DOCTORAL THESIS

UCAM
UNIVERSIDAD CATÓLICA DE MURCIA

INTERNATIONAL DOCTORAL SCHOOL

Doctoral Programme in Social Science

The Development of Integrated Reporting and Concept Design for a Holistic Implementation: A Cross-Country Analysis of the Degree of Integrated Reporting in South Africa and Germany

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AUTHORIZATION OF THE DIRECTORS OF THE THESIS FOR SUBMISSION

Prof. Dr. Nicolás Gonzálvez Gallego and Prof. Dr. Stefan Razik as Directors[(1)] of the Doctoral Thesis "The Development of Integrated Reporting and Concept Design for a Holistic Implementation: A Cross-Country Analysis of the Degree of Integrated Reporting in South Africa and Germany" by Mr. Marcel Mock, M.Sc. in the Programa de Doctorado en Ciencias Sociales, **authorize for submission** since it has the conditions necessary for his defense.

Sign to comply with the Royal Decrees 99/2011, in Murcia, November 24, 2023.

Stefan Razik

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ABSTRACT

In corporate reporting, the density and complexity of information is constantly increasing. However, the relevance of information for the organisation's shareholders and stakeholders to make efficient decisions is also growing. Traditional corporate and financial reporting seems insufficient to adequately meet stakeholders' interests and needs since several shortcomings limit the reports' usefulness for decision-making.

These circumstances, extrinsic, and intrinsic motivating factors have led to Integrated Reporting maturing in the existing reporting landscape. At its core, Integrated Reporting aims to ensure holistic communication about an organisation's value creation, preservation, or erosion in the short, medium, and long term. It is important to emphasise how the strategy, governance, business model, performance, and prospects influence value transformation in the changing environment. Integrated Reporting thus combines financial and non-financial information. Therefore, it is considered as a possible approach to support the economy's sustainable development and meet the increasing demands on corporate reporting. Integrated Reporting can be seen as an advancement of prevailing reporting concepts and is regarded as a holistic approach to interdisciplinary and integrated corporate management.

The still relatively young research in Integrated Reporting is mainly reflected in analysing normative or conceptual issues on Integrated Reporting but less on its degree. In addition, existing research has focussed primarily on studying South African companies. Therefore, this dissertation attempts to close the accentuated research gap by conducting a cross-country analysis between South Africa and Germany. Compared to previous studies, this dissertation does not distinguish between self-declared adopters of Integrated Reporting and those who do not explicitly refer to the International Integrated Reporting Framework. In order to avoid the self-selection bias resulting from this binary approach, this thesis considers companies, regardless of their status, to fulfil the original intention of Integrated Reporting.

The dissertation examines the degree of Integrated Reporting and its corresponding development in a year-to-year comparison within a cross-country setting. Using a self-designed content analysis catalogue, the degree of Integrated Reporting is determined in South Africa and Germany. For this purpose, the Integrated Reporting score is also subdivided into different sub-scores based on the Content

Elements of the International Integrated Reporting Framework. Various panel studies shed light on the development of Integrated Reporting from multiple perspectives.

The analysis results show that the companies increasingly report in a more integrated manner, regardless of their location. The findings also indicate that the orientation towards the aspects of Integrated Reporting is more pronounced in South Africa than in Germany. The degree of Integrated Reporting was also analysed along individual sub-scores, in analogy to the Content Elements of Integrated Reporting. The results of the sub-score analyses paint a similar picture to the overall assessment. The outcomes are supported by underlying theoretic assumptions and previous studies in similar constitutions. The findings from the analysis are used to make recommendations that enable Integrated Reporting to be implemented holistically in an organisation. This aligns with the Integrated Management Concept, which emphasises the necessity of a normative, strategic, and operational management level. Critical, overarching success factors are also identified in this context.

This research adds value to academia, practitioners, and standard setters by examining Integrated Reporting from multiple perspectives. On the one hand, this thesis analyses the development of Integrated Reporting in a mandatory and, on the other hand, in a voluntary environment. This leads to closing the identified research gap and actively contributes to answering the research questions. In addition, recommendations for action for the entire implementation of Integrated Reporting allow companies to transfer this approach to realise the potential benefits of Integrated Reporting.

KEY WORDS

Integrated Reporting, Corporate Reporting, Integrated Management, Cross-Country-Analysis, Content Analysis

RESUMEN

En el reporting corporativo, la densidad y la complejidad de la información está en continuo crecimiento. No obstante, la relevancia de la información para los accionistas y los agentes claves de la organización para adoptar decisiones también es cada vez mayor. El reporting financiero y corporativo tradicional parece insuficiente para cumplir adecuadamente con los intereses y necesidades de los stakeholders dado que ciertas carencias limitan la utilidad de esos informes para la toma de decisiones.

Estas circunstancias, así como factores motivadores extrínsecos e intrínsecos han conducido que el Reporting Integrado evolucione hasta su estado actual. En esencia, el Reporting Integrado persigue garantizar una comunicación holística acerca de la creación, preservación o erosión de la creación de valor de una organización tanto en el corto, como en el medio y largo plazo. Es importante destacar cómo la estrategia, la gobernanza, el modelo de negocio, el desempeño y las expectativas influyen en la transformación de valor en un entorno cambiante. Así, el Reporting Integrado combina información financiera y no financiera. De esta forma, se le considera un posible enfoque que dé soporte al desarrollo sostenible de la economía y que cumpla con las crecientes demandas de información corporativa. El Reporting Corporativo puede verse como un avance en cuanto a los conceptos previos del reporting y se considera un enfoque global de la gestión corporativa integral e interdisciplinar.

La investigación sobre Reporting Integrado es relativamente reciente y se centra principalmente en analizar el grado de integración. Además, la literatura existente se ha enfocado principalmente en estudiar empresas sudafricanas. Esta tesis doctoral intenta cerrar este acentuado gap en la investigación a través de un análisis multipaís de Sudáfrica y Alemania. En comparación con estudios previos, este trabajo no distingue entre quienes se autodeclaran adoptantes del Reporting Integrado y aquellos que no se refieren explícitamente al Marco Internacional de Reporting Integrado (IIRF, por sus siglas en inglés). Para evitar el sesgo de autoselección que resulta de este enfoque binario, esta tesis considera que las empresas, con independencia de su estatus, cumplen con las intenciones del Reporting Integrado.

Esta tesis doctoral examina el grado de implementación del Reporting Integrado y su correspondiente desarrollo en una comparación año a año bajo un enfoque multipaís. El grado de Reporting Integrado para Sudáfrica y Alemania se determina a partir del uso de un catálogo de análisis de contenido propio. Con este propósito, la

puntuación de Reporting Integrado también se subdivide en diferentes marcas basadas en el IIRF. Distintos estudios de panel arrojan luz sobre el desarrollo del Reporting Integrado desde diferentes perspectivas.

Los resultados del análisis muestran que las compañías realizan sus informes de una forma cada vez más integrada, con independencia de dónde se localicen. Los resultados indican también que la orientación hacia los aspectos que comprende el Reporting Integrado es más acusada en Sudáfrica que en Alemania. El grado de implementación del Reporting Integrado también se analiza de acuerdo a las sub-puntuaciones individuales, de forma análoga a los Elementos de Contenido del Reporting Integrado. Los análisis de esas sub-puntuaciones arrojan una imagen similar al análisis global. Los resultados se apoyan en hipótesis teóricas subyacentes y en estudios similares. Los hallazgos que se desprenden de este análisis se emplean para hacer recomendaciones que faciliten que el Reporting Integrado se implante de forma holística en una organización. Este planteamiento se alinea con el concepto de gestión integrada que enfatiza la necesidad de un nivel de gestión normativo, estratégico y operativo. En este mismo contexto, también se identifican factores críticos generales de éxito.

Esta investigación persigue aportar valor a académicos, profesionales y reguladores por medio del estudio del Reporting Integrado desde múltiples perspectivas. Por un lado, esta tesis analiza el desarrollo del Reporting Integrado en un contexto de obligado cumplimiento y, por otro, en uno de seguimiento voluntario. Esto permite contribuir a cerrar el gap de investigación y a responder a las preguntas de la investigación. Además, las recomendación prácticas para la implantación completa del Reporting Integrado permiten a las empresas adoptar este enfoque para aprovechar los beneficios potenciales del Reporting Integrado.

PALABRAS CLAVE

Reporting Integrado, Reporting Corporativo, Gestión Integral, Análisis Multipaís, Análisis de Contenido

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Research is an insightful and fulfilling path. However, this path of knowledge cannot be travelled alone; it requires support of various kinds. Only in this way is it possible to develop new ideas and progress.

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‘Research is the simple enjoyment of discovering
something, you did not know before.’
Carl Friedrich von Weizsäcker (1912-2007)
[free translation]

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS

BAPP, Basis of preparation and presentation

BUSIM, Business model

CEO, Chief Executive Officer

CSR, Corporate Social Responsibility

CSR-RUG, CSR-Richtlinie-Umsetzungsgesetz

CSRD, Corporate Social Responsibility Directive

Deutsche Börse AG, Deutsche Börsen Aktiengesellschaft

DRS, Deutsche Rechnungslegungsstandards

e.g., exempli gratia

EMEA, Europe, Middle East and Africa

ESG, Environmental, Social and Governance

EU, European Union

FTSE, Financial Times Stock Exchange

GAAS, German Amendment Accounting Standard

GAS, German Accounting Standard

GDP, Gross Domestic Product

GOVER, Governance

GRI, Global Reporting Initiative

HDAX, Deutscher Aktienindex 100

HGB, Handelsgesetzbuch

i.e., id est

IASB, International Accounting Standards Board

IDW, Institut der Wirtschaftsprüfer

IFRS, International Financial Reporting Standards

ISO, International Organization for Standardization

ISSB, International Sustainability Standards Board

IT, Information Technology

JSE, Johannesburg Stock Exchange Limited

King I, King Report on Corporate Governance

King II, King Report on Corporate Governance for South Africa 2002

King III, King Report on Corporate Governance for South Africa 2009

King IV, King IV Report on Corporate Governance for South Africa 2016

KS test, Kolmogorov-Smirnov goodness-of-fit test

Max., maximum

Min., minimum

N, number of observations

NFRD, Non-Financial Reporting Directive

NGO, Non-Government Organisation

OECD, Organisation for Economic Co-operation and Development

OUTL, Outlook

OVERV, Organizational overview and external environment

p-value, probability value

PERF, Performance

Q25, 25 per cent quartile

Q75, 75 per cent quartile

Q-Q plot, quantile-quantile plot

RIOP, Risks and opportunities

SASB, Sustainability Accounting Standards Board

SIC, Standard Industrial Classification

St. dev., standard deviation

STRA, Strategy and resource allocation

USA, United States of America

VRF, Value Reporting Foundation

LIST OF FIGURES, TABLES AND APPENDIXES

LIST OF FIGURES

LIST OF TABLES

APPENDIXES

I – INTRODUCTION

I - INTRODUCTION

1.1. RELEVANCE AND PROBLEM STATEMENT

Corporate communication is very multi-faceted. Annual reports are the core and the supreme discipline of corporate communication (Baetge et al., 2012, pp. 59–61; Keller, 2009, p. 19; Kirchhoff, 2009, p. 53; Nix, 2004, p. 97; Piwinger, 2009, p. 357; H. Wang et al., 2012, p. 55; Yuthas et al., 2002, p. 141). In this context, financial communication represents the "basis for the assessment of corporate management by the financial public" (Vater et al., 2008, p. 2610). The communication should significantly contribute to legitimising the strategic motivation of corporate decisions as well as their necessity and relevance. It can, therefore, be assumed that financial communication and annual reports play an essential role in the disclosure and presentation of information (Center for Research in Financial Communication, 2019, p. 3). The reports should enable investors to assess the extent to which company managers fulfil their duties and perform their stewardship function (Epstein & Pava, 1994, p. 18; Kohut & Segars, 1992, p. 7). In addition, corporate reporting should provide information on a company's performance in previous financial years as well as on prospects and opportunities that may arise in the coming financial years. (Kohut & Segars, 1992, p. 7). That is why firms are particularly interested in presenting their reports transparently and openly to investors as holistically and comprehensively as possible. (Simpson, 1997, p. 16).

In addition to the high conceptual importance of corporate reporting, however, it must also be noted that the current reporting practice and landscape are limited in decision-making. It turns out that reports are often too lengthy and contain insubstantial information, which makes it very difficult for the addressees to filter out relevant and necessary information to analyse a company accordingly (Peñarrubia Fraguas, 2015, pp. 597–598). Criticism of this communication tool goes back a long way. For example, Girdler (1963) provocatively describes the annual reports as "18,000,000 books nobody reads". Whereas the external perspective is highlighted here, Jones (1988) looked at the internal perspective, focusing on time and monetary resource burden companies must bear to produce the reports.

The rationale for the discrepancy between satisfying the actual intention of corporate reporting and addressees' needs are varied and diverse. In particular, the fact that corporate reports are often not written comprehensibly is a central shortcoming of corporate reporting and contrasts the purpose of such communication instruments (Buffet, 1998, p. 1). The incomprehensibility of the corporate report occurs in several ways. On the one hand, corporate reports are not well written. Studies over time have found that readability of corporate reports is insufficiently and has even declined further. At the same time, information overload increased in the recent past (Barnett & Leoffler, 1979; Cox, 2007; Impink et al., 2022; Jones & Shoemaker, 1994; J. E. Smith & Smith, 1971). This circumstance inevitably leads to the fact that specific knowledge is necessary in order to be able to read and understand the company reports. Therefore, the report seems only accessible to experts and less to the public, especially to addressees in education-deficient countries (Rensburg & Botha, 2014, p. 150). Thus, it is questionable whether corporate reports in this form can contribute to transparency and reduce prevailing information asymmetries.

On the other hand, there is information overload. Corporate reports provide so much information that they exceed the processing capacity of the addressees (Snowball, 1979, p. 22). This information overload leads to a decrease in the usefulness of the reports for the users' decisions (Iselin, 1988, p. 147). The abundance of information consequences primarily from an increasing amount of report and disclosure formats. These can be a reaction to the growing demand for information (Fertakis, 1969, p. 680) as well as to the necessary and obligatory fulfilment of various regulations (Simpson, 1997, p. 17).

Due to the growing number of additional requirements arising from different perspectives, the length of a report logically increases. As the length of such reports extends, the information's usefulness is increasingly compromised (Stainbank & Peebles, 2006, p. 78). In addition to illegibility and information overload, this results in another aspect that influences the mismatch between needs and actual reporting practices, namely the increasing number of redundancies in the report (KPMG & Financial Executives Research Foundation, 2011, p. 12). From a linguistic point of view, repetitions make sense to a certain extent, as they promote the reader's understanding and can bring relevant points into sharper focus. However, they can also hinder the dissemination of information by being distracting from the essential content (Lothian, 1976, pp. 216–218).

Early on, it was complained that company reports focused more on financial and less on non-financial information (Fertakis, 1969, p. 683). In turn, the concentration on financial information leads to the problem of a too narrow focus on corporate reports. This continues to be a common thread running through corporate reporting. In addition to non-financial data, however, non-physical and non-financial aspects are not sufficiently covered in annual reports (Stubbs et al., 2014, p. 6). While the share of intangible assets in the market value of companies is continuously growing, the proportion of physical and financial assets is steadily decreasing (Elsten & Hill, 2017, p. 245). Consequently, intangible assets must also be accorded rising importance. However, there is insufficient reporting on the increasing major component of corporate value (International Integrated Reporting Council, 2011a, pp. 4–5).

Another issue that reports often fail to address are statements about forward-looking information. Although disclosures on forecasts and future prospects are partially required in annual reports,[1] the content of the corresponding forward-looking information is usually very general and generic. The reason may be fear of legal disputes or discord with stakeholders if communicated targets and forecasts cannot be met (Johnen & Ganske, 2002, cols. 1529–1530). Against this background, many corporate reports use boilerplate texts or language. However, these standardised text fragments provide only generic information (Iannaconi & Rouse, 1996, pp. 72–73). Due to its non-specificity, this type of language impairs the value of information and thus does not contribute to the satisfaction of the needs and the decision usefulness of stakeholders.

The motivation for this study, which will be examined in more detail in the following chapter, is thus fed by various aspects of the shortcomings of corporate reporting. Therefore, the incomprehensibility, the information overload, the redundancies, the narrow focus on financial information, and the lack of future

[1] The fundamentals of corporate reporting in the countries relevant to this study can be found in Chapter 2.4.

orientation of corporate reports form the supporting pillars and the basis for the further considerations of this study.

1.2. MOTIVATION OF THE THESIS

The problem statement is intended to illustrate the significance and importance of the topic of this research in the reporting landscape. These fundamental reporting challenges are preceded by the fact that progressive social change also influences sustainable corporate management and control. Corporate (financial) communication and reporting based on this is enjoying increasing priority and attention from a company's stakeholders. Hence, the development towards Integrated Reporting is indispensable against the backdrop of increasing tendencies and merging ideas of value-oriented financial reporting and sustainability reporting (Günther et al., 2016, pp. 3–9; Haller, 2017, p. 442). These circumstances lead to the need for value-added and materiality-oriented corporate reporting (Kajüter, 2013, pp. 125–126), which can counter the increasing complexity of information and the growing number of reporting standards to be implemented.

Therefore, comprehensive and holistic reporting seems to offer the possibility to meet these demands. It aims to disclose key value drivers of a company and provide decision-relevant information to all stakeholders to increase the efficiency of decision-making processes. In the context of this specific reporting, however, there would not only be an external added value for the stakeholders, but it would also make it possible internally for the management to align and evaluate strategic decisions multidimensional. This interdisciplinarity accompanies with a holistic and overarching way of thinking, considering various interdependencies and interrelationships (Haller, 2017, p. 443). It can thus be stated that such a reporting system would not only implement a reporting medium but also a corporate management concept. There have been some initiatives that have tried to address and overcome these challenges.

Despite all considerations and efforts to remedy the deficits of corporate reporting, a holistic approach that could create guidance for internationally regulated reporting was missing. The various national and supranational efforts to create such a reporting format resulted in a conglomeration of many different options for action and led to a partially repetitive communication (Kajüter et al., 2013a, p. 199).

The international approach of Integrated Reporting has evolved from this mixture of issues. This form of reporting aims to present a holistic concept to address the problems described above and to attempt to design all-encompassing guidelines to present a company's value creation in reporting terms. This should ultimately lead to better analysis and evaluation of companies' actions so that more accurate investment decisions can be made, and capital can be allocated more efficiently. For this reason, the International Integrated Reporting Council began to develop an institutional framework for implementing Integrated Reporting in 2010 (International Integrated Reporting Council, 2010, p. 1).[2] It should be mentioned that the primary intention was to create a framework for increasingly relevant sustainability reporting (Prince's Accounting for Sustainability Project & Global Reporting Initiative, 2010, p. 1). However, this emerged into the claim to establish a "new approach to corporate reporting" (International Integrated Reporting Council, 2011b, p. 1) in the market.

A vital characteristic of this new approach was to break down and overcome the impermeable silo mentality of traditional reporting (S. Adams & Simnett, 2011, p. 293). The root of this lies in many reporting proposals, reporting strands, and processes established and developed within the company. Integrated Reporting should mature as the primary communication tool that reveals the organisation's capability to create value. It had set itself the task of uniting the various reporting strands and information with each other. It thus claimed to broaden the financial focus of traditional corporate reporting and to open it up to other essential information concerns to be able to offer the addressees of the reports a comprehensive picture of the company.

The development of the reporting format progressed so rapidly that the International Integrated Reporting Framework was already published in December 2013 (International Integrated Reporting Council, 2013b). This framework sets out how and in what form integrated reports have to be prepared in order to provide

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[2] Chapter 2 deals specifically with the concept of Integrated Reporting, in detail.

essential and valuable information to the intended objective, investors and other stakeholders in order to be able to assess the value creation and its potential of the respective companies accordingly. The International Integrated Reporting Framework includes three Fundamental Concepts, seven Guiding Principles and eight Content Elements to meet the requirement of increasing the usefulness of information and disclosure (International Integrated Reporting Council, 2013b, pp. 10–32).

In 2021, the International Integrated Reporting Council published a revision of the International Integrated Reporting Framework (International Integrated Reporting Council, 2021a, 2021b). This revision preceded a dedicated and intensive market consultation with 1,470 individuals in 55 jurisdictions. First and foremost, this revision is intended to make reporting even more helpful and increase decision-making's usefulness. To this end, the framework has been modified to meet the feedback requirements resulting from the consultation. Companies should thus be able to deliver even more robust and balanced reporting and thus further improve communication with investors and relevant stakeholders. The feedback is considered particularly valuable as they are directly market-induced and have been given by those directly affected by Integrated Reporting (International Integrated Reporting Council, 2021b). There is still the general preamble to develop a global and comprehensive corporate reporting system, combined with the claim to establish Integrated Reporting as the corporate reporting norm that should be decisive for companies' disclosures in the future (International Integrated Reporting Council, 2021a, p. 2).

Against the increasing importance of holistic corporate reporting, which considers non-financial information in addition to financial aspects to present the political value creation process, this study examines the reporting approach of Integrated Reporting. In particular, the perspective of the addressees of the integrated reports is taken. This seems necessary due to the outlined shortcoming of corporate reporting, the accentuated intended users of Integrated Reporting for the addressees and the self-proclaimed focus of the International Integrated Reporting Framework on these users. Thus, the main objective of this research is to reveal the degree of Integrated Reporting that companies have. This degree is to be determined from the target group's perspective and analyses of the contents of the underlying reports. Based on this, the further objective is to identify success factors that need to be considered in implementing and establishing Integrated Reporting. This should result in a circular model in that companies constantly strive to improve their Integrated Reporting, which leads to a higher degree of Integrated Reporting and a higher potential benefit for investors. This is supported by theoretically and conceptually induced considerations on how Integrated Reporting can be fully and holistically implemented in a company at all management levels.

1.3. RESEARCH DESIGN

1.3.1. Current research gap

The growing importance of Integrated Reporting and the associated increase in interest on the part of academia, decision-makers, investors, and auditors is steadily increasing, which goes hand in hand with the rising abundance of literature on Integrated Reporting. Nevertheless, it remains a relatively young form of corporate reporting, lagging and less researched compared to extensive analyses of other, earlier non-financial reporting formats (Tweedie & Martinov-Bennie, 2015, p. 50). Primarily, the prevailing Integrated Reporting literature is designed to address normative and conceptual issues or to address Integrated Thinking and its implementation (Veltri & Silvestri, 2020, p. 3038; Vitolla, Raimo, & Rubino, 2019a, p. 519).[3] Concrete empirical studies have not yet been the focus of research on Integrated Reporting and studies examining the benefits of implementing Integrated Reporting are scarce (de Villiers, Venter, et al., 2017, p. 944; Rinaldi et al., 2018, p. 1306; Veltri & Silvestri, 2020, p. 3038; Vitolla, Raimo, & Rubino, 2019a, p. 519). In this context, it is essential to assess whether the introduction of Integrated Reporting impacts the value relevance of information, which is one of the central unanswered questions in Integrated Reporting research (Loprevite et al., 2018, p. 1). In order to assess and answer this still strongly underrepresented field, this

[3] An excerpt of the various literature streams of existing Integrated Reporting research is provided in Chapter 3.1.

research goes into advance. It elicits the degree of implementation of Integrated Reporting to create a suitable basis to conduct further studies and assess the value increase of the information accordingly.

The degree of reporting is a crucial and critical aspect of Integrated Reporting (Pistoni et al., 2018, p. 491). Many studies on Integrated Reporting exist already, but only a few examine the actual assessment of the degree or quality. Against this background, more research is needed on the quality assessment of integrated reports (Vitolla, Raimo, Rubino, et al., 2020, p. 430). Expanding theoretical knowledge makes it possible to develop further Integrated Reporting in a target-oriented way to extract the most significant possible benefit from both the addressee and the user.

Another identified research gap is that previous research has focused primarily on South African companies (Dumay et al., 2016, p. 173; Velte & Stawinoga, 2017, p. 293), but this is also historically justified.[4] However, this focus is at odds with the claim to establish Integrated Reporting as an international reporting norm. In their research, Velte & Stawinoga (2017) even argue that this focus on South Africa is not meaningful due to limited validity (Velte & Stawinoga, 2017, p. 293). In their agenda for future research, de Villiers, Venter, et al. (2017) accentuates the need to conduct more research about other countries or cross-country comparative research. This could ensure that not only the mandatory but also the voluntary introduction of Integrated Reporting is considered (de Villiers, Venter, et al., 2017, p. 947).

Against the background of the presented need for cross-country analysis on the one hand and voluntary application of aspects of Integrated Reporting on the other hand, this thesis examines the cross-country setting of South Africa and Germany.[5] Despite the above challenges associated with further research in South Africa, creating the reference point here makes sense. Firstly, Integrated Reporting has been mandatory here for a long time. Secondly, it can be assumed that a

[4] A detailed description of the reporting landscape in South Africa can be found in Chapter 2.4.2.

[5] A dedicated derivation and justification of the country selection for the study is presented in Chapter 2.4.1.

development is achieved in this context. The further focus of the study is on Germany. The reason lies in the long European history of publishing non-financial information in management reports (Gerwanski et al., 2019, p. 754). Furthermore, it is assumed that the transposition of the Corporate Social Responsibility (CSR) Directive (CSRD) into national law creates an institutional context favouring Integrated Reporting implementation (Dumay et al., 2019; Gerwanski et al., 2019, p. 754; Stawinoga, 2017; Stawinoga & Velte, 2021; Velte & Stawinoga, 2017, p. 316).

Furthermore, it is inherent in this study that a direct reference to the International Integrated Reporting Framework does not necessarily have to be demonstrated. Many empirical studies on Integrated Reporting are characterised by methodological limitations in that they differentiate binarily between Integrated Reporting adopters and non-adopters. However, this status is mostly based on databases which companies can use for self-assessment (e.g., Cortesi & Vena, 2019; Mervelskemper & Streit, 2017; Pavlopoulos et al., 2017; Vena et al., 2020; Vitolla, Salvi, et al., 2020). This approach seems questionable, as self-selection bias may occur (M. E. Barth et al., 2017, p. 44; de Villiers, Venter, et al., 2017, p. 950; K. T. Wang & Li, 2016, p. 665). Moreover, such research designs do not capture the diversity in the form and content of integrated reports (Velte & Stawinoga, 2017, p. 296), as these are subject to a principles-based approach (International Integrated Reporting Council, 2021a, pp. 2; 11). It was even noted that some companies refer to the International Integrated Reporting Framework, in particular, to meet the requirements of stakeholders but implement the specifications of an integrated report only rudimentarily (Pistoni et al., 2018, p. 491; Velte & Stawinoga, 2017, p. 315). Conversely, however, companies may not consider themselves being Integrated Reporting adopters but, in fact, already implement vital elements of the reporting format, respective of the International Integrated Reporting Framework (Eccles et al., 2015b, p. 192). Against this background, this dissertation does not differentiate between self-assessed adopters and non-adopters to sketch a complete picture of the reporting landscape.

Therefore, this research also responds to the call to consider appropriate proxies for adopting Integrated Reporting and its quality (de Villiers, Venter, et al., 2017, p. 947). The work also addresses the scarcity of research on the degree of Integrated Reporting and, thus, on the actual implementation and compliance with the central aspects of Integrated Reporting according to the International Integrated Reporting Framework (Liu et al., 2019, p. 236). Vitolla, Raimo, & Rubino (2019) also conclude that there is a necessity to examine in more detail the content and degree of Integrated Reporting (Vitolla, Raimo, & Rubino, 2019a, p. 519).

1.3.2. Objective and design of research questions

The present study deals with the reporting format of Integrated Reporting. This is necessary for several reasons. A deeper understanding of Integrated Reporting seems crucial considering the thoughts outlined in the chapters above. Against this backdrop, the research objective of this thesis is to assess what degree of implementation companies have already achieved in applying Integrated Reporting. On the one hand, significant deficits in reporting have already been outlined, and on the other hand, the International Integrated Reporting Framework admits wanting to establish itself as the corporate reporting norm that would prevail in the corporate reporting landscape (International Integrated Reporting Council, 2021a, p. 2). A detailed analysis is necessary, especially against the background of the claim of comprehensiveness and the market-driven revisions of the original version of the International Integrated Reporting Framework.

Deriving from the argumentation of the International Integrated Reporting Council and its claim to increase information quality of reports in order to enable a more efficient allocation of capital and to eliminate the need for companies to generate numerous and disconnected reports in the long term (International Integrated Reporting Council, 2021a, p. 2), the dissertation addresses the following research questions. Research Question 1 emphasises the degree of implementation of Integrated Reporting in corporate reports and the associated changes over time. For this reason, Research Question 1 is divided into two sub-research questions and is presented in Figure 1.

Figure 1. Research Question 1 and its sub-research questions

Research Question 1:
Is progress in Integrated Reporting evident in corporate reports?

Research Question 1.1:
What is the degree of Integrated Reporting in corporate reports from South Africa and Germany?

Research Question 1.2:
What changes in the degree of Integrated Reporting have occurred in corporate reports from South Africa and Germany comparing the financial years 2013 and 2022?

Author's elaboration

In addition, this dissertation intends to examin how Integrated Reporting can be established holistically in companies. To this end, the outcomes of the literature research and the findings of the content analysis are condensed in such a way that the following Research Question 2 is also addressed within the scope of the dissertation. It is illustrated in Figure 2.

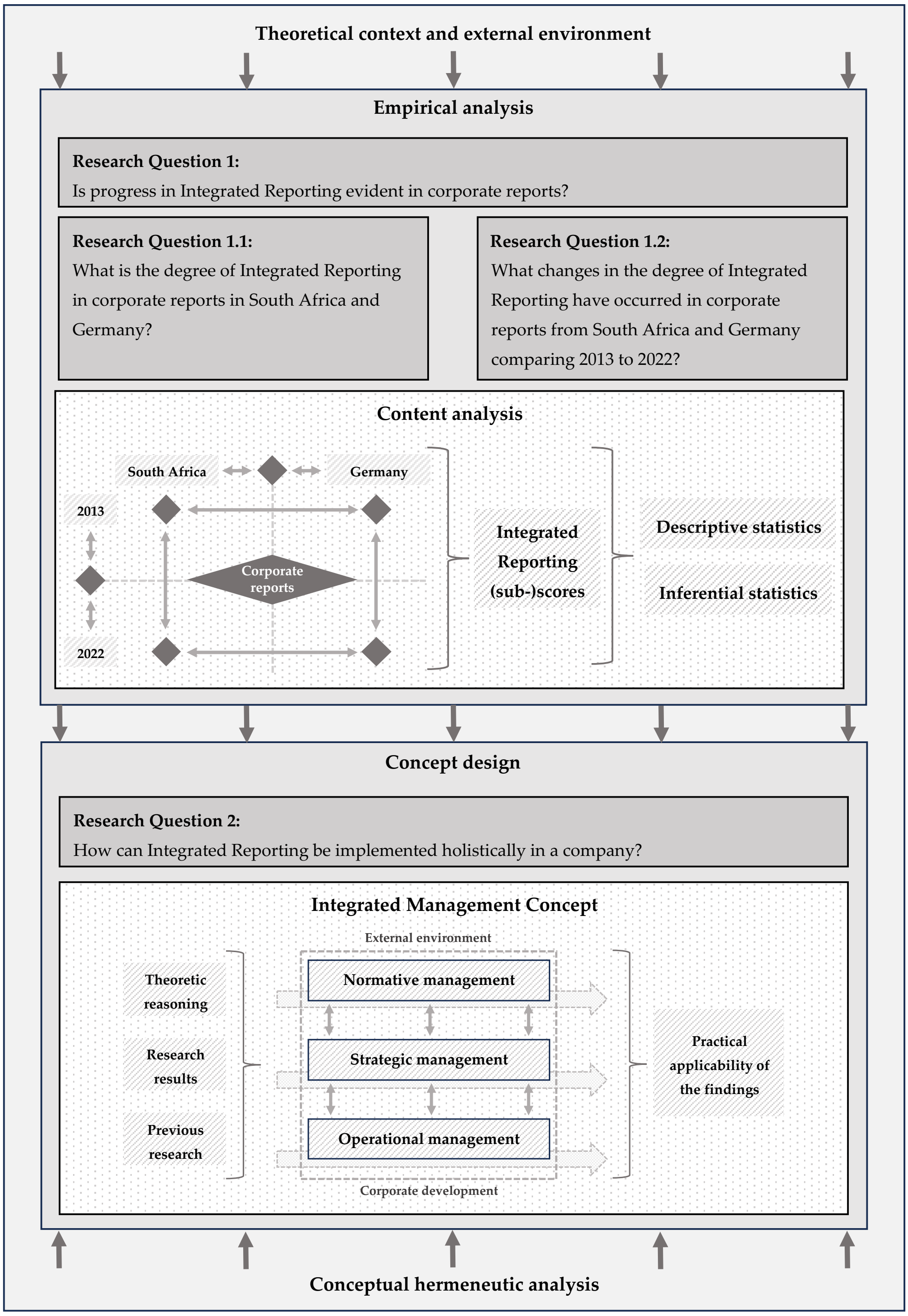
Figure 2. Research Question 2

Research Question 2:
How can Integrated Reporting be implemented holistically in a company?

Author's elaboration

The following Figure 3 illuminates the concept and the parts' respective sub-objectives. This conception already gives an outlook and insight into the scientific methods underlying this research study, the research design, and the research focus. This figure also tries to emphasise how the different components of this work interact and cross-fertilise each other through mutual symbiosis to contribute added value to the research.

Figure 3. Conception of the thesis



Author's elaboration

A conceptual hermeneutic analysis forms the foundation and basis for further reflection on this study. In this context, a particular reference is made to the International Integrated Reporting Framework published by the International Integrated Reporting Council to disclose and analyse the individual components accordingly. Furthermore, in addition to this analysis, the purpose of Integrated Reporting and the principles and instruments serving the objective of Integrated Reporting will be evaluated. Considering the current trends in the corporate reporting landscape and the critical appraisal of the objectives and challenges that accompany the implementation of Integrated Reporting, its potential will be derived as to what extent such reports could contribute to the decision-making usefulness of the stakeholders. In addition, Integrated Reporting is placed in the existing reporting landscape and context.

The comprehensive thesis can primarily be classified as a descriptive study with subsequent descriptive and inferential statistics analyses (Döring, 2023, pp. 185, 602), which claims to generate a holistic design concept based on the findings. The research intends to give an impression of the extent to which the Content Elements of Integrated Reporting are included in corporate reports and to answer Research Question 1 as well as its sub-questions. For this purpose, an Integrated Reporting score is designed. The Integrated Reporting score and the sub-scores represent the degree of compliance with and correspondence to the content characteristics of Integrated Reporting.

The selected reports are from South African and German companies and cover the financial years 2013 and 2022, which result from the derivation of the theoretic questions and are further substantiated in the context of the hypothesis generation. In particular, the different and temporally staggered approach to this complex of topics has the potential to reveal new insights for the scientific discourse. While established and standardised reporting formats are more likely in Europe, South Africa has a pioneering role in Integrated Reporting, as the reporting system here is more stakeholder and sustainability oriented. Since King Report on Corporate Governance for South Africa 2009 (King III),[6] South African companies

[6] The King Reports on Corporate Governance are a set of guidelines for companies in South Africa and are described in Chapter 2.4.2.

have been obliged to apply Integrated Reporting, whereas no such obligation exists in Europe. In addition to the level of cross-country comparison, the study design also allows a comparison in a temporal dimension. The selected points in time show significant structural changes in the year-on-year comparison since, on the one hand, the normative and legal basis of non-financial reporting has developed massively in this period and on the other hand, a revised version of the International Integrated Reporting Framework has already been established. This deliberately two-dimensional setting allows valuable insights to be extracted from the comparison over time and each country.

To answer Research Question 2, the Integrated Management Concept will be presented to enable a holistic implementation of Integrated Reporting. Recommendations for action will be made along the normative, strategic, and operational management dimensions based on the findings of the study. In addition, overarching success factors are identified that could be decisive for the success of an implementation. Finally, findings from previous studies will be used and symbiotically linked with the management approach.

1.3.3. Research strategy

In order to approach the exact research method and the course of investigation of this study, it is first necessary to frame the scientific perspective. Science is generally understood as a process that involves systematically identifying, formulating, and solving problems (Lingnau, 1995, p. 124).[7] The focus lies on accumulation and expansion of previous knowledge. Philosophy of science is classified as a metascience that centres on the term and primary goals of science as well as the way of gaining knowledge and originates in epistemology – the theory of knowledge (Fülbier, 2004, p. 266; Kornmeier, 2007, pp. 4, 6–8).

According to the considerations of Schweitzer (1978, pp. 3–9), science pursues four aims. The dimension of the descriptive objective accentuates the phenomena

[7] This is only one definition of science. Raffée, (1974, pp. 13–17), for example, defines science in a much more differentiated way. In his perspective, he distinguishes science as an institution, a process, and an outcome from this process.

itself that occur and its corresponding systematic documentation. Based on this, explanatory science attempts to test derived hypothesis from theory. In a further step, the pragmatic goal of science follows, which consists of efficiently using findings for decisions and forecasts. The normative objective comprises the delivery of value judgements and the derivation and recommendation of options for action.

There are two epistemological strands in economic research: one is constructivism, and the other one is critical rationalism (Fülbier, 2004, p. 268).[8] Within the framework of constructivism, the gain of knowledge is due to deductive arguments. In turn, these are used by experts draw their conclusions and findings (Fülbier, 2004, p. 269; Lorenzen, 1974, pp. 113–118). However, constructivism has the inherent disadvantage that arguments based on the experts' conclusions are fallible, and thus the deduced knowledge or insights cannot ultimately be regarded as the ultimate and absolute truth (Fülbier, 2004, p. 269).

The continuum of fallibility of human knowledge forms the basis of the considerations of critical rationalism, which can be traced back to Popper (1934).[9] According to this, knowledge is only of limited or temporary duration since it can be erroneous at any time. An ultimate and sealing verification of knowledge is not possible (Lingnau, 1995, p. 124; Popper, 2005, pp. 16–17). However, Popper states that a successive approach to truth is possible. This is possible through continuously falsifying various views and ideas (Popper, 2005, pp. XXXIII–XXXIV, 16–19). The process for approaching a gain in knowledge is presented within the framework of critical rationalism (Fülbier, 2004, p. 268; Kornmeier, 2007, p. 42). After identifying a concrete and relevant problem needing explanation through observation, an attempt is made to address it by developing and establishing hypotheses which can be interpreted as possible solutions. The next step is the empirical analysis and verification of the hypotheses. In this process step, some

[8] It should be added that historically, these two approaches evolved from the earlier ones, namely classical rationalism, empiricism, positivism, and neo-positivism (Fülbier, 2004, p. 268).

[9] A decisive definition and description of critical rationalism can be taken, for example, from Albert (2000).

hypotheses are falsified and eliminated accordingly. Then, this process is continuously iterated. These iterations can then lead to the emergence of nomological hypotheses. Nomological hypotheses are universal, well-tested statements that occur under certain conditions and contexts. The combination of several non-contradictory nomological hypotheses form a theory (Lingnau, 1995, p. 125). Nevertheless, they are still subject to human fallibility and, despite the many iterations, cannot be regarded as ultimately valid but only have a temporary validity until they are again falsified (Bartel, 1990, p. 58).

Critical rationalism is the predominant approach in business studies due to the iterative process and the associated continuous testing of hypotheses. Nevertheless, constructivism is considered a relevant and non-negligible role in research in this field to gain knowledge (Fülbier, 2004, p. 269). Since empirical research is also accompanied by limitations and boundaries (Frank, 2003, p. 283), it is impossible to focus and rely exclusively on critical rationalism. In its place, the two strands need to be used in a complementary or even symbiotic manner for research purposes to elicit the maximum benefits and advantages of the respective approaches. Research on financial reporting is a suitable example of their dual use (Nienhaus, 2015, p. 9). On the one hand, empirical research can be used to analyse the effects of accounting and reporting standards as well as reporting formats and requirements on capital markets or key company parameters. On the other hand, deductively derived strategic recommendations for action based on these formats can be used to promote and optimise the development of accounting standards or internal company processes.

This dissertation follows constructivism and critical rationalism as scientific approach per the cross-fertilisation to exploit the full research potential and thus gain more knowledge. On the one hand, hypotheses on the degree of Integrated Reporting are derived from scientific theories, which are empirically tested. On the other hand, based on the hermeneutic literature research and the findings from the empirical study, recommendations are deductively developed on how Integrated Reporting can be comprehensively and efficiently applied in a company embedded in a concrete management model that takes all company levels into account. Furthermore, critical success factors will be identified to optimise and further operationalise Integrated Reporting. This mixture and mutual symbiosis should substantiate the research results and significantly contribute to the increase of quality and usefulness of this thesis.

In addition to the scientific approach, choosing a corresponding research strategy is essential. Basically, three different research strategies exist and are used in business economics. In this context, the conceptual, the analytical and the empirical research strategy should be mentioned and explained (Grochla, 1978, p. 71).

Within the conceptual research framework, plausibility considerations are brought to the fore. They attempt to analyse problems through logical thinking and connections to derive implications and, based on these, to define and make recommendations for action. As a result of this strategy, one can usually expect definitional and descriptive statements that result from this logical causal chain. They can construct and clarify relationships. This means that these statements have the characteristics of a hypothesis and can also be perceived as such. However, conceptual research does not aim to empirically test these hypotheses (Grochla, 1978, pp. 72–78).

The focus and accentuation on a specific problem are more essential to the analytical research strategy than the other mentioned strategies. The method behind the analytical research strategy is the abstract modelling of a specific problem. The generalised, actual situation is attempted to be compressed into a mathematical model, based on which solutions are derived in combination with the occurring problem. However, it should be critically noted that this strategy remains an abstract model and does not allow for an accurate description of reality (Grochla, 1978, pp. 85–93).

The empirical research strategy goes one step further. It aims to confront the hypotheses and theories with reality. This confrontation leads either to support or falsification of the hypotheses. Against this background, the statements about reality can be descriptive and explanatory. With the help of explanatory statements, (causal) relationships are established between the variables. Concerning data collection within the framework of this research strategy, it may be stated that various methods could be considered; these include case studies, field studies, experiments, and action research, but also historical research with archival data, for instance (Grochla, 1978, pp. 80–81; M. Smith, 2022, pp. 67–68).

Since the scientific approach of this study is already diversified, a multiple approach is also implemented within the framework of the research strategy. Thus, this study pursues a conceptual research strategy by developing and elaborating the foundations of Integrated Reporting thematically. This study then pursues an empirical research strategy. It describes the degree of Integrated Reporting and its development in two specific countries and at different points in time.

To adequately answer Research Question 1 and its sub-questions, a hand-collected content analysis of South African and German companies' corporate reports is conducted. The content analysis aims to examine a proxy for the degree of application of essential components of Integrated Reporting. Here, regardless of the companies' self-assessment of whether they are adopters or non-adopters, the conformity of the corporate reports with the Content Elements postulated in the International Integrated Reporting Framework is measured. This helps to counteract the bias caused by self-reflection, as the sample does not make any such selection via a declared reporting status. The validity of the content analysis is granted by developing a dedicated content analysis catalogue to classify and evaluate the underlying content. In addition, various measures were taken to ensure the reliability of the content analysis.[10]

On this basis, i.e., the hermeneutic basis and the results of the research, the foundations have been laid for addressing the topic of Integrated Reporting practically. Subsuming this, the management implications and strategic recommendations are explained in detail to enable the transfer of scientific findings into corporate practice. In this context, reference is also made to the management approach for establishing Integrated Reporting at all management levels (Research Question 2).

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[10] An overview of content analysis and the derivation and justification of the content analysis catalogue can be found in Chapter 3.4.

1.4. SCIENTIFIC CONTRIBUTION AND IMPACT ON PRACTICE

Expected scientific contribution and possible impact on practice are multifaceted. The results of the analysis as well as the empirical party yield various implications for the different parties involved in corporate reporting. In addition, the results affect research on Integrated Reporting.

The research represents a significant contribution to the young research field of Integrated Reporting. It represents the state of the art by presenting current trends and developments in the context of Integrated Reporting. The study examines current trends and developments in Integrated Reporting. It offers insights into the measurement of integrated reports and thus reveals the decision usefulness of published information. Corresponding to the identified research gap, a significant scientific contribution is made. Within the literature-based, hermeneutic research framework, the status of literature concerning Integrated Reporting is outlined and placed in the context of relevant scientific theories. Against the background of the evaluated Content Elements, another spot in the research on Integrated Reporting can be illuminated. The descriptive study conducted here goes beyond previous assessments of Integrated Reporting due to its research design and measurement methodology. It is important to note that this study does not claim to assess the quality of Integrated Reporting but rather the degree of implementation and realisation.[11] The study even pursues a difference-in-differences approach to provide substantiated results. The present study is thus based on a cross-section of previous literature. However, it expands the understanding of Integrated Reporting and the degree of measurement of this reporting format to make a significant contribution to the scientific literature. In this respect, it ultimately offers further starting points for further research, especially concerning the proposal of a holistic management concept for implementing Integrated Reporting at all management levels, based on the Integrated Management Concept.

[11] A corresponding differentiation between quality and degree assessment can be found in Chapter 3.4.1.

Moreover, methodologically, this dissertation also represents significant advances and contributions to research. This research does not use a dichotomous variable for Integrated Reporting. This means self-declared adopters and non-adopters are equally studied and analysed in this thesis. Thus, the degree of Integrated Reporting can be considered, which in turn allows for the detection of heterogeneity concerning the content of corporate reports. Therefore, the basis of this dissertation covers a sample of listed companies in South Africa and Germany, regardless of their status in Integrated Reporting. These two strands can be summarised so that this research design enables the degree of Integrated Reporting in corporate reports to be conducted independently of the reporting status for all listed companies that are in the particular focus of investors and other stakeholders. The methodological consideration of the trade-off and the interdependent interaction between the degree of Integrated Reporting and the independence of reporting status contributes to understanding voluntary corporate reporting based on Integrated Reporting considerations from different theoretical scientific perspectives.

In addition, this research also significantly contributes to the application and practical design of Integrated Reporting. These refer to the research results elaborated in the thesis and thus represent an extension of the already existing added value for academia. The conceptual hermeneutic analysis enables the congruence of the reports with the framework of expectations in terms of content. This is primarily linked to increasing the usefulness of decisions with the help of such reports in order to allocate the capital made available more efficiently. Furthermore, the Integrated Reporting score can measure companies' ability to implement Integrated Reporting, especially regarding the underlying Content Elements. The results can be used especially for capital investors. In addition, however, there is also potential for reporting companies, as they could create concrete synergies by determining the degree of Integrated Reporting to identify in which form there is still potential for optimisation. It can thus help to support the materiality determination process to develop a balanced but holistic report, which would, in turn, be of great importance for the relevant target groups. This study also provides significant insights for standard setters and regulators. With the help of this study, conclusions can be drawn about the rules and standards set, which is helpful for the further development of the reporting formats. Thus, a holistic concept for the implementation of Integrated Reporting is developed. In addition, this thesis provides strategic recommendations for action that will ultimately make the introduction and implementation of Integrated Reporting successful.

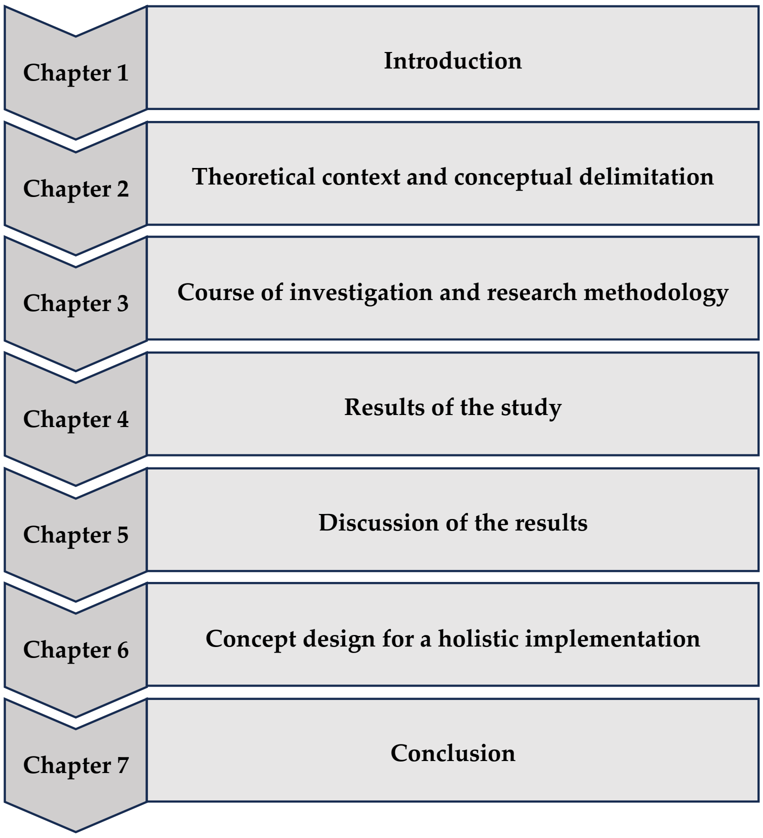
In addition, it should be noted that this thesis is one of the first studies to analyse the voluntary use of Integrated Reporting in the context of non-financial information disclosure in the European Union (EU) in light of the Non-Financial Reporting Directive (NFRD) and the upcoming CSRD. As Integrated Reporting is expected to increase importance and diffusion in the EU member states after implementing the NFRD into national law (CSR Europe and Global Reporting Initiative, 2017, pp. 3, 14; Dumay et al., 2017, p. 475), this dissertation represents a significant contribution to the potential support of this assumption. Therefore, this research contributes to understanding the increasing importance of Integrated Reporting over time by conducting cross-national and cross-temporal research. Since many studies also include data from before the International Integrated Reporting Framework came into effect (Velte & Stawinoga, 2017, p. 316), this study provides recent evidence of the increasing prominence of integrated corporate reporting.

The thesis generates an increase in theoretical and practical knowledge. Nevertheless, it remains to be stated that only partial aspects can be considered here, and the work should be evaluated as a starting point and basis for further research projects and efforts. In sum, the research offers added value for researchers, practitioners, and standard setters. This is because it takes a holistic approach, seeking a symbiosis of theoretical, hermeneutic research with the applicability of the literature-based findings and the empirical research results.

1.5. OUTLINE OF THE THESIS

The thesis is organised into seven chapters. Figure 4 shows the structure of the thesis. The first chapter introduces the study. For this purpose, the relevance for research and practice, the problem statement, and the motivation are elaborated in this context. A central aspect is the scientific research design. On the one hand, the chapter derives the research gap. Subsequently, the objectives and the research questions are presented. The conception of the thesis stems from these considerations. On the other hand, the research strategy is also emphasised and evaluated in this context. Furthermore, the chapter gives an overview of the scientific contribution and the possible effects on practice that can be expected. Finally, the chapter describes the outline of the dissertation, which is illustrated in Figure 4.

Figure 4. Outline of the thesis



Author's elaboration

The second chapter builds the conceptual basis of this dissertation. It defines the frame of reference of this thesis and places the research focus in the theoretical context. In addition, it establishes basic definitions and terminology. In the tension between the increasing demands of the market and the stakeholders of organisations, the chapter first examines the decision usefulness of information. Subsequently, the comprehensive integrated approach of entrepreneurial action, which radiates both thinking and reporting, is introduced. In the following, Integrated Reporting, its Framework, and the related definitions are discussed in more detail. The focus is on the objectives of Integrated Reporting and its specific characteristics. These include three Fundamental Concepts, seven Guiding Principles, and eight Content Elements. In addition to a critical appraisal of the advantages and disadvantages of implementing Integrated Reporting, its potential benefits and impact on traditional financial reporting are disclosed. In this context, it is essential to distinguish Integrated Reporting from other reporting formats. The chapter closes with a short summary.

The third chapter examines the study's course and research methodology in detail. It provides an overview of the literature on the evaluation of Integrated Reporting and identifies a research gap that the research design of the thesis closes. Based on theory-driven reasoning, hypotheses about the extent of Integrated Reporting and its development over time are posited in a country comparison. Subsequently, the general research approach and its epistemological and methodological basis are presented. In particular, the chosen mixed-methods approach and the principle of methodological triangulation are the focus of the considerations. While, on the one hand, content analysis is presented as a fundamental method of analysis, further sections describe the concrete elements of the content analysis catalogue as well as the data collection and the corresponding scoring.

The fourth chapter deals with the results of the study. After first explaining and interpreting basic parameters with the help of descriptive statistics, the chapter also deals with the essential findings of the individual research aspects. In this context, the results of the content analysis are tested on the basis of the derived hypotheses using inferential statistics. In addition to the presentation of the results of the entire Integrated Reporting score, the results of the identified sub-scores are also disclosed. For this purpose, several sub-samples and panels were conducted in order to be able to answer Research Question 1 adequately. The chapter concludes by subsuming the results of the study.

The fifth chapter discusses the observed results of the content analysis. Following the fourth chapter, the first step is to look at the overall Integrated Reporting score. Subsequently, the results of the sub-scores are evaluated. Like the presentation of results, the discussion is always carried out against the background of the different year-on-year and cross-country comparisons. The discussion of the results is also enriched by the results of previous studies to better place the results of this dissertation in the overall context. The chapter concludes with a short summary.

The sixth chapter merges the conceptual analysis and the empirical results by synthesising their conclusions into an overall consideration. To answer Research Question 2, the chapter generates a holistic concept for implementing Integrated Reporting. The approach is based on the Integrated Management Concept. In this context, the Integrated Management Concept is introduced. The following sections of the chapter examine the individual management levels and how Integrated Reporting can be implemented holistically at the dimensions. Thus, Integrated Thinking and Integrated Reporting are to be interpreted normatively as sustainable and promising management approaches. From a strategic point of view, an intensive materiality analysis is required to consider the relevant report contents before the following chapter highlights the operational symbiosis of internal and external reporting. Furthermore, critical success factors are presented that could be decisive for a successful implementation. A summary concludes the chapter.

The final chapter seven summarises the main results of the thesis. Furthermore, it attempts to classify the generalisability of the research results and reveals the limitations of the thesis. The chapter derives suggestions for future research based on these limitations. An outlook on future prospects for Integrated Reporting closes the thesis.

II – THEORETICAL CONTEXT AND CONCEPTUAL DELIMITATION

II - THEORETICAL CONTEXT AND CONCEPTUAL DELIMITATION

2.1. STRATEGIC ANSWERS TO THE INCREASING MARKET REQUIREMENTS AND DECISION USEFULNESS OF INFORMATION

The increasing expansion of traditional reporting in recent years and the associated additional stand-alone reports, such as those based on the Global Reporting Initiative (GRI), harbour some risks (Velte, 2022b, p. 1655). This inflation or the generation of new reports carries the risk of greenwashing, information overload and a related decline in the decision usefulness of corporate reports for stakeholders (Boiral, 2013; Chelli & Gendron, 2013; de Villiers et al., 2014; Dingwerth & Eichinger, 2010; Sethi et al., 2017). Some of these reporting formats have been sharply criticised for having a box-ticking mentality (Velte, 2022b, p. 1655), which in turn is no guarantee of meaningful and valuable reporting (Boiral, 2013, p. 1062). Furthermore, the lack of operationalisation and the unresolvable conflicts of objectives between the heterogeneous demands of the stakeholders are inherent to these formats (Boiral, 2013, p. 1064). The aim is to combine essential financial information with environmental, social and governance aspects. All company and decision-relevant data should be included in a holistic and integrated report to increase transparency for internal and external addressees (Lai et al., 2016; Mock et al., 2021).[12] Above all, it must be considered that the information needs of shareholders and stakeholders must be explicitly considered and reflected in preparing the report (Deegan & Rankin, 1997, p. 580). Thus, an overarching guiding principle is needed that considers both financial and non-financial aspects to draw a holistic and comprehensive picture of the organisation.

One of the primary purposes of corporate reporting is to reduce information asymmetries among stakeholders. This also reduces the uncertainty associated with the allocation of capital (Ho & Taylor, 2013, p. 5; Javaid Lone et al., 2016, p. 785). Lower uncertainty among financiers, in turn, results in lower required rates

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[12] A detailed definition of Integrated Reporting and the individual functions can be found in Chapter 2.3.

of return and thus increases the company's value (Diamond & Verrecchia, 1991, p. 1325; Francis, Khurana, et al., 2005, p. 1125). However, these financing- and enterprise-value-induced effects are not solely attributable to financial reporting (Andrikopoulos et al., 2014). Several studies have already concluded that non-financial information also influences the cost of capital and the company's value. Thus, lower-quality information has a negative correlation with the cost of equity. Consequently, it can be concluded that companies should be interested in providing higher quality financial and non-financial information to reduce their capital cost in the long run (Dhaliwal et al., 2011; Orens et al., 2010; Plumlee et al., 2015).

Regardless of the relevance and necessity of financial data, it must be stated that these are insufficient to reflect entrepreneurial activities fully. In order to ensure that published information is useful for decision-making, additional data and information is needed. Instead, focusing on the strategy and its consequences for the environment and the company is decisive (Ghazali, 2007). Not least, the financial crisis has drawn the attention of shareholders, stakeholders, and the general public to reflect on the current corporate reporting model critically and rethink its need for adaptation (Cormier & Magnan, 2014; Elmagrhi et al., 2016; Torchia & Calabrò, 2016). Since monetary quantification does not adequately reflect activities and does not consider the direct impact on society, it provides a breeding ground for Integrated Reporting. The aim here is to balance financial and non-financial information (Vitolla, Raimo, & Rubino, 2019b). It is not about creating another reporting format that is the sum of traditional, financial and sustainability reporting (Nazari et al., 2015, p. 375). Instead, the aim is to create an innovative format that leverages synergies between these two reporting levels. This way, the current and future value creation can be worked out and evaluated more clearly (Vitolla et al., 2016, 2017). This also makes the decision-making process more efficient so that shareholders and stakeholders can beneficially allocate their capital.

These explanations can ultimately be traced back to the theory of decision usefulness of accounting presented by Staubus (1999). He assumes that any information that is disclosed is evaluated by the information users in terms of its usefulness. Information perceived to have a higher utility is considered to have a greater influence on decision-making (Staubus, 1999, pp. 331–334). Rikhardsson & Holm (2008) apply this theory in further research. To capture this topic systematically and following the prevailing management theory, the approach of Integrated Thinking must be located within the framework of normative management and critically discussed accordingly. This is the only way to effectively counter the dangers of information overload and greenwashing (Velte, 2022b, p. 1666).

2.2. THE INTEGRATED APPROACH

2.2.1. Integrated Thinking as a guiding maxim

The traditional approach of the resource-based theory states that companies can only generate value from resources (Ireland, 2003, p. 964). Kor & Mesko (2013) describe this metaphorically with a musical orchestra, saying that top management must orchestrate resources in such a way as to ultimately generate competitive advantage (Chirico et al., 2011, p. 310; Ireland, 2003, p. 964). However, newer approaches to this resource orchestration indicate that the mere possession of necessary resources is insufficient to generate value creation. Instead, it is about how a company handles and uses these resources to drive value creation (Miller, 2018). Ergo, in this context, management, i.e., the decision-makers, play a decisive role (Skaržauskiene, 2010, pp. 49, 60). In support of this, the research of Hambrick & Mason (1984) found that the upper echelon characteristics lead to strategic decisions, which in turn directly determine the organisational and operational performance of a company. Thus, the resource orchestration theory assumes that combining resources, capacities and management skills leads to higher business performance (Chadwick et al., 2015, pp. 372–373).

In addition to the resource orchestration theory, looking at the system theory is necessary. Hence, Integrated Thinking is related to system thinking in accounting (Oliver et al., 2016, p. 230). It points out that it is necessary to look for evidence to locate interactively developed strategies and controls (M. de Haas & Kleingeld, 1999; R. Gray, 1992; Maunders & Burritt, 1991; Parker, 2008). While the former explained resource-based theory states how organisational capital should be used to create value, the latter focuses on what drives this process (Herath et al., 2021, p.

877). The systems thinking literature focuses on the ability to identify connections and interdependencies. In addition, the dynamic complexity of organisational influences must be compared with this detailed complexity at the micro level (Checkland, 1988; Senge, 2021). The system theory states that it is impossible and insufficient to understand a phenomenon solely by breaking it down into its parts, but rather to apply a global vision to underscore how it works and how it benefits (Mele et al., 2010, p. 126; Rubenstein-Montano et al., 2001, p. 269). Thus, according to the systems theory, there is a need to look at phenomena as a whole and not just analyse the sum of the parts. The theory assumes that individual components of a system have different properties and effects when viewed in isolation (Rubenstein-Montano et al., 2001, pp. 269–270). Therefore, it is essential to study the systemic relationships between the different parts and determine the system's behaviour as a whole. Only then is it possible to penetrate the complexity of an entire system (Senge et al., 2007, p. 47; Yawson, 2013, pp. 57–59). This is because instead of focusing on the detailed properties of the individual sub-areas (hard systems thinking), soft systems thinking focuses on the consideration of the properties of the whole. This thinking recognises the pluralism of views and the more profound underlying ideas and is thus able to elicit more decisive decision-making (Checkland, 1981, pp. 189–190). A systematic approach is essential when the underlying challenge is particularly complex with multiple interactions (Fusso, 2012, p. 818). The Integrated Thinking approach is based on this foundation and is therefore attributed particular importance in the context of entrepreneurial action.

Therefore, evaluating which basis and approaches these strategic decisions are made is necessary. In this context, it is essential to move away from the strategic decision-making level and refer to a higher, more abstract meta-level and normative management. Integrated Thinking is one approach to determining this necessary and normative prerequisite for strategically efficient decisions. Integrated Thinking is the overarching, normative maxim that underpins the Integrated Reporting approach. Against the background of the high significance of Integrated Thinking, it is indispensable to illuminate it and to present the basic ideas in detail.

The long-term vision of the International Integrated Reporting Council is that Integrated Thinking will find its way into mainstream business practice. The interlocking of Integrated Thinking and Integrated Reporting results in an efficient capital allocation and will serve to strengthen financial stability and sustainable development (International Integrated Reporting Council, 2021a, p. 2). This is about companies actively considering and managing the relationships between units and capitals. This includes the critical interdependencies of relevant units, processes and information and the organisation's ability to meet the demands and requirements of stakeholders. A holistic normative approach based on Integrated Thinking also involves aligning the business model and strategy with the external environment. This means extrinsically motivated impulses can be adapted quickly, and new trends will be implemented accordingly. Nevertheless, despite all the consideration of opportunities, it is also inherent in Integrated Thinking that the risks to which the company is exposed are evaluated and responded to accordingly (International Integrated Reporting Council, 2021a, p. 3). The objectives addressed by the framework for Integrated Thinking in the operational context allow conclusions to be drawn about the theories introduced above and show that Integrated Thinking is more than just an empty phrase but a scientific approach that must be used to develop benefits and create value for a company. In sum, Integrated Thinking considers the interrelationships and interdependencies between the individual factors that influence the ability of companies to create value. An active engagement of the company with these relationship structures is a prerequisite for this. Ultimately, Integrated Thinking leads to integrated decision-making, which considers various measures for the value creation, preservation, or erosion in the short, medium, and long term. This is supported by the Chartered Institute of Management Accountants (2017, p. 2), which points out that Integrated Reporting encompasses the identification, execution and ultimately the monitoring of business decisions and strategies for long-term value creation.

Integrated Thinking is designed to break down processual and unitary silos. This can help to distribute information more efficiently (Herath et al., 2021, p. 875). Moreover, it enables the units to assess better the impact of their decisions on different stakeholders (both internal and external) and to recognise and understand the company as a whole (Krzus, 2011). Thus, predominant individual work is increasingly divided into collaboration (Blacksun, 2012, pp. 5, 7). Integrated Thinking can ultimately contribute to improve the synchronisation of information systems and thus promote and support more effective and consistent internal and external reporting (International Integrated Reporting Council, 2021a, p. 3). Guthrie et al. (2017, p. 561) show that Integrated Thinking is even an elementary factor that helps to better understand internal accounting changes.

Oliver et al. (2016) distinguish between hard Integrated Thinking[13] and soft i Integrated Thinking[14]. The latter is a prerequisite for the former and emphasises the mutual relationship between the distinguishing features. These different approaches to Integrated Thinking result in integrated decision-making that considers value creation at multiple temporal levels and does not focus exclusively on profit-oriented short-termism (International Integrated Reporting Council, 2021a, p. 2). It is thus once again clear that Integrated Thinking helps organisations to focus on elements essential for value creation and their interdependencies (International Integrated Reporting Council, 2021a, p. 3; Paternostro, 2013). Therefore, Integrated Thinking is also the basis of the decision-making process and includes both the company's interests and those of all stakeholders (Al-Htaybat & von Alberti-Alhtaybat, 2018, p. 1450; Krzus, 2011, pp. 275–276). Therefore, it represents the possibility of transforming business-related models into stakeholder-centred approaches (Aras & Williams, 2022, p. 11).

However, applying Integrated Thinking is also accompanied by practical challenges (La Torre et al., 2019). According to this study, ten key observations were identified concerning Integrated Thinking (International Integrated Reporting Council, 2017, p. 6). La Torre et al. (2019) divide these into five categories representing the main challenges for introducing Integrated Thinking (La Torre et al., 2019, p. 29). Thus, the challenges include understanding Integrated Thinking and the connectivity of information, which are arguably the most critical elements. Nevertheless, connectivity and the incomplete accounting space is a significant challenge. Furthermore, the Integrated Thinking approach is often in tension with actual applicable practice in organisations. Another challenge is the form and substance of Integrated Thinking. This is because the level of maturity of Integrated

[13] Hard Integrated Thinking occurs when organisations focus to achieve operational efficiency goals (J. Oliver et al., 2016, p. 235).

[14] Soft Integrated Thinking occurs when organisations focus to achieve operational sustainability goals (J. Oliver et al., 2016, p. 235).

Thinking is not always evident just because relevant information or reports are published. As a consequence, a stronger focus on Integrated Thinking by standard setters is still needed. Finally, trust and credibility are also challenges. In this context, it is crucial to emphasise that upper management, in particular, must fully support the implementation and realisation of the thinking approach.

Several studies have already dealt with the concept of Integrated Thinking. For example, definitions and guidelines for its introduction into the organisational context have been examined (Al-Htaybat & von Alberti-Alhtaybat, 2018; Barnabè & Giorgino, 2013; Mio, 2016; Paternostro, 2013; Value Reporting Foundation, 2022a). In addition, some research focuses on the development or its use as a cultural control mechanism (Dumay & Dai, 2017) or observes structured literature reviews (Dumay et al., 2015). Other studies analyse stakeholders' interpretation of Integrated Thinking (Feng et al., 2017) or the organisational change leading to Integrated Thinking (Guthrie et al., 2017). The relationship between the top management's perception of Integrated Thinking is also observed (Herath et al., 2021). However, a few papers refer to Integrated Thinking in practice (Churet & Eccles, 2014; Knauer & Serafeim, 2014; J. Oliver et al., 2016b; Value Reporting Foundation, 2022b; Vesty et al., 2015). Dumay & Dai (2017) criticise that much is written about why Integrated Thinking needs to be applied but less about how to implement Integrated Thinking. In particular, Oliver et al. (2016) contributes to advancing the conceptualisation of Integrated Thinking in practice.

It can be concluded that the strength of embedding Integrated Thinking in the company is involved in the actions of an organisation and positively influences the self-evidence for the interrelated and synergetic effect of information. This, in turn, is then fully incorporated into management reporting, analysis and decision-making (International Integrated Reporting Council, 2021a, p. 3). Integrated Thinking thus enables the appreciation of the impact of decisions on all stakeholders and the company (Krzus, 2011, p. 274; Vitolla, Marrone, et al., 2020, pp. 282, 288; Vitolla, Raimo, & Rubino, 2020, p. 1152). It also means that Integrated Thinking allows the impact of management decisions to be appreciated and evaluated from multiple perspectives, as a multitude of interdependencies is taken into account (Salvi et al., 2020, p. 998).

Integrated Thinking is thus, on the one hand, the underlying logic of Integrated Reporting (Giovannoni & Fabietti, 2013, p. 36) and, at the same time, the ultimate goal of Integrated Reporting (Haller & van Staden, 2014, p. 1206). Thus, to implement Integrated Reporting fully and holistically into the organisation, it must first permeate Integrated Thinking (Al-Htaybat & von Alberti-Alhtaybat, 2018, p. 1435). The starting argument is that the benefits that come with Integrated Reporting have their basis in Integrated Thinking, in particular, also the report creation process and not exclusively the report as such (International Integrated Reporting Council, 2021a, pp. 3, 53). Integrated Thinking is implicitly the core of Integrated Reporting, and without Integrated Thinking, Integrated Reporting is impossible to implement effectively (Black Sun, 2012, p. 2). This inevitable circular argument can only be resolved if Integrated Thinking and Integrated Reporting are implemented and applied holistically within the company. Finally, Churet & Eccles (2014, p. 64) confirm that Integrated Thinking and Integrated Reporting are linked. This means that, on the one hand, the company's short-term priorities can be achieved, and, on the other hand, an organisation's long-term visions and goals can be fulfilled simultaneously. In this context, Moolman et al. (2016) found that Integrated Reporting promotes Integrated Thinking and a better connection between risk, opportunity, and strategy (Moolman et al., 2019, p. 621).

It can therefore be assumed that by applying the maxim of Integrated Thinking, a more valid basis of information is available, and thus, in turn, more efficient and value-creating decisions can be made. Integrated Reporting, whose development and growing importance will be examined in more detail in the following chapter, is the logical result of Integrated Thinking (Haller & van Staden, 2014, p. 1206; Vitolla, Marrone, et al., 2020, p. 287) and its perquisite at the same time (Giovannoni & Fabietti, 2013, p. 36). However, there is more to be said for Integrated Thinking being upstream. This is supported by the fact that organisations using Integrated Reporting first adopt Integrated Thinking as a way of thinking in order to holistically build reporting on an integrated basis (Guthrie et al., 2017, p. 568). To fully exploit the potential benefits of Integrated Reporting, a transdisciplinary perspective is required and not an isolated consideration of individual issues within a company (Velte, 2022b, p. 1657).

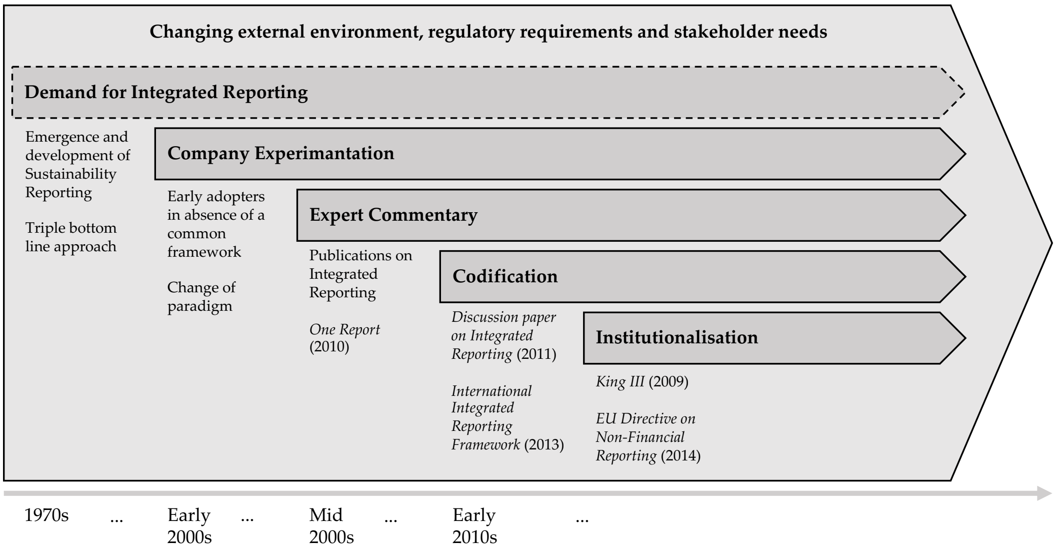
What emerges from these considerations, however, and thus also goes hand in hand with them, is that the relationship between Integrated Thinking and Integrated Reporting is interpreted quite individually by different companies. Three possible scenarios can explain how these two concepts interact: inextricable, interrelated and mutually beneficial (Value Reporting Foundation, 2021, p. 11).

On the one hand, Integrated Thinking and Integrated Reporting can be defined as inextricable. Conversely, this means companies cannot have Integrated Reporting without implementing Integrated Thinking and vice versa. In this context, it should be possible that Integrated Thinking could be measured and ultimately promoted by Integrated Thinking. On the other hand, the relationship between Integrated Thinking and Integrated Reporting can also be interpreted as interrelated. This means that in order to be able to produce an integrated report at all, organisations need to develop and establish integrated ways of thinking in their company in order to understand value creation as a whole. Finally, the link can also be understood as a mutual benefit. In this context, Integrated Thinking supports the identification process of information that is subsequently to be published and made accessible to stakeholders in the context of Integrated Reporting (Value Reporting Foundation, 2022b, pp. 2–3). Against this background, the following chapter is dedicated to the development and increased importance of Integrated Reporting.

2.2.2. Increasing relevance and evolutional development of institutional Integrated Reporting

This chapter briefly outlines the institutional development of Integrated Reporting in an international context. According to Eccles et al. (2015b, p. 32), the evolution and growth in importance of Integrated Reporting can be divided into four phases, as seen in the following Figure 5. Although the individual phases are not always stringent due to the dynamic evolution of Integrated Reporting and are also partially blurred, this nevertheless provides a rough overview.

Figure 5. Development of Integrated Reporting



Author's elaboration adapted from Eccles et al. (2015b), p. 9 and Gibassier et al. (2019), pp. 9-15

In the run-up to the four phases, an increasing need for reporting that was not exclusively focussed on financial reporting could already be perceived from the 1970s onwards (Gibassier et al., 2019, p. 9). This initially led to the development of separate social reports and isolated environmental reports (Müller & Stawinoga, 2015, p. 17). Sustainability reporting gained significant importance with the publication of the United Nations Brundtland Report in 1987 (United Nations, 1987). The report broadened the discourse on sustainability worldwide and, in this context, paid particular attention to intergenerational equality (Reuse et al., 2021, p. 86; United Nations, 1987). John Elkington (1997) then introduced the triple bottom line approach to corporate reporting practice, according to which a company should report on its economic, social, and environmental performance. This leads to the foundation of the GRI, whose standards are the most widely used for sustainability reporting worldwide (Global Reporting Initiative, 2021, p. 3).

The initiation of the practical application of Integrated Reporting already took place in the early 2000s. Here, some companies have already experimented with the approach of Integrated Reporting and published the first integrated reports (Eccles et al., 2015b, pp. 31–32; Gibassier et al., 2019, pp. 9–10). On this basis, the second phase of expert commentary developed in the mid 2000s. In this context, consultancies, researchers, and experts have increasingly examined and analysed the practical applications of Integrated Reporting. The first fundamental principles of Integrated Reporting were developed on this basis. Theories, in particular, were thus formed in this phase (Eccles et al., 2015b, pp. 31–32; Gibassier et al., 2019, pp. 10–11). In the late 2000s, the codification phase of Integrated Reporting began. In this stage of development, frameworks and standards were developed and designed by non-governmental organisations (NGOs) in a joint exchange with relevant stakeholders. This phase culminated in the publication of the International Integrated Reporting Framework in December 2013 (Eccles et al., 2015b, pp. 31–32; Gibassier et al., 2019, pp. 11–14). The influence of the regulatory and market environment was accentuated in the context of the fourth phase they identified. This should help to make Integrated Reporting more useful for practice and create an appropriate framework. Therefore, this phase, which began in the late 2000s and early 2010s, is also essentially based on laws and codes of conduct. These include, for example, King III, or the NFRD (Eccles et al., 2015b, pp. 31–32; Gibassier et al., 2019, pp. 14–15).

Based on this four-phase consideration, some aspects will now be explained in more detail, essentially with the beginning of the codification and institutionalisation phase. However, the scheme described above cannot necessarily be projected one-to-one onto the dynamic developments of Integrated Reporting. The initial starting point of codified and the resulting institutionalised Integrated Reporting was the meeting convened by The Prince of Wales at St. James Palace in 2009, which aimed at a symbiotic exchange between representatives of companies, investors, regulators, standard setters, the accounting profession, academia, and society to advance the idea of Integrated Reporting. This led to the foundation of the International Integrated Reporting Council in 2010 (International Integrated Reporting Council, 2020; Navarrete-Oyarce et al., 2022, p. 2; Soh et al., 2015, p. 36).

Until 2010, Integrated Reporting was merely a collection of ideas and a loose concept, in which it was assumed that the multi-capital view could help to present a more comprehensive picture of the company and to correct the allocation of the capital misdirected in the financial crisis and to make it efficient in the future.[15] A key success factor for the institutionalisation of Integrated Reporting by the International Integrated Reporting Council is the market-driven and principles-based framework of Integrated Reporting, the International Integrated Reporting Framework. It claims to be the intellectual foundation of Integrated Reporting and subsumes the Fundamental Concepts, Guiding Principles, and Content Elements underlying it in a multi-capital approach focusing on a company's value creation (International Integrated Reporting Council, 2013b, 2020, 2021a).

The International Integrated Reporting Framework, published in December 2013, is an essential event in the institutionalisation of Integrated Reporting, as the previously market-driven push towards Integrated Reporting has now been embedded into an orderly pattern and coherent process. The underlying principles and requirements were developed and tested by 100 International Integrated Reporting Council Pilot Programme participants over three years. A continuous dialogue with investors accompanied this to ensure the adequacy of their reporting requirements. It was also subject to a three-month global consultation period, during which several events were held to ensure that the guidelines met global reporting requirements (International Integrated Reporting Council, 2020; Rivera-Arrubla et al., 2017, pp. 158–159).

As Integrated Reporting became institutionalised, Integrated Thinking was increasingly seen as having a fundamental role. The potential benefits associated with Integrated Thinking were perceived as transformative. The synergies that result from the symbiosis of the considerations of strategy, business model and governance finally unleash the advantages of Integrated Reporting. The simultaneous consideration and application of Integrated Thinking and Integrated Reporting should thus lead to more efficient decision-making and communication as a continuous improvement process (International Integrated Reporting Council, 2020; Value Reporting Foundation, 2021).

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[15] In South Africa, elements of Integrated Reporting were already part of corporate reporting before 2010. A detailed description of the development and rise of Integrated Reporting in South Africa can be found in Chapter 2.4.2.

Some specific initiatives, such as the Integrated Reporting Technology Initiative and several networks, have been established in this context. The former aims to drive innovation, with a particular focus on identifying and underpinning trends in reporting. The latter were formed globally. These networks are mainly concerned with interpreting and implementing Integrated Reporting within the scope of local and national regulations (International Integrated Reporting Council, 2010).

As will be elaborated in more detail in Chapter 2.4.2, South Africa is considered a pioneer in the context of Integrated Reporting (Gibassier et al., 2019, pp. 20–22). Worldwide, South Africa is considered to be the country that has introduced Integrated Reporting as an essential component of corporate governance. In this context, the Integrated Reporting Committee of South Africa plays a unique role, regularly publishing guidelines on how to establish Integrated Reporting in companies in a targeted manner and promote the further development of Integrated Thinking and Integrated Reporting (International Integrated Reporting Council, 2020).

In addition, the International Integrated Reporting Council initiated the Corporate Reporting Dialogue in 2014. The International Integrated Reporting Council, the Financial Accounting Standards Board, the Climate Disclosure Standards Board, the GRI, the Sustainability Accounting Standards Board (SASB), and the International Organization for Standardization (ISO) participated in this dialogue. The overarching goal was to promote networking and strengthen the cooperation of crucial standard setters with an influence on the corporate reporting landscape. This dialogue also resulted in guidelines, working papers, and a report on the goals for sustainable development and the future of corporate reporting. The forum's work can also be seen as a precursor to the vision of jointly developed comprehensive corporate helpful reporting for all target groups (International Integrated Reporting Council, 2020).

According to the EU Directive 2014/95, large capital market-oriented companies are obliged to issue non-financial statements. This also has significant implications and impacts on Integrated Reporting (Dumay et al., 2019; Mock & Razik, 2020). This circumstance alone results in a potential of 6,000 additional users of Integrated Reporting in the European Union (Howitt, 2017). This once again underlines the importance of connecting, holistic reporting, and the progressive institutionalisation of the approach.

A consultation period was convened again in 2020. This ultimately demonstrated that the International Integrated Reporting Framework remained fit for purpose and relevant, publishing an updated version in January 2021. The consultation was in response to a changing market context and to embed Integrated Reporting into companies' reporting landscape. Another focus was to increasingly enable organisations to use and apply the International Integrated Reporting Framework more effectively. In addition, valuable insights could be drawn from this process on how Integrated Thinking could be further developed holistically and technological progress could be taken into account even more in the context of reporting (International Integrated Reporting Council, 2020).

In recent years, the strategic partnerships have been successively expanded to advance the comprehensive system of corporate reporting. This also resulted in the International Integrated Reporting Council merging with the SASB to form the Value Reporting Foundation (VRF). Especially against the background of the principles-based approach of the International Integrated Reporting Framework, the Council consolidated with the SASB (Velte, 2022b, p. 1666).

However, the consolidation process did not end there, as the International Integrated Reporting Framework became integral to the International Financial Reporting Standards (IFRS) Foundation materials. Although it continues to be described as non-mandatory, the framework was prominently presented unless national regulations provided for a different procedure. With the consolidation, the International Accounting Standards Board (IASB) and the International Sustainability Standards Board (ISSB) assumed responsibility for the Integrated Reporting Framework. In this context, particular emphasis is placed on the coherent integration of Integrated Reporting into the overall context of the reporting landscape. In the long term, an all-encompassing framework for corporate reporting will emerge from this merger that reflects the concepts, principles, and content of the International Integrated Reporting Framework. Ultimately, the vision of a networked, holistic, and coherent corporate reporting should be advanced. It should be noted, however, that the consolidation with the VRF was accompanied by the dissolution of the Integrated Reporting Framework

Board. Nevertheless, the corresponding members were invited to participate in advisory bodies to develop, advance the idea of Integrated Reporting and embed it in the overall context. The purpose was the increase of extent and quality of Integrated Reporting. The International Integrated Reporting Council became an advisory body to the IASB, the ISSB and the IFRS Foundation Trustees through the consolidation. The Council should make proposals and contributions to ensure that the IFRS Foundation creates legal frameworks to enable the preconditions to apply Integrated Reporting smoothly. This advisory body was initially established for two years. Following this period, the need for a separate council will be reviewed (IFRS Foundation, 2022b). On 1 August 2022, the IFRS Foundation announced the finalisation of the consolidation of VFR into the IFRS Foundation. This means that the IASB and the ISSB are jointly responsible for the International Reporting Framework, from now on (IFRS Foundation, 2022a).

The number of companies using Integrated Reporting is increasing. According to the IFRS Foundation, over 2,500 organisations in more than 70 countries have adopted Integrated Reporting (IFRS Foundation, 2022c). It should be noted that different types of organisations use Integrated Reporting, i.e., not only listed companies but also public companies, NGOs or small and medium enterprises. If the listed companies are analysed in more detail, South Africa and Japan, for example, are leaders in Integrated Reporting (IFRS Foundation, 2022c), which aligns with the results of Gibassier et al. (2019, p. 20). An analysis of the sectors in which the companies operate shows that Integrated Reporting is widespread in all sectors (Gibassier et al., 2019, p. 23; IFRS Foundation, 2022c).

2.3. THE INTERNATIONAL INTEGRATED REPORTING FRAMEWORK AND ITS BASIC TERMINOLOGY

2.3.1. General definition of Integrated Reporting

Based on the hermeneutic derivation of the concept of Integrated Reporting, a working definition is now required, which is applied as the basis for further considerations in this work. In this context, Integrated Reporting is not merely a loose concept of a subjectively broad definition. Integrated Reporting is defined by the International Integrated Reporting Council according to the International Integrated Reporting Framework[16] as follows (International Integrated Reporting Council, 2021a, p. 53):

> "A process founded on integrated thinking that results in a periodic integrated report by an organization about value creation, preservation or erosion over time and related communications regarding aspects of value creation, preservation or erosion."

Accordingly, the International Integrated Reporting Council defines an integrated report as follows (International Integrated Reporting Council, 2021a, p. 10):

> "An integrated report is a concise communication about how an organization's strategy, governance, performance and prospects, in the context of its external environment, lead to the creation, preservation or erosion of value over the short, medium and long term."

With reference to this working definition, Integrated Reporting is a holistic reporting approach. It combines economic aspects with social and ecological ones (Velte, 2022a, p. 998). Even though the triad of sustainability sometimes plays an essential role, Integrated Reporting is not primarily a pure sustainability format. The explanations of value changes over a certain period are intended for providers

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[16] The International Integrated Reporting Framework is written in American English. Therefore, when referring to the International Integrated Reporting Framework, there may occur differences in spelling.

of financial capital (International Integrated Reporting Council, 2021a, p. 11). And to ensure that this allocation of financial capital is as efficient as possible, Integrated Reporting includes both financial and non-financial information (International Integrated Reporting Council, 2021a, p. 11). It is important to remember that Integrated Reporting intends not to add up financial and non-financial information and generate a bloated report. Instead, it is an innovative format that processes different types of information synergistically and coherently to increase the potential benefit for the addressee (Nazari et al., 2015, p. 375). However, the purpose of Integrated Reporting also extends to all other stakeholders who have a vested interest in an organisation's ability to create value (International Integrated Reporting Council, 2021a, p. 11). Therefore, Integrated Reporting is compliant with the CSRD and can be seen as a possible approach to support the sustainable development of the economy and at the same time to meet the increasing demands and requirements on corporate reporting (Biondi et al., 2020, p. 890; European Union, 2014, p. 2, 2022, p. 15). In essence, the goal and purpose of Integrated Reporting is to provide better quality information to financial capital providers and other stakeholders so that they can allocate their capital efficiently. It is also about developing a more coherent approach to reporting that incorporates all the key elements that contribute to value creation in the company over time. It is important to understand the various interrelationships and interdependencies and to clearly demonstrate them to stakeholders. This is to avoid continuing to produce many different, disjointed, and static reports in the future. Instead, the International Integrated Reporting Framework takes an Integrated Thinking approach based on holistic thinking that considers the different interrelationships and interdependencies (International Integrated Reporting Council, 2021a, p. 2).

It is thus clear that Integrated Reporting is intended to work on several levels to give the addressees of the report a comprehensive impression. The triad mentioned does not refer exclusively to the potential for change of the value, but also differentiates in the temporal occurrence of the change in value. In this context, it is important to consider that the International Integrated Reporting Framework is principles-based. In order to be considered an integrated and framework-compliant report, specific requirements must be met (Busco et al., 2013, pp. 12–13; International Integrated Reporting Council, 2021a, pp. 5, 11; Vena et al., 2020, p. 194). However, it should be noted that no information must be published mandatorily. This is intended to create an efficient balance between flexibility and prescription, to be able to address company-specific characteristics without restricting the scope of the report from the outset. Operationalised, this means that the reporting companies themselves can determine whether an issue is to be assessed as material and whether it should then be disclosed (International Integrated Reporting Council, 2021a, pp. 5, 11).

The Integrated Reporting format is supported by three main pillars, and comprises namely three Fundamental Concepts, seven Guiding Principles, and eight Content Elements. The three Fundamental Concepts serve to underpin and reinforce the requirements derived from the International Integrated Reporting Framework (International Integrated Reporting Council, 2021a, p. 15). Whereas the seven Guiding Principles are the basis for the preparation and presentation of the integrated report as well as describe and inform about the related content (International Integrated Reporting Council, 2021a, p. 25), the eight Content Elements represent the concretisation and operationalisation of the Guiding Principles (International Integrated Reporting Council, 2021a, p. 38). Consequently, it gets clear that Integrated Reporting is designed to provide a holistic, comprehensive view of the recursive relationship between cause and effect. These three main pillars are explained in more detail in the following chapters.

2.3.2. The three Fundamental Concepts of Integrated Reporting

Based on the definition presented above, there are three Fundamental Concepts that manifest both the guidelines and the requirements of Integrated Reporting. As a basic underlying and helping to understand integrated reports, these three Fundamental Concepts have been defined: *Value creation for the organization and others*, *The capitals*, and the *Process through which value is created, preserved or eroded* (International Integrated Reporting Council, 2021a, pp. 15–23). These stand on their own and are independent of each other, but at the same time they also have connecting effects on each other.

The central objective of an integrated report is – as can be seen from the previous definition – to present the value transformation by a company. One of the three Fundamental Concepts is the *Value Creation for the organisation and others*. Within this concept it gets clear what the primary purpose of Integrated Reporting is about. The focus is on disclosing added value of an organisation and how it creates this for itself and others. In this context, it needs to be stated that this value creation process is also highly determined by external factors (International Integrated Reporting Council, 2021a, pp. 16–17).

The Capitals represent the success factors of an organisation and can be interpreted as vital characteristics of value creation. The International Integrated Reporting Framework differentiates between six various Capitals, which are shown in Figure 6 (International Integrated Reporting Council, 2021a, pp. 18–19).

Figure 6. The Capitals of Integrated Reporting

- **Financial capital**
- **Manufactured capital**
- **Intellectual capital**
- **Human capital**
- **Social and relationship capital**
- **Natural capital**

The Capitals according to the International Integrated Reporting Framework

Author's elaboration

The symbiosis and connection of financial and non-financial elements is once again clearly accentuated here. In addition to the classic economic components (*financial capital*), there are two social dimensions (*human capital* and *social and relational capital*) and an ecological dimension (*natural capital*) as well as *intellectual capital*. The clear linking of these capitals is a key point of the integrated approach and once again puts the emphasis on holistic reporting (International Integrated Reporting Council, 2021a, pp. 18–20). However, according to the principle-based approach, the Capitals are not mandatory to adopt and apply in this categorisation by the organisations. Rather, they represent a guideline to ensure that all components are observed (International Integrated Reporting Council, 2021a, p. 20).

The third concept is the *Process through which value is created, preserved, or eroded* (International Integrated Reporting Council, 2021a, pp. 21–23). Within the value creation process, the previously defined Capitals are considered as an input factor, which are transformed into output factors and outcomes. Not least due to the fact that companies have to meet various stakeholder demands, the transformation of the different Capitals is accompanied by both harmonious and conflicting goals that have to be weighed up against each other (International Integrated Reporting Council, 2021a, pp. 16–17). The business model of an organisation is decisive, as it has a significant influence on the value creation process. However, it is essential to note that the business model is in turn determined by the organisation's external environment, the purpose, the mission and vision, and the governance.

The high level of abstraction requires an inevitable operationalisation of this theoretical construct. Consequently, seven Guiding Principles and eight Content Elements were defined within the scope of the International Integrated Reporting Framework, which will be described in more detail in the following chapters.

2.3.3. Spotlight on the seven Guiding Principles

Against the background of the high degree of complexity and abstraction of the three Fundamental Concepts, it is necessary to enable an operationalisation of the facts explained up to this point (Arbeitskreis Integrated Reporting der Schmalenbach-Gesellschaft für Betriebswirtschaft e.V., 2018, p. 338). To this end, the International Integrated Reporting Council has admitted seven Guiding Principles and eight Content Elements. The Guiding Principles serve in the first instance as guidelines for the preparation of an integrated report, the preparation and presentation of the information to be published (International Integrated Reporting Council, 2021a, p. 25). The following Guiding Principles exist in accordance are presented in Figure 7 (International Integrated Reporting Council, 2021a, p. 25).

Figure 7. The Guiding Principles of Integrated Reporting

- **Strategic focus and future orientation**
- **Connectivity of information**
- **Stakeholder relationships**
- **Materiality**
- **Conciseness**
- **Reliability and completeness**
- **Consistency and comparability**

The Guiding Principles according to the International Integrated Reporting Framework

Author's elaboration

The presentation of a company in terms of its ability to create value in the short, medium, and long term is at the heart of the *Strategic focus and future orientation* principle. Also subsumed under this is the extent to which individual capital resources are used and their effects managed and understood. In this context, the assessment and evaluation are also considered, which are related to the business model and the competitive position of the company (International Integrated Reporting Council, 2021a, pp. 25–26).

Another principle is *Connectivity of information*. In particular, the connections and dependencies between the individual value-creating factors must be explained. The Integrated Thinking approach plays a key role. The stronger the Integrated Thinking approach, the higher the awareness and sensitivity within a company to the self-image of the connectivity of information among each other. Within the framework of this principle, the Content Elements are accentuated, and a further focus is placed on the presentation of financial and non-financial information as well as its consistency over time (International Integrated Reporting Council, 2021a, pp. 26–28).

The Guiding Principle *Stakeholder relations* is to be interpreted with great reference to the fundamental concept *Value creation for the organization and others*.

The aim here is to disclose the quality of the relationships between the organisation and the relevant stakeholders. It is essential to consider the interests of all stakeholders (International Integrated Reporting Council, 2021a, pp. 28–29).

The Guiding Principle *Materiality* is the focus of many disclosure considerations and thus also of Integrated Reporting. The special characteristic of this principle is that the definition is kept relatively general (International Integrated Reporting Council, 2021a, p. 29), but the specific applications of the principle can be fully and differently developed. The materiality determination process that precedes the release of information includes four sub-process steps. First, the relevant issue or issues that contribute to the value creation process must be identified. Next, the identified aspects must be evaluated and reflected upon regarding their already demonstrable or potentially expected impact on value creation. This in turn enables a prioritisation to be made on this basis. In this context, the relative importance of the issues in terms of their contribution to value creation must be determined. This analysis then provides the basis for deciding which information the company will ultimately disclose in its integrated report (International Integrated Reporting Council, 2021a, pp. 29–33).

In addition, the Guiding Principles require their users to keep integrated reports short and concise (*Conciseness*) on the one hand and to take all material aspects into account on the other. In this context, the degree of impact is initially irrelevant. Reporting on the material issues is to be carried out irrespective of whether their effects are negative or positive. Furthermore, the report must be balanced and free of material misstatements (*Reliability and completeness*) (International Integrated Reporting Council, 2021a, pp. 33–36).

The Guiding Principles are rounded off by the pair of terms *Consistency and comparability*. The consistent presentation of information over time and the possibility of comparison with other companies form the main cornerstones of the referenced Guiding Principles (International Integrated Reporting Council, 2021a, pp. 36–37). However, it should be noted that this aspect in particular is very challenging. In addition to the freedom granted in the International Integrated Reporting Framework to disclose specific company characteristics, there is also the strictly applicable process of determining materiality, which places the main emphasis on the institution's own priorities.

Within the scope of the Guiding Principles, the framework's principles-based approach is crystallised. The Guiding Principles can be considered and applied together, but also separately. Best knowledge of internal operating procedures and essentials are therefore required as to how these Guiding Principles are to be applied in an institution-specific manner. However, challenges arise when the individual Guiding Principles appear to be contrary to each other (International Integrated Reporting Council, 2021a, p. 25). As a result, on the one hand, the published information and the resulting report can be highly customised to the organisation. On the other hand, however, this also leads to the fact that reports sometimes cannot be easily compared within the peer group (International Integrated Reporting Council, 2021a, p. 11). Against this background of ambivalence, the Content Elements and the corresponding questions were formulated to ensure a certain and appropriate degree of comparability between the individual companies. The aim of this is to enable stakeholders to efficiently classify the competitive position of an individual company in relation to the overall market (International Integrated Reporting Council, 2021a, pp. 37–38).

2.3.4. The eight Content Elements in focus

The Guiding Principles are operationalised through the formulation of the Content Elements. Furthermore, the Content Elements are intended to make the Guiding Principles more concrete (International Integrated Reporting Council, 2021a, pp. 37–38). Thus, they serve to operationalise the requirements of Integrated Reporting in an all-encompassing manner. In conclusion, the content of an integrated report is reflected in the eight Content Elements and represent the highest operationalisation standard of the Integrated Reporting concept. The eight Content Elements are illustrated in Figure 8 (International Integrated Reporting Council, 2021a, p. 38).

Figure 8. The Content Elements of Integrated Reporting

- **Organizational overview and external environment**
- **Governance**
- **Business model**
- **Risks and opportunities**
- **Strategy and resource allocation**
- **Performance**
- **Outlook**
- **Basis of preparation and presentation**

The Content Elements according to the International Integrated Reporting Framework

Author's elaboration

One of the first questions to be answered is what essentially distinguishes a company, what economic tasks it fulfils and under what exogenous and endogenous circumstances it operates or interacts with its environment (*Organizational overview and external environment*). In this context, exogenous environmental influences are contextualised, and the company's vision and mission are identified (International Integrated Reporting Council, 2021a, pp. 39–40).

Furthermore, a look at the G*overnance* structure of a company is to be taken. This involves assessing the extent to which the implemented and established structures support the value creation over time (International Integrated Reporting Council, 2021a, p. 40).

A central Content Element of Integrated Reporting is the *Business model*. The related question refers to the original business model and its raison d'être in the competitive market. When describing the business model, certain key factors are addressed: *Inputs*, *Business activities*, *Outputs*, and *Outcomes*. They are interrelated in the sense that the inputs generate outputs and outcomes through the transformation of the business activities. The aim of this is to fulfil the purpose of the company and thus to satisfy the needs as well as the requirements of the stakeholders, which ultimately makes a significant contribution to value creation (International Integrated Reporting Council, 2021a, p. 41). In this context, both capital and resources are considered as input factors. In addition, relationships are also *Inputs* that are used during business activities and thus represent an elementary component of the transformation. *Outputs* and *Outcomes* should not be confused. However, while *Outputs* are defined as products, services, by-products and waste, *Outcomes* are understood as positive or negative effects on the used and invested Capitals (International Integrated Reporting Council, 2021a, p. 42).

It is also necessary to report on the *Risks and opportunities* to which the company is exposed. Although the consideration of the value creation process plays a decisive role here, the interaction of the company with the factors identified in each case also plays a role. Since this Content Element is based on the Guiding Principle *Materiality*, all risks that could threaten the existence of a company are included in an integrated report. This applies even if the probability of occurrence is defined as low (International Integrated Reporting Council, 2021a, p. 44).

In addition, an integrated report must answer the question of which strategic positioning the company aims for and adopts. In this context, it is also essential to report on how the path to achieving this level of ambition is designed with the aid of relevant competitive advantages (*Strategy and resource allocation*) (International Integrated Reporting Council, 2021a, pp. 44–45).

Moreover, the company should disclose the extent to which it has achieved its strategic objectives and its impact on its capital resources (*Performance*). In addition to measurable, quantitative indicators, qualitative information must also be considered, which should be linked together in the best possible and most effective way in order to meet the requirements of transparent and holistic reporting. Beyond the mere combination of qualitative and quantitative information, it must also be ensured that the information disclosed is consistent over time and that a connection or dependency relationship is established between the past, the present and the future (International Integrated Reporting Council, 2021a, pp. 45–46).

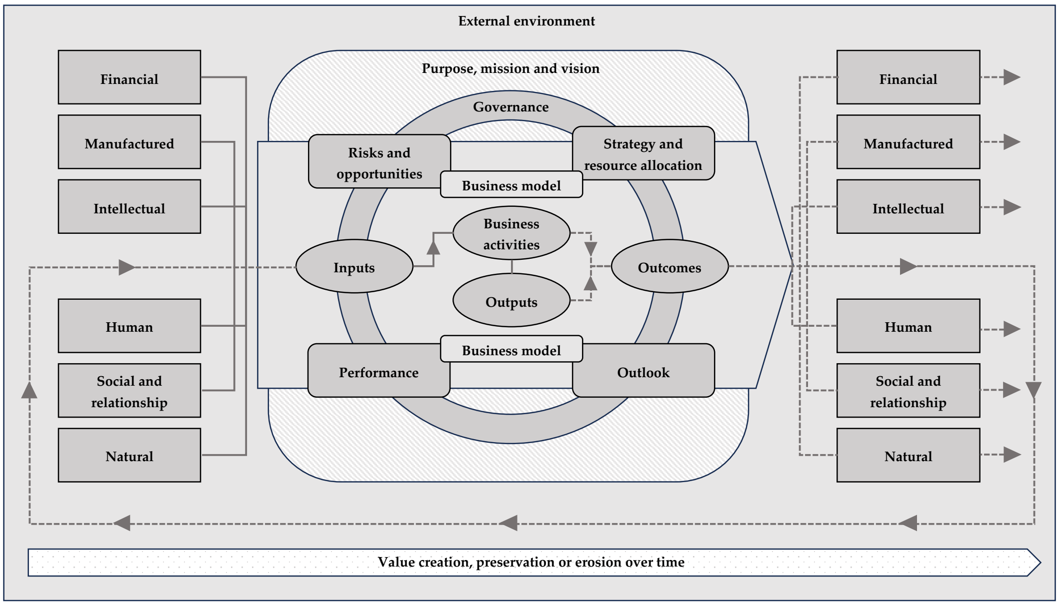
The *Outlook* is intended to answer the question of the company's challenges and insecurities when implementing the strategy. In addition, the resulting effects on the *Business model* and the *Performance* Content Element mentioned earlier should be reflected. Ensuring that forward-looking statements are based on a solid foundation is essential. Therefore, it should represent the specific capabilities of a company on the one hand and a realistic assessment of the factors that create value on the other (International Integrated Reporting Council, 2021a, pp. 46–47).

Finally, the Content Element *Basis of preparation and presentation* must be considered. Here, the focus is on the question of which specific content should be included and quantified in an integrated report. In this respect, three core aspects are at the forefront of the considerations. First, an overview of how the materiality determination process is designed must be created and disclosed. Secondly, the reporting boundaries must be identified and how the company has to deal with them. Third, the essential frameworks and methods for determining both financial and non-financial key figures should be highlighted (International Integrated Reporting Council, 2021a, pp. 47–48).

Staying true to the principles-based approach of the International Integrated Reporting Framework, the Content Elements are not presented in the form of concrete requirements, but rather allow for a company-specific approach by formulating them as questions (International Integrated Reporting Council, 2021a, p. 38). Furthermore, they are not mandatory in their application. Rather, care must be taken to ensure that the key aspects are presented and adequately prepared for the addressees of the reports. The maxim of institution-specific flexibility is complied with insofar as the content of the reports is determined to a large extent by the facts and circumstances identified as relevant for the individual company. This is also a sufficient criterion for the necessity and justification that the Content Elements do not appear exclusively descriptively, but that its users must deal with explicit questions so that the addressee can also be provided with concrete answers (International Integrated Reporting Council, 2021a, p. 38). The individual elements and their corresponding questions are enriched by various concrete examples of information to enable companies to provide the addressees with the best possible quantity and quality of information.

The Guiding Principles and Content Elements concluding considerations are made within the context of a *General Reporting Guidance*, which are of central importance for various Content Elements. Accordingly, material facts are to be reported. If any kind of uncertainty arises, the uncertainty corresponding to the material fact must also be reported. In this context, it is considered essential to report on volatility and the range of possible parameter changes. If key information about certain matters is perceived to be indeterminable, this fact and the reasons for it should also be reported (International Integrated Reporting Council, 2021a, pp. 49–50). Another component is the characteristics of quantitative indicators. They serve to increase comparability and to express corporate objectives. The requirements of such information are narrowly defined and clearly outlined. For example, it must be consistent, connected and focused to meet the formulated objectives of quantitative indicators (International Integrated Reporting Council, 2021a, pp. 50–51). Accordingly, all material facts and their effects on the Capitals must be disclosed in the presentation. In this context, it is important that both endogenous and exogenous interdependencies as well as trade-offs between the Capitals are reported transparently (International Integrated Reporting Council, 2021a, pp. 51–52). It must also be ensured that the time frame of the integrated report refers to the short-, medium- and long-term perspective of value creation (International Integrated Reporting Council, 2021a, p. 52). Finally, the company is free to choose the level of aggregation at which to report (International Integrated Reporting Council, 2021a, p. 52). Figure 9 summarises the process through which value is created, preserved or eroded.

Figure 9. Value creation, preservation or erosion over time



Author's elaboration adapted from International Integrated Reporting Council (2021a), p. 22

2.3.5. Critical discussion: Benefits and obstacles of the implementation of Integrated Reporting

Based on the importance of holistic and Integrated Reporting described above, the increase in information relevance of value drivers and the rise in information complexity can be identified as essential and significant parameters of reporting (Krzus, 2011, pp. 274–275). The application of the International Integrated Reporting Framework is accompanied by considerable potential benefits, which will be briefly described below; the impact on traditional financial reporting will then be referred to in more detail in the following section. For the sake of clarity, it makes sense to divide these benefits into external and internal advantages.

However, first, it should be noted that the full potential benefits of an integrated report can only be realised if a certain level of reporting quality is achieved. In this regard, several studies found that certain positive effects only occur when a distinct extent of Integrated Reporting quality was inherent (Chouaibi et al., 2021; Cortesi & Vena, 2019; Pistoni et al., 2018; Pozzoli & Gesuele, 2016; Vitolla, Raimo, & Rubino, 2020; Vitolla, Raimo, Rubino, et al., 2020; Zhou et al., 2017; Zúñiga et al., 2020). Nevertheless, if there is a minimum level of quality of the integrated report, there are various benefits of using Integrated Reporting. For example, Massingham et al. (2019) and Vitolla & Raimo (2018) have identified various benefits.

Subsuming the benefits can be represented by a combination of communication, risk management and cost benefits. On a meta-level, it can thus be stated that both internal and external benefits arise with the help of the application of Integrated Reporting for companies (Eccles & Krzus, 2010, pp. 146–161; Roth, 2014, p. 65). By taking a holistic view of financial and non-financial aspects, risks can also be better identified and evaluated, which in turn has a positive impact on the decision-making process within a company. Nonetheless, one of the most significant potential benefits does not necessarily unfold directly in the company using the report, but rather in the addressees of the respective company report. Through the consequent and integrated provision of information, it is possible for investors or capital providers to allocate their capital more efficiently (Vitolla & Raimo, 2018, p. 245).

Regarding the internal benefits of Integrated Reporting, it is possible to create a focused awareness and a higher potential for identification with the company's internal understanding of the contribution to value creation and the reporting process based on it. The more precise accentuation in turn leads significantly to entrepreneurial decisions being made in a much more targeted and concise manner. In addition, the integrated approach, due to its holistic perspective, provides an in-depth insight into risk management. For example, it is possible to reduce the cost of capital, as a lower risk premium is now attributed to the companies (Roth, 2014, p. 65). However, it is not only important to increase the quality and transparency of the disclosed data or the reports and to establish more efficient and targeted risk management. Rather, it is also important to change the thinking within the organisation to an Integrated Thinking approach. This is to be projected both onto corporate management and the resulting strategy as well as onto the future-oriented alignment of the company (Paschke, 2019, p. 39). In this approach, the interdependencies between the individual Capitals, Content Elements as well as the interaction of the organisation within the framework of its externally determining conditions are to be considered in a focused and integrated manner (Paschke, 2019, p. 40). Based on these general considerations and the maxim of the Integrated Thinking approach, collaboration within the organisation is strengthened at the level of dissolving silo knowledge and departmental thinking and creating overarching and interdisciplinary exchanges and working conditions (Association of Chartered Certified Accountants, 2019, p. 9; Haller, 2017, p. 445; International Federation of Accountants, 2015, p. 12; International Integrated Reporting Council, 2011a, p. 7).

In addition to the internal potential benefits already mentioned, there are also external benefits. Based on Integrated Thinking and Reporting, there is an increasing amount of decision-relevant data for stakeholders (Velte & Stawinoga, 2017). This, in turn, leads to an efficient and productive capital allocation, which is targeted in the ambition level (International Integrated Reporting Council, 2021a, p. 2). The integrated approach, which ultimately focuses on holism, is thus to be evaluated as a core element in corporate management and in management with stakeholder relations (Velte & Stawinoga, 2017, p. 275). It can therefore be assumed that the increased transparency of the status quo and the desired goals will sustainably improve the stakeholder dialogue. Finally, the relationship of trust between the organisation and its stakeholders will be intensified and expanded. This is particularly evident from the fact that not only information on financial matters is included in Integrated Reporting, but that other types of capital are also considered to enable a holistic view of the company (Haller, 2017, p. 446).

However, in addition to the numerous potential benefits, there are also points of criticism regarding the concept of Integrated Reporting, which need to be acknowledged in the following. To investigate why companies are only introducing Integrated Reporting in a fragmented manner, with delays, or not at all, despite the potential benefits presented, Günther et al. (2017), for example, conducted interviews with experts. This study revealed that company management still does not see the need for Integrated Reporting. On the one hand, the focus is on reporting. Integrated Reporting is thus still defined as a niche topic that is focused almost exclusively on capital market-oriented companies (Günther et al., 2017, p. 133). Moreover, corporate reporting is still perceived more as an unavoidable and necessary compliance obligation than as an opportunity to present oneself positively to stakeholders (Günther et al., 2017, pp. 132–133; Haller, 2017, p. 446). On the other hand, the concept of Integrated Reporting as such is viewed critically. In this context, it is argued that the requirements of the International Integrated Reporting Framework are difficult to put into practice because of the lack of target standards and the associated lack of standardisation. The high degree of complexity and abstraction are also significant obstacles (Günther et al., 2017, pp. 134–135; Haller, 2017, p. 446).

Another not insignificant role is played by data collection, quality, and verification. In particular, there are concerns about auditing the data and information that the company itself classifies as relevant (Günther et al., 2017, p. 136). After all, it is not just data-related requirements that need to be met; the implementation of Integrated Reporting also requires profound and far-reaching change processes – both organisationally and culturally. The experts state that the benefits of Integrated Reporting do not yet compensate for the initial implementation and long-term costs (Günther et al., 2017, pp. 135–136; Haller, 2017, p. 446). However, the still predominantly voluntary character of the application of Integrated Reporting is accompanied by the fact that its comprehensive comparability between users is still difficult. Against this background, there is still a danger of greenwashing and information overload, which should be avoided. For this reason, the intensive examination of the normative guiding maxim of Integrated Thinking is unavoidable (Velte, 2022b, p. 1656).

In sum, it can be stated that Integrated Reporting can be interpreted as a holistic and comprehensive management approach. The synthesis and harmonisation of the corporate strategy with the requirements of the organisation's various stakeholders is continuously promoted and aligned with the background of the aggregated presentation of information, which is considered essential (Haller, 2017, p. 443). The advantages presented, which are associated with the application of Integrated Reporting, are the first directional signs that Integrated Reporting also has an economic benefit for companies. This is since Integrated Reporting makes a significant contribution to increasing transparency in corporate reporting (Mock et al., 2021). Therefore, the development towards Integrated Reporting is inevitable, as stakeholders increasingly expect and ultimately demand that corporate reporting incorporate the synergy of financial and non-financial information paired with value-oriented and sustainable elements (Haller, 2017, p. 442).

2.3.6. Classification of Integrated Reporting in the reporting landscape

The purpose of this chapter is to place Integrated Reporting in the context of the reporting landscape. Even though there is a now institutionalised definition of Integrated Reporting by the International Integrated Reporting Council (see Chapter 2.3.1) understandings and interpretations of Integrated Reporting persist, resting especially from the context prior to institutionalisation (Behncke et al., 2012, p. 3063; Landau et al., 2020, p. 1760). There is general agreement that Integrated Reporting aims to combine, link and cross-link financial and non-financial information to achieve added value for the reporting recipients.

One part of the research community interprets the concept of Integrated Reporting as a kind of evolution of traditional financial reporting and the corresponding annual reports. Other researchers define Integrated Reporting as a further development of sustainability reporting (Del Baldo, 2019, p. 96; Fasan, 2013, pp. 52–55; Silvestri & Veltri, 2019, p. 170).

The former goes hand in hand with the fact that the International Integrated Reporting Council itself sees the purpose of integrated reports as explaining to providers of financial capital how the company creates value in the short, medium, and long term (International Integrated Reporting Council, 2021a, p. 5). This is a significant difference to sustainability reporting. Whereas sustainability reporting is mostly stakeholder-oriented and primarily concerned with satisfying their interests, Integrated Thinking accentuates the underlying capital and its development in the context of value creation (Mio, 2016, p. 9; Velte, 2022b, pp. 1655–1656). In this context, it can be stated that an integrated report deliberately includes sustainability topics in order to provide a holistic overview of the company but cannot be classified as a sustainability report (Stacchezzini et al., 2016, p. 103).

The latter sees the basis of legitimacy in interpreting the different Capitals within the International Integrated Reporting Framework. They argue against the background of the Stakeholder Theory. In this context, the Integrated Reporting approach is as an attempt to ultimately include all stakeholders in the scope of the reporting format. Therefore, they justify their view with the different Capitals addressed within the International Integrated Reporting Framework. The explicit reference here is brought about by *human capital*, *social and relationship capital* and *natural capital* (International Integrated Reporting Council, 2021a, p. 18), which show a strong connection and congruence to sustainability reporting (Herbert, 2018, p. 135). This is supported by the finding that the development of Integrated Reporting was also moderately aligned with social and environmental reporting (de Villiers et al., 2014, p. 1044).

However, Integrated Reporting is undoubtedly distinct from other reporting formats. Integrated Reporting attempts to disclose value-based information and to accentuate the combination of essential financial information as well as environmental, social, and governance aspects. Since Integrated Reporting already covers features of conventional financial reporting in the context of the Content Elements, which would only need to be supplemented with further information, the approach should be less complex and more accessible to enforce as the components of an isolated sustainability reporting system (Velte, 2022b, p. 1656). Ideally, financial and non-financial information should be combined in one report to strengthen and increase transparency (Lai et al., 2016, pp. 165, 175), reducing the friction of consulting multiple reports to get a complete picture of a company.

It should be noted that there are both similarities and differences between Integrated Reporting, annual reporting, and sustainability reporting (Fasan, 2013, p. 55; Silvestri & Veltri, 2019, p. 170; Velte, 2022b, p. 1656). Irrespective of the academic controversies as to whether Integrated Reporting is more related to annual reporting or sustainability reporting, the dissertation follows the approach of Integrated Reporting according to the framework of the International Integrated Reporting Council. It thus interprets Integrated Reporting as a reporting format that primarily seeks to combine financial and non-financial information and present it in an integrated manner so that the addressees of the integrated report gain a concise understanding of how the company creates, preserves, or erodes value in the short, medium, and long term.

After all, one of the first books on Integrated Reporting already stated that the ambition was to produce a report that included both financial and non-financial information as well as the corresponding narratives. This means not only the exclusive compilation of both strands of information but also the servicing of the particular interests of the different stakeholder groups through an integrated approach (Eccles & Krzus, 2010, pp. 10–11).

2.4. FUNDAMENTALS OF CORPORATE REPORTING IN SOUTH AFRICA AND GERMANY

2.4.1. Motivation and considerations of country selection

This chapter will briefly review the institutional and regulatory setting of the countries selected for this study, South Africa and Germany, and analyse the rationale for selecting the two countries. This brief overview should serve to classify better and understand the degree of application of Integrated Reporting and its factors. In this context, it should be emphasised that the following presentation of reasons and insights into the respective reporting landscape can only represent a small excerpt and focus on publicly listed firms. This means there is no extensive discussion of the underlying legal and regulatory requirements. Otherwise, the scope of this dissertation would be exceeded and could not be pursued.

In general, it can be stated that the two selected countries represent a promising analytical setting for examining the application practice of Integrated Reporting. Firstly, South Africa represents a pioneer in developing this reporting approach, having shown a solid commitment to the International Integrated Reporting Council. Secondly, the application Integrated Reporting was already mandatory due to King III. Finally, information disclosure on stakeholder orientation and sustainability was already established in the previous King regulations and considered by the companies (Rensburg & Botha, 2014, p. 146). Thus, there are early indications that corporate reporting in the context of the South African environment is more broadly based than traditional financial reporting; thus, the country's sample selection – as a comparative reference – can be considered appropriate for applying Integrated Reporting practices.

Secondly, the favourable institutional environment regarding the application of Integrated Reporting in Europe and the associated coverage of non-financial information is of profound importance for selecting a European country (Gerwanski et al., 2019, p. 754; Velte & Stawinoga, 2017, p. 316). In contrast to South Africa, Germany is not a pioneer in developing, applying, and establishing Integrated Reporting. However, against the still sparse situation of such research in this environment,[17] it seems to represent a possible environment where the ideas of Integrated Reporting could sprout.

The domestic market capitalisation can also be mentioned as a further reason for the selection of the two countries. Deutsche Börse Aktiengesellschaft (Deutsche Börse AG) and Johannesburg Stock Exchange Limited (JSE) are among the leading stock exchanges in Europe, Middle East, and Africa (EMEA). While Deutsche Börse AG is this cluster's fourth largest stock exchange, JSE in South Africa ranks eighth among the leading stock exchanges in EMEA (World Federation of Exchanges, 2023). Thus, they also claim a corresponding relevance character, which is particularly important for research findings, as it also underlines the significance of the results produced in this dissertation. The gross domestic product (GDP) can be understood as a further relevance criterion. While Germany's GDP makes it the largest economy in the European Union (Eurostat, 2023), South Africa has the third-highest GDP in Africa (International Monetary Fund, 2023). Measured against the research objective of this dissertation, the two selected countries thus have an appropriate relevance in their respective markets in which they operate.

Overall and in combination, the selected samples of countries represent an exciting and promising setting to analyse the degree of Integrated Reporting in a cross-country and year-on-year context. In order to ultimately understand the institutional background of the corporate reports in the two selected countries, the respective reporting landscapes are outlined in the following chapters in a manner appropriate to the scope of the dissertation.

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[17] A detailed overview of previous research studies is given in Chapter 3.1.

2.4.2. Brief overview of corporate reporting environment in South Africa

This chapter provides a brief overview of the reporting landscape in the selected country of South Africa used for the sample.[18] In order to understand this, an insight into the history as well as into the economic situation is necessary. The economic situation in South Africa is very heterogeneous. While on the one hand, there is an uneven distribution of capital, challenges in the health system and educational deficits for parts of the population, on the other hand the country has abundant natural resources and financial wealth (Rensburg & Botha, 2014, p. 145). Regarding GDP, South Africa is the third largest nation on the African continent (International Monetary Fund, 2023).

The country's historical influence on the accounting landscape should also not be underestimated. Dutch merchants brought accounting techniques to South Africa, which were later expanded and adapted by the British colonial influence (Oberholster, 1999, p. 224; Verhoef & Van Vuuren, 2012, pp. 136–143). In addition to Colonialism, the Apartheid period from 1948 to 1991 also represents a major influencing factor.[19] One of the major activities related to the Anti-Apartheid Movement was the Divestment Movement of the United States of America (Arnold & Hammond, 1994), under which many (institutional) investors withdrew from companies operating in South Africa. The Apartheid system thus constituted an obstacle for companies to operate commercially in South Africa and to invest capital (van Staden, 2003, p. 233). After the first post-Apartheid democratic elections in April 1994, the African National Congress, elected as the governing party, enacted laws to strengthen workers' rights (Cahan & Van Staden, 2009, pp. 44–45; Catchpowle & Cooper, 1999, pp. 719–723). Such legislation, in turn, strengthened and increased the importance of unions (Jamerson, 2004, p. 41). Similarly, ethical behaviour and the need for corporate transparency became more

[18] It is not the intention of this section to outline the entire reporting landscape in South Africa. Only specific elements associated with Integrated Reporting are briefly examined.

[19] For more information and a general overview of Apartheid, see N. Clark & Worger (2016).

prominent (Druckman, 2013), leading to the establishment of the King Committee[20] and the formulation of the first King Report on Corporate Governance (King I) (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 1994; West, 2009, p. 11).

King I, which was established in 1994, paved the way for the further development of corporate reporting in South Africa (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 1994). Concepts from King I were successively transformed into binding legislation. For this reason, the King Committee developed a revision of the regulations, the King Report on Corporate Governance for South Africa 2002 (King II). The first requirements and principles for reporting have already been disclosed in this report, such as the principle of clarity (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2002, p. 36) and addressing the publication of non-financial aspects that relate in particular to sustainability or stakeholders (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2002, p. 35). In 2009, King III was published, prescribing the application of Integrated Reporting (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2009b, pp. 108–109). It should be noted that both financial and sustainability-related information need to be published in the same report (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2009b, pp. 13–14). Finally, the King IV Report on Corporate Governance for South Africa 2016 (King IV) was issued and is intended to make it accessible to all types of entities to apply the regulations (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2016).

The King regulations have in common that, in addition to the provisions for adequate corporate governance, they also contain background information and recommendations for established practices. Whereas King I and King II were directed only at selected companies (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 1994, pp. 31–32, 2002, p. 20), King III is

[20] Established in July 1993, the committee was named for its lead person former Supreme Court Justice Mervyn E. King (Stewart, 2010).

directed at all companies under the apply-or-explain approach[21] (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2009b, pp. 17–18). King IV, published in November 2016, revised the previous version and increased accessibility to all types of entities across sectors, as non-profit organisations, private companies, and entities in the public sector faced challenges in interpreting and applying King III (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2016, pp. 27, 35).

Because the first significant steps towards Integrated Reporting, also in closer alignment with the International Integrated Reporting Framework, have been taken within the context of King III, the following considerations of this report places greater emphasis on King III and its successor King IV. The roots of the Integrated Reporting approach can be traced back to the earlier King reports. A detailed analysis, including an evaluation of the differences and overlaps, can be found in Roberts (2011) and PricewaterhouseCoopers (2017), for example.[22] Indeed, in the context of King III, governance, strategy, and sustainability need to be viewed integrated (Stewart, 2010), and principles on the disclosure of Integrated Reporting were advised (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2009b, pp. 107–111).

King III defined an integrated report in terms of presenting a company's performance in both financial and sustainability terms. Furthermore, this report could be published in one or more documents, but preferably and truly integrated only in one report (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2009b, p. 108). King III also uses different types of capital definitions (e.g., human, monetary, social capital), but unlike the concept of the

[21] The comply-or-explain approach previously required in King II was replaced with the apply-or-explain approach of King III. The comply-or-explain approach assumes that all requirements are applied in accordance with the regulation. The apply-or-explain approach evaluates the application of individual requirements on a case-by-case basis (Walker & Meiring, 2010, p. 36).

[22] This dissertation does not include a dedicated analysis of the overlaps and differences, as it does not add any value to the research results and the scope. The firm observations examined in the sample of this thesis were all made after the publication of the Consultation Draft of the International Integrated Reporting Framework in April 2013.

International Integrated Reporting Council, it does not provide a structured taxonomy. The reporting principles and contents are equally unstructured but indicate that the company's activities' positive and negative aspects must be reported (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2009a, p. 49). The information should be complete, timely, relevant, accurate, honest, accessible, comparable to the past, and forward-looking to a certain extent (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2009b, p. 109).

Furthermore, this report is subject to a stakeholder-inclusive perspective. Accordingly, the interests and requirements of all stakeholders should be satisfied (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2009b, p. 13). Thus, the integrated report must also disclose stakeholder management, including, where appropriate, identifying stakeholder groups and the nature and outcome of each relationship (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2009a, p. 47).

In the context of the triad of principles, content, and stakeholder orientation, companies should report on their strategies for achieving their economic, social, and environmental performance in order to satisfy and adequately meet stakeholder requirements (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2009b, p. 108). This should enable the addressees to recognise the enterprise value and the value creation potential of the company. In addition, the orientation aims to improve the assessment of possible risks and the negative and positive effects of the company's activities (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2009b, p. 109).

More detailed, but not legally binding, elaboration on Integrated Reporting came from the discussion paper on Integrated Reporting published by the Integrated Reporting Committee of South Africa in 2011. This paper highlights various principles and elements and outlined how the introduction of the integrated approach could succeed. In contrast to King III, which primarily proclaim a link between financial reporting and sustainability reporting, the discussion paper emphasises allowing the addressees to assess the company's ability to create value (Integrated Reporting Committee of South Africa, 2011, pp.

6–7). In analogy to the International Integrated Reporting Framework, it underlines the importance of the holistic reporting approach. While the reporting principles sometimes diverge considerably, the content requirements for the integrated report show a corresponding similarity. However, a high degree of congruence is not unexpected given that Integrated Reporting Committee of South Africa and the International Integrated Reporting Council have worked together, and Mervyn E. King chaired both the King Committee and the International Integrated Reporting Council.

In the context of the changing environment and the resulting shifts in the corporate environment, King IV was published in 2016 (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2016). The philosophical underpinnings of King IV do not differ significantly from those of King III but have been further developed and refined (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2016, p. 23). It is based on the fundamental idea that organisations are an integral part of society and, therefore, have certain rights and obligations towards society and the environment they must fulfil. In this context, Integrated Thinking and stakeholder inclusivity are decisive for Integrated Reporting. This is reflected in the increasing importance of information connectivity and the inclusion of stakeholders in determining key aspects. This is the only way to successively curb siloed reporting and take further significant steps towards holistic Integrated Reporting (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2016, pp. 5, 23). The differences between King IV and its predecessors lie in that it is now more accessible to users and includes a broader target group, thanks to corresponding modifications. The range of different sectors and organisational types is given more significant consideration (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2016, pp. 27, 74–117). In addition, the apply-or-explain approach of King III (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2009b, pp. 17–18) is replaced by an apply-and-explain approach (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2016, pp. 7, 27, 37). In this context, the seventy-five principles of King III set were reduced to seventeen basic principles. On the one hand, this is intended to enable stakeholders to understand the company better and, on the other hand, to perceive applying the principles not merely as a compliance task but to deal intensively with the issues (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2016, pp. 7, 37). King IV also cites the International Integrated Reporting Framework as a guideline for preparing an integrated report. The Integrated Reporting Committee of South Africa confirms this framework as good practice (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2016, p. 28).

In addition, there are other overarching reporting requirements for companies in South Africa. The Companies Act, which is binding by law in South Africa stipulates that all companies, except for those of minor public interest, must apply IFRS in their financial reporting (Companies Act 71 of 2008, 2008, Section 29, Paragraph 5b). The Companies Act 71 of 2008 is intended, in particular, to ensure the formation, registration, organisation and administration of companies doing business in South Africa. In addition, it is also intended – among many other things – to clarify the relationships between companies, shareholders, and directors. In addition to general framework parameters for financial reporting, specifications are made regarding specific content and disclosure (South African Government, 2008).

Moreover, companies are required to comply with the JSE listing requirements when they want to be listed at JSE (Johannesburg Stock Exchange Limited, 2022, Section 1.2). In addition to legal and governance-related criteria, a variety of other information must be provided in this context. Section 8.60 as well as Section 8.61 describes the minimum requirements and content of annual financial statements and management reports. In this context, it is also required to provide the application and implementation of the King regulations with the corresponding reasons (Johannesburg Stock Exchange Limited, 2022, Section 8.62(a)).

It can thus be assumed that many regulations determine the reporting landscape in South Africa. It is noticeable that the government does not exclusively issue these regulations; they are also determined by private institutions such as the King Committee, the JSE, or the Integrated Reporting Committee of South Africa. To sum up, even though King III already required Integrated Reporting, and the JSE listing requirements, in turn, require listed companies to apply King III or even to state the reasons for not applying them, there was a lack of concrete application guidelines for Integrated Reporting. Although King III contained some explanations on Integrated Reporting (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2009b, pp. 107–111), they are very general and brief. It is also critical to note that King III sees Integrated Reporting as a combination of financial and sustainability reporting, whereas the International Integrated Reporting Council takes a broader view on value creation.[23] First steps for the concretisation regarding application and introduction were created by the discussion paper of the Integrated Reporting Council of South Africa. After the International Integrated Reporting Council published its International Integrated Reporting Framework in December 2013,[24] this became the definitive guidance for Integrated Reporting in South Africa (Integrated Reporting Committee of South Africa, 2018, pp. 1–2). Against institutional and personnel interdependencies in establishing some regulations, a similarity to the final International Integrated Reporting Framework was to be expected. It is, therefore, only logical that South Africa plays a pioneering role in Integrated Reporting. These fundamentals are continued and manifested in King IV. In particular, the focus here is on the applicability of the regulations for all organisations regardless of their sector. The Integrated Thinking approach, awareness of the organisation's role in society and the environment and increased stakeholder inclusivity are essential in this regard (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2016, p. 23).

[23] The definition and objectives of Integrated Reporting according to the International Integrated Reporting Council can be found in Chapter 2.3.

[24] The historical development and increase in importance of Integrated Reporting according to the International Integrated Reporting Council can be found in Chapter 2.2.2.

2.4.3. Brief overview of corporate reporting environment in Germany

This chapter better delineates the institutional framework of corporate reporting in Germany. [25] Since narrative disclosures are of particular importance for the dissertation's research purpose in the context of content analysis, management reporting in Germany will be evaluated in particular and accentuated in the following.

The relative importance of capital markets, measured by the average market capitalisation of listed companies in relation to GDP, is at 45.6 per cent in Germany for the year 2022 (CEIC, 2023), which underlines the subordinate role of the capital market. Even though there has been an increasing trend in recent years toward institutional investors playing a more critical role (Witt, 2003, p. 80), the high concentration of ownership is another characteristic of the German capital market (Benston et al., 2006, p. 110). Given these two circumstances, it can be concluded that strategic interests on the part of several company stakeholders are considered and not exclusively shareholder-driven (Vitols, 2001, p. 343). The company often pursues short-term objectives such as profitability or share price, and they tend to be given a subordinate role (Vitols, 2001, pp. 351–352).

This is also reflected in the German corporate governance system, which has a firm stakeholder orientation, as various stakeholders have a voice in corporate decision-making (Bottenberg et al., 2017, p. 166; Vitols, 2001, p. 338). As a result, corporate practice tends to be long-term oriented, considering various stakeholder groups' concerns, interests, and needs (Vitols, 2001, p. 341).

Lastly, banks play a significant role in the German economy, as companies generally base their financing on retained earnings or bank loans (Benston et al., 2006, p. 110). Against this background, the main purpose of annual financial statements in the past has been to protect creditors and is based less on the interests of shareholders (Benston et al., 2006, p. 107).

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[25] It is not the intention of this section to outline the entire reporting landscape in Germany. Only specific elements associated with Integrated Reporting are briefly examined.

As mentioned, national accounting standards in Germany [26] have traditionally been geared to the interests of creditors and are therefore subject to the principle of prudence, as the focus is on their need for protection. In addition, such financial statements tend to be characterised by a lower level of disclosure and discretionary scope (Gross, 2016; Haller, 1992, 2003; Haller & Walton, 2003, p. 8). Since 2015, companies whose debt and equity securities can be traded on a regulated market must disclose their consolidated financial statements following IFRS under the European regulation on applying international accounting standards (European Communities, 2002; Gassen & Sellhorn, 2006, p. 365). National accounting reforms, including the Accounting Law Modernisation Act[27] of 2009 and Accounting Directive Implementation Act[28] of 2015 have increased the congruence between national accounting requirements and IFRS (Gross, 2016, p. 424).

For corporations[29], the obligation to prepare annual financial statements and the scope of the information to be published depends significantly on the company's size. This classification criterion is regulated in Section 267 and Section 267a HGB by differentiating according to the size of the company and defining the respective thresholds. In addition, Section 267 (3) HGB stipulates that capital market-oriented corporations are categorised as large corporations. Following Section 242 HGB, large corporations must prepare annual financial statements consisting of a balance sheet and an income statement. In addition, they must supplement these financial statements with notes and a management report according to Section 267 HGB. In principle, the notes contain supplementary information on the individual balance sheet and income statement items. The detailed requirements for the notes are defined in Section 284 HGB. However, Section 289 HGB and Section 315 HGB regulate the requirements of the

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[26] The German Commercial Code is named *Handelsgesetzbuch (HGB)* (Bundesministerium der Justiz & Bundesamt für Justiz, 2023).

[27] The Accounting Law Modernisation Act is named *Bilanzrechtsmodernisierungsgesetz* (Bundesministerium der Justiz, 2009).

[28] The Accountig Directive Implementation Act is named *Bilanzrichtlinie-Umsetzungsgesetz* (Bundesministerium der Justiz, 2015).

[29] In this context, cooporations are named *Kapitalgesellschaften*.

management report, which are further specified by the German Accounting Standard (GAS)[30] 20 group management report[31]. This standard had to be observed for the first time for financial years beginning after 31 December 2012 (Bundesministerium der Justiz, 2012, p. 23).

For the content analysis to be carried out in this dissertation, the management report, according to GAS 20, is of essential importance. According to GAS 20.3, the main objective of group management reporting is to disclose on the use of resources to provide the addressees of the report with information on the course of business in the current situation and future development, taking into account opportunities and risks. According to GAS 20.12-20.35, the preparation of the group management report is based on six principles,[32] which can be taken from Figure 10.

Figure 10. Principles of group management reporting according to GAS 20

- **Completeness**
- **Reliability and balance**
- **Clarity and transparency**
- **Communication of the group management's view**
- **Materiality**
- **Information levels**

Principles of group management reporting according to GAS 20

Author's elaboration

Figure 10 reveals similarities between the six principles of GAS 20 and the Guiding Principles of the International Integrated Reporting Framework, which are explicitly explained in Chapter 2.3.3.

[30] The German Accounting Standard (GAS) is named *Deutscher Rechnungslegungsstandard (DRS)* (Bundesministerium der Justiz, 2012).

[31] The group management report is named *Konzernlagebericht* (Bundesministerium der Justiz, 2012).

[32] For a further discussion of the principles see Müller & Stawinoga (2013), pp. 25–38.

The following Figure 11 summarises the content-related criteria for group management reporting following GAS 20 and the underlying regulations according to Section 289 HGB and Section 315 HGB.[33] It is clear from Figure 11 that there are also overlaps with the content requirements for an integrated report postulated in the International Integrated Reporting Framework,[34] which has been presented in Chapter 2.3.4.

[33] For a detailed discussion of the content requirements see Winkeljohann et al. (2013), pp. 55–268. In addition, Müller et al. (2013) also present the content requirements in their editorial volume within the framework of various authorships on pp. 39–422.

[34] For a detailed analysis and comparison see Behncke et al. (2012), p. 3064 or Wulf et al. (2014), pp. 148–155.

Figure 11. Content Requirements of group management reporting according to GAS 20

- **Fundamentals of the group**
  including business model, objectives, strategies, management system, research and development
- **Economic report**
  including macro und sector-specific environment, net assets, financial position, and results of operations, financial and non-financial key performance indicators
- **Supplementary report**
- **Forecast, opportunities and risk report**
- **Internal control system and risk management system in relation to the group accounting process**
- **Risk reporting in relation to the use of financial instruments**
- **Takeover-related disclosure**
- **Statement to corporate governance**
- **Responsibility statement by the legal representatives**

Content Requirements of group management reporting according to GAS 20

Author's elaboration

Of further importance is the NFRD, which was transformed into German law by the CSR Implementation Act[35]. As can be seen from GAS 20, non-financial information had to be published even before the NFRD was introduced into

[35] The CSR Implementation Act is named *CSR-Richtlinie-Umsetzungsgesetz (CSR-RUG)* (Bundesministerium der Justiz & Bundesamt für Justiz, 2017).

German law. The CSR-RUG amends Section 289 HGB and Section 315 HGB and introduced Sections 289a to 289e HGB and 315a to 315d HGB. As a result, the German Amendment Accounting Standard (GAAS) 8 amends GAS 20 (Deutsches Rechnungslegungs Standards Committee e.V., 2017). Thus, for certain publicly listed entities and their fiscal years beginning on or after 01 January 2017, the publication of a non-financial statement was mandatory according to Section 289b HGB (Pfeifer & Wulf, 2017, p. 181). This obligation is to be interpreted in the context of a comply-or-explain approach (Kajüter, 2017, p. 621), following Section 289c (4) HGB. The non-financial (group) statement is to include a description of the business model following Section 289c HGB, as referred to in Section 315c HGB, which covers the following elements under Section 289c (2) HGB: environmental matters, employee matters, social matters, respect for human rights as well as anti-corruption and bribery matters.

According to Section 289c (3) HGB, the information shall be prepared so that it is possible to assess the development of the company's performance, the economic situation, and the impact of the company's activities. Under Section 289b HGB, the non-financial statement may be published as part of the management report, separately as part of the annual report or, under certain circumstances, separately online.

A fundamental aspect of significant relevance to this dissertation and sample selection can be identified in Section 289d HGB. According to this, companies can use either national, European, or international frameworks to prepare the non-financial statement. Therefore, this opens the space for companies to choose to apply Integrated Reporting on the basis of the International Integrated Reporting Framework to meet the legal requirements.

Furthermore, Deutsche Börse AG, which operates the Frankfurt Stock Exchange, imposes extended disclosure requirements on companies listed in the Prime