, mixed-methods approaches are of particular interest to critical realists because a mixed-methods approach can reveal different features in a stratified reality (Downward and Mearman, 2007; Porter, 2007; Zachariadis, Scott and Barrett, 2013). Data triangulation through secondary data is recommended to reveal these different features (Toomer, Bowen and Gummesson, 1993). This secondary data amplifies the qualitatively collected primary data and allows the phenomenon to be viewed from different perspectives (Simons, 2009).

The primary data collection is carried out through expert interviews (see chapter 4.4.1 Expert interviews) as the literature review has given a good insight into the prevailing and recommended methodology of the case study, which is also applied to this work. Previous research has shown that its design was essentially based on interviews. Therefore, semi-structured interviews were a relevant instrument for collecting primary

data (Stubbs and Cocklin, 2008; Arenas and Ayuso, 2016; Diouf, Hebb and Touré, 2016; Kleanthous, Paton and Wilson, 2019). Those interviews will help identify, sort out, and, most importantly, allow the researcher to gain further insight into the research question's underlying processes of individual banks and employees. The later-described documentary analysis (see chapter 4.7 Data analysis of the DNK reports) is a further triangulation via publicly available documents and information from the companies. Several authors recommend this concept of data triangulation (e.g. Stubbs and Cocklin, 2008; Arenas and Ayuso, 2016; Diouf, Hebb and Touré, 2016), as it counteracts the complexity and exploratory nature of the research with a valid methodology (McWilliams and Siegel, 1997; Diouf, Hebb and Touré, 2016). The documentary analysis uses non-financial reports and focuses on the corporate credit clients objectives management, the relevant decision-making processes and given freedom of decision to the interviewed employees. It defines the work environment and department's strategy in which the interview participants act and evaluate the generalizability of the case study's insights to further institutions.

4.4.1 EXPERT INTERVIEWS

The initiating and focused qualitative part of the research approach uses semi-structured interviews to outline and identify the scope of criteria to be used for assessment in the various cases in a bank's corporate lending business and thus draw conclusions on the existence and usage of guidelines by operational employees (RQ1), as well as potential framing concepts and recurring decision structures on the operational level (RQ2 and RQ3). Therefore, interviews are among the most essential sources of information in case studies (Yin, 2009).

The interviews were semi-structured, conducted in a short period of time and a conversational atmosphere (Yin, 2009). This form of interview is suggested, as it can increase the proportion of speech among interview participants and increase the willingness to provide information in a conversational dialogue compared to structured and unstructured interviews (Gioia, Corley and Hamilton, 2013). In addition, interviews offer the researcher an excellent opportunity to capture the interviewee's reality dimension (Lamnek and Krell, 2016). Even though the semi-structured qualitative

interviews are structured as a face-to-face conversation in which situational adaptability is possible, open questions and a neutral interview style prevail (Lamnek and Krell, 2016). Therefore, it is helpful to prepare a structured guide. Firstly, to have anchor questions at the beginning that create a trusting atmosphere and secondly, to continue or bring back the conversation with well-considered questions in the further course, so as not to let the interview break off and pursue the research focus. All interviews were conducted in the German language to reduce or avoid potential translation errors and information reduction due to non-native language. The interview questions can be found in the appendices.

To understand how the employees are set in their organisational framework of balancing competing priorities in their decision-making processes, the researcher used real-life cases regarding regular work processes and decision-making. This research method is suggested and was previously embedded into successfully tested and accepted concepts, which will be discussed in the further course of the chapter (Wu and Pagell, 2011)

Furthermore, the concept of Cognitive Task Analysis (CTA) was used. Within the CTA, semi-structured interviews are used to elicit the cues and influences on judgment and decisions (Schraagen, Chipman and Shalin, 2000; Crandall, Klein and Hoffman, 2006; Kahneman and Klein, 2009). Therefore, it allows to identify, sort out, and gain further insight into the underlying processes that are influential for biased decisions. Furthermore, conducting qualitative expert interviews with operational interviewees from different banks in person proved to be a great advantage. This way, in addition to the transmitted "soundtrack", all senses can contribute to the overall impression. Besides, the researcher/interviewer can establish a relationship of trust more readily in personal interviews, which leads to the interviewees opening up more.

The sample selection is crucial for the validity and generalisation (Gray, 2004), as the low representativeness of case research is its key critic (Easton, 2010). The sample size and composition are crucial for this research's validity, useability, and impact to tackle this research's aims. Therefore, the selection and composition received much attention

and was accompanied by a time-intensive preparatory work. The participants were selected according to the following inclusion and exclusion characteristics:

They are necessarily employees of German banks. In addition, they are distributed among the entire spectrum of the banking sector of cooperative banks, private banks and the public sector/savings banks concerning those banking groups market share. Within this profession, they are active, operative decision-makers in a corporate client department, as this defines the research environment. The department or business segment is chosen for its strong impact on sustainable development through the leverage effect of credits and liquidity towards the economic system and the most frequent operational decision-making processes regarding long-term related business concerns (Weis, 2010). Thus, the primary inclusion criteria depend on the current job-related role as a consultant for corporate clients within the bank. Further related criteria are the interviewees' experience in their role in years and the sample allocation over the different bank types (three-pillar system), as described in the previous chapter.

The exclusion criteria concern the researcher's and participants' relation. For example, to limit the participants' familiarity with the research and the researcher and thus reduce ethical issues, such as friendly favours and biases and emotional conflicts. In order to meet these exclusion criteria, the researcher excluded all direct colleagues from the department in which the researcher worked during primary data collection and potential participants with whom the researcher has already spoken about his research, especially informally.

Case study design typically involves one or a few situations by collecting data from multiple sources (Easton, 2010). The total number of cases to build varies depending on the kind of research. So, even if the sample size is not a relevant aspect for the case study, the examined sample is crucial. It is not the sample size in particular but its representativeness (Gray, 2004). Therefore, achieving a representative sample and a good response rate is necessary (Saunders, Lewis and Thornhill, 2012). In this setting, the consulted companies should consist of a representative sample of the whole research setting in terms of its composition in a manifold set of attributes.

The interview participants' sample size relates further to saturation, which means that the researcher can finish his data gathering when new data does not deliver new insights or new information (Charmaz, 2006). This statement could lead to the assumption that there is no anchor to be determined in advance. However, other authors mention target values. For example, Creswell (2013) recommends conducting ten in-depth interviews. However, based on the literature review, the number of participants interviewed in similar research settings significantly varied and ranged from 7 to 30. Whereby several functional areas were interviewed, especially in the larger interview groups, so that the minimum number of interview participants per functional area was 4 and the maximum 20; the number depended on the available scope and the achievement of the collected data's saturation (Stubbs and Cocklin, 2008; Arenas and Ayuso, 2016; Carlucci *et al.*, 2018; Kleanthous, Paton and Wilson, 2019).

This limited understanding of sustainability practice in this field justifies selecting a relatively small sample, as its focus was a deep understanding of the researched phenomenon. For this thesis' theory generation approach, a case analysis of 4-10 cases is appropriate (Eisenhardt and Melissa E. Graebner, 2007), which is also in accordance with Kvale's (2008) suggestion for the typical amount of interviews of 10 +/- 5 and corresponds to the representative sample of comparable previous research studies (Stubbs and Cocklin, 2008; Arenas and Ayuso, 2016; Carlucci *et al.*, 2018; Kleanthous, Paton and Wilson, 2019).

Each interview includes three differing cases: new customer acquisition, new customer enquiry and credit expansion (further credit lending) for an existing customer. The research assumed that not every consultant would be responsible for all case types in their operational area of responsibility. Therefore, all cases are addressed during the interview. Nevertheless, it should be assumed that only half of the cases can be discussed with the interviewee on average. Thus, the case study would cover $1.5 \times 6 = 9$ cases, and therefore, a sufficient number of cases would be discussed (Eisenhardt and Melissa E. Graebner, 2007).

As participants are homogeneous due to the sample composition of purposeful sampling, a sooner saturation can be expected (Guest, Bunce and Johnson, 2006). For

this research, purposive sampling was used for the selection approach, including participants' choice and their number for the research work (Saunders, Lewis and Thornhill, 2012; Creswell, 2013). The research aimed to gain a precise understanding of the mechanism and the phenomenon as well as a theoretical generalisation based on this. Therefore, the selection of samples for the case study was based on purposive sampling. In order to obtain the information needed to answer the RQs, the selection was made with the following characteristics.

- A corporate credit advisor is defined as a person who works operationally for a bank or savings bank in the corporate client department with their own client responsibility.
- Ceded credit authority: It was essential that the participants have lending expertise and were, therefore, decision-makers in the lending process and customer liaison.
- Diverse demographic structure: A sample distribution was advisable to observe a differentiated picture and possible dependencies regarding previous findings.

As access to people and data is crucial for all research, the insider researcher setting was beneficial.

Especially in this research context, within a few companies, it is essential may be unsettling for the company and its employees (Gray, 2004). This has an essential effect on research, impacting communication, expectations and time horizons (Flick, 2009). The successful acquisition of participants was therefore also dependent on a trusting and professional starting position. Therefore, a pool of about 100 participants is available from the researcher's and employer's business networks. All participants and the subjects of the study are known from a business context. The researcher has regular meetings with the potential participants in the working environment and can approach potential participants personally and pitch the research concept before a formal contract, including all necessary information, is initiated. Participants were asked if they wished to participate.

Potential participants were selected and approached based on equal distribution, according to representativeness. The participants were then selected according to the first-come, first-served principle in their representative group. Based on the distribution keys described above and according to demographics and affiliation to the banking groups, the commitment speed is decisive for participation in the study.

The participants were requested via the University's email address in June 2019. After a positive response, they were contacted by phone. Within these pre-interview contacts, any queries were clarified, the research information, the consent form and conditions of participation and rights, including the right of withdrawal, were handed out and discussed, and an appointment for the interview was arranged. The interviews were then conducted in July 2019. The information and contract package for participation can be found in the annexes.

The research work finally included six expert interviews regarding a total of 17 differing cases, with a homogenous allocation over the three pillars (two private bank consultants, two savings bank consultants and two cooperative bank consultants) as it was previously advised as sufficient (Grodach, 2011; Baker and Edwards, 2012). Furthermore, the given distribution and sample size led to a representative sample in the market distribution (described in more detail in Chapter 4.4 Research method – Case Study) and integrated demographic characteristics considered in the previous research into the distribution process.

4.4.2 DNK-REPORT ANALYSIS

In further analysis, the interview data is combined with the banks' published strategy information regarding their sustainability approaches for data triangulation to provide a more robust hypothesis construction (Eisenhardt, 1989). Researchers used reports and analyses for decades to examine sustainability research (Ernst & Ernst, 1978; Campbell, 2003; Beck, Campbell and Shrives, 2010). The research papers identified in the literature review that pursue similar goals also use comparable reporting data for triangulation (Stubbs and Cocklin, 2008; Arenas and Ayuso, 2016; Diouf, Hebb and Touré, 2016).

According to Milne and Adler (1999), assessments of sustainability and analyses of sustainability practices, content analyses of reports are a popular research method. Content analysis' popularity is due to its systematic approach that allows trends to be determined and systematic classifications and comparisons to be made (Milne and Adler, 1999; Krippendorff, 2004). The data basis used here for the quantitative data collection is the reporting following the requirements of the "Deutsche Nachhaltigkeitskodex" (DNK), which translates to German Sustainability Code, is relevant as a model in particular for the broad German banking sector, which can be used as a non-financial declaration to fulfil the CSR reporting obligation (Rat für Nachhaltige Entwicklung, 2016). The DNK report was created based on the CSR Directive adopted in 2014. It states that from 2017, capital market-oriented companies, as well as credit institutions and insurance companies with a company size of 500 employees or more, must report annually on their performance in the areas of society, environment, anti-corruption, human-rights, employees and diversity in management bodies (Rat für Nachhaltige Entwicklung, 2016). The EU member states had to transpose the CSR Directive provisions into national law by 6 December 2016. The first-time application took place in the 2017 financial year, as finally discussed and passed by the Bundestag in the second/third reading on 9 March 2017 (Bundesverband deutscher Banken e. V., 2017a). The reports available at the latest on the date of the interviews were used to achieve a time-related presentation. The query of the publicly available database of non-financial reports according to the DNK reporting standard was retrieved on 2 October 2019 and referred to the years 2017 and 2018.

The researcher aimed to include the entire spectrum of the banking sector of cooperative banks, private banks and the public sector/savings banks related to their market share. The DNK database allowed filtering in the sector "banks, insurance companies, financial service providers". At the time of the study, 539 companies had published non-financial DNK-reports.

Among these companies, all special-, state- and central-banks, and insurance companies and other specialised financial service providers were manually sorted out by the researcher to select only bancassurance institutions with corporate lending businesses

in order to exclude specialised institutions that, for example, exclusively offer asset leasing, wealth management or private bulk business. Reports from 24 relevant cooperative banks, 6 relevant commercial banks and 100 relevant savings banks were selected. Particularly in the selected set of institutions in the cooperative sector, an apparent quantity deviation arises from the German banking market's quantity distribution, which is described in Chapter 3. In particular, the smaller average company size in the cooperative banking sector in conjunction with the reporting requirement of 500 or more employees has a significant influence here (Bundesministerium der Justiz und für Verbraucherschutz, 2017).

4.5 DATA PROCESSING OF THE INTERVIEWS

The acquisition, release and processing of the desired information based on the expert interviews are primarily dependent on the participants being able to rely on the assurances given about the agreed rules on voluntariness, preservation of anonymity and the possibility of withdrawal of statements. Essential requirements and procedures are also discussed in Chapter 4.10 Research ethics. This chapter first outlines the processing of the data obtained. Due to the small number of interview participants, the required openness, the need for trust and the overall high level of secrecy inherent in the banking sector, ensuring anonymity is significant. Therefore, the raw data will be kept secure and undisclosed, as the final thesis contains only summarised and highlighted findings (Gray, 2004). Collected statements, information or contexts that are highlighted to underline the research findings do not allow identification of the originator. Anonymity is ensured because the quotations do not have names, places or other personal or company-identifying specifics. This procedure is consistent with the Data Protection Act (University of Worcester, 2017). According to this Act, pseudonyms usage to allow reviews of transcribed findings is a feasible concept. To fulfil the Act's special provisions for research, the gained information will exclusively be used for research purposes and do not harm the participants (University of Worcester, 2017). Furthermore, the cooling-off period gives participants veto-holding powers over their data.

All consent forms with the referring pseudonyms will be kept as a password-protected digital copy and stored securely on the University of Worcester's One-Drive directory and separately to the research data. Thus, the procedure will allow the researcher to relate the gained information to the participants' identities and ensure confidentiality and anonymity (University of Worcester, 2017). The data will be held for ten years and the year of research following the University's data management guidelines. It will then be deleted if no further research related usage is required. Regarding compliance with the GDPR, the pseudonyms count as personal data and require participants to be supplied with a privacy notice. This notice is included in the consent form (see appendices) and contains the needed information inconsistency with the University of Worcester's data protection guidelines.

The interviews' recorded data will be transferred immediately to a University's storage space after the interviews' completion to limit the risks of data loss. The audio data was kept until the anonymous transcripts were revised and securely discarded in acceptance or denial of usage.

4.6 DATA ANALYSIS OF THE INTERVIEWS

The search of CR aims at "demi-regularities". These are tendencies rather than regularities (Danermark *et al.*, 2002). According to CR, these tendencies or "demi-regularities" can be identified through recurring schemes, which can be identified through the coding of qualitative data (Lawson, 1997; Fletcher, 2017). The analysis is content-driven (Guest, MacQueen and Namey, 2012) based on CR philosophy and aims to uncover generative mechanisms and generate a metatheory (Guest, MacQueen and Namey, 2012). The thematic analysis is not designed to count words or phrases but to identify and describe implicit and explicit data content (Guest, MacQueen and Namey, 2012). Apart from the objectives, the literature on critical realism lacks application concepts and stays vague in describing qualitative data analysis (Yeung, 1997; Fletcher, 2017). the research follows the recommendations and applied methods of current studies and analysed the collected text data by themes and codes.

According to Guest *et al.* (2012), this type of analysis for capturing complexity and meaning in textual data sets is the most suitable and frequently used analysis method

in qualitative research. The thematic analysis was created and structured with the help of the software NVivo, a qualitative data analysis (QDA) software. QDAs were also used in comparable qualitative research work identified in the literature review (Stubbs and Cocklin, 2008; Arenas and Ayuso, 2016).

Some critical realists follow inductively-based analytical procedures and an approach based on grounded theory in terms of data coding and analysis (Fletcher, 2017). For various reasons, this does not seem ideal for a CR study. Therefore, this approach uses a primarily deductive coding (Hsieh and Shannon, 2005). The codes were created using the literature review and research setting. They were changed, discarded, and added during the analysis until each section of the transcripts was coded (Gilgun, 2011). In adopting this approach, the researcher also follows Saldaña's (2016) suggestion and avoids rigid approaches and thus the risk of bias by mirroring the researcher's preconceived notions of what to await corresponded to the observations and reflects the deductive coding process' flexibility (Fletcher, 2017). The codes were divided into two types: organisational and theoretical codes. Maxwell (2012) described organisational codes as topic-based 'bins' into which data is sorted. Theoretical codes, on the other hand, are those whose structure can be developed from existing research theories (Fletcher, 2017). Besides, NVivo coding queries identify dominant codes regarding frequency and connections between codes, which served as a basis for identifying tendencies (Fletcher, 2017).

The analysis was carried out in the following steps.:

1. develop an initial coding manual.
2. detailed review of data.
3. further coding and identification of themes.
4. interpretation of data.

Step 1: Develop the initial codebook

The first codebook was derived from the literature and serves to structure the primary data. The codes also include the aspects of the research questions and the analysed

literature on sustainability strategies and their operationalisation and contain and order all discussed topic areas from the interviews.

Step 2: Data review

In the next step, the researcher aimed to become familiar with the data collected. For this purpose, the qualitatively reviewed transcripts of the semi-structured interviews were read, reflected upon, and segmented to assess the data quality (Guest, MacQueen and Namey, 2012). One advantage of semi-structured interviews is that the text can be easily divided into segments if the interview guide is used consistently.

Step 3: Coding process and identification of themes

In this step, the coding of the data and their clustering into themes took place. First, all transcripts were screened and indexed with the codebook (see table 4). In the process, the codebook was permanently expanded and specified by adding, changing, or deleting codes. In addition, the background information such as age, gender, length of service, experience in the job profile was mapped for further triangulation. As the final codebook development was an iterative process (Guest, MacQueen and Namey, 2012), the already coded transcripts were also reviewed and recoded several times.

Step 4: Interpretation of the data

Data interpretation was carried out by reflecting on the findings in order to identify the deeper meaning of the data and detect demi-regularities (Creswell, 2013; Fletcher, 2017).

The approach described in points 1-4 was less linear and more iterative.

After the main findings (demi-regularities) were identified through coding in this first research step's qualitative analysis, the next step was the abduction through re-description based on a theoretical concept (Fletcher, 2017).

		statistics	acquisition	cases enquiry	customer expansion
experience	total				
	corporate consulting				
	on current job position				
	number of employers				
	employers in various pillars				
company given specifications					
experience in respective case					
information used	primary				
	secondary				
practical approach					
quantitative aims					
customer's management analysis					
special factors	analysis				
	choice				
strategical alignment					
top 3 topics					

table 4: Coding of the interviews in relation to the cases examined

4.7 DATA ANALYSIS OF THE DNK REPORTS

The non-financial reporting data used for data triangulation based on the mixed-methods approach were analysed and coded using content analysis. Content analysis aims to relate content to given categories and thus quantify it systematically (Krippendorff, 2004; Bryman and Bell, 2015). The subsequent description is done using statistics (Hsieh and Shannon, 2005). Thus, quantitative analysis can be performed on seemingly qualitative data. This method is often used to quantify qualitative data (Collis and Hussey, 2013). It is adopted in this thesis and mainly used in corporate sustainability studies and by coding and categorising anecdotal information from publications to quantify and scale the data. Its dominance in this field of research is due to its advantages. It allows hard-to-study topics to be explored by allowing data to be collected from a diverse set of source types (Morris, 1994). Furthermore, this method can reduce possible biases of the researcher or ethical concerns of research projects, which are under constant criticism, as the participation of individuals is not mandatory for the collection of empirical data (Morris, 1994). Thus, it is importantly relevant concerning research philosophical theory, which considers the researcher's subjective influences.

The content analysis of the 130 DNK reports was also realised with the software NVivo. Other articles and studies in the field of sustainability based on content analysis use annual reports for their data collection (Vourvachis, 2007). For this thesis, specific, non-financial reportings of (savings) banks' sustainability strategy are used as sampling data

sets. According to the CSR Directive Implementation Act (CSR-RUG), companies subject to reporting requirements can use national, European or international frameworks to prepare their non-financial statement (§ 289d HGB). The "Deutsche Nachhaltigkeits Kodex (DNK)", which stands for German Sustainability Code, is explicitly mentioned in the explanatory memorandum as an example of such a framework. It is a comparative framework developed in Germany by the German Council for Sustainable Development, which the Federal Government appointed and adopted in 2011 (Bundesverband Deutscher Banken e. V., 2017).

Through the DNK declaration of conformity, users can fulfil the reporting obligations on non-financial information (Bundesverband Deutscher Banken e. V., 2017). Furthermore, due to the recommendation of the Association of German Banks for the DNK-Report as a medium to fulfil the reporting requirements and the widespread use within all German credit institution groups, this medium was used as a quantitative triangulation source.

For the application of content analysis, the definition of the units of analysis used is still necessary. According to Unerman (2000), different unit measures can be applied to this thesis. The disclosure information from the DNK reports can therefore be quantified in different ways. The number of reports containing predefined report categories could be determined. In more detail, it is also possible to count individual words, whole sentences or relevant pages. In this way, it is also possible to determine the percentage of the total reporting for a defined category. Although previous research has used different measures of disclosure, as Menassa and Brodhäcker (2017) have summarized. The choice of units of analysis is an issue worthy of consideration as it can influence the outcome and thus the evaluation framework (Unerman, 2000). While words are easier to categorise, sentences are more useful when deriving meaning (Gray, R, Kouhy and Lavers, 1995). This categorisation decision is essential for this research, as it focuses on the way of a sustainability strategy's implementation in corporate lending. A company's sustainability report does not directly disclose its sustainability strategy. However, according to the GRI-FSSS, it can be interpreted through the foreword and statements by the CEO or board of directors, by interpreting the sustainable objectives and corporate's role conveyed therein (Jeucken and Bouma, 1999) Thus, an organisation's

sustainability strategy may be published, but its usage is not instantly visible (González-Benito and González-Benito, 2005). While earlier researches have measured the sustainability strategy based on managers' perception (Sharma and Vredenburg, 1998; Christmann, 2000; Sharma, 2000), this research focuses on the actual implementation and the operational implementation of sustainability in the business area of corporate loans. The focus is thus also on the question of whether a potentially formulated sustainability strategy is actually implemented. In addition to counting implementers of a sustainability strategy, the degree of implementation and sustainable practices is another relevant factor. According to the literature review, further insights are also provided by the mission statement concerning the recognition of triple bottom line related responsibility in the core business.

There are two dominant approaches that can be distinguished, and which integrate sustainability differently into a company's strategy (Jeucken and Bouma, 1999). On the one hand, banks that see sustainability activities as compliance with laws and a matter of risk management or, on the other hand, banks that truly want to be sustainable and balance all sustainability dimensions in their operations. Therefore, the study used content analysis to triangulate the data and transform the qualitative text into quantitative data for a mixed-methods approach. NVivo serves as a tool for this transformation, as content analysis is a very time-consuming task. Therefore, the researcher argues that NVivo and similar software helps facilitate the data analysis process. Thus, it helps to provide an accurate, transparent and reliable picture of the data while processing and analysing them. Through NVivo, the researcher was able to analyse this large number of 130 DNK reports in a reasonable time frame.

In this thesis, the aim of the content analysis was to generate evidence on the respective sustainability strategies and their implementation. The coding plan and coding manual are created to classify the texts based on the research questions. Its development bases on the recurring themes and focal points found in the reports (see figure 6: Content analysis' themes and focal points).

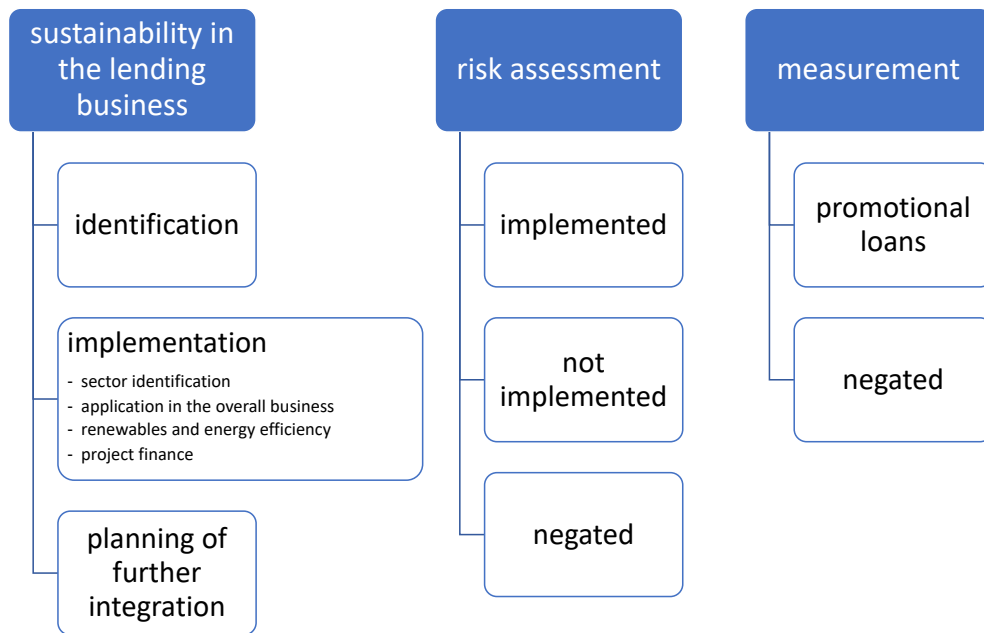


figure 6: Content analysis' themes and focal points

4.8 VALIDITY AND RELIABILITY

In terms of results' quality and credibility, validity and reliability are crucial and should therefore be treated with particular attention to achieving a good result (Morse *et al.*, 2002; Easton, 2010; Fletcher, 2017). First and foremost, valid and reliable data must be collected that allow classification and coding to be repeatable and thus remain independent of the researcher's subjectivity so that the variables generated in the research results represent what they represent (Weber, 1990).

The researcher followed the suggestions for case study research by Miles and Huberman, and Yin to assure methodological stringency (Miles and Huberman, 1994; Yin, 2009). According to them, the research should meet four criteria: Reliability, internal validity, external validity and construct validity.

1. reliability

Research results are considered reliable if they can be repeated and the data collection and analysis methods produce consistent results (Collis and Hussey, 2013). For an

adequate reliability, the following questions must be answered in the affirmative: Are the results the same in other situations under the same investigation measures? Is the derivation from the raw data understandable, meaningful and transparent? Would the results be identical if carried out by a third party? (Krippendorff, 2004; Easterby-Smith, Thorpe and Jackson, 2012). In particular, to make the data processing and the coding and interpretation of the raw data comprehensible, the interview transcripts and raw data of the content analysis and other significant evidence were secured.

2. validity

Validity means that the subject under investigation is accurately represented to a greater extent by the results of the research (Collis and Hussey, 2013). Internal validity is achieved by matching the patterns observed during data collection with those found in previous research from the literature review. A further increase in internal validity can be achieved through similar pattern structures in different contexts. In addition, the further increase of external validity can be achieved through the repetitive systematics in the multiple case studies in the research design. Construct validity is also called process-related validity and describes how comparable measurements relate to each other (Weber, 1990). Good construct validity exists when the different measurements achieve similar or correlating results, and it is achieved by using several sources and triangulation of their data. In this thesis, interviews and DNK reporting analyses are used for this purpose. Furthermore, several interview participants per organisation and banking group are involved.

The triangulation of data collection methods can be used differently in the research process (Bryman, 2006). Here, a sequential strategy is used in which the data collection methods are introduced one after the other to explain, generalise and confirm the results (Creswell and Plano Clark, 2011). If, as in this study, the aim is to conduct exploratory research, an exploratory sequential strategy is used to discover main themes by using qualitative data collection tools and then generalising them based on quantitative data of a more extensive data set and larger sample.

Especially concerning sustainability in this research context, it cannot be excluded that certain expressions are given different meanings or perceived differently. As noted in the literature research, the conceptual definition and application logic is vague and operational definitions are scarce (Sharma, 2002; Bansal, 2005; Stubbs and Cocklin, 2008; Weis, 2010; Wu and Pagell, 2011; Müller-Christ, 2014; Müller, Janetschek and Weigelt, 2015; Wiengarten *et al.*, 2017; Eustachio *et al.*, 2019)

Furthermore, the relevance of "response bias" was also assigned a potentially significant role in advance of the interviews. Response bias refers to the respondent's tendency towards "socially desirable responses" (Kromrey, Roose and Strübing, 2016). Since the interviewees can reflect sustainable behaviour as a socially desirable goal in the research context, their answers could be biased towards how they would like to see themselves. These sources of error can lead to a certain distortion of the response picture, which cannot be eliminated but can be reduced. Therefore, an appropriate approach is advisable, which will be examined in more detail in chapter 4.10 Research ethics due to its research-ethical peculiarities in the context of timely disclosure.

4.9 RESEARCH QUALITY

In addition to questions of validity and reliability as well as the research ethics framework, the general quality of the research work is also essential for the academic relevance of the results. The overall quality of research depends not only on choosing a suitable methodology but also on its execution. It includes the presence or learning of required research skills, the execution's excellence and the researcher's ability to objectify or neutralise his own potential assumptions, heuristics and beliefs. Therefore, measurement errors affected by the interviewer, the wording of the data collection technique have to be deliberated (de Leeuw, 2013). Especially the interviewer and a lack of quality control and misunderstanding due to the wording of the questions could lead to different conclusions (de Leeuw, 2013). These effects highlight the underlying philosophy's belief in reality's interpretations.

Furthermore, the researcher acts as an insider researcher. He was employed as a corporate client advisor in both a savings and a cooperative bank until the beginning of 2020 and thus during the conduct of the interviews. This circumstance has advantages

and disadvantages in terms of research quality. Both the role as an insider researcher and the underlying research philosophy CR, leads to the fact that personal values can enter into the research. Therefore, the following aspects are fundamental when assessing the researcher's skills. Fundamentally, in order to achieve excellence in research, the methods must be applied appropriately. Furthermore, the research has to ensure that the data collected is credible and trustworthy and that the researcher has considered adherence to ethical rules for all decisions made.

Properly implementing the primary data collection methods required the researcher to have specific skills related to interviewing participants, including the ability to conduct appropriate and goal-oriented discussions, moderation, and active and attentive listening. Furthermore, since the researcher was employed in the banking industry, he also knew the organisations, areas of responsibility, technical terms, industry-specific processes and framework conditions. Therefore, the researcher was perceived as a "colleague" who identified strongly with the expert group, knew and lived its customs and acted neutrally. Thus, the interpersonal skills for dealing with difficult participants and situations were less challenging than expected.

On the other hand, these positive aspects for enabling an open discussion atmosphere through the role as insider researcher and the personal values of the researcher also require a high degree of reflexivity in order to prevent the influence on the evaluation of results by possibly existing biases, prejudices and values (Creswell, 2013). To prevent this, the researcher prioritised considering and reflecting on his potential bias to mitigate the impact of his conversational behaviour and non-verbal expressions and interpreting the responses.

4.10 RESEARCH ETHICS

The basis of high-quality, valid and reliable research work is ethically justifiable research implementation. Therefore, the research is aligned with all relevant University ethical approval processes and regulations. A fundamental concern is each participant's well-being (Gray, 2004; Saunders, Lewis and Thornhill, 2012). Apart from the potential harm that could result from the disclosure of individual statements or data, there are no potential risks of inconvenience to participants for the research. Potential power-related

stressors have been considered, as the researcher acts as an insider researcher as he is a consultant and has worked for savings and cooperative banks. However, particularly higher-ranked researcher positions in relation to the participants may cause this effect (Mercer, 2007). With a comparable role to the potential participants, this project's researcher is in an even position, and power-related issues should therefore not occur (Gray, 2004). The researcher discussed any other unanticipated emerging potential threads from the research's practical realisation with the supervisory team.

To ensure an ethically unobjectionable process, in particular voluntary participation and uninfluenced expression of opinion, each participant had to make a deliberate choice to participate in this study. There were no financial incentives. The only benefits offered are learning outcomes for the participants and their organisations.

Participants, who expressed their willingness to participate, received a study information package. It includes an information sheet and the consent form (see appendices). The researcher handed it out after the first contact email. In this context, the researcher informs about the consent and rights to withdraw. Additionally, the researcher requests to read, sign and return the forms before the settlement of an interview appointment. By giving a clear explanation of the project and requesting a clearly articulated will to participate, which was done by a signature before the participation and research's execution, informed consent is achieved and reduces potential stress factors.

Obtaining consent is also the central ethical issue of this research, as the full disclosure of the research's objectives towards the participants is countervailing and unbiased research. Research related to sustainability, as a socially desired topic, could elicit potential "response biases" related to a potential tendency towards "socially desirable responses" (Kromrey, Roose and Strübing, 2016). The interview structure was adapted accordingly to ensure that the answers and the topics raised by the interview participants describe a state of affairs and not their own or the desired strategic goal. Thus, "framing" through specific terms was avoided. Likewise, the research objective was not fully communicated in advance. Full disclosure might lead to biased and,

therefore, unfeasible results if the concept is pushed in the focus of attention. By disclosing the search for sustainability, framing issues and cognitive errors may occur. Thus, the participants will become aware and may adapt their answers. Therefore, the disclosure of research conceptual corner points could promote a potential change in the participants' approach to the tasks, their answers, and behaviour in the interviews. Arenas et al. (2016) suggested not explicitly mentioning concepts in the sustainability context and thus avoiding social desirability bias. Therefore, the term "sustainability" and related terms were concealed from the wording, as they may trigger a certain social pressure related code of conduct and may lead to biased and, therefore, unfeasible results if those sustainability-related terms are pushed in the focus of attention.

The information was disclosed after the interview to ensure an ethical research framework. Therefore, it was important to maintain an appreciative interview style to avoid participants feeling deceived and exercising their right to withdraw. Previous research has already debated this belated disclosure aspect (Grodach, 2011; Hammer and Pivo, 2017). Additionally, it was discussed with Dr Daniel Farrelly (Senior Lecturer in Psychology & BSc Psychology course leader, Institute of Health and Society, University of Worcester). He points out that this concept of subsequent disclosure is commonplace in the psychological field the research is based on.

Nonetheless, this is a major ethical issue. Therefore, an additional "cooling-off period" of 10 days after the interviews and before using the data was added. In this "cooling-off period", participants had the right to exclude parts or the whole data from the research afterwards. Therefore, if any participant feels circumvented by the previously described lack of disclosure, the likelihood of withdrawal of consent increases.

Furthermore, the anonymity and confidentiality of the participant's data and identity also play an essential role. Due to the small number of potential and actual participants, ensuring anonymity is significant. Anonymity towards the researcher is not possible, but it has to be ensured towards potential research readers. Statements, information, or contexts may therefore not allow identification of the originator. This anonymity was ensured to avoid the following undesirable results: 1. potential defamation of the institute and thus of the interview participant's employer, and 2. damage to the career

prospects of the interview participants. Thus, the raw data, transcripts and recordings have to be kept secure.

Furthermore, the revision and cooling-off period after the interview gives participants veto-holding powers over their data. Moreover, the raw material itself will not be undisclosed. The final thesis will summarise the findings without compromising any single participant (Gray, 2004) and therefore do not harm by disclosing individual statements or data. Thus, no potential threat of discomfort or above-mentioned undesired results is possessed by the research.

By applying a strict disclosure concept, participants' anonymity and information are secured, and a negative impact on the participants' development and career is seen as highly unlikely. In addition, the high number of potential participants excludes the potential risk of traceability of statements about a person, as 600.000 people work in German banks' credit departments with a distribution of 25-37% per banking pillar.

The Data Protection Act governs the security of data. Using pseudonyms allowed the researcher to review transcribed findings, they were not made entirely anonymous, and thus the Data Protection Act became highly relevant. Furthermore, to fulfil the Act's special provisions for research, the gained information was exclusively used for research purposes, did not harm the participants and was only published after an analytical classification in categories or a summarised manner, so they do not provide the chance of individual's identification (University of Worcester, 2017).

Considering all the discussed aspects, the very complex nature of the researched phenomenon, and, with regards to the research aim, a reference to the case study methodology emerges. The need for deep understanding and the ability to react more flexibly on probable unanticipated research findings outvote other strategies.

5 INTERVIEW RESULTS AND FINDINGS

Chapter 4 Methodology showed the approach to the research work. The concrete implementation details and their results are now shown in this chapter. The experimental design follows the approach of Stubbs and Cocklin (2008), using interviews as the primary database and a further triangulation of data from publicly available reports as outlined in chapter 6 Findings from the DNK report Analysis. Finally, the results found and their correlations are discussed against the background of the research questions in chapter 7 Conclusions and discussion.

This chapter first presents the selection, characteristics and representativeness of the participants. Then, potential deviations from the demographic representativeness are discussed, and their significance for this research work is evaluated. In the following, the compilation and results of the interviews, their coding and analysis are presented in detail. Including a description of the interview structure, its scientific basis, and the connections to the research questions. Hence, the case studies used for the CTA methodology are explained and what role they can play in evaluating the operationalisation of sustainability strategies. Finally, the participants' statements are processed case-specifically and thematically to build up an overview and classification of the statements on the surveyed topics and thus a data framework for answering the research questions. In addition, the limitations of the methodology and implementation are discussed.

5.1 INTERVIEW SELECTION CRITERIA AND INFLUENCES

Interviewees were selected based on several factors as described in chapter 4.4.1 Expert interviews. The selection characteristics are based on the research topic and specific area of banking business being studied. The primary inclusion criteria are job-related. All participants have to be active employees of German banks and operative decision-makers in the banks' corporate client department. Therefore, they are a consultant for corporate clients. In addition, the entirety of the interview participants should represent a diverse demographic structure. Therefore, they should be heterogeneous both in terms of their experience and their affiliation to the various banking groups and representative of the German banking market.

The professional role as a corporate client advisor and a distribution in line with the market shares among the three banking groups was essential for the research concept. Furthermore, the researcher ensured that the interviewees had the relevant professional experience to provide a sound knowledge base for the experience questions and that the demographic structure was as heterogeneous as possible. Therefore, the sample was selected via purposive sampling regarding both: the respective participant selection and the total number of participants (Saunders, Lewis and Thornhill, 2012; Creswell, 2013).

Potential participants are excluded based on a relation with the researcher to reduce ethical issues, such as friendly favours and emotional conflicts. Therefore, colleagues with whom the researcher worked directly during the primary data collection or with whom he had already exchanged information about his research project were explicitly excluded. This applies in particular to colleagues from the same department and regional office.

For the acquisition of participants, an existing nationwide network of experts who fitted the selection grid was used as a basis. Based on this existing network, the participants could be activated quickly and with a professional relationship of trust and a basic level of awareness. An available pool of about 100 participants was approached as potential participants based on equal distribution, according to the representativeness of age, experience and affiliation to banking groups.

Following the approximately equal market distribution of the three banking groups, the researcher approached employees of savings banks, cooperative banks and private banks to the same extent. This distribution is comparable to the employment statistic ratios from the same year, which allocate between 26-36% of the total workforce to the respective banking groups (Arbeitgeberverband des privaten Bankgewerbes, 2018) as well as the distribution based on banking group's lending to companies, which ranged between 19.3% and 29.7% in the banking groups (Deutsche Bundesbank, 2019). To represent as large a number of institutions as possible, one employee per institution was approached.

Due to the lack of precise knowledge about birth cohorts, the demographic distribution was made based on age estimation. The estimated age was also used as an indicator of job experience and was determined in the preliminary participation discussion and then documented during the interviews.

Potential participants were divided into batches. The first selected batch consisted of 15 potential participants with 5 per each banking group, and an assumed diverse age distribution of younger (<35 years), more experienced (35-50 years) and older candidates (>50 years). The researcher then determined the participation using the first-come, first-served principle in their representative group. Therefore, based on the defined representative characteristics, commitment speed is decisive for participation in the study.

After a first request via the University's email address in June 2019, a telephone appointment was then arranged with the positive responders and the exchange of data and information took place. The interviews were conducted in July 2019.

The finally selected participants consist of 2 participants from each banking group and thus represents the market distribution of approx. 1/3 for each banking group. Furthermore, the following demographic picture emerges:

With one interview participant per age group 20-29, 40-49, 50-59 and 60+ and two participants from the age group 30-39, different age and experience groups could be represented. The percentage distribution of age groups in the labour market statistics shows a relevantly higher number of employees in the 45-60 age group (Bundesagentur für Arbeit, 2020, p. 9). The small number of participants in the study cannot and does not want to make a statistically valid mapping here, but to map the demographic distribution in order to allow the inclusion of different generations' values and horizons of experience. This is particularly desirable in order to reflect different ways of thinking, which can have an impact on individual decisions. For example, the experience of economic crises, different time-specific and market-specific approaches and ways of thinking, expectations of further career steps and career decisions already experienced, including setbacks, are potentially significant factors influencing individual decision-

making. Overall, participants had 114 years of professional experience, with an average of 19 years in the banking sector, with extremes of 6 and 42 years. These different time periods thus include participants who have either experienced only one economic growth phase or have already experienced several economic crises as well as the bursting of several bubbles, such as the dot-com bubble or the collapse of the sub-prime real estate market. Specific experience in the current and desired profession totalled 69 years, with an average of 11.5 years, ranging from 6 to 29 years. Participants had been in their current position for an average of 7.7 years, at least 3 years and the most extended 21 years. This also shows a diverse set of existing customer experience with possible customer-specific crisis periods and the risk-side management. Only 2 participants had more than one employer, the mean value was 1.7, and the maximum number of employers was 4. Those who had changed employers also changed banking groups.

Based on the first response rule, according to which the interview participants were selected in their respective distribution groups, in that the fastest commitments determined participation, no female participants were selected, so the sample was purely male. However, given the respective departmental compositions of the institutions surveyed, this is not a statistical deviation, as only 2 of the 6 interviewees had direct female colleagues in the same job position. Thus, the researcher is aware that the sample is not representative of the gender distribution of the population. However, this limitation should not further distort the result. For example, Wilson et al. (2007) studied the decision-making of loan officers, and the results indicated that the gender of both the loan officer and the applicants did not influence decisions (Trönning and Hemlin, 2012).

5.2 INTERVIEW CASES AND CASE-RELATED RESULTS

Within the interviews, 3 different cases were examined with the participants: acquisition of a new customer, new customer enquiry, and an existing customer's credit inquiry. The RQs were thus answered based on the results of up to 3 individual case studies per interview. The question structure based on typical decision-making situations in everyday work corresponds to the typical and thus identifiable sequence of process

steps. This structure is based on the concept of Cognitive Task Analysis (CTA) to elicit cues and influences on judgment and decisions (Schraagen, Chipman and Shalin, 2000; Crandall, Klein and Hoffman, 2006; Kahneman and Klein, 2009). All 3 cases have their unique characteristics and connections concerning the research questions that need to be examined. It is questioned for each case whether the interview participants are operationally responsible for this task and, if so, what aims and targets the bank sets here and the customer selection criteria used. In addition, it was asked how the activity is reflected in the experienced corporate strategy. Thus, RQ1 (How do the guidelines of corporate banking consultants frame the operationalisation of sustainability strategies?) is analysed.

Furthermore, a detailed description of the respective process in practice is achieved through the open questions, which, supported by a sustainability vocabulary-free communication methodology, should produce unbiased insights. Those are required for RQ 2 (Can framing concepts be identified as potential origins for decision-making errors that contradict sustainability?) and RQ 3 (Are systematic cognitive biases prominent on the operational management level?). The results are then used to answer RQ 4 (Which management tools could overcome the potential identified undesirable, unintended or unconsciousness related factors countervailing sustainability goals?).

The correlations and references are shown graphically (see figure 7: Relationship of research questions, interview topics and codings) for clarity and essentially apply to all three cases examined, as shown in Chapter 4 (see table 4).

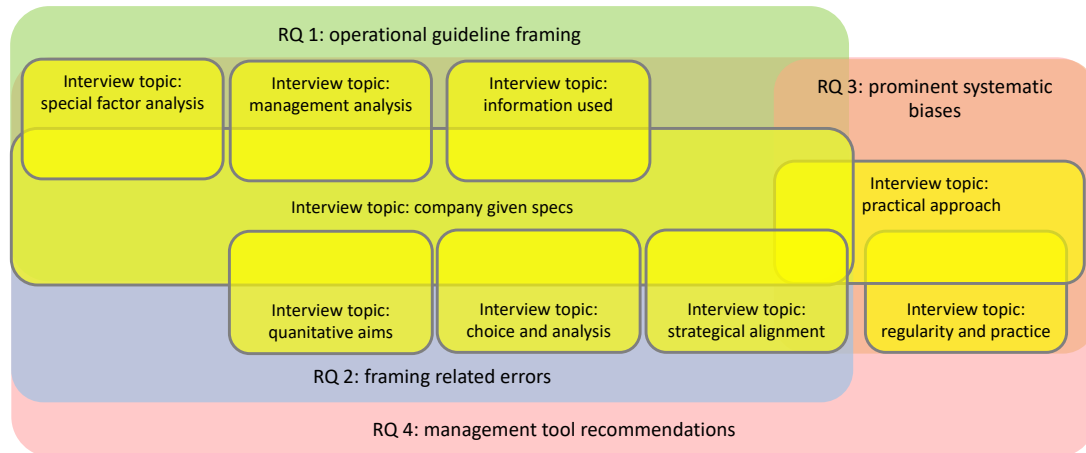


figure 7: Relationship of research questions, interview topics and codings

5.2.1 ACQUISITION CASE

Acquiring new customers means actively approaching new customers for the bank and winning them as customers. In the process, either the bank or the customer advisor selects the acquisition target. Thus, in contrast to the second case, the customer acquisition is not initiated by the bank, as the customer selects the bank actively.

A decisive framework condition is that every company that already exists also has a bank account since, without an account connection, salary transfers to employees, the payment of social security contributions and taxes are not possible. Thus, it is a distributed market. Therefore, growth is possible by adding another bank account, attracting customers from other banks, or acquiring new companies. For achieving growth, the acquisition of new clients is thus an essential means. It is therefore not surprising that every participant mentioned that this is part of their area of responsibility. Based on these responsibilities, acquisition and consulting of an existing customer portfolio are organised as a mixed task, and new customers are acquired via the long-term consultant for the institution.

The interviews started by asking for company guidelines and their framework in the form of rules, requirements, objectives and chosen terminology, thus providing information on RQs 1 and 2. There were no guidelines, regulations or targeted training

for client acquisition in any of the banks surveyed. The questions about the bank's framework and strategic alignment about the acquisition were deliberately asked openly so that there was also a wide range of responses here. A quantified requirement is also rarely made for acquisitions. Only one private bank has a centrally compiled target customer list. Two institutions set their targets in the operative units; this was stated by both a savings bank and a cooperative bank. Here, "everyone makes two to three new acquisitions per year" (interviewee 6) or an annual target of "15 new customers per year" (interviewee 2).

An economic guiding principle or preference was raised several times here, which is aimed at revenue and volume growth independent of the customer base, i.e. can arise from existing and new customers. As exclusion criteria, only the general corporate strategy, which is related to the credit and risk strategy, and rating quality, size of the individual exposure and, as multiple mentions, the exclusion criterion of regionality in a defined business area were referred by the participants. A sector exclusion was explicitly requested and not mentioned by any participant.

Since none of the interviewees mentioned explicit sustainability criteria in the company's acquisition specifications, the interviewer was interested in the information obtained on customer assessment. The information and sources named were exclusively economic: creditworthiness databases with information on the earnings and equity situation, information from auditors, tax and business consultants, and commercial law information from the registers. Based on the above examples of documents and information that are primarily of an economic type. This result leads to the question of why non-economic information is not obtained. Are there given guidelines (RQ 1), or is this selection influenced by (un)conscious biases (RQ 3)? Thus, additional qualitative documents and information were explicitly requested here to detect potential framing effects (RQ 2). Against the background of the avoidance of the term sustainability, the explicit questioning of qualitative data is one of the most evident linguistic indications intended to steer away from the hard, countable information focus to a broader area. This line of questioning led to the following result: Further information is acquired from the press, homepage and social media. Their information serves, in particular, to define

business potential and topics to initiate conversations. Since these questions did not lead to any information sources relevant to sustainability, other sources of information and selection criteria were asked. Essentially, the interviewees named more detailed economic documents. However, two participants also referred to soft factors. Interviewee 2: "when you work for years, you also have a certain gut feeling". He trusts his knowledge of human nature when assessing the person acting, "You notice relatively quickly what his counterpart is pursuing. And if I have the feeling that maybe he is a little bit tight or whatever, or has a problem with someone else and is looking for a replacement, then I'm always very, very sceptical. You never can be. It is just a gut feeling." Interviewee 6 goes into more detail here and describes a similar approach: "How does the company work? Who are the acting persons? (...) Are there still any risks in the business model or how is it doing in the industry?" It could be assumed that qualitative factors play a role. However, the detailing then also referred to the commercial suitability, in particular, the history: "Are there perhaps any reasons why we do not want to do business with the customer? Was there something in the past?"

In practical implementation, only one interviewee from a large private bank mentioned the corresponding compliance and know-your-customer regulations for actual onboarding. The previously unnamed industry exclusions were now mentioned for the first time. For example, several banks exclude the restaurant industry. This exclusion is a risk-related criterion, as the gastronomy sector has the highest insolvency rate of all sectors (Creditreform Wirtschaftsforschung, 2020).

When asked about the links between the acquisition targets and the corporate strategy, two main factors were named: Growth targets in volume and earnings and exclusions for compliance with regulations or avoiding sanctions. In the banks with a regional focus, regionality was also mentioned. After the bank-induced specifications did not reveal any sustainability aspects, the leading personal arguments or core characteristics for an acquisition target were asked. Here, too, economic factors such as creditworthiness, size and sales potential dominated. Only one interviewee mentioned a qualitative factor: Trust in the management.

5.2.2 ENQUIRY CASE

The comparable case of enquiry, i.e. approaching a new customer on his or her own initiative, represents another strategic variable. There are several reasons for a customer to seek a new bank. On the one hand, this could be the bank's reputation, the desire for a further connection due to growth and the emerging need for a multi-bank strategy, and cost reduction through competing offers in terms of price. On the other hand, in the negative case, banks may be perceived as risk-affine and thus attract poorer credit ratings. Thus, companies with deteriorating earnings and financing problems may try to obtain financing through the information asymmetry in new business relationships. Overall, this form of approach is more common in banking with smaller companies: "nowadays it is not the entrepreneur who goes to the bank but the bank that goes to the entrepreneur." (interviewee 2) or is taught in the practice of bank training with the hint of increased caution, which the interviewees also mirror: "Then there are usually certain reasons that lead to a bit of caution." (interviewee 1) and "One tries to have fine antennae. It starts with the language as such, with the content. You ask, how do you find us?" (interviewee 3).

On the other hand, the regional institutes also refer to the approach based on personal connections: "If you live in the business area yourself and grew up in the business area, then you can never clearly separate it, i.e. private contacts, business contacts and in between there are always network structures somewhere because you simply have many overlaps." (Interviewee 3). In contrast, most interviewees are not familiar with the division into active and passive acquisition, referring to the cases acquisition and enquiry approaches. Concluding, those cases are not differentiated in any institutional, company-specific framings or instructions. Thus, exclusion criteria do not deviate from the acquisition rules. Gastronomy is mentioned several times, and the furniture industry sector is added as a sector to be excluded from enquiry lists.

Regarding a specific sector-related question, an interviewee, who works in a region dominated by the betting and gambling industry, confirmed that no exclusions exist in this sector either. However, inclusion and exclusion rules are commonplace in sustainable investment strategies and are used here as an indicator for the selection

process. They represent a relevant aspect of sustainability orientation and thus influence the topic area of the research questions on specifications and framing.

Overall, regarding passive acquisition, reference is made to the size- and region-specific distribution of the potential customer to the corresponding organisational unit in the bank, sometimes also according to industry focus. As far as the interested entrepreneur has been "pre-sorted" accordingly, the creditworthiness assessment is carried out the same way as the analysis of active acquisition. Therefore, the documents and information here are generally quantitative and economical.

One interviewee knew the checklist by heart: "Annual financial statements, economic evaluations, lists of totals and balances - up-to-date and usually at the end of the year (...) a liquidity and profitability forecast, a concrete description of the project, a substantiation either via concrete contracts, if they exist, planning documents, a detailed description of the project. On the private side, of course, income tax returns, notices, income tax calculations, self-disclosures, proof of assets and liabilities in the most diverse ways" (Interviewee 4). Here, the same participants again emphasise the assessment of the entrepreneurial personality who did so in the first case, while the others leave this factor unmentioned. Overall, more attention is paid to the quality of the customer's argument for approaching the bank in an enquiry case. Significantly, the argumentation and application quality and the trustworthiness of the contact person are essential characteristics. Finally, interviewee 5 summarises the most important factors succinctly: "Equity, income, experience".

5.2.3 CUSTOMER EXPANSION CASE

The customer expansion case describes the expansion of credit with an existing customer and an ongoing business relationship. It is usually based on an existing financing structure. The bank already has a credit commitment with the customer and, therefore, a history regarding the economic data and payment behaviour. According to the answers, the expansion case is the most defined process across all bank groups regarding the company-given specifications and instructions. Since a data history is available here and there is usually an exposure strategy as well as possible size limits according to the banks' general counterparty risk strategies, which limits the maximum

risk level per customer according to their rating and possibly also industry, all interviewees named significantly more detailed company guidelines here. Even if they also exist for new loans according to the legal basis of the lending business.

The exclusion criteria already mentioned are expanded even further: "Gastronomy. Otherwise I would not know who else is in there. Car dealers used to be in there for a while." (Interviewee 6). "You mean we do not finance sex-related businesses? There have been isolated discussions about genetic engineering. There were discussions once. I had a case there. So at least there is no hard exclusion criterion that is written into a strategy." (Interviewee 6).

In addition, structural aspects of financing are mentioned; for example, no interim or follow-up financing is made as a stand-alone transaction with the primary financing at another bank, or financing is not closed - i.e. financing in which the entire project is not secured with sufficient liquidity until completion. Furthermore, economic creditworthiness is increasingly referred to in the context of a rating or scoring process. The significantly increased information density here correlates with the empirical values. All interviewees have the most experience with existing clients and have taken over some of their clients from their predecessors.

Again, reference is made exclusively to financial information such as annual financial statements and business analyses concerning the documents and information obtained. In addition, there are statistical data from the account relationship: "So if the account management is adequate, then it already weighs extremely much with an existing customer, because you can read a lot from the account movement." (Interviewee 4). Interviewee 6 sums up the objective and range of analysis well: "How does the profitability fit? How much equity can he bring in?".

The question about qualitative information and documents also remains without sustainability reference in the existing client case. Interviewee 1 sees these as customer statistics: "These are mainly qualitative data for our systems, for evaluations and, if necessary, acquisition information". One interviewee focuses on one aspect in particular: "Within the framework of the strategy (...) Things like business succession,

etc. are also addressed." (Interviewee 3). Thus, indicating a focus on a rating-relevant topic. The question of succession planning in the company has gained importance in recent years and reached a relevant statistical level in terms of economic distress, especially since 13.7% of all SMEs in Germany need a successor (KfW Research, 2018). Furthermore, industry reports are requested in order to benchmark the borrower.

The management assessment is also a rather individual project in the portfolio case: "But there is no rigid grid now..." (Interviewee 6). From SWOT analyses, categorisation into analysts or gut decision-makers, doers or introverts, as well as the assessment of commercial skills concerning planning and organisation: "Integrity, commercial skills, reliability" (Interviewee 5), concrete strategic questions for the future are now also discussed: "What challenges are there that the customer first writes down and which we can perhaps also include from our data or which can otherwise be obtained from the information sources. If the customer were to tell me from a strategic point of view that he does not think much of digitisation but is really only on the move with pen and paper, that would be the future. Then I would have to be extremely doubtful about his management qualifications and judge it that way." (Interviewee 4).

For the first time, and only by one of the interviewees, the term "sustainability" was used. It was mentioned when the researcher asked about the expansion process's practical implementation. From the point of view of one participant, it was crucial in this decision field to pay attention "(...) above all also on the sustainable capital service capability and the extent to which the project also brings meaningful, sustainable earnings for the customer or the company(...)" (Interviewee 1). The definition and meaning were then questioned in more detail, and a definition of this use was requested: "For me, it means that the company that makes investments - in whatever area - generates success from them over the next few years." (Interviewee 1). Despite the demand and repetition of the term, the concept of sustainability is not broadened further here but remains in the economic perspective of sustained profitability and planning assumptions as well as any reserves for potential declines in turnover.

Further questions on qualitative topics in Interviewee 2 led to a question to the client concerning the medium-term development of the company: "(...) will the business

model still be possible in five years as it is now? Are there any further developments?" (Interviewee 2). This point was then addressed with further questions and finally led to a regulatory objective, namely the industry classification for the rating: "(...) of course I have to play that into it a bit because that is also important for the rating. In which industry sectors does it move? I cannot give a hard plastic rating now if maybe it only does something else somehow".

Overall, the sector comparisons and evaluation of the future prospects of the customer markets also appear in Interview 1, 3 and 4. Interviewee 4 sets his own core focus when considering the future: "(...) not specifically defined. But of course we are looking at the topic of digitalisation (...)". The interviewer took up this strategic focus further, inquired about the strategic and qualitative values in greater depth, and specifically asked about social and political topics in one of the questions. Here, limits and consequences were referred to: "If I notice things that are morally dubious, related to a certain company - I am actually obliged to terminate this customer via the bank and to return a potential existing loan at least as quickly as possible and then not to extend the connection in any case. That rule exists." (Interviewee 4). What is remarkable here is the extreme position that first comes into focus when asked and is then commented on with the relativisation concerning the dissolution of the banking relationship.

The interviewer wanted to investigate this restriction or freedom of choice further and asked about the limit of moral doubts. In response, it was explained that if "fraudulent activities (...) or if there are personal punishments against certain persons, these then also appear in the corresponding registers, and then I am also required to hold engagements in repatriation in any case and not to expand them on the basis". The decision to repatriate is therefore based on the obligation in the case of documentation of legal misconduct. Thus, this describes the non-expansion in the case of unlawfulness as the lower limit of the strategy to non-economic evaluation criteria.

This evaluation regulation is also reflected in the answers to the strategic linkage of credit expansion decisions. Here, the same goals are named: "Of course, I prefer to choose customers for such an expansion who are pursuing a stable business, which will also function for the next few years. However, at least over the years, I grant the loan,

that is the minimum". (Interviewee 1). "A big goal...to get as much as possible out of it" (Interviewee 2). "The bank would like to grow in the portfolio and certainly has to fight against existing redemptions." (Interviewee 4). Related to corporate targets and objectives, the quantification in the portfolio business, as indicated by the interview results on the acquisition and enquiry cases, is based on two main target variables: Volume and income of the total portfolio are named uniformly by all interviewees. In addition, two interviewees have targets for individual sources of income, such as interest, fee, commission and securities transactions.

The strategy here is visibly set in the direction of growth from volume expansion. Individual statements point to the relevance of the time horizons of the customers, which are based on the credit risks and the distribution struggle against existing repayments with declining margins and interest income based on the low-interest phase.

5.3 Boundaries

The research is subject to some limitations in collecting primary data from the interviews. In particular, semi-structured interviews and qualitative data collection are subject to some factors that have to be considered to obtain reliable data.

When collecting primary data through interviews, framing is possible through the interview structure, questions, wording, and choice of words. Furthermore, there are potential communicative barriers and trust-related influences from the spatial setting, the behaviour and relationship to the interviewer. However, due to the choice of location by the interviewees, who without exception provided their own premises for the interviews, a neutral to positive effect can be assumed here due to the familiar location. 2 of the 6 participants even chose their private rooms for the interviews.

The time frame was another influencing factor. The lead time between arranging and conducting the interview and the time reserved for the interview were comfortably planned. From the interviewer's point of view, observing the persons in the interview situations and the time for discussion and accompanying conversations that followed

throughout ensured that no hurry or stress factors have a relevant influence on the interview situation.

Semi-structured interviews were conducted in advance with two colleagues as a test run. The colleagues were selected from the same professional field and departments to ensure comparability to the real participants. Based on the participants' feedback and by analysing the audio recordings, the comprehensibility of the questions, the interview structure, the appropriateness of the number of questions in the time frame was checked.

It was found that the opening questions in particular, in which the participants talk about their professional experience and their career, have a decisive psychological role in addition to the statistical data basis. As a result, they took on the function of "warming up". Therefore, the participants were given more opportunities to answer freely and comprehensively than initially intended. Furthermore, the expressed interest in one's own person and the opportunity to present one's career and successes created a positive feeling and enabled an open entry into the concrete cases.

The analysis further revealed a subject-relevant influence. The aspects relevant to this study relate to the active and passive portfolio management concerning sustainability. In this context, the acquisition or enquiry of new customers may be subject to different requirements than the existing business. For example, the portfolio can be successively improved through stricter sustainability requirements for new customers while in the existing customer business. This potential differentiation is investigated based on the 3 cases identified. In the interviews, it became apparent, despite the previous rehearsal, that the subdivision of acquisition and enquiry (cases 1 and 2) does not correspond to the strategic or organisational subdivision and systematisation of the employees interviewed and their companies. That this subdivision makes sense overall was confirmed by several interviewees. Still, the distinction between passive and active new customer acquisition was initially a mental effort for the interviewees, as this did not correspond to the usual work setting. As a result, the interviewees may not have distinguished the results of both cases.

Furthermore, it was noticed that the top 5 issues asked at the end of each case discussed were too many, so it was reduced to a top 3.

Additionally, the interviewer's neutral and open questioning behaviour was controlled and optimised through the test runs. Through notes and hints used during the interviews, the areas of "avoiding suggestion" and "waiting for and enduring pauses/silence" were identified and implemented for the relevant interviews. Based on the critical review of the recordings, it became apparent that the researcher interviewer found it challenging to endure the pauses that arose. Therefore, a red marker on the questionnaire was used as a visual anchor for the following interviews. It served as a visual reminder. Furthermore, additional questions intended to scrutinise the answers given were linked to a suggestion in the test runs. For example, questions were formulated so that they contained the reason assumed by the interviewer and only allowed a yes/no answer as a closed alternative question. This was not desirable for either neutral or exploratory research and was improved by subsequent practice and review after each subsequent interview.

The entire research's information and data basis are also dependent on granting access to relevant actors and data. The interviews allow a deeper individual access to the organisations studied, which is not reproducible at all times and depends on the cooperation of the persons involved, even with the reports representing an analysis of publicly available data. Overall, the research work is therefore dependent on the availability of and access to information. From the researcher's point of view, there was no prohibition or withholding of information in the setting. It is also reflected in the consent of all interviewees to use the information.

In general, it should be noted that the sample studied cannot produce a universal or statistical generalisation of the results, although this was not intended based on the methodology. The research was conducted as a case study. It explores a phenomenon regarding the operationalization of sustainability aspects in commercial lending in German banks and seeks to find causal explanations in this limited set rather than generalization based on large scale surveys (Easton, 2010; Zachariadis, Scott and Barrett, 2013). Thus, statistical validity cannot be achieved within a multi-case-study

methodology, nor is it intended (Sayer, 2000; Eisenhardt and Melissa E. Graebner, 2007). The generalization of case studies can only be made theoretically (Gray, 2004). However, identifying the underlying processes through specific mechanisms allows analytical generalization through data triangulation (Yin, 2009; Easton, 2010). Thus, using multiple cases and the applied sequential strategy supports a prediction of regularities or a generalization (Yin, 2009; Easton, 2010). The multiple case study is preferable as it does not focus on a specific organization but considers a restricted research environment: the German banking landscape. So, generalization is only considered to a specific extension.

Concerning generalisability, the research methodology and the selection of the sample play a relevant role. It is crucial for validity and generalization (Gray, 2004), as low representativeness of case research is its key critic (Easton, 2010). Therefore, the selection and composition received much attention and accompanied a time-intensive preparatory work with carefully selected inclusion and exclusion characteristics. Nevertheless, time, access, and availability constraints for research must be considered and weighed against the required and planned distribution representation. Access to relevant participants could be presented through a pool of contacts through professional networks. Based on a diverse regional distribution, bank group affiliation, and demographic diversity, the benefits from availability and accessibility outweighed the potential pre-selection limitations. The group of approximately 100 contacts represents only a minimal fraction of the total employees in comparable positions. The alternative of contacting anonymous bank departments and asking them to pass on the participation request to the relevant employees would presumably have significantly reduced the response rate and the time required for contacting them, answering queries, asking them to pass on the request and arranging appointments would have been considerably more time-consuming and, based on the diversity achieved in the group of participants, would only have been able to achieve marginal advantages in terms of representation and diversity.

Furthermore, the data collection of the research work was carried out in summer/autumn 2019. An investigation of the development over time was not part of the research system. Therefore, current developments since the interviews are not

presented. The results, therefore, represent a snapshot, even concerning the DNK reports from the corresponding period. In principle, and mainly due to the current tightening of regulations, as described in Chapter 2.3.2 current drivers, regulatory processes and outlook, it can be assumed that the results will change in the event of a repetition of the test setup.

5.4 SUMMARY OF THE INTERVIEW RESULTS

In this chapter, it could be clearly shown to what extent the composition of the interview participants is representative and how exactly the questions and recorded topic areas help answer the research questions. In particular, cross-bank regularities and research-relevant characteristics were shown that are decisive for the development and orientation of sustainability efforts in the corporate lending business. In addition, recurring patterns in daily practice were identified, which provide indications for the improvement and consolidation of operationalisation efforts.

In conclusion, the following can be stated:

1. Profitability, ability to service debt and equity capital are the guiding financial decision-making factors.
2. In addition, there is a strong focus on the customer's entrepreneurial personality and management skills in terms of ability and reliability.
3. The business model or the industry is also assessed, the influence via industry criteria and the individual or internal industry reports' assessments of future viability.
4. Sustainability criteria only played a role in the dimension of economic sustainability and were only mentioned explicitly by one participant.
5. Corporate responsibility was only mentioned by one interviewee in the context of significant governance failures.

These results are further analysed and interpreted in the following chapters. The report data used for triangulation and further delimitation are analysed first in the next step and chapter.

6 FINDINGS FROM THE DNK REPORT ANALYSIS

Chapter 4 Methodology showed the approach to the research work. The results are presented in the previous and this chapter.

In this chapter, the sample composition, representativeness and special features of the existing reports are first shown and research-relevant criteria, as well as selection categories, are explained. In addition, the database backgrounds are explained, and thus the data basis is specified. Subsequently, the coding rules are presented based on the research questions before the results, and their structure is explained. In the process, selection patterns and qualitative adjustments are also documented and justified. Next, the DNK reports' content analysis results are broken down into content-related and structural categories to define the different results of the three bank groups. Finally, the results are concretely related to the RQs, and the limitations of the research methodology are highlighted.

The overall research design follows the approach of Stubbs and Cocklin (2008) by using data from publicly available reports for triangulation.

6.1 SAMPLE COMPOSITION AND ITS FUNDAMENTALS

The sample consists of non-financial reports that comply with the "Deutsche Nachhaltigkeits Kodex (DNK)", which stands for German Sustainability Code and are structured according to this standard. The DNK is a framework following the CSR Directive Implementation Act (CSR-RUG) and can be used to meet the reporting standards of companies (Bundesverband deutscher Banken e. V., 2017b).

The DNK reports follow a reporting standard of 20 criteria. These are:

- Strategy
- Materiality
- Objectives
- Depth of value creation
- Accountability
- Rules and processes
- Control systems
- Incentive systems

- Stakeholder participation
- Innovation and product management
- Use of natural resources
- Resource management
- Climate-related emissions
- Employee rights
- Equal opportunities
- Skills development
- Human Rights
- Community
- Political influence
- Law- and policy-compliant behaviour

(Deutscher Nachhaltigkeits Kodex, 2019)

Due to the recommendation of the Association of German Banks for the DNK-Report as a medium to fulfil the reporting requirements and the widespread use within all German credit institution groups, this medium was used as a quantitative triangulation source. Therefore, the sample is composed of the most recent DNK reports available on the DNK's freely accessible database no later than 2 October 2019. This selection date ensures a picture at the time of the interview and thus a representation of the overall picture at the time of the research. The interviews were conducted in summer/autumn 2019. Filtering was carried out using the applicable filter systems of the DNK reporting web database:

Sector: banks, insurance companies, financial service providers

As of 2.10.2019, 186 DNK-reporting companies were listed under these filter criteria. In order to systematise the banks and savings banks according to the three relevant groups. The company types are selected via the legal form: Cooperatives (cooperative banking group), institutions under public law (savings banks) and AGs (private banks). Furthermore, the selection "other legal forms" was also used to identify further banks, as shown in table 5.

Cooperatives	Institution under public law	plc	other
Frankfurter Volksbank eG	Erzgebirgssparkasse	Aareal Bank AG	Förde Sparkasse
Hamburger Volksbank	Kreissparkasse Augsburg	Commerzbank AG	Kreissparkasse Biberach
Hannoversche Volksbank eG	Kreissparkasse Kaiserslautern	Deutsche Bank AG	Kreissparkasse Böblingen
Mainzer Volksbank eG	Kreissparkasse Ostalb	Deutsche Kreditbank AG (DKB AG)	Kreissparkasse Esslingen-Nürtingen
Münchner Bank eG	Kreissparkasse Saarlouis	Hamburger Sparkasse AG	Kreissparkasse Heilbronn
Sparda-Bank Baden-Württemberg eG	Kreissparkasse Syke	HypoVereinsbank	Kreissparkasse Heinsberg
Sparda-Bank Berlin eG	Kreissparkasse Tübingen	National-Bank AG	Kreissparkasse Köln
Sparda-Bank München eG	Niederrheinische Sparkasse RheinLippe	Oldenburgische Landesbank AG	Kreissparkasse Ludwigsburg
Sparda-Bank Südwest eG	Nord-Ostsee Sparkasse	Allianz SE	Kreissparkasse München Starnberg Ebersberg
Sparda-Bank West eG	Sparkasse Allgäu	B. Metzler seel. Sohn & Co. Holding AG	Kreissparkasse Ravensburg
Volksbank Alzey-Worms eG	Sparkasse am Niederrhein	Bank für Sozialwirtschaft AG	Kreissparkasse Reutlingen
Volksbank Bielefeld-Gütersloh eG	Sparkasse Chemnitz	Basler Versicherungen	Kreissparkasse Steinfurt
Volksbank eG Braunschweig Wolfsburg	Sparkasse Coburg - Lichtenfels	Berlin Hyp AG	Kreissparkasse Waiblingen
Volksbank Kraichgau eG	Sparkasse Essen	Deutsche Börse AG	Sparkasse Aachen
Volksbank Kur- und Rheinpfalz eG	Sparkasse Fulda	Deutsche Hypothekbank	Sparkasse Ansbach
Volksbank Lübeck eG	Sparkasse Fürstfeldbruck	DZ BANK AG	Sparkasse Aschaffenburg-Alzenau
Volksbank Lüneburger Heide eG	Sparkasse Gifhorn-Wolfsburg	DZ PRIVATBANK	Sparkasse Bamberg
Volksbank Mittelhessen eG	Sparkasse Hildesheim Goslar Peine	Fiducia & GAD IT AG	Sparkasse Bielefeld
Volksbank Raiffeisenbank Bayern Mitte eG	Sparkasse Holstein	MLP SE	Sparkasse Bochum
Volksbank Raiffeisenbank Nordoberpfalz eG	Sparkasse Karlsruhe	Provinzial Nordwest Konzern	Sparkasse Bodensee
VR Bank Main-Kinzig-Büdingen eG	Sparkasse KölnBonn	ROLAND Rechtsschutz	Sparkasse Bremen
VR Bank Rhein-Neckar eG	Sparkasse Kraichgau	SCHUFA Holding AG	Sparkasse Celle
VR-Bank Rottal-Inn eG	Sparkasse Krefeld	SÜDWESTBANK AG	Sparkasse Dortmund
Wiesbadener Volksbank eG	Sparkasse LeerWittmund	SV Sparkassenversicherung	Sparkasse Duisburg
Bank 1 Saar eG	Sparkasse Mainfranken Würzburg	UmweltBank AG	Sparkasse Düren
Bank für Kirche und Diakonie eG - KD-Bank	Sparkasse Minden-Lübbecke	Union Investment	Sparkasse Fürth
BBBank eG	Sparkasse Osnabrück	Waldenburger Versicherung AG	Sparkasse Gelsenkirchen
BIB - BANK IM BISTUM ESSEN eG	Sparkasse Rhein Neckar Nord	WERTGARANTIE Group	Sparkasse Göttingen
Deutsche Apotheker- und Ärztebank eG	Sparkasse Rhein-Maas	Wüstenrot & Württembergische AG	Sparkasse HagenHerdecke
DEVK Versicherungsverein a.G.	Sparkasse Rhein-Nahe		Sparkasse Hannover
Spar- und Bauverein eG	Sparkasse Schweinfurt-Haßberge		Sparkasse Hegau-Bodensee
	Sparkasse Trier		Sparkasse Heidelberg
	Sparkasse Vorderpfalz		Sparkasse Herford
	Sparkasse Vorpommern		Sparkasse Hilden • Ratingen • Velbert
	Sparkasse Westerwald-Sieg		Sparkasse Ingolstadt Eichstätt
	Sparkasse Westmünsterland		Sparkasse Lemgo
	Stadtparkasse Oberhausen		Sparkasse Leverkusen
	Helaba		Sparkasse Marburg-Biedenkopf
	Investitionsbank Berlin		Sparkasse Märk. Sauerland Hemer-Menden
	KfW Bankengruppe		Sparkasse Memmingen-Lindau-Mindelheim
	Landessparkasse zu Oldenburg		Sparkasse Münsterland Ost
	LBS Landesbausparkasse Südwest		Sparkasse Neuss
	Provinzial Rheinland Versicherungen		Sparkasse Niederbayern-Mitte
			Sparkasse Offenburg/Ortenau
			Sparkasse Pforzheim Calw
			Sparkasse Regensburg
			Sparkasse Rosenheim-Bad Aibling
			Sparkasse Saarbrücken
			Sparkasse Schwarzwald-Baar
			Sparkasse Südholstein
			Sparkasse Ulm
			Sparkasse Vest Recklinghausen
			Sparkasse Vogtland
			Sparkasse Westholstein
			Sparkasse Worms-Alzey-Ried
			Sparkasse Zollernalb
			Stadt- und Kreissparkasse Erlangen Höchstadt..
			Stadt-Sparkasse Solingen
			Stadtparkasse Augsburg
			Stadtparkasse Düsseldorf
			Stadtparkasse München
			Stadtparkasse Wuppertal
			ALTE LEIPZIGER Lebensversicherung
			Barmenia Lebensversicherung
			Barmenia Versicherungen
			Barmenia-Konzern
			BARMER
			BayernLB
			BGV / Badische Versicherungen
			Bremer Landesbank
			Concordia Versicherungen
			Debeka-Gruppe
			DekaBank Deutsche Girozentrale
			HALLESCHE Krankenversicherung
			Investitionsbank Schleswig-Holstein (IB.SH)
			Landesbank Baden-Württemberg AöR
			NORD/LB
			plilend UG (haftungsbeschränkt)
			SaarLB
			SIGNAL IDUNA Krankenversicherung a. G.
			SIGNAL IDUNA Lebensversicherung a. G.
			Triodos Bank N.V. Deutschland
			VGH Versicherungen

table 5: DNK reporting database sorted by company type

On this basis, special credit institutions and financial intermediaries, insurance companies, etc., were removed from the list so that only universal banks remain. Furthermore, restructuring by bank group was also necessary, as criteria "legal form" does not accurately divide according to bank group since savings banks also operate as public limited companies, which can be found under the legal form selection criterion "other".

The sample selection can be recognised by the coloured background in table 5:

blue - cooperative

red - savings bank

yellow - private bank

grey – removed as Irrelevant due to the specific business orientation

6.2 CODING OF THE DNK REPORTS

The DNK reports contain categorical data, which has no ordinal form. Thus, the data coding is done as a descriptive/nominal set (Saunders, Lewis and Thornhill, 2009). The content analysis of the DNK-reports was performed using a conceptual analysis model as described in chapter 4.7 Data analysis of the DNK reports. First, the data sets were searched using the terms "credit" and "financing" to select all relevant text passages for strategic and operational discussion of sustainability in connection with the topic area under investigation. These were subsequently thematically coded. This procedure serves to triangulate the data with the results from the interviews concerning the research questions, in particular, the following sub-questions:

- How is sustainability considered in lending (values, strategy, instructions, concrete instruments, limits, negative/positive lists, etc.)?
- Are concrete guidelines mentioned/used?
- If so, in which areas are they applied?
- How explicitly are they implemented?
- Is sustainability identified/analysed/integrated for risk assessment?
- How important is the topic in the measurement and the strategy?

The main categories of sustainability in the credit business, risk assessment and measurement were set as core codes regarding the research questions (see figure 6: Content analysis' themes and focal points). They show to what extent sustainability has been used in the corporate credit business, how and whether risks are assessed and how sustainability efforts are measured and targeted for employees.

The subcategories result from the contextual findings. For example, the procedure in the project financing business was disclosed in particular in the large banking business, while cooperative banks and savings banks named in particular the financing of renewable energies and energy-saving measures. Furthermore, sector-related strategies and instructions were identified and coded. In addition, the identification of sustainability's relevance and information on planned implementations regarding sustainability were included as relevant coding categories. In addition, there was a measurement systematisation concerning promotional bank loans granted, which was explicitly reported and is further discussed in detail in this chapter.

6.3 RESULTS ON THE STRUCTURE AND AMOUNT OF DATA FOUND

The DNK reports examined were analysed based on the designed codebook. Due to the different quantity structures in the distribution among the respective bank groups as well as the quantitative differences, the comparison and evaluation of the basic data structures are first carried out based on the results before the results are then discussed in terms of content and concerning the RQs.

For the content analysis, a query was made for the topic area of financing and credit business, searching for the terms credit or financing, including the root word. The search yielded 565 results across the entire sample.

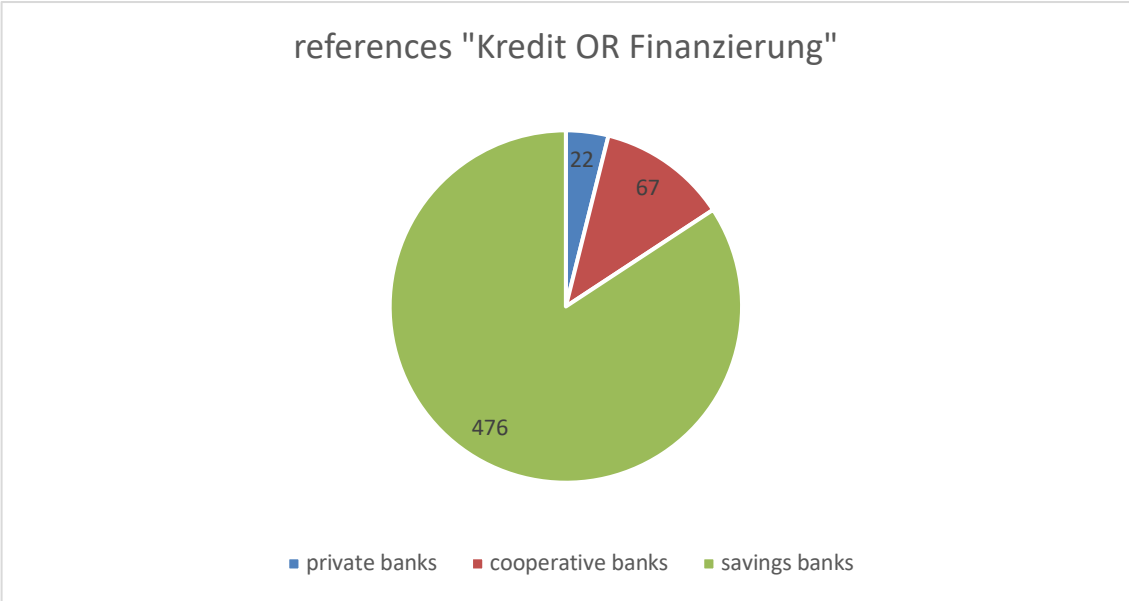


figure 8: Total distribution of search results related to credit and financing

Overall, there are significantly more result points for the savings bank sector but weighted according to sample size, the distribution is comparable, with an average of 2.8 for the cooperative banks, 3.7 for the private banks and 4.8 for the savings banks.

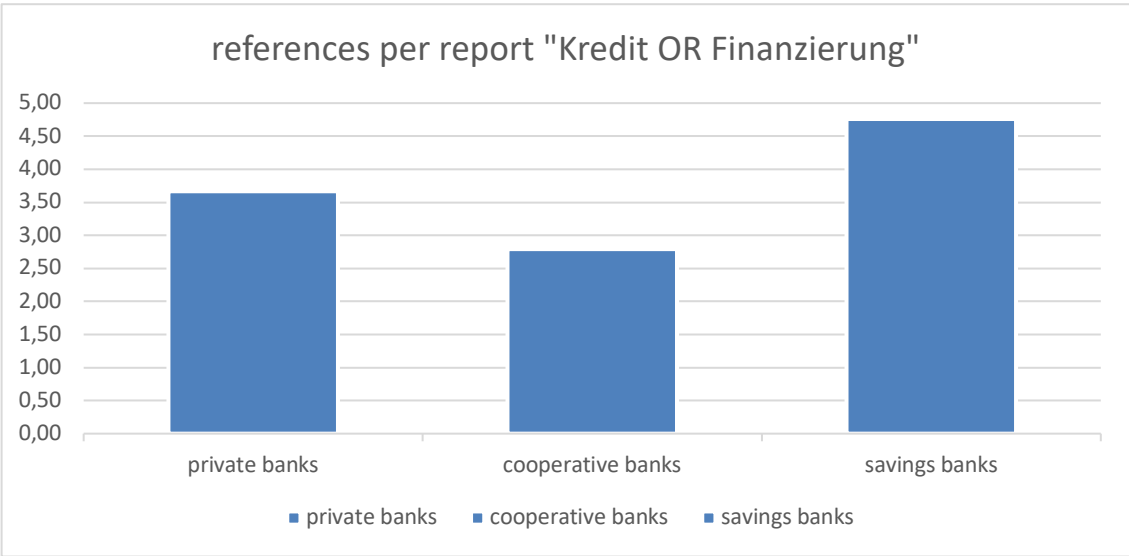


figure 9: Normalised distribution of search results related to credit and financing

The results are further controlled in terms of content and quality. First of all, the search yields results that do not relate to the research topic, and there are significant deviations in the description in the core business areas, despite the GRI catalogue of requirements and its standardisation and checklists. On the one hand, the reports based on the

performance indicators differ: the Savings Banks Finance Group institutions split 36% between EFFAS and 64% between the GRI indicators, while the other institutions in the sample exclusively use the GRI indicator set. Furthermore, based on the search terms, the following recurring search results/paragraphs were not coded:

- All references related to compliance with legal frameworks, such as the rejection of banking transactions related to money laundering or terrorist financing.
- Results that do not refer to the business activity of granting loans but serve to designate one's own institution, this was a common term in particular for savings banks that use the term credit institution.

After a qualitative assessment of the coding results, references to the bank's lending business amount to a total of 214 and are distributed as follows:

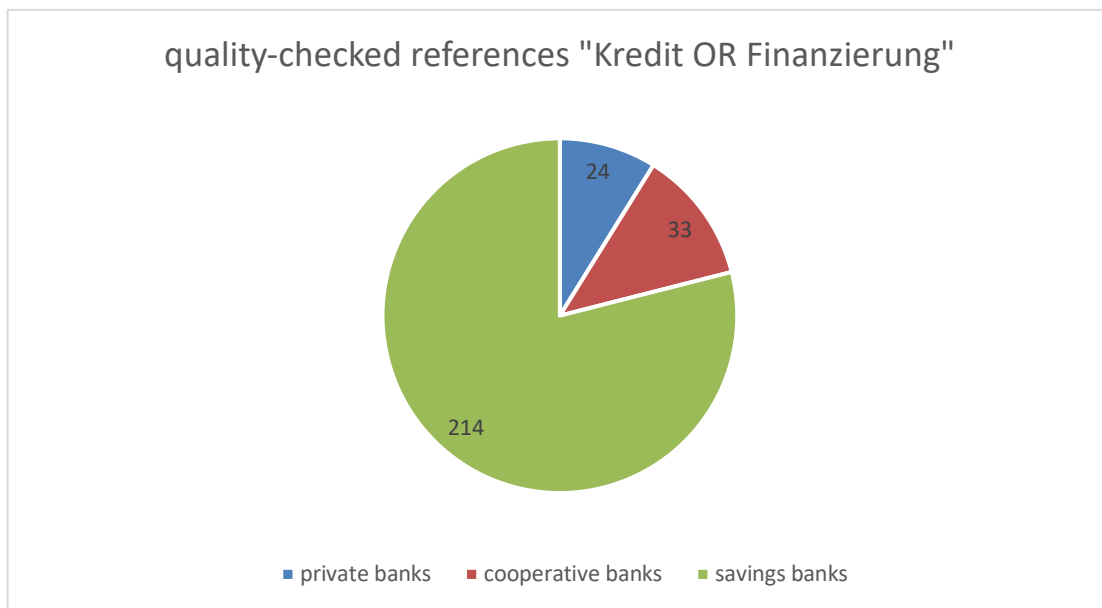


figure 10: Quality controlled distribution of search results related to credit and financing

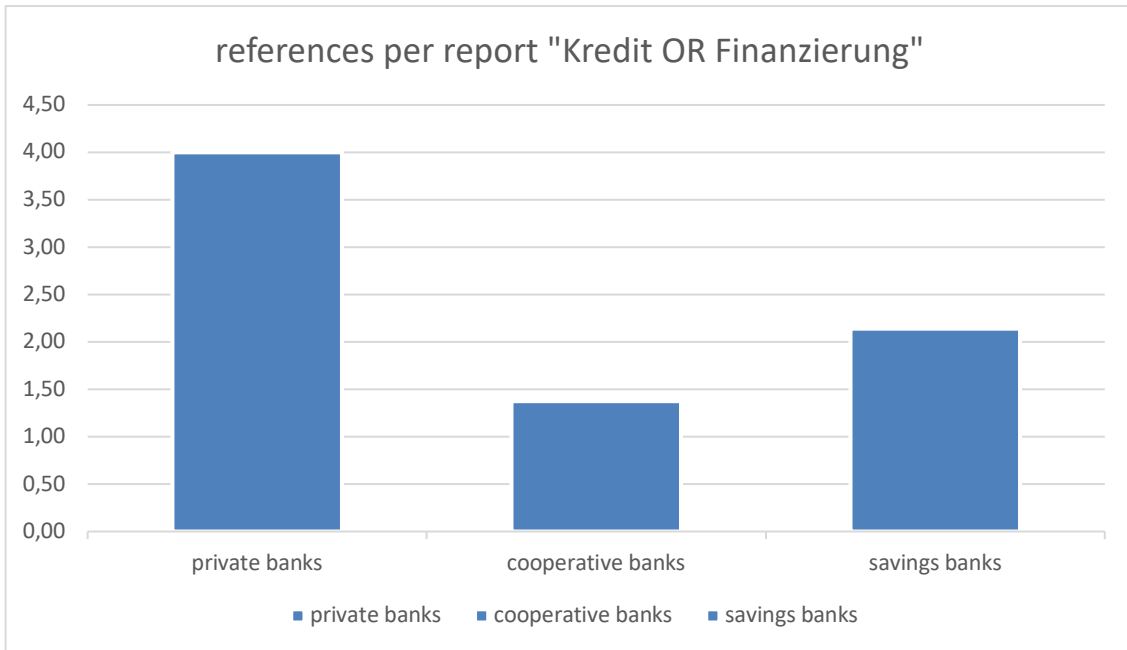


figure 11: Quality controlled normalised distribution of search results related to credit and financing

The paragraphs in which these terms are found are then qualitatively examined and divided into codes (see figure 6: Content analysis' themes and focal points).

Found search terms thus could result in multiple codings. For example, if measurement and implementation aspects are described within a single sentence.

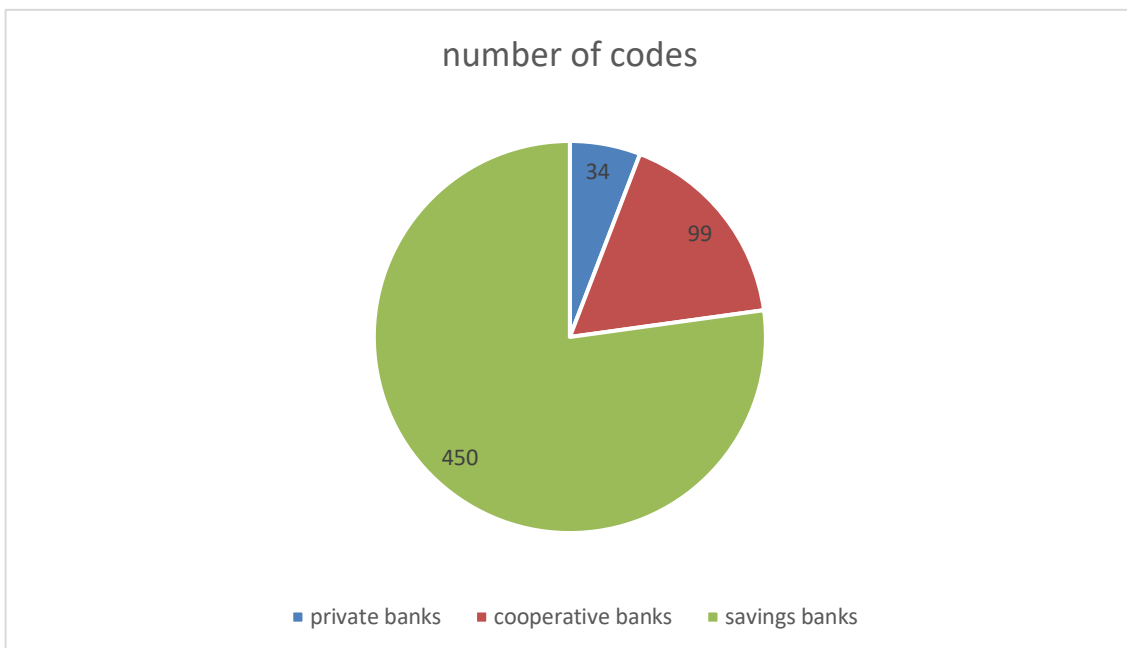


figure 12: Total amount of coding per banking group

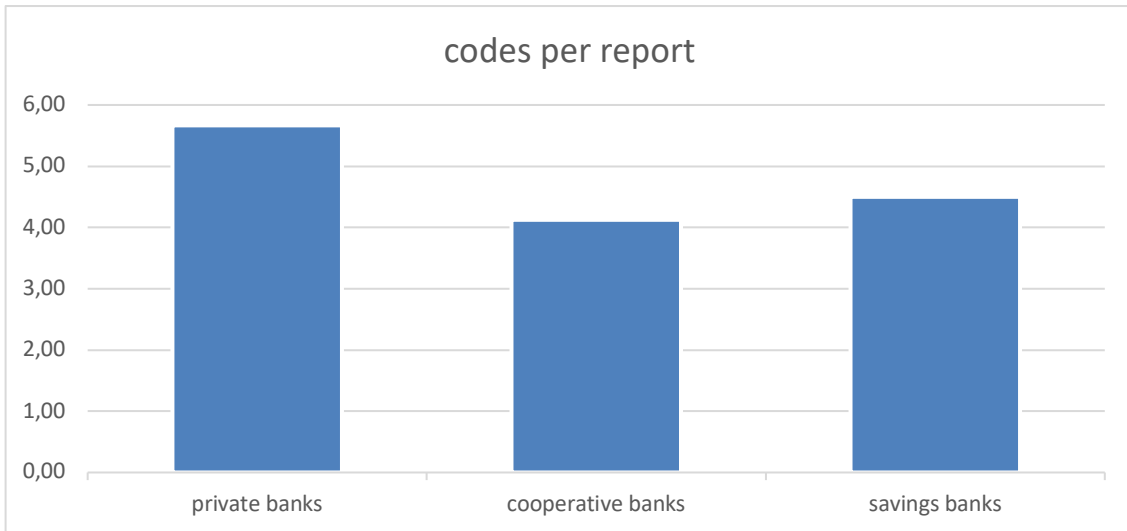


figure 13: Total amount of coding per report and banking group

Based on the coding, the results are quantitatively comparable for all three bank groups. However, the results in terms of content differ more from one another in the groups. These differentiations will be compared and examined more closely below.

6.3.1 RESULTS WITHIN THE GROUP OF PRIVATE BANKS

The analysis of the DNK-reports from the private banking sector shows the following results.

1. The density of information on the research topic in the private banks' reports is 5.67 codes, and this is above the overall average of 4.48 codes per report, which may indicate the higher implementation rate and materiality for this banking group.
2. The identification and implementation of sustainability in the lending business are higher than the total sample average. The basic identification and implementation rate is 83%, thus above 79% of the overall rate. The usage of industry aspects and general integration are at 50% each. They are significantly above the average of 8.5% (industry identification) and 21.5% (general integration in the broad business).
3. In measurement, the segment is above the average of 43% with 50%, in risk assessment with 67% significantly above the 10% in the overall sample.

4. The field of renewable energies and efficiency has a much lower communication value than for the other bank groups. With 50% naming it as an implementation field for the lending business, it is below 66% of the total sample.
5. With 17%, the measurement aspect of promotional loans is also significantly below the average of 36%.

The results underline what is already visible in the literature research. An analysis of relevant competitors showed that private banks already positioned themselves with a strong focus on sustainable capital market products and use public relation campaigns regarding current activities and specific sustainable products (Kleine, Munisso and Weskamp, 2011).

When assessing the results, however, it should be noted that DNK reports are not the primary reporting tool for most private banks. With 157 banks in this segment as of 2019 (Deutsche Bundesbank, 2020) and a reporting obligation from 500 employees (Bundesministerium der Justiz und für Verbraucherschutz, 2017), significant parts of the banks are not obliged to report here. This reporting is additionally carried out in parts, and otherwise, a separate report is published following the legal requirements. Thus, the sample within the already smaller number of institutions in this segment, with significantly higher total assets, was significantly smaller than the other bank groups (see figure 14: Sample distribution by banking group).

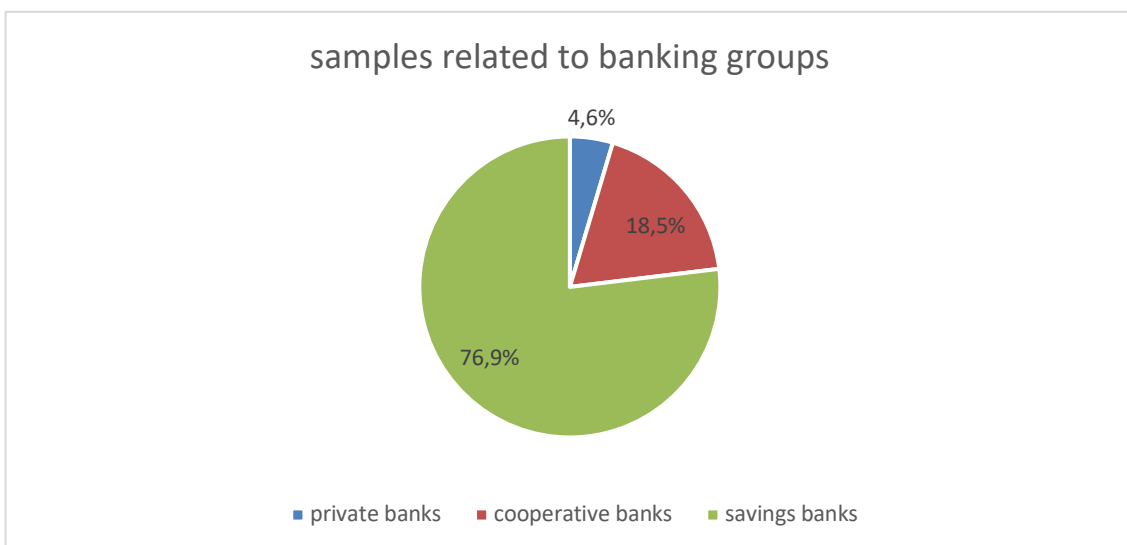


figure 14: Sample distribution by banking group

6.3.2 RESULTS WITHIN THE COOPERATIVE BANKING GROUP

The analysis of the DNK reports from the cooperative banking sector shows the following results:

1. The density of information on the research topic in the reports consulted is below average compared to the overall average with 2.8 references. Although the number of codes from the references, at 4.13, does not deviate significantly from the mean value of 4.48 for the entire sample. A relevant aspect is the specific report formulations within the cooperative banking group, which leads to a high information density in a comparatively small amount of text.
2. Implementation of sustainability in lending is lower than the mean of the overall sample. However, the introductory identification rate of 20.8% is above the average of 15.4%. The implementation rate of 67% is below the 79% overall average. The results are above average in negation and basic application, with 25% general application and 12.5% negation. The renewable energies and efficiency area is below average at 46% and has the lowest application level among the three banking groups.
3. The cooperative sector lags behind the market in terms of sustainability measurement. For example, 12.5% of cooperative banks implemented such systems, 100% of those measured via promotional lending. Moreover, 87.5% of reports do not mention, and 8% deny a sustainability-related measurement.
4. The risk assessment models also reflect the low measurement rate, with 62.5% without mention and 21% negating implementation. However, almost 17% have integrated sustainability in the risk assessment, which is more than the average of 10%.

There is a statistical anomaly to be examined in the sample. With 845 institutions per Bundesbank statistics in the calendar year 2019 (Deutsche Bundesbank, 2020), the cooperative banking group has the highest granularity and, with 61%, unites the majority of all relevant institutions. The granularity relates to the average size and total amount of institutions (see also 3.1 Specialities of the German banking structure). However, with 24 DNK-reports, this banking group only accounts for 18.5% of the

sample. This can be explained in particular by the granularity and the reporting requirement of 500 or more employees (Bundesministerium der Justiz und für Verbraucherschutz, 2017). Unfortunately, a statistical listing by employees is not available, but an indicative distribution can be made based on the group-wide data. The Federal Association of German Cooperative Banks reports the consolidated balance sheet (Bundesverband der Deutschen Volksbanken und Raiffeisenbanken e. V., 2021a) and the number of employees of the entire group (Bundesverband der Deutschen Volksbanken und Raiffeisenbanken e. V., 2021b).

Assuming that there is a constant distribution of the balance sheet total per employee, the approximate number of institutions subject to reporting requirements with more than 499 employees can be determined (see figure 15: Derivation of the theoretical size limit for the reporting obligation)

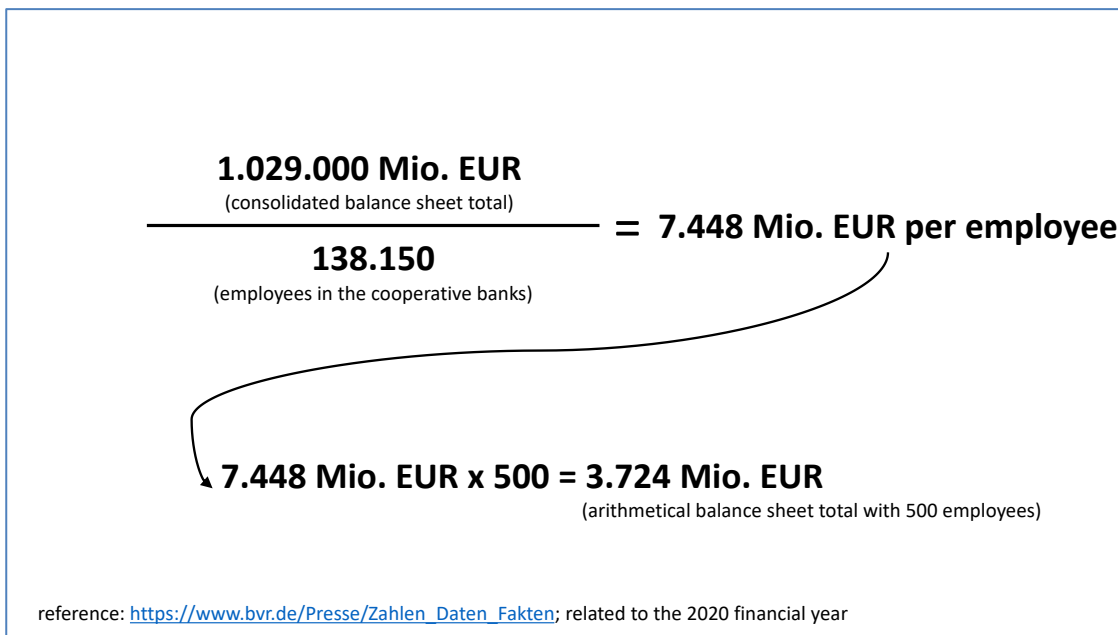


figure 15: Derivation of the theoretical size limit for the reporting obligation

If this calculation is related to the list of cooperative banks, ranking no. 57 with EUR 3,743 million shows the arithmetic answer to the reporting sample. Therefore, even if a specific staff requirement exists regardless of the business size, especially for overhead, minimum requirements for risk separation, compliance and reporting, this arithmetical value with a comparison of the institutions from the sample is to be regarded as valid

since these are significantly above this arithmetical dividing line, which is displayed in table 6.

Sample of cooperative banks

name	rank
Sparda-Bank West eG	5
Frankfurter Volksbank eG	6
Sparda-Bank Südwest eG	7
Sparda-Bank München eG	10
Volksbank Mittelhessen eG	11
Mainzer Volksbank eG	18
Hannoversche Volksbank eG	19
Sparda-Bank Berlin eG	23
Volksbank Kur- und Rheinpfalz eG	26
Volksbank Bielefeld-Gütersloh eG	28
Wiesbadener Volksbank eG	29
Sparda-Bank Baden-Württemberg eG	31
Volksbank eG Braunschweig Wolfsburg	32
Volksbank Kraichgau eG	34
VR Bank Rhein-Neckar eG	37
Volksbank Raiffeisenbank Bayern Mitte eG	39
Volksbank Alzey-Worms eG	42
Hamburger Volksbank	43
Volksbank Lüneburger Heide eG	54
VR-Bank Rottal-Inn eG	58
Volksbank Raiffeisenbank Nordoberpfalz eG	59
VR Bank Main-Kinzig-Büdingen eG	61
Münchner Bank eG	64
Volksbank Lübeck eG	267

table 6: Cooperative banks according to size ranking

A unique feature here is Volksbank Lübeck eG, which publishes a report with 168 employees (Volksbank Lübeck eG, 2021) without reasons for obligation. Based on the

assumption of the mathematical model described above, the sample size of 24 is comparatively large, with 57 institutions subject to reporting requirements.

In the case of the regional institutions of the cooperative group, the number of references found from the text search "Kredit OR Finanzierung", including root word and the number of coded references, also deviate significantly from each other. This is primarily since the searched terms were also found in textual contexts not relevant to the research. However, there was also a high repetition of a content-related aspect within the group. All regional institutions refer to the circular economy or the regional retention of funds from deposits and lending within the region as a sustainable approach. However, in the sense of a triple bottom line view of sustainability, this was not interpreted as a sufficient criterion for the sustainable character of the lending business.

6.3.3 RESULTS WITHIN THE SAVINGS BANKS

The analysis of the DNK reports from the Savings Banks Finance Group shows the following results.

1. The density of information on the research topic in the reports used is average, with 4.5 codes.
2. The identification of sustainability in the lending business is the lowest in the entire sample at 10%. However, the implementation rate of sustainability in the lending business is comparable with the sample of private banks at 82% and thus above the average of 79%. This may indicate that the majority of the savings banks no longer rate the identification as significant and thus worthy of reporting. The use of sector screening at 7% and project finance standards at 2% is about average for the sample. The naming of the financing of renewable energies and efficiency measures is reported by 72% of the savings banks. This bank group thus cites this feature here with above-average frequency as an aspect of its sustainability orientation. Furthermore, savings banks plan a more extensive implementation of sustainability in the business area with a sample average of 12%. Implementation is reported by 19%, which is just below the average of 21.5%.

3. The segment of sustainability measurement is at the same above-average level as the private banks with 50%. In addition, 43% of the savings banks, and thus 86% of the savings banks with implemented measurement, also measure promotional loans, which correlates with the high rate of renewable energy and energy efficiency financing.
4. The risk implementation of 5% is below the average of 10%. The savings banks show themselves average in the question of denial of risk assessment (5%) and in the proportion of reports without mentioning this topic (65%).

The sample size of 100 institutions from the Savings Banks Finance Group is not conspicuous in a total of 386 associated institutions. The Savings Banks Association publishes the number of employees per institution. Thus, as of 2019, 142 savings banks report a staff number of >499 employees and are subject to reporting requirements. The sample thus represents over 70% of the relevant institutions and does not show any institution that is not subject to reporting requirements.

For the regional institutions of the Savings Banks Finance Group, the number of references found from the text search "Kredit OR Finanzierung", including root word and the number of coded references, differ significantly. This is primarily because the searched terms were also prominent in non-research-relevant textual contexts. In particular, "credit institutions" was spoken of more frequently in the reports of savings banks, which refer to themselves as "credit institutions", while the term "banks" is used more frequently in the reports of private banks and cooperative banks. Therefore, the search term "credit" also found any designation as a credit institution.

However, there was a high repetition of regional retention of funds from deposits and lending in the region as a sustainable approach within this group. In addition, savings banks referred to the public mandate, which represents both the provision of small-scale lending for private and commercial stakeholders and ensuring a sustainable revenue and expenditure situation as sustainable. However, both aspects were not interpreted as a sufficient criterion for the sustainable character of the lending business,

as they do not follow a TBL-related definition of sustainability. Therefore, they are eliminated in the qualitative coding process.

6.4 RESULTS OF THE REPORTING ANALYSIS AND THEIR TRIANGULATION

Following the research questions and the results of the interviews, it was examined which guidelines (RQ1), framing concepts, and company-side focal points can be identified (RQ2). The reports provide the researcher with relevant information on the corporate guidelines and complete the picture of the primary framing in the context of language and wording choices, thus providing further insights into RQ 1 and 2. As the reports examined only present the strategic and structural components of sustainability performance, no direct references to RQs 3 and 4 are provided. Therefore, these RQs can only be answered indirectly through the content analysis. However, these results can be used to evaluate the previous results and added to the argumentation basis through this clarification of the corporate framework data with the results and statements of the interview participants, thus strengthening the argumentation basis. In the coding for sustainability in the lending business, the overriding point is the fundamental strategic implementation or consideration of sustainability in the business area.

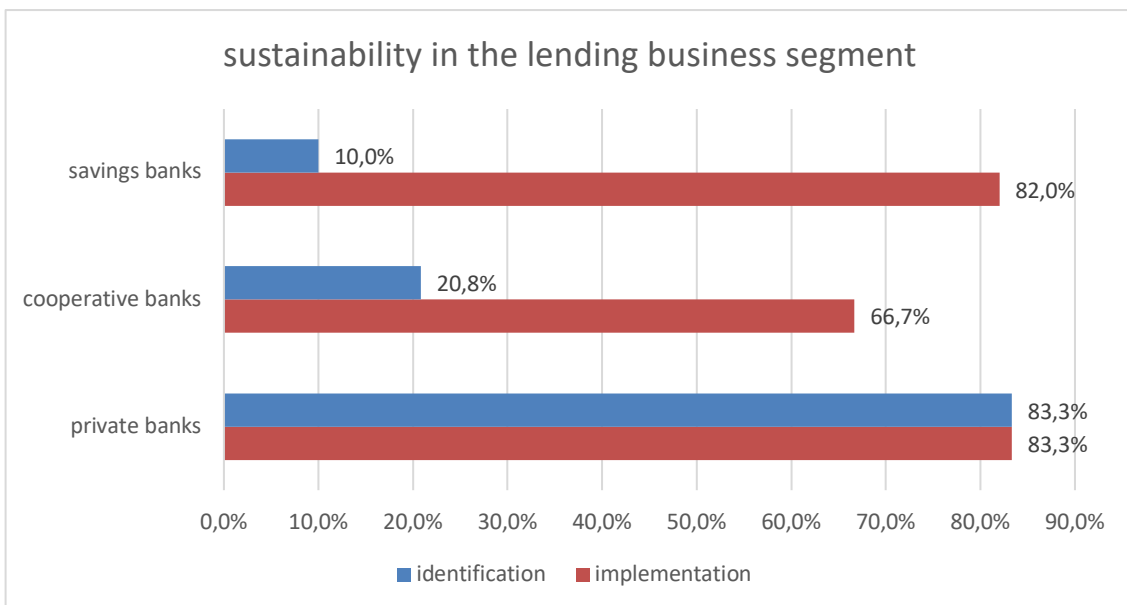


figure 16: Reporting of sustainability's identification and implementation

Concerning the results on, state of implementation of sustainability as presented in figure 16: Reporting of sustainability's identification and implementation, the distinguishing criteria are defined as follows. Identification refers to the fact that sustainability aspects have been identified for the specific business area, and thus the relevance of the business area for sustainability has been institutionally confirmed. This is the basis on which further implementation, and thus operational implementation, is carried out based on the need arising from the identification. Implementation in this context means that strategic decisions are used in operational implementation concepts in everyday business.

The assessment shows that identification has lower levels of proficiency than implementation, which cannot be explained logically, as identification of the sustainability dimensions precedes implementation. Without identification, there is no implementation. The results, therefore, show that identification is not explicitly referred to, e.g. because the use of non-financial reporting or the implementation description also implies identification. Therefore, this aspect and the necessary distinction between "not mentioning" and "explicit negation" will be shown and examined in the following, in which explicit statements on a negation of the application are present.

Overall, the implementation of sustainability aspects in the lending business shows a high implementation rate across all bank groups. With 66.7% to 83.3%, 79% of the banks across the entire sample have integrated sustainability in the business area. This area was further broken down and subdivided into additional categories to assess the framing and the guidelines (see figure 17: Categorisation of sustainability implementation). The codes were created based on the identified information and allowed for a categorisation focused on the research work.

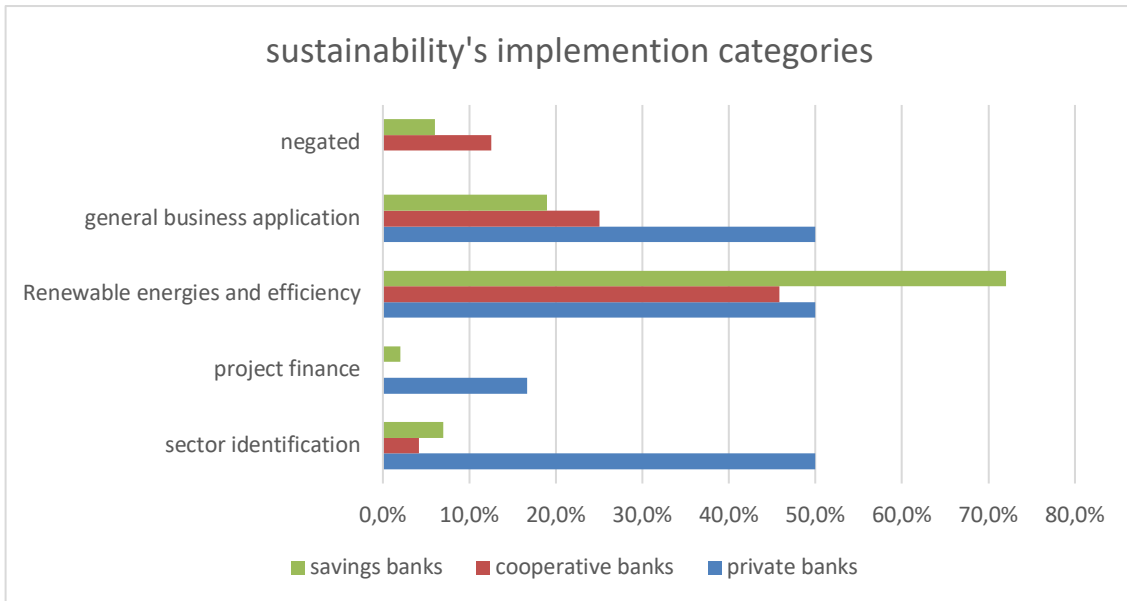


figure 17: Categorisation of sustainability implementation

Overall, the following relevant categories exist:

- The implementation in the business areas of project finance, e.g. through the Equator Principles, etc.
- the identification of sectors or business areas that are assessed separately or excluded directly (so-called negative lists)
- the focus on financing and consulting for renewable energies, energy efficiency measures and energy-efficient refurbishments
- the fundamental application and implementation in the lending business regardless of sectors, size or underlying business
- the allocation to specific business areas/departments.

Based on the materiality reference, project financing is commented on and explicitly mentioned by large market participants. A possible explanation is that in the banking groups of cooperatives and savings banks, this type of business is mainly carried out by the central institutions.

The different treatment of sectors and industries and their fundamental exclusion was of particular importance for the private banks, where 50% of the private institutions examined had corresponding negative lists. Regional institutions have a much lower

value here, with 4.2% and 7%, respectively. Their reports mainly refer to their strategy and their mandate to supply the entire region with credit funds or, due to their size and decentralised structure, they do not take a categorical but a case-by-case approach. This result shows an apparent discrepancy with the interview results. Here, exclusion criteria and negative lists were partly not mentioned or only when explicitly asked in the interviews. This may indicate that this strategic requirement is only implemented in practice to a below-average extent, whether intentionally, for cultural reasons or unconsciously.

Furthermore, 19 % of the savings banks and 50 % of the private banks generally integrate sustainability aspects in their lending activities. In addition, every fourth cooperative institution has a general sustainability assessment in its lending. However, it should be noted in the assessment that the economic sustainability criterion cited, as in the following example, cannot be considered a general application, as the granting of loans based on sustainable economic viability is not sufficient as a definition of sustainability for this research work, which is oriented towards the triple bottom line:

"We take our responsibility in lending very seriously and advise our clients in a way that ensures a sustainable income and expenditure situation for them."
(Sparkasse Ansbach, 2018, p. 5).

The financing of renewable energies, energy efficiency measures and energy-efficient refurbishments was particularly relevant in banks' own presentation and evaluation of sustainability implementation in the business field of lending. These are mostly financing opportunities that involve providing low-interest subsidies from the "Kreditanstalt für Wiederaufbau" (KfW) and other development banks, which offer subsidised interest rates or repayment subsidies. As a result, all three bank groups have high reporting rates between 46% and 72% in this subject area. Overall, two-thirds of all institutions in the sample report this business area as a sustainability implementation concept in the core business area of lending.

In addition to the institutions that comment positively on the implementation in these topic areas, three cooperative and six institutions from the savings bank sector could

also be identified that explicitly negate the implementation of sustainability. These are exemplary as follows:

"A concept, as well as quantitative targets, have not yet been set, as there is no independent sustainability strategy" (Sparkasse Gifhorn-Wolfsburg, 2017, p. 8)

"We have not formulated any explicit sustainability goals there, and consequently, we have not defined any accountability for sustainability." (Sparkasse Celle, 2018, p. 4)

"So far, no sustainability aspects have been taken into account in a standardised way when making credit decisions and selecting own securities deposit investments." (VR Bank Rhein-Neckar eG, 2018, p. 3)

Based on this distribution with 103 institutions that positively name an implementation and 9 that negate it, 18 institutions do not explicitly express themselves in this regard.

Other essential topics for risk assessment, which arise for the lending business and operationalisation, are the measurement and thus quantification of sustainability in the lending business as well as risk assessment as a decisive evaluation factor in the granting of loans as part of the RQ 1 (see figure 18: Integration of sustainability-related risks into credit risk management).

The measurement and thus quantification is a relevant factor for the depth of sustainability's implementation. For banks, it is an indicator for implementation into the fundamental management and controlling. Risk assessment means calculating the probability of default, e.g. through rating or scoring models or qualitative risk assessment and documentation. It involves calculating the probability of the risk that the debtor cannot repay a loan. The inherent evaluation models conduct several influencing factors that flow in weighted. This assessment process is a central area of responsibility and task in lending. Therefore, the integration of sustainability issues in this area is a relevant indicator for the operational implementation, guidelines, and institutional framing for the consultant.

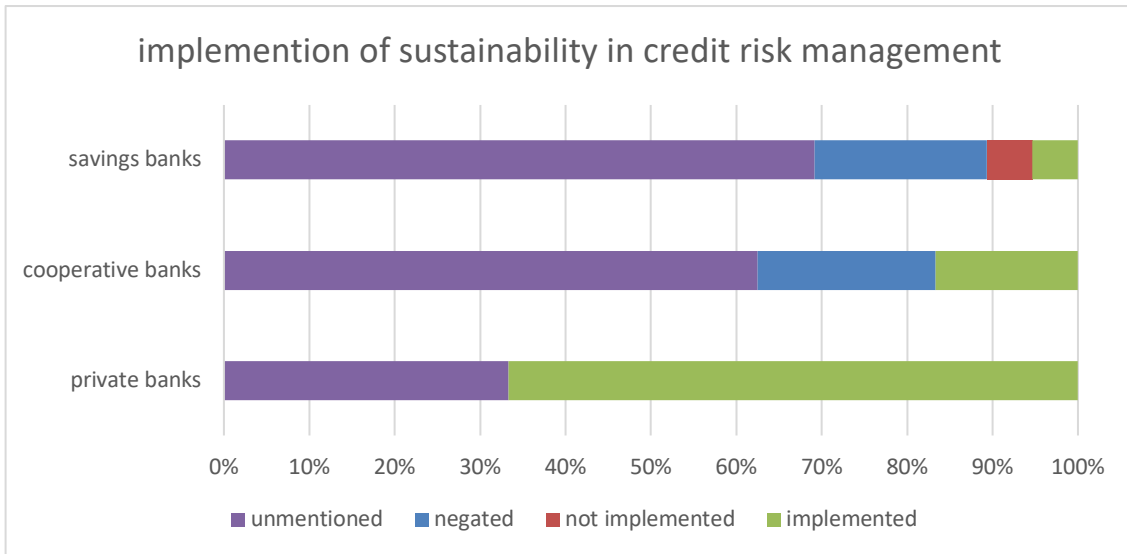


figure 18: Integration of sustainability-related risks into credit risk management

Implementation in risk assessment again differs significantly between the bank groups. Two-thirds of the private/large banks mention implementation, while the non-mention and denial in the cooperative and savings bank groups is over 80%. With a view to the distribution, the group of "implementers" is analysed in more detail for its characteristics and unique features.

The first characteristic studied is the correlation with size in terms of sustainability implementation. The literature review showed that in other industries, implementation also started from the largest organisations:

Savings banks including ranking number by company size in the banking group (Deutscher Sparkassen und Giroverband e. V., 2020b).:

- Hamburger Sparkasse AG (1)
- Sparkasse Rosenheim-Bad Aibling (60)
- Sparkasse Ravensburg (66)
- Stadt- und Kreissparkasse Erlangen Höchststadt Herzogenaurach (44)
- Stadtsbank München (4)

Cooperative banks including ranking number by company size in the banking group (Bundesverband der Deutschen Volksbanken und Raiffeisenbanken, 2021):

- Hamburger Volksbank eG (43)
- Frankfurter Volksbank eG (6)
- Münchener Bank eG (64)
- Volksbank Raiffeisenbank Nordoberpfalz eG (59)

Private banks:

- HypoVereinsbank UniCredit Bank AG
- Commerzbank AG
- National-Bank AG
- Oldenburgische Landesbank AG

Unfortunately, no current data series are available at the private bank level. The last publication from the banking association refers to figures from 2014, according to which second and third place were represented. Oldenburgische Landesbank AG shows total assets of EUR 19.1 billion as of 31 December 2018 (Oldenburgische Landesbank AG, 2019) and would rank second in the comparative group of cooperative banks. Excluding the supra-regional Apotheker- und Ärztebank eG, which specialises in one clientele, it is even in the top position (Bundesverband der Deutschen Volksbanken und Raiffeisenbanken, 2021). Among the largest savings banks, it would be in sixth place (Deutscher Sparkassen und Giroverband e. V., 2020b). With total assets of EUR 4.64 billion in 2018 (National-Bank AG, 2019), Nationalbank AG was ranked 40th among cooperative banks and 80th among savings banks in terms of total assets (Deutscher Sparkassen und Giroverband e. V., 2020b; Bundesverband der Deutschen Volksbanken und Raiffeisenbanken, 2021). Overall, the banks' reporting on sustainability implementation ranks among the larger banks within their banking group (only the top 15%).

The second area concerns sustainability measurement in the lending business (see figure 19: Sustainability-oriented measurement integration in credit business).

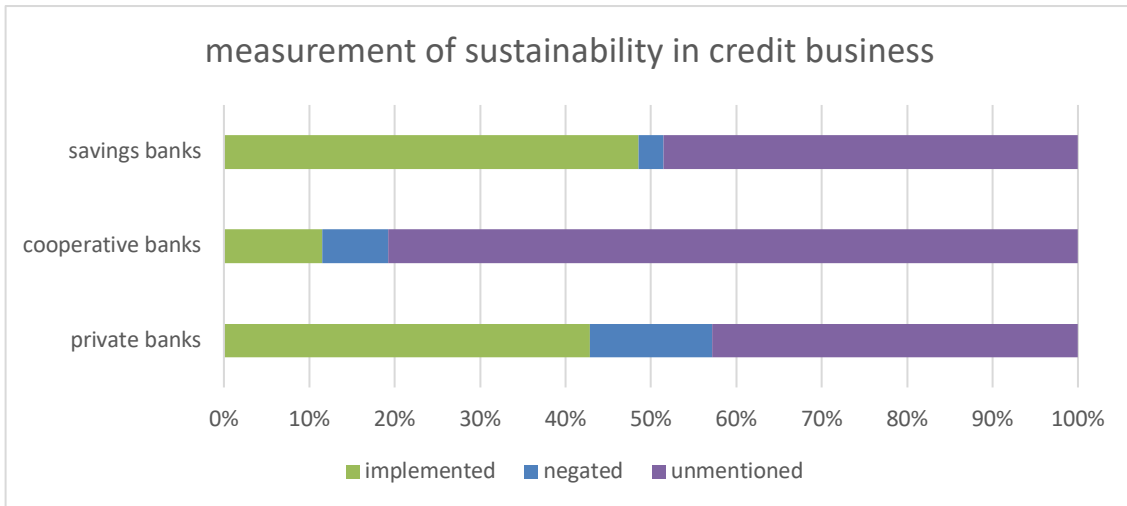


figure 19: Sustainability-oriented measurement integration in credit business

About half of the banks are already equipped with a measurement system within the savings and private banking groups. A private bank, two cooperative institutions and three savings banks have communicated an explicit denial. A closer look at the information reveals that a more detailed analysis of the content is advisable. For example, both Sparkasse Göttingen (Sparkasse Göttingen, 2018, p. 4) and National-Bank AG (National-Bank AG, 2018, p. 4) describe that they do not yet have a valuation catalogue. This wording implicitly refers to potential implementation planning (see figure 20: Formulation of planned integration of sustainability in credit business). Further implementation planning was explicitly mentioned by 16 institutions, and all institutions that currently deny a measurement are institutions that have already documented an implementation in the credit business.

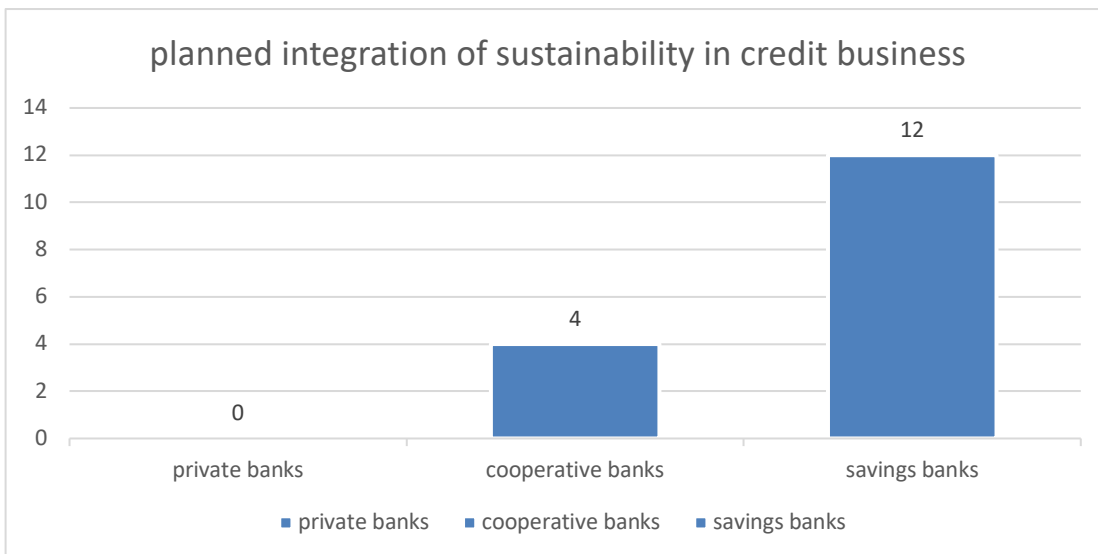


figure 20: Formulation of planned integration of sustainability in credit business

A relevant subset of the institutes already measuring sustainability effects uses a specific medium (see figure 21: Comparison of sustainability measurement via promotional loans). Particularly in the regional banking sector of the cooperative and savings banks, measurement through the granting of promotional loans is named as a measure of the sustainability effect of lending. In particular, funds for ecological and social purposes are reported through the allocation of subsidy programmes.

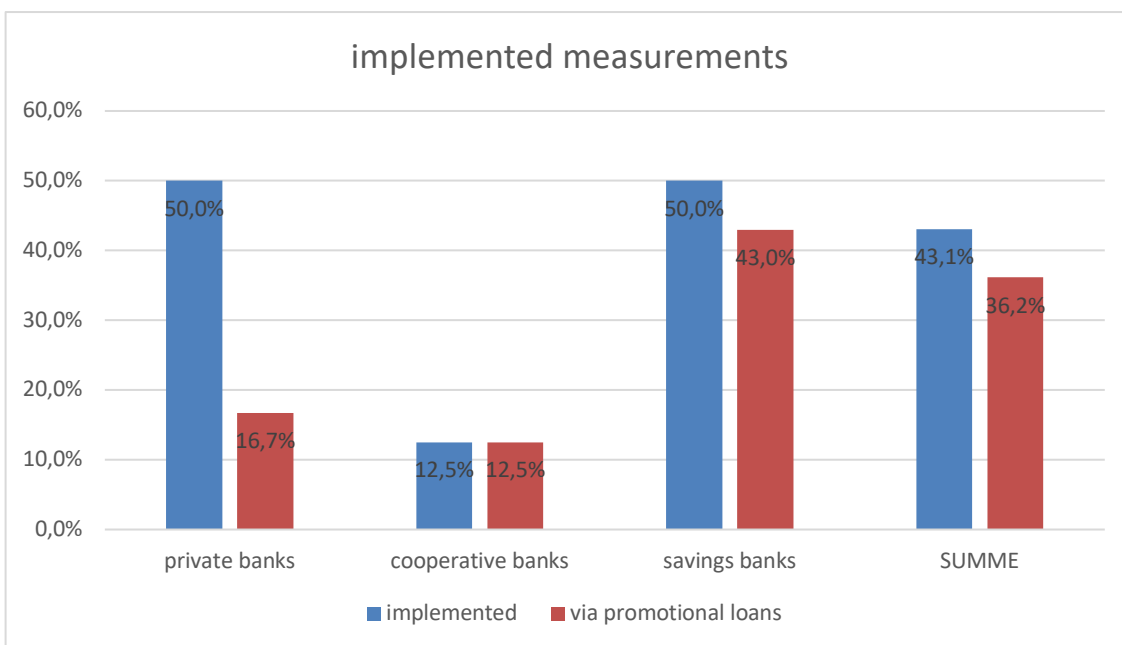


figure 21: Comparison of sustainability measurement via promotional loans

6.5 BOUNDARIES

The research is subject to some limitations in obtaining data from the DNK reports. The data consulted from the DNK reports is considered based on a scientifically valid system (McWilliams and Siegel, 1997; Stubbs and Cocklin, 2008; Arenas and Ayuso, 2016; Diouf, Hebb and Touré, 2016). They are, furthermore, representing a relevant cross-section of the study group of German bancassurance banks. Furthermore, these reports are subject to a legally derived set of rules and provide pertinent data to the research field, as they deal with the business area of lending and thus the researched area of banks' core business. However, it cannot be fully ensured that this research work holistically represents the current state of sustainability implementation. In particular, the implementation statuses cannot be identified through the analysis methodology or are not communicated in the reports.

Therefore, a relevant aspect of the reports' examination is that even if a credit institution has no or only marginal reporting information concerning the measures and requirements examined here, it is not necessarily a sign of a lack of sustainability on the part of the institution, but merely the result of the examination in the specific context and area of value creation. Likewise, non-existent explicit strategies and implementations can also occur in credit institutions that are significantly sustainable due to implicit arguments, e.g., the size and significance of the business area. In this regard, a detailed evaluation and separation are made between an explicit denial of an aspect and its non-mention.

As with the description of the research limitations regarding interview analysis, it is also true here that the data collection and analysis is time-related and carried out in 2019. Therefore, the development over time is not intended, current developments since the data collection are not researched, and thus the results represent a snapshot. Furthermore, the current tightening of regulations, as described in Chapter 2.3.2 current drivers, regulatory processes and outlook, suggests the assumption that the results will change in the event of a repetition of the test setup.

6.6 SUMMARY OF THE DNK REPORT ANALYSIS

Chapter 6 shows the basics and contents of the DNK reports and the representativeness of the analysed selection. In addition, the coding model and the objectives are disclosed in order to ensure traceability based on the search and analysis parameters. First, therefore, the comprehensiveness and relevance of the search results are qualitatively examined, and their process is explained.

The results are analysed individually for each bank group, and the background and special features are discussed. This reveals several conspicuous bank group-specific features, such as the measurement system, and cross-sectoral, such as the relevance of company size for the probability of implementing sustainability management.

In conclusion, the following can be stated:

- The quality-checked search results show an even distribution of quantities across all bank groups so that a business strategy relevance can also be derived from a similar reporting relevance across all markets.
- The private banks are already more involved in implementation, measurement and risk assessment. Overall, the results show a very high implementation rate of sustainability aspects in the lending business.
- Cooperative banks are below the market average in sustainability implementation and thus also in measurement and risk assessment. However, on average, the reporting companies are the smallest institutions, and they name their system-inherent regional value creation cycles as a sustainable concept.
- The savings banks show average implementation levels. In measuring sustainability, they refer to the granting of promotional loans (e.g. for renewable energies). Just like the cooperative banks, regionality is the communicative core of their sustainability characteristics.
- The results across the groups confirm the picture that the integration and implementation of sustainability factors are first found in larger companies.
- There are different perceptions of the implementation status (e.g. in the implementation of sector exclusions) between the DNK report information on

the procedure and the experienced implementation and specifications from the results of the interviews.

- The definition of sustainability factors in lending is sometimes a definition of economic sustainability and thus not in the sense of TBL.

7 CONCLUSIONS AND DISCUSSION

In this last chapter, previously presented theoretical backgrounds, consulted literature, its review results, observations and deductions of the experimental setup and research results, are discussed in terms of their dependencies and references and evaluated by the researcher.

It must be stated that the concept of sustainability became highly significant and socially expected for banks, especially in context with the financial crisis' outcomes. However, besides this fundamental relevance of sustainability and the TBL concept for economy and research, these concepts are highly complex. Thus, many boundary points on existing business concerns and demands for adaptation and supplementation on diverse levels and facings emerge. This again underlines a need for academic research and practical implementation concepts.

To this end, the implications for the scientific findings, the significance of the research results for professional practice and the achievement of the objectives, including the personal meta-objectives of the researcher, are examined and reflected upon in greater detail. Finally, the limitations of the work and the recommendations and necessities for future research are presented.

7.1 CONCLUSION

Based on the interviews and the analysis of the DNK reports, there are several relevant observations and findings derivable from there and related to the research questions.

The main findings are:

1. In operational practice, the approach to financing decisions is exclusively based on economic aspects and solely referring to economic information sources in all the cases examined.
2. The management objectives named in the interviews and the company's assessment of their influence on sustainable development, as well as the reference to relevant measures in the DNK reports, are valid factors influencing the extent to which sustainability aspects have so far been expressed in practice

to date, which is not yet comprehensive and takes all dimensions of sustainability into account.

3. Based on the interview results, the sustainability characteristics cited by savings and cooperative banks from the historical brand core as a corporate value or aspect of the corporate culture do not influence the sustainability characteristics in lending practice.
4. Subsidy funding for renewable energies, energy efficiency measures and energy-efficient refurbishment characterise the indirect impact core related to sustainability. They thus illustrate the great importance of the environmental component for sustainability policies.
5. The majority of institutions recognised the high significance of the indirect impact power of financial institutions through capital allocation but only led to implementation in the minority of the banks examined.
6. In their reports, several banks and savings banks have pointed out that the direct impact is low, especially on environmental sustainability. But their financing and money allocation function is impactful (Scholtens and van't Klooster, 2019)

These results are of essential importance for answering the research questions and are systematically discussed below with their relation to previous research results based on the research questions:

Research question 1: How do the guidelines of corporate banking consultants frame the operationalisation of sustainability strategies?

The question serves to ascertain concrete objectives and targets that can trigger the thematic focus, the importance of sustainability aspects for the respective banks and thus steering of operational activities among the interviewed decision-makers - whether consciously or unconsciously. Based on the interview results, there are no requirements, objectives or targets for a sustainable character of the credit business. In the interviews, in the cases discussed, no participant named a sustainable objective, no sustainability-related prohibitions and no sustainability-oriented information analysis. All interview participants related their answers to economic information bases. Moreover, no interviewee mentioned any sustainability requirements that have to be met. Concerning

the DNK reports, sustainability aims, and targets are partially implemented in the credit business. This result is derived from the following findings from the sustainability reports. As shown in figure 16 and figure 17, several banks have implemented sustainability in their lending business. In this context, 19% of the savings banks, 25% of the cooperative banks and 50% of the private banks surveyed have integrated a sustainability assessment model in their lending business. Nevertheless, related to the interviews, it does not occur or be named by the participants. Considering the direct correlation of the interview sample with the corresponding DNK reports, this result is noteworthy and requires a deeper analysis of the phenomenon. This requirement is supported by the reviewed literature. Furthermore, as the interviews show that relationship managers refer significantly to business figures, mainly drawing on traditional sources of information, this is also in line with the observation of other researchers and will be revisited in the discussion of the following RQs (Slovic, 1975; DeBusk, Killough and Brown, 2005; Neumann, Roberts and Cauvin, 2011; Bento, Mertins and White, 2017).

In addition, the interview participants of the regional institutions also mentioned regionality as a selection and evaluation criterion. Cooperative banks and savings banks formulated this aspect as a sustainability criterion in the corporate strategy code; the preservation of regional value creation and value cycles is an argument mentioned several times. Strengthening the region is thus a value that is strategically linked to sustainability and is also the only one reflected in the selection of new customers. Besides, this is also a corporate cultural value examined in more detail concerning research question 2.

Furthermore, according to the research findings from the interviews, there are no corporate requirements for analysing or verifying non-financial information. All information mentioned and used by the interviewed consultants is exclusively economic. In each case discussed, reference was made exclusively to quantitative and economic information bases. A proxy list of the information used can be found in the direct quote in chapter 5.2.2 Enquiry case, in which a participant recites the list of sources. As part of the interview planning, a follow-up round was already planned

regarding this aspect to ensure that this area was sufficiently investigated and that the participants had the opportunity to add to it. In further support, participants were actively asked for qualitative information in order to explicitly direct them to other sources. The objective is growth in volume and revenues through acquisitions and refinancing of redemptions in the overall portfolio, which was mentioned by the respondents as well as compliance with legal standards in every case researched. Therefore, this focused growth objective is a saturated result across all interviews and suggests that the economic pressure outweighs other aspects that do not play a relevant role in the operational implementation. Concerning the sales objectives, the acquisition and expansion are thus carried out strictly economically. The target evaluation from the point of view of the supervisors is purely quantitative. This observation from the interviews is confirmed by the analysis results of the DNK reports. In chapter 6.4, figure 19 and figure 21 refer to the current measurement practices. In regional institutions in particular, sustainability in lending is derived by measuring the granting of promotional loans. Thus, the implementation of sustainability goals is carried out particularly outside of the general lending business. The basis is formed by separate advisory services and promotional loans for renewable energies and energy efficiency measures. These are thus not a fundamental value and motivational tool within strategic customer management.

The interview results and the coded findings of the reports point to the corporate culture and structural gap in the implementation of sustainability already named in the literature, according to which formal structures and incentives steer as much as an appropriate corporate culture (Hambrick and Manson, 1984; Hambrick, 2007; Chin, Hambrick and Trevino, 2013; Bento, Mertins and White, 2017). In particular, the regional cooperative banks and public savings banks refer to their corporate culture and values in relation to their sustainability performance, as presented in the results chapters 6.3.2 and 6.3.3 specific to the banking group. This is not accompanied by a high level of formal implementation in operationalisation, as shown in figure 18. This is underpinned by the interviewees' responses on the lack of objectives and regulations for observing

sustainability criteria. Thus, there is a gap. Therefore, the area of corporate culture is still discussed further concerning the 2nd research question.

Overall, both the DNK-reports and the results of the interviews show no relevant structures in the approach or objective setting to support a sustainable lending orientation in the sense of the TBL definition. In addition to the fundamental negation of sustainability aspects by all interviewees in the selection and evaluation of lending in all cases discussed, the term sustainability was only used once. Overall, the interviewees referred to a definition of sustainability in terms of continued economic viability. However, the significant focus on ecological goals based on the measurement of promotional loans, especially for renewable energies and energy efficiency measures, ~~covers the characteristics already identified in the literature review.~~ The banks' focus on environmental sustainability and energy efficiency measures supports previous findings (Jeucken and Bouma, 1999). It is also reflected in this research work in the banks' identification, evaluation and measurement procedures as an essential aspect of sustainability.

Research question 2: Can framing concepts be identified as potential origins for decision-making errors that contradict sustainability?

The second research question distinguishes the influencing factors from the first research question in that it questions the influence of indirect and non-explicit framing concepts. Framing here refers to the framing effect, which can contribute to influencing rational decisions, as presented by Kahneman and Tversky (1974). In this context, it refers to the representation and formulation of decision-relevant topics related to sustainable aspects in this field of research. It looks at how the formulations and communication on strategic orientation and work instructions on sustainability issues affect decisions. Again, the research philosophy plays an essential role, as generative mechanisms and structures are identified and investigated (Reed, 2009; Bhaskar, 2010). Based on a retroductive analysis, the analysis results are the most reasonable basis from the researcher's point of view and the best interpretation until it is revised by another more valid explanation (Easton, 2010).

The potential framing through the employer's presentation of sustainability, its relevant aspects, importance and appreciation for daily work and operational decisions was carried out through the analytical consideration of the formulations on sustainable topics by the interview participants and the formulations and focal points from the DNK reports. First, the importance of sustainability aspects for daily work, their definition and the source of these aspects, i.e. self-selected or issued by the company, was assessed based on the interview statements. The results of the interviews showed a clear distinction.

In the interviews, sustainable success has been discussed. This discussion and the further deeper analysis show that the participants primarily refer to an economic sustainability definition. This definition refers to long-term and thus also sustainable financial strength and profitability. Specifically, in the "customer expansion case", which is presented in more detail in chapter 5.2.3, reference was made to the dominant definition of sustainability. One interviewee, in particular, very clearly described the prevailing definition. This is directed in particular at sustained economic income that secures loan repayment and ensures sufficient income to service the liabilities even in the event of an economy-wide downturn. From this perspective, sustainable success thus primarily serves economic durability. This way of thinking and definition can be found at the organizational level, as it is also reflected as a relevant message in the DNK reports. Many institutions present economic sustainability as a relevant strategic orientation in customer selection and financing practice. For example, sustainable lending is defined by the long-term sustainability of the debt burden by the Sparkasse Ansbach in its DNK report (Sparkasse Ansbach, 2018). Likewise, the reference to legal requirements that prohibit, for example, the financing of terrorism or money laundering is a relevant aspect in many DNK reports, which is also mentioned in the interviews. The fact that legal standards are mentioned here as a minimum and are even relativised in one interview can serve as an indication of the non-priority general practical significance and the strength of sustainability expression. Based on this example, it can be seen that this includes general internal company communication and targeting, and thus the

framing of sustainability in terms of the fulfilment of legal, social or moral minimum requirements, impacting values and decision-making concepts.

Another relevant framing aspect becomes apparent through the analysis focus on corporate values, their communication, impact and significance for the sustainable expression of the companies. By emphasising values such as regionality, the public mission or the cooperative principle as an orientation towards sustainability, the corporate culture is communicated as a decisive code of values for a sustainable orientation. Thus, especially at savings banks and cooperative banks, sustainability is positioned and emphasised as part of the corporate DNA, as the analysis of the DNK reports shows and was highlighted as a cross-institutional analysis result. As a result, all employees are implicitly supported by and assimilated into a common code of values. The sustainability cited in the cooperative banks and savings banks as part of the founding DNA or mission is a value system that, according to literature research, should have a positive influence on the value decisions of the advisors or influence their fundamental character (Hambrick and Manson, 1984; Ajzen, 1985; Homer and Kahle, 1988; Hambrick, 2007; Chin, Hambrick and Trevino, 2013; Bento, Mertins and White, 2017; Krause and Battenfeld, 2019).

However, this effect was not proven but disproven in this research setup. On the one hand, the interviews did not reveal any explicit formulations with reference to the corporate values, irrespective of membership of the banking group. Concrete references to non-economic corporate goals, such as member-value orientation or the public mandate, were not formulated. However, the tendency towards case-specific, individual decisions in the responsibility of the corporate advisors underpins the customer proximity advertised by the regional institutions with more profound knowledge of the borrowers' business characteristics. This is reflected in the more case-related decision-making processes compared to the supraregional banks' not always consistent sector exclusions. However, a clear deduction could not be made on the basis of the sample. Thus, their effect on the operational orientation is not decisive. Instead, it is overlaid by the deviating organisational framework values and the direct management instruments to have the significant economic driver function.

In addition, a reinforcing effect can be assumed from the rejection of the measurement or risk consideration in the business area. In particular, the regional institutions of cooperative banks and savings banks have so far incorporated sustainability criteria into the core function of bank management at a very below-average rate. The analysis of the reporting in the DNK reports on the implementation of sustainability aspects in risk assessment is carried out in chapter 6.4. In particular, figure 18 shows that this central management function of the banks has so far only been implemented by the largest sector participants. The decision is repeatedly rejected due to the non-availability of public or publication-required data for SMEs or the cost-benefit ratio. It is not evaluated here whether this assessment is valid, but it manifests a value model. It is based on a fundamental consideration that is thus supported and transferred by the board and management.

Comparing this assessment at the strategic level, the analysis results in the credit business with SMEs, systematic monitoring and evaluation of environmental and social impact factors are not proportional to the strategic level result. Some regional institutes base the argument for not systematising sustainability on the increased proximity to customers based on regional characteristics, which is represented in the case-related decision-making processes observed in the interviews compared to the supraregional banks' sector exclusion approach. Accordingly, they would have an increased information density inherent in the design and therefore an organisation-induced know-your-customer concept. With a view to this communication model, further connections to the description of the interviewee's qualitative customer evaluation method open up.

Most interviewees described the assessment of borrowers regarding a gut feeling. This means that the basis of trust and the qualitative management assessment strongly depend on the personal evaluation of the relationship manager. His or her value imprint thus has a significant qualitative influence on the evaluation of the customer and the continuation of business initiation or expansion. Therefore, a set of values that every employee shares with his or her organisation is a decisive success factor for implementing sustainability goals. The research results show that sustainable factors, as

defined by the TBL approach, are not mentioned. Thus, they are indicating that sustainable values are not implemented in practice and the implicit orientation.

Research question 3: Are systematic cognitive biases prominent on the operational management level?

RQ 1 and 2 refer in particular to the framings originating from the company's specifications. This research question addresses cognitive biases arising from judgement heuristics (Kahneman and Tversky, 1974). Heuristics are mental shortcuts that are a time-effective aid in daily decision-making processes. However, they also form the basis for cognitive biases that unconsciously influence decision-making negatively (Bazerman and Moore, 2009). For example, suppose someone references the most mentally present information (availability heuristic) or comparable facts (representative heuristic). In that case, this can already significantly influence the rational evaluation of information and lead to cognitive biases, such as focusing on confirmatory information (confirmation bias) (Bazerman and Moore, 2009).

Therefore, this research question refers to cognitive biases, which are recurrent and thus prominent examples beyond singular phenomena. For this purpose, the interview results and the content analysis results of the DNK reports were analysed concerning apparent biases as well as biases identified from relevant other research concepts. Decisive for the research question here were biases that arise regularly or indicate a systematic problem in the experimental setting. Systematic cognitive biases are observable regarding the harmonised and thus saturated data basis and results.

The anchoring bias, which has already been named in the literature review (Kahneman and Tversky, 1974; Cornelissen *et al.*, 2001; Dilla and Steinbart, 2005; St-Hilaire, 2013; Arenas and Ayuso, 2016; Bento, Mertins and White, 2017; Tan *et al.*, 2017), could be observed in the experimental design. In this case, judgements are often made in favour of financial criteria (DeBusk, Killough and Brown, 2005; Bento, Mertins and White, 2017) as research shows that people tend to give more weight to criteria that they consider important (Slovic, 1975; Neumann, Roberts and Cauvin, 2011; Bento, Mertins and White, 2017). Cardinael and Van Veen-Dirk's (2010) experiment even shows that

evaluators ignored non-financial metrics altogether. Reasons for this include lived standards, personal reasons such as a lack of confidence in non-financial metrics and their suitability, and an emphasis on performance-based metrics over process-based metrics (Bento, Mertins and White, 2017). Furthermore, several authors emphasise that a lack of knowledge and familiarity with non-financial metrics underpin the rationale (DeBusk, Brown and Killough, 2003; Bento, Mertins and White, 2017). The answers from the interviews confirm for this research field that this effect also occurs here. The questions from the semi-structured interviews on the data used served both to query the scope of analysis and the attention paid to the three dimensions of sustainability, as well as to ask about the starting points for obtaining information and changing and expanding sources of information.

These questions thus target several heuristics and biases related to availability, representativeness, confirmation, novelty, and hindsight. The observed mention of purely economic sources of information can confirm the anchoring bias and the behaviour identified in previous research. Thus, there is a high traditional, quantitative observation and evaluation methodology that mostly negates sustainable aspects. The results of the interviews show a clear result here, which at the same time is consistent with the reported expectation of balance sheet and earnings growth. The interviewees reported consistently throughout all cases discussed that they exclusively refer to quantitative and economic information. This focus on balance sheet, financial and, in particular, past-based data is part of the classic valuation charter in professional financial education and is representative of a model strategy. In fact, this effect has been observed and identified several times in other contexts and describes a cognitive process of complexity reduction which is included in the anchoring bias effect (Kahneman and Tversky, 1974; Cornelissen *et al.*, 2001; Dilla and Steinbart, 2005; St-Hilaire, 2013; Arenas and Ayuso, 2016; Bento, Mertins and White, 2017; Tan *et al.*, 2017). Further support for this observation is provided by the unsystematic approach and simplification strategy when considering qualitative factors. This statement is underpinned by the emphasis on the additional qualitative assessment on a gut feeling and the return to well-known and traditional assessment maxims throughout the

interviews. The naming of this gut feeling, which refers to the personal and feeling based assessment of the entrepreneurial personality as a qualitative assessment standard, is a relevant aspect here that underlines this unsystematisation, which is also described case-specifically by interview participant 6 in Chapter 5.2.3 as not having a rigid grid on this.

In every single case discussed with the interviewees, no participant explicitly referred to sustainable valuation aspects. Furthermore, it could be determined that the qualitative information sources are not systematised in their naming at the respective banks. Thus, the interviews show clear negative answers to the question about the basic assessment of sustainability aspects. This result is consistent across all cases investigated, and a more precise differentiation is therefore not necessary.

The practical implementation status in the sustainability assessment based on the interview results thus remains significantly behind the expected results and the implementation status communicated by the institutions. In short, beyond these identified anchor effects an incomplete or biased assessment is not present. The results instead point to a complete negation of sustainability's assessment. This can especially be concluded from the fact that the only mention of the term sustainability in all interviews carried out is related to sustainable economic performance and thus does not correspond to a related definition of sustainability with a social, an ecological and an economic dimension.

Research question 4: Which management tools could overcome the potential identified undesirable, unintended or unconsciousness related factors countervailing sustainability goals?

For application in the German banking industry, concrete indications and recommendations for action result from the research results. Two main fields of action emerge that are suitable drivers and tools:

1. the quantification and targeting of sustainability aspects in customer management
2. the strengthening of sustainability and the importance of impact relevance in the credit business through the management's internal and external communication.

The quantification and targeting of sustainability appear to be particularly relevant from the following aspects. First, the analysis focal points in lending or new customer acquisition named and identified in the interviews go hand in hand with the guidelines and objectives of the management and control system and correspond to each other. This can be deduced from the comparison of the information used for valuation and lending based on the interviewees responses as well as the stated corporate objectives for portfolio management. While on the one hand, financial and economic information is considered and evaluated, the benchmarks for acquisition and portfolio objectives are also strictly economically focused. Negative lists, in the environment examined by the exclusion of sectors, are also based on creditworthiness-related aspects by excluding sectors that are particularly at risk of default, such as the restaurant industry. Thus, objectives focussing on economic values go hand in hand with the search for economic evaluation of customers.

If these systems explicitly consider sustainability aspects or require consideration, it can be assumed that they control the operational implementation. This is also a conceptual approach that builds on existing industry culture and established structures. The industry-wide focus on quantifiable values and uniqueness of measurement is a prevalent concept in the financial industry, as previous research has identified and documented (Bento, Mertins and White, 2017). Therefore, implementing sustainability goals and objectives in well-known, practised and established concepts can avoid further biases (Cornelissen et al., 2001; Tan et al., 2017). The Bundesanstalt für Finanzdienstleistungsaufsicht (2019b) also refers to such approaches in its information leaflet as sustainable indices with an open set of decision-making rules, sustainability ratings, individual investment models such as the best-in-class approach can be used.

As the respective dimensions of sustainability could produce opposing outcomes, effects of bounded rationality may occur due to increasing complexity (Bento, Mertins and White, 2017; Carlucci *et al.*, 2018; Ferreira, Jalali and Ferreira, 2018). Therefore, the effects should be systematised, categorized and weighted in the process, resulting in a clear objective combined with the subsequent qualitative and implicit value component, enabling time-efficient and transparent decision-making.

This can be done in different degrees of complexity and adapted to the respective characteristics of the specific bank. Through commandment and prohibition rules, interpretation-free framework values can be set. Exclusion and negative lists could be used to systematically exclude sectors and potential customer groups from taking on new customer acceptance or further lending to existing customers. In this context, regulations from SRI investment can be used, such as the exclusion of so-called "sin stocks" industries, which focus on unethical business such as gambling, tobacco, alcohol, arms producers and suppliers or sex services. The application and adaptation of EP standards is another approach here, so companies and sectors directly or indirectly associated with people's exploitation, especially in poorer regions or with environmentally damaging raw material exploitation, can also be excluded here. Regional banks often deny such fundamental exclusions, as they tend to make individual decisions with their regional orientation, which, however, do not represent a clear but individual solution and thus negate systematisation.

A more complex implementation concept arises from the involvement in quantified assessment processes, especially ratings. Ratings may or may not include sustainability aspects, as, according to the EU Rating Regulation, credit ratings only need to consider factors necessary for assessing creditworthiness. The success of such rating implementation models can be seen in integrating other risk-relevant aspects into the rating methods, which are also used for business field expansion at banks. For example, the integration of succession issues into rating concepts led to a consistent uptake of information and the distribution of services and advisory support in implementing these measures among bank clients. Here, one can fall back on existing rating solutions, as additional sustainability ratings already exist but are often no credit ratings (Bundesanstalt für Finanzdienstleistungsaufsicht, 2019b). Therefore, it makes sense to adapt them to the needs and application goals, especially SMEs. As explained in the analysis, unlisted companies often lack a sufficient database.

Sustainable development is a concept of a gradual progression towards sustainability. Starting from this point and noting that the comparatively inadequate data situation exists among SMEs, however, a simple approach can already be taken. For example, the

actual voluntary publication of a sustainability report can already be used as an indicator for a fundamentally sustainable orientation beyond economic sustainability for smaller companies. Furthermore, standardised information in the increasingly widespread required reports can also become part of larger SMEs' risk analysis and rating.

Another implementation system is procedural support applications that map decision-making models, such as a balanced scorecard, which weighs up partially dilemmatic sustainability perspectives against each other with a corporate strategy-oriented and transparent weighting model.

Especially regarding the risk assessment, in which the calculation of default risks helps to assume the probabilities that debtors cannot repay their loan, factors related to social and ecological sustainability should be considered. Therefore, the existing models should be expanded so that several sustainability factors can be included in a weighted manner so that risks that have gone unnoticed can first be taken into account and then calculated.

The majority of institutions recognise the high importance of the indirect impact of financial institutions through capital allocation. However, it only leads to implementation in the minority, as the statements from the interviews and the evaluation of the DNK reports show. This first requires an honest and prioritised strategic orientation that must be communicated by the management level and underpinned by their own actions to be perceived as an earnest orientation. Furthermore, consistency is required that also intervenes in the other operational implementation models.

Therefore, the strategic orientation must be found consistently throughout the entire company in the form of objectives. The strategic sustainability orientation must also be related to the corporate values, as the research results argue towards the usage of corporate culture as a supporting tool and to communicate and position this even more strongly. The fundamental sustainability orientation and understanding of the indirect impact of power through the capital allocation function are described mainly positively in the DNK-reports. However, it has not yet led to a holistic, sustainable orientation via

the corporate value base as a management tool. Just as the mere existence of sustainability reports is not an indication of sustainable development (Weaver, Trevino and Cochran, 1999; Gray, 2004; Lyon, 2004; Milne and Gray, 2013; Kok, de Bakker and Groenewegen, 2019).

Therefore, the cultural imprint and reinforcement of the value effect on the individual value systems of each operational decision-maker must be strengthened. It should manifest itself there as an implicit and fundamentally internalised decision-making imprint. Given the experiences from change management, managers are called upon to implement this through active cultural implementation and communication at the various hierarchical levels of the company and can be underpinned as a driver of sustainability by regular and honest communication (Lewin, 1947; Cummings and Bridgman, 2011; Wilson, 2013).

Furthermore, sustainability is communicated as part of the corporate core, especially in the cooperative idea and the public mission of the savings banks, in many different ways. It may lead to the assumption that sustainability has already been sufficiently fulfilled by the cooperative idea or the public mission per se (Roth, 2006; Theurl, 2013a). This must be contrasted with a clear definition of sustainability with an ecological, social and economic dimension to prevent the purely economic approaches and definitions of sustainability communicated in the interviews and DNK reports from becoming a universal assessment or even an unofficial code of values. In recent years, uniform definitions and components of sustainability have developed here, as outlined in Chapter 2. These can be used for corporate sustainability strategies, corporate value codes, and communication.

7.2 CONTRIBUTION TO KNOWLEDGE

The contribution to knowledge was unexpected concerning the correlation of findings to existing research in broadly comparable or similar research areas and the implementation progress variance between different banks.

The research gap has already been identified in Chapter 2 Literature review. The reasons for the research gap is based on the following characteristics. First, sustainability

research is a comparatively young field (Tranfield, Denyer and Smart, 2003) and therefore shows a fundamental scarcity of research. Second, sector-specific research has only emerged in recent years. Third, the results are not easily transferable between different sectors because of their specificities (Dafermos, Nikolaidi and Galanis, 2018; Scholtens and van't Klooster, 2019). In addition, there is a high degree of complexity based on diverse and multiple stakeholders (Carlucci *et al.*, 2018).

Previous research has focused on CSR reporting, strategic decision-making at a country-wide level and rating or scoring systems (Phillis and Andriantiatsaholiniaina, 2001; Phillis, Grigoroudis and Kouikoglou, 2011; Santana *et al.*, 2014; Veldhuizen *et al.*, 2015; Coteur *et al.*, 2016; Gutiérrez-Nieto, Serrano-Cinca and Camón-Cala, 2016; Iribarren *et al.*, 2016; Strezov, Evans and Evans, 2017; Tan *et al.*, 2017; Dor and Kissinger, 2017; Karami *et al.*, 2017; Chen *et al.*, 2018; Eustachio *et al.*, 2019). Furthermore, the economic or financial performance measurement of sustainability-related businesses was examined instead of analysis and evaluation of the actual implementation and operationalisation (Bhagat and Bolton, 2008; Neal and Cochran, 2008; Nelling and Webb, 2009; Levine, Toffel and Chatterji, 2009; Schmid, Sabato and Aebi, 2011; Lioui and Sharma, 2012; Zopounidis and Doumpos, 2013; Ducassy, 2013; Essen, Engelen and Carney, 2013; Ferrell, Liang and Renneboog, 2016; Carlucci *et al.*, 2018; Scholtens and van't Klooster, 2019; Ziolo *et al.*, 2019; Krause and Battenfeld, 2019; Kudratova *et al.*, 2020).

In contrast, this thesis focuses on the operational level of companies, in this case banks. It examines the areas of the banks that have the highest impact on sustainability. The results therefore add a further perspective to previous research.

The thesis thus fills the research gap in many dimensions:

- Regional: Germany- Sector-specific: Banking
- Business field: Corporate finance in the SME sector
- Assessment dimension: Implementation status and operationalisation

When considering the research region of the national banking market in Germany, a transfer of other sector results is only insufficiently possible. The high granularity and

the 3-pillar model ensure a high degree of individuality here with influencing factors such as comparatively small independent banking institutions and within savings and cooperative banks also objectives that are not primarily driven by economic or stakeholder value. In addition, the market is unique because of the high importance of SMEs in Germany and their affinity for credit in corporate financing. Due to this high relevance of the financing structure of SMEs, banks have an even more significant indirect impact. Furthermore, the implementation assessment or the actual implementation in practice and the influences acting on it are not a highly frequented field of research.

CR and a mixed-method approach achieved additional results and further insights compared to the previous models. Combining the valid and broadly similar qualitative data from the interviews with the analytical results from a broader database of available sustainability reports enabled causal structural analyses that provided additional evidence compared to the previous findings. The following identified themes and hypotheses were substantiated within the framework of the thesis:

- biases and bounded rationality are a common consideration in the context of sustainable decision-making (St-Hilaire, 2013; Bento, Mertins and White, 2017; Carlucci *et al.*, 2018; Ferreira, Jalali and Ferreira, 2018; Liang *et al.*, 2018)
- Informal structures and corporate culture are relevant factors for a successful sustainability implementation (Hambrick and Manson, 1984; Hambrick, 2007; Stubbs and Cocklin, 2008; Chin, Hambrick and Trevino, 2013; Bento, Mertins and White, 2017; Ziolo *et al.*, 2019)

Therefore, the experimental design followed these recommendations and directions for future research:

- A general suggestion for further explorative case study research regarding the status of sustainability operationalisation (Sharma, 2002; Bansal, 2005; Stubbs and Cocklin, 2008; Kauko, 2010; Lekakos, Vlachos and Koritos, 2014; Müller-Christ, 2014; Cho *et al.*, 2015; Klein, 2015; Bento, Mertins and White, 2017; Carlucci *et al.*, 2018)

- focus on the processes of decision-making and influences of values and emotions (Lekakos, Vlachos and Koritos, 2014)
- Broadening the practical research focus from large corporations to SMEs (Kudratova *et al.*, 2020)

The multi-case study methodology with a data triangulation under the philosophical research approach of critical realism derived generative mechanisms. These results from corporate culture, implicit value images, mental overload and insufficient objectives, measurement systems, and risk tools for sustainable implementation support the existing hypotheses and make relevant contributions to professional practice.

7.3 CONTRIBUTION TO PROFESSIONAL PRACTICE

The core message of the thesis for the practice of banks is that banks willing to push sustainability further must first strategically integrate sustainability and its many aspects into their core business areas to be then able to implement it operationally. Other authors already suggested that strategy (Bonn and Fisher, 2011; Eweje, 2011), but it reveals further essential implementation aspects in its specificity. Many previous research findings with an analytical focus on the outcomes are criticised for having little practical impact on sustainability management (Garland and Gendall, 2004; Ferreira, Santos and Rodrigues, 2011; Carlucci *et al.*, 2018). The practical impact, in particular, is the focus of this thesis.

In particular, the results presented point to the practical relevance and additional insights from the research design for professional practice. The operative analysis is relevant for the research subjects (corporate client consultants), their managers, banks' boards, as well as developers and users of target and risk controlling instruments. The results point to soft and hard facts as influencing factors for sustainability implementation and operational excellence that is still largely lacking. The specific observation provides indications for the implementation and adaptation of existing systems. This is highly relevant as it addresses a large national market with many participants. Moreover, its market and its participants face increasing legal

requirements that require introducing or expanding sustainable management, reporting and controlling approaches.

The research findings on the consideration and analysis of solely economic data will highlight a potential open flank in the risk assessment. Potential risks may arise from aspects of the unaddressed TBL dimensions. Thus, those risks are not strategically tolerated or accepted. They are not identified at all. Therefore, they represent a risk value that is not assessed and considered.

Furthermore, this research finding is that if the respective communicated corporate culture is seriously oriented towards a sustainability orientation in all 3 TBL dimensions, this is not reflected in the procedures and value-induced actions of the employees, as the sustainability definitions and autonomous selection criteria show. The corporate values relating to sustainability, which are listed in particular in the Sustainability Code reports, are not reflected in the statements on procedures and decision-making in any of the cases examined. Considering that qualitative assessments in corporate credit departments are based mainly on personal experiences and gut feelings, as the analysis results show, it becomes even more relevant. The recourse to personal experiences and thus the bounded rationality-induced reduction of the credit customer's analysis to quantitative and economic core data and the justification by a gut feeling and thus a value landscape of one's own, which does not entirely go hand in hand with the corporate culture, draw a significant risk potential in terms of reputation and individual address risks based on decision-making freedoms and powers.

Moreover, the alignment of control systems, work instructions, guidelines or other operational processes has been identified by the research work across the breadth of the German banking landscape in the corporate lending business and analysed concerning its implementation status. Nevertheless, the implementation status still shows some potential for improvement, which the identified critical factors can systematically address.

7.4 REFLECTION ON THE STUDY'S OUTCOMES

Based on the preliminary scientific analysis of existing literature and research combined with the researcher's own experience as an insider researcher, the research questions have identified a research gap and targeted a phenomenon observed in practice.

The literature review underpinned the initial analysis, confirming and refining the research gap with further recommendations for future research concepts. As a result, the original planning was adapted and more clearly structured and validly constructed from the researcher's point of view. Contrary to expectations, the acquisition and analysis of primary data went very well. However, the researcher expected limitations specific to the sector and the research setup, as the researched sector is very reserved. Explicitly, low feedback rates and restrained information flows in the interviews were expected. This expectation stems from the basic rules of conduct of strict banking secrecy and the employment of the researcher and interviewer at a competing bank. Furthermore, there was a risk based on the disclosure strategy. The subsequent disclosure of the research intention could have led to a relevant subsequent rejection of the use of the interview data.

Furthermore, with the primary data from the interviews, a saturated data package could be created comparatively quickly. Indeed, the interview results surprised with their unambiguity, revealing a systematic, valid and generalisable picture. In particular, the unambiguity and uniformity of the interviewees' statements on the operational credit granting approach, which is consistent across all cases, participants and thus bank groups, shows that the assessment is not based on sustainability aspects beyond the economically sustainable profitability.

Based on the research objective and the evaluation from the researcher's perspective as an insider, the results are remarkable in that the clear-cut nature and the still largely rudimentary or non-existent sustainability implementations in operations contradict the expected values. Therefore, the research questions are based on the assumption that the field of action is far more complex and a different and more diverse decision situation is found.

Therefore, the results have been coded to match the findings complexity and a realigned ordinal system for triangulating the DNK reports. The research thus also shows that further exploratory research remains necessary.

7.5 PERSONAL LEARNING

The path of this research work and the DBA programme has taught essential analytical and evaluation procedures that have influenced the fundamental approach to problems, the evaluation of statements and their validity for the researcher beyond the scientific working cosmos. The deep engagement with the subject area, the accompanying scientific and practical developments and findings, as well as the constriction and implementation of the research setup, have thereby promoted and shaped fundamental skills such as perseverance, stamina, dealing with criticism, reflection on one's evaluation standards, the ability to structure time and content, as well as organisational skills.

The original orientation of the research work was externally determined by external factors of the work environment and self-determinedly changed and further narrowed by one's own research and analysis activities.

The collection and analysis of the results showed the researcher that years of professional experience and the associated expected values from personal observations and initial scientific literature research could be challenged in the course of the conducted in-depth research.

7.6 FURTHER RESEARCH

The still young research field shows that there are still many areas of research in terms of regions, industries and specifics that remain unexplored. Thus, the thesis and previous research suggest continuing exploratory case studies in yet unexplored industries, regions, or markets to define a valid basis for potentially similar, transferable, fundamental structures.

Furthermore, this work has exclusively provided an insight into the German banking landscape at a given point in time. Against the backdrop of rapidly changing conditions, both in terms of societal demands and regulatory requirements, a comparable research

structure to determine the development over time makes sense. Here, the research consulted in recent years shows how expressions and implementations are changing. As regulation grows, broader standardisation of results also becomes possible.

Based on the results, experiments can also help clarify the intensity of both corporate cultural or value-induced framework conditions or quantitative and operational management tools.

In order to be able to make more precise statements in the future, research work that considers and evaluates specific influencing factors is target-oriented for meaningful transferability into practice. Therefore, further controlled experiments that enable the effects of specific frameworks or influences are valuable to the research field from the researcher's point of view.

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APPENDICES

APPENDIX 1: INTERVIEW QUESTIONS

<u>Opening Questions</u>	
How are you?	
Do you have enough time to participate in the interview?	<ul style="list-style-type: none"> • clarify time requirement • potential rescheduling
Do you have any questions about the previous information and content?	-
How much and which experience do you have as a credit consultant?	<ul style="list-style-type: none"> • Previous employer • duration • etc.
How long do you hold your current position?	<ul style="list-style-type: none"> • average customer relationship duration
Case 1: new customer acquisition	
What experience do you have in customer acquisition?	<ul style="list-style-type: none"> • if none, ask about the organisational concept
What are your quantitative goals in this business area - if you have any?	<ul style="list-style-type: none"> • Target type: piece, revenue, defined target customers
How would you describe your approach to selection?	<ul style="list-style-type: none"> • methodology • themes • sources
Which company guidelines and specifications influence the selection process?	<ul style="list-style-type: none"> • branches • hard and soft criteria
How are they linked to the banks' overall strategy?	<ul style="list-style-type: none"> •
What is the first and the advanced information you use?	<ul style="list-style-type: none"> • initial selection • Detail check and selection
Which focal points of analysis do you need and want to document?	<ul style="list-style-type: none"> • Beyond business management (HR, long-term strategy, anti-disruption)

If you were to prioritise, what would be the top 5 topics?	
<u>Case 2: new customer enquiry</u>	
What experience do you have in customer enquiry?	<ul style="list-style-type: none"> • if none, ask about the organisational concept
What are your quantitative goals in this business area - if you have any?	<ul style="list-style-type: none"> • Target type: piece, revenue, defined target customers
How would you describe your approach to an inquiry?	<ul style="list-style-type: none"> • methodology • themes • sources
Which company guidelines and specifications influence the selection process?	<ul style="list-style-type: none"> • branches • hard and soft criteria
How are they linked to the banks' overall strategy?	
What information do you request or research?	<ul style="list-style-type: none"> • the personal environment of the entrepreneur • Mission, mission statement etc.
Which focal points of analysis do you document?	<ul style="list-style-type: none"> • Beyond business management (HR, long-term strategy, anti-disruption)
If you were to prioritise, what would be the top 5 topics?	
<u>Case 3: credit expansion</u>	
What experience do you have in the existing customer business?	<ul style="list-style-type: none"> • average customer relationship duration
What are your quantitative goals in this business area - if you have any?	<ul style="list-style-type: none"> • Target type: piece, revenue, defined target customers
Which company guidelines and specifications influence the expansion process?	<ul style="list-style-type: none"> • branches • hard and soft criteria

How are they linked to the banks' overall strategy?	
How would you describe your process of risk expansion?	<ul style="list-style-type: none">• methodology• themes• sources
Which qualitative topics have to be researched and documented by you in the ongoing customer relationship?	<ul style="list-style-type: none">• global, societal and political uncertainties
What information do you require or research for credit expansion?	
Which focal points of management analysis do you document?	
If you were to prioritise, what would be the top 5 qualitative topics?	

APPENDIX 2: CONSENT FORM



**INFORMED CONSENT FORM (NON-NHS RESEARCH)
FORMULAR ZUR EINWILLIGUNG NACH AUFKLÄRUNG (NICHT FORSCHUNG
IM - NATIONALEN GESUNDHEITSWESEN)**

Title of Project: decision-making frameworks in German banks' corporate client departments
Projekttitel: Entscheidungsfindung und –rahmenbedingungen im Firmenkundengeschäft deutscher Banken

Participant identification number for this study:
Teilnehmeridentifikationsnummer für diese Studie:

Name of Researcher: Henning Duderstadt
Name des Forschers: Henning Duderstadt

I, the undersigned, confirm that (please initial boxes as appropriate):
Ich, der Unterzeichner, bestätige, dass (bitte die entsprechenden Felder ankreuzen):

1.	<p>I have read and understood the information about the project, as provided in the Information Sheet dated or it has been read to me.</p> <p><i>Ich habe die Informationen über das Projekt gelesen und verstanden, wie sie im Informationsblatt vom _____ enthalten sind oder sie mir vorgelesen wurden.</i></p>	
2.	<p>I have been able to ask questions about the project and my participation and my questions have been answered to my satisfaction.</p> <p><i>Ich konnte Fragen über das Projekt und meine Teilnahme stellen und meine Fragen wurden zu meiner Zufriedenheit beantwortet.</i></p>	
3.	<p>I understand that taking part in this study involves an interview, in which my given information is recorded (audio and written notes) and those information will be transcribed as text and published through research reports, a thesis / dissertation, conference papers, journal articles or other at a summary level and will be fully anonymised, so there will be no way of identifying personal information. Anonymised data will be archived and shared in line with our Policy for the Effective Management of Research. Personal data will be retained until the project (including the dissemination period) has been completed.</p> <p><i>Ich verstehe, dass die Teilnahme an dieser Studie ein Interview umfasst, bei dem die von mir gegebenen Informationen aufgezeichnet werden (Audio und schriftliche Notizen) und diese Informationen als Text transkribiert und durch Forschungsberichte, eine Dissertation, Konferenzbeiträge, Zeitschriftenartikel oder vergleichbare Arbeiten auf einer zusammenfassenden Ebene veröffentlicht und vollständig anonymisiert werden, so dass es keine Möglichkeit gibt, persönliche Informationen zu identifizieren. Anonymisierte Daten werden im Einklang mit der universitären Richtlinie für ein effektives Forschungsmanagement archiviert und weitergegeben. Personenbezogene Daten werden bis zum Abschluss des Projekts (einschließlich des Verbreitungszeitraums) gespeichert.</i></p>	
4.	<p>I understand I can withdraw at any time before the interview and up to 10 days after the interview without giving reasons and that I will not be penalised for withdrawing nor will I be questioned on why I have withdrawn.</p> <p><i>Ich verstehe, dass ich jederzeit vor dem Interview und bis zu 10 Tage nach dem Interview ohne Angabe von Gründen zurücktreten kann und dass ich weder für den Rücktritt bestraft noch gefragt werde, warum ich zurückgetreten bin.</i></p>	
6.	<p>I understand that the information I provide will be used for: research reports, a thesis / dissertation, conference papers, journal articles or other publications.</p>	

	<i>Ich verstehe, dass die von mir zur Verfügung gestellten Informationen verwendet werden für: Forschungsberichte, eine Dissertation, Konferenzbeiträge, Zeitschriftenartikel oder andere Publikationen.</i>	
10.	The procedures regarding confidentiality have been clearly explained (e.g. use of names, pseudonyms, anonymisation of data, etc.) to me. <i>Die Verfahren zur Vertraulichkeit wurden mir klar erläutert (z.B. Verwendung von Namen, Pseudonymen, Anonymisierung von Daten, etc.).</i>	
11	I understand that personal information collected about me that can identify me, such as my name, or where I live, will not be shared beyond the study team. <i>Ich verstehe, dass personenbezogene Daten, die über mich gesammelt wurden und die mich identifizieren können, wie z.B. mein Name oder mein Wohnort, nicht außerhalb des Studienteams weitergegeben werden.</i>	
13.	I consent to the audio recording. <i>Ich bin mit der Audioaufnahme einverstanden.</i>	
14.	I understand that other researchers will have access to this data only if they agree to preserve the confidentiality of the data and if they agree to the terms I have specified in this form. <i>Ich verstehe, dass andere Forscher nur dann Zugang zu diesen Daten haben werden, wenn sie der Wahrung der Vertraulichkeit der Daten zustimmen und wenn sie den Bedingungen zustimmen, die ich in diesem Formular festgelegt habe.</i>	
15.	I voluntarily agree to participate in the project. <i>Ich stimme freiwillig der Teilnahme am Projekt zu.</i>	
16.	I know who to contact if I have any concerns about this research. <i>Ich weiß, an wen ich mich wenden kann, wenn ich Bedenken bezüglich dieser Forschung habe.</i>	

.....
Name of Participant
Name des Teilnehmers

.....
Signature
Unterschrift

.....
Date
Datum

.....
Name of Researcher
Name des Forschers

.....
Signature
Unterschrift

.....
Date
Datum

APPENDIX 3: PARTICIPANT INFORMATION SHEET



PARTICIPANT INFORMATION SHEET AND PRIVACY NOTICE

TITLE OF PROJECT: decision-making frameworks in German banks' corporate client departments

Invitation

The University of Worcester engages in a wide range of research which seeks to provide greater understanding of the world around us, to contribute to improved human health and well-being and to provide answers to social, economic and environmental problems.

We would like to invite you to take part in one of our research projects. Before you decide whether to take part, it is important that you understand why the research is being done, what it will involve for you, what information we will ask from you, and what we will do with that information.

We will in the course of this project be collecting personal information. Under General Data Protection Regulation 2016, we are required to provide a justification (what is called a "legal basis") in order to collect such information. The legal basis for this project is "**task carried out in the public interest**".

You can find out more about our approach to dealing with your personal information at <https://www.worcester.ac.uk/informationassurancesurance/visitor-privacy-notice.html>.

Please take time to read this document carefully. Feel free to ask the researcher any questions you may have and to talk to others about it if you wish. You will have at least 7 days to decide if you want to take part.

TEILNEHMER- INFORMATIONSBLETT UND DATENSCHUTZERKLÄRUNG

PROJEKTTITEL: Entscheidungsfindung und –rahmenbedingungen im Firmenkundengeschäft deutscher Banken

Einladung

Die Universität Worcester betreibt ein breites Spektrum an Forschung, die darauf abzielt, ein besseres Verständnis der Welt um uns herum zu vermitteln, zur Verbesserung der menschlichen Gesundheit und des Wohlbefindens beizutragen und Antworten auf soziale, wirtschaftliche und ökologische Probleme zu geben.

Wir laden Sie ein, an einem unserer Forschungsprojekte teilzunehmen. Bevor Sie sich entscheiden, ob Sie teilnehmen möchten, ist es wichtig, dass Sie verstehen, warum die Forschung durchgeführt wird, was sie für Sie bedeutet, welche Informationen wir von Ihnen erfragen und was wir mit diesen Informationen tun werden.

Im Rahmen dieses Projekts werden wir personenbezogene Daten erheben. Gemäß der Allgemeinen Datenschutzverordnung 2016 sind wir verpflichtet, eine Begründung (eine so genannte "Rechtsgrundlage") für die Erhebung solcher Daten vorzulegen. Rechtsgrundlage für dieses Projekt ist die "**Aufgabe im öffentlichen Interesse**".

Mehr über unseren Ansatz im Umgang mit Ihren personenbezogenen Daten erfahren Sie unter <https://www.worcester.ac.uk/informationassurancesurance/visitor-privacy-notice.html>.

Bitte nehmen Sie sich die Zeit, dieses Dokument sorgfältig zu lesen. Zögern Sie nicht, dem Forscher alle Fragen zu stellen, die Sie haben, und mit anderen darüber zu sprechen, wenn Sie es wünschen. Sie haben mindestens 7 Tage Zeit, um zu entscheiden, ob Sie teilnehmen möchten.

What is the purpose of the research?

This study aims to identify and categorize the key decision factors in the corporate client business of a bank besides the financial ratios. It aims to gain a deeper understanding of the practical approaches and procedures and aspects considered for the new customer selection and acceptance as well as risk expansion. Thus the research would like to improve the guidance and management concepts.

Who is undertaking the research?

Henning Duderstadt,
Student Researcher,
DUDH1_16@uni.worc.ac.uk

Who has oversight of the research?

The research has been approved by the Research Ethics Panel for the College of Business, Psychology and Sport in line with the University's Research Ethics Policy. The University of Worcester acts as the "Data Controller" for personal data collected through its research projects & is subject to the General Data Protection Regulation 2016. We are registered with the Information Commissioner's Office and our Data Protection Officer is Helen Johnstone (infoassurance@worc.ac.uk). For more on our approach to Information Assurance and Security visit: <https://www.worcester.ac.uk/informationassurancesurance/index.html>.

Why have I been invited to take part?

You have received this invitation because you are a experiences consultant in a corporate business unit of a German bank. We are hoping to recruit min. 6 participants for this study.

Was ist der Zweck der Forschung?

Ziel dieser Studie ist es, die wichtigsten Entscheidungsfaktoren im Firmenkundengeschäft einer Bank zu identifizieren und zu kategorisieren, die es neben den Finanzkennzahlen gibt. Ziel ist es, ein tieferes Verständnis für die praktischen Ansätze und Verfahren und Aspekte zu gewinnen, die bei der Auswahl und Akzeptanz neuer Kunden sowie der Risikoausweitung berücksichtigt werden. Damit möchte die Forschung die Leit- und Managementkonzepte verbessern.

Wer führt die Forschung durch?

Henning Duderstadt,
Studentischer Forscher/Doktorand
DUDH1_16@uni.worc.ac.uk

Wer hat die Aufsicht über die Forschung?

Die Forschung wurde vom Research Ethics Panel für die Hochschule für Wirtschaft, Psychologie und Sport im Einklang mit der Forschungsethikrichtlinie der Universität genehmigt. Die University of Worcester fungiert als "Datenverantwortlicher" für die im Rahmen ihrer Forschungsprojekte erhobenen personenbezogenen Daten und unterliegt der Allgemeinen Datenschutzverordnung 2016. Wir sind beim Büro des Datenschutzbeauftragten registriert und unsere Datenschutzbeauftragte ist Helen Johnstone. (infoassurance@worc.ac.uk). Für weitere Informationen über unseren Ansatz zur Informationssicherung und -sicherheit besuchen Sie uns: <https://www.worcester.ac.uk/informationassurancesurance/index.html>.

Warum wurde ich zur Teilnahme eingeladen?

Sie haben diese Einladung erhalten, weil Sie ein erfahrener Berater in einer Firmenkundenabteilung einer deutschen Bank sind. Wir hoffen, mindestens 6 Teilnehmer für diese Studie gewinnen zu können.

Do I have to take part?

No. It is up to you to decide whether or not you want to take part in this study. Please take your time to decide; we will wait for at least 7 days before asking for your decision. You can decide not to take part or to withdraw from the study until 10 days after the interview. If you wish to have your data withdrawn please contact the researcher with your participant number and your data will then not be used. If you do decide to take part you will be asked to sign a consent form.

What will happen if I agree to take part?

If you agree to take part, you will

- receive a consent form and be asked to sign it
- be asked to agree for an interview date
- meet the researcher in person and have an one to one interview in an agreed location, which will take about 60 minutes – this may vary per participant
- be asked for the permission that the researcher audio records the interview and takes notes

What are the benefits for me in taking part?

With your participation you support my dissertation and its contribution to the knowledge and the better understanding of a practical problem, which concerns the German banking industry. I will gladly make the results of my dissertation available to you and your employer upon completion of my research.

Are there any risks for me if I take part?

The research causes no anticipated risks. Nonetheless, you are free to withdraw from the study. The project has been given advisory approval by the University's Ethics Committee.

Muss ich teilnehmen?

Nein. Es liegt an Ihnen zu entscheiden, ob Sie an dieser Studie teilnehmen möchten oder nicht. Bitte nehmen Sie sich Zeit für Ihre Entscheidung; wir werden mindestens 7 Tage warten, bevor wir Sie um Ihre Entscheidung bitten. Sie können sich auch bis 10 Tage nach dem Interview entscheiden, nicht teilzunehmen oder sich aus der Studie zurückzuziehen. Wenn Sie eine Löschung Ihrer Daten wünschen, wenden Sie sich bitte mit Ihrer Teilnehmernummer an den Forscher und Ihre Daten werden dann nicht verwendet. Wenn Sie sich für eine Teilnahme entscheiden, werden Sie gebeten, eine Einverständniserklärung zu unterschreiben.

Was passiert, wenn ich der Teilnahme zustimme?

Wenn Sie zustimmen teilzunehmen, werden Sie

- eine Einverständniserklärung erhalten und gebeten, diese zu unterschreiben.
- gebeten werden, einen Interviewtermin zu vereinbaren.
- den Forscher persönlich treffen und ein persönliches Gespräch an einem vereinbarten Ort führen, das ca. 60 Minuten dauert - dies kann je nach Teilnehmer variieren.
- um die Erlaubnis gebeten werden, dass der Forscher das Interview aufzeichnet und sich Notizen macht.

Was sind die Vorteile für mich bei der Teilnahme?

Mit Ihrer Teilnahme unterstützen Sie meine Dissertation und ihren Beitrag zum Wissen und zum besseren Verständnis eines praktischen Problems, das den deutschen Bankensektor betrifft. Gerne stelle ich Ihnen und Ihrem Arbeitgeber die Ergebnisse meiner Dissertation nach Abschluss meiner Forschung zur Verfügung.

Besteht für mich ein Risiko, wenn ich teilnehme?

Die Forschung verursacht keine erwarteten Risiken. Dennoch steht es Ihnen frei, sich aus der Studie zurückzuziehen. Das Projekt wurde von der Ethikkommission University's beratend genehmigt.

What will you do with my information?

Your personal data / information will be treated confidentially at all times; that is, it will not be shared with anyone outside the research team or any third parties specified in the consent form unless it has been fully anonymised. The exception to this is where you tell us something that indicates that you or someone else is at risk of harm. In this instance, we may need to share this information with a relevant authority; however, we would inform you of this before doing so.

During the project, all data / information will be kept securely in line with the University's Policy for the Effective Management of Research Data and its [Information Security Policy](#).

We will process your personal information for a range of purposes associated with the project primary of which are:

- To use your information along with information gathered from other participants in the research project to seek new knowledge and understanding that can be derived from the information we have gathered.
- To summarise this information in written form for the purposes of dissemination (through research reports, a thesis / dissertation, conference papers, journal articles or other publications). Any information disseminated / published will be at a summary level and will be fully anonymised and there will be no way of identifying your individual personal information within the published results.
- To use the summary and conclusions arising from the research project for teaching and further research purposes. Any information used in this way will be at a summary level and will be fully anonymised. There will be no way of identifying your individual personal information from the summary information used in this way.

Was werden Sie mit meinen Daten machen?

Ihre personenbezogenen Daten/ Informationen werden jederzeit vertraulich behandelt, d.h. sie werden weder an Dritte außerhalb des Forschungsteams noch an Dritte weitergegeben, die in der Einwilligungserklärung angegeben sind, es sei denn, sie wurden vollständig anonymisiert. Die Ausnahme hiervon ist, wenn Sie uns etwas mitteilen, das darauf hinweist, dass Sie oder jemand anderes von Schaden bedroht ist. In diesem Fall müssen wir diese Informationen möglicherweise an eine zuständige Behörde weitergeben; wir würden Sie jedoch vorher darüber informieren.

Während des Projekts werden alle Daten / Informationen sicher aufbewahrt, in Übereinstimmung mit der Richtlinie der Universität für ein effektives Management von Forschungsdaten und deren Informationssicherheitspolitik (s. link: [Information Security Policy](#)).

Wir werden Ihre personenbezogenen Daten für eine Reihe von Zwecken verarbeiten, die mit dem Projekt verbunden sind, dessen Hauptzweck es ist:

- Ihre Informationen zusammen mit Informationen, die von anderen Teilnehmern des Forschungsprojekts gesammelt wurden, zu verwenden, um neue Erkenntnisse zu gewinnen, die sich aus den gesammelten Informationen ableiten lassen.
- Diese Informationen in schriftlicher Form zum Zwecke der Verbreitung zusammenzufassen (durch Forschungsberichte, eine Dissertation, Konferenzbeiträge, Zeitschriftenartikel oder andere Publikationen). Alle Informationen, die veröffentlicht werden, werden zusammengefasst und vollständig anonymisiert, und es gibt keine Möglichkeit, Ihre persönlichen Daten innerhalb der veröffentlichten Ergebnisse zu identifizieren.
- Die Zusammenfassung und die Schlussfolgerungen aus dem Forschungsprojekt für die Lehre und weitere Forschungszwecke zu nutzen. Alle auf diese Weise verwendeten Informationen werden zusammengefasst und vollständig anonymisiert. Es gibt keine Möglichkeit, Ihre persönlichen Daten anhand der auf diese Weise verwendeten zusammenfassenden Informationen zu identifizieren..

If you wish to receive a summary of the research findings or to be given access to any of the publications arising from the research, please contact the researcher.

How long will you keep my data for?

Your personal data will be retained until the project (including the dissemination period) has been completed.

At the completion of the project, we will retain your data only in anonymised form. This anonymised data will be securely stored and kept for up to 10 years after the project ends in 2020 in line with our Policy for the Effective Management of Research Data and then securely disposed.

How can I find out what information you hold about me?

You have certain rights in respect of the personal information the University holds about you. For more information about Individual Rights under GDPR and how you exercise them please visit: <https://www.worcester.ac.uk/informationassurance/requests-for-personal-data.html>.

What happens next?

Please keep this information sheet. If you do decide to take part, please either contact the researcher using the details below.

Thank you for taking the time to read this information.

Wenn Sie eine Zusammenfassung der Forschungsergebnisse erhalten oder Zugang zu einer der aus der Forschung hervorgegangenen Publikationen erhalten möchten, wenden Sie sich bitte an den Forscher.

Wie lange werden Sie meine Daten aufbewahren?

Ihre personenbezogenen Daten werden bis zum Abschluss des Projekts (einschließlich der Veröffentlichungsfrist) gespeichert.

Nach Abschluss des Projekts speichern wir Ihre Daten nur in anonymisierter Form. Diese anonymisierten Daten werden nach Projektende im Jahr 2020 gemäß unserer Richtlinie für ein effektives Management von Forschungsdaten bis zu 10 Jahre lang sicher gespeichert und aufbewahrt und anschließend sicher entsorgt.

Wie kann ich herausfinden, welche Informationen Sie über mich haben?

Sie haben bestimmte Rechte in Bezug auf die personenbezogenen Daten, die die Universität über Sie gespeichert hat. Weitere Informationen über die individuellen Rechte im Rahmen von GDPR und wie Sie diese ausüben, finden Sie unter:

<https://www.worcester.ac.uk/informationassurance/requests-for-personal-data.html>.

Was passiert als nächstes?

Bitte bewahren Sie dieses Merkblatt auf. Wenn Sie sich für eine Teilnahme entscheiden, wenden Sie sich bitte entweder über die folgenden Angaben an den Forscher.

Vielen Dank, dass Sie sich die Zeit nehmen, diese Informationen zu lesen.

Name: Henning Duderstadt

If you decide you want to take part in our project, and we hope you do, or if you have any further questions then please contact:

Henning Duderstadt
DUDH1_16@uni.worc.ac.uk.

If you have any concerns about the project at this point or at any later date you may contact the researcher (contact as above) or you may contact the Supervisor: Kay Emblen-Perry;
k.emblenperry@worc.ac.uk
phone.: 01905 855253

If you would like to speak to an independent person who is not a member of the research team, please contact Karen Dobson at the University of Worcester, using the following details:

Karen Dobson
Secretary to Research Ethics Panel for
College of Business, Psychology and
Sport
University of Worcester
Henwick Grove
Worcester WR2 6AJ
ethics@worc.ac.uk

Wenn Sie sich entscheiden, an unserem Projekt teilzunehmen, und wir hoffen, dass Sie dies tun, oder wenn Sie weitere Fragen haben, dann wenden Sie sich bitte an uns:

Henning Duderstadt
DUDH1_16@uni.worc.ac.uk.

Wenn Sie zu diesem Zeitpunkt oder zu einem späteren Zeitpunkt Bedenken bezüglich des Projekts haben, können Sie sich an den Forscher wenden (Kontakt wie oben beschrieben) oder an die Doktormutter: Kay Emblen-Perry;
k.emblenperry@worc.ac.uk
Tel.: 01905 855253

Wenn Sie mit einer unabhängigen Person sprechen möchten, die nicht Mitglied des Forschungsteams ist, wenden Sie sich bitte an Karen Dobson an der University of Worcester unter Verwendung der folgenden Angaben:

Karen Dobson
Secretary to Research Ethics Panel for
College of Business, Psychology and
Sport
University of Worcester
Henwick Grove
Worcester WR2 6AJ
ethics@worc.ac.uk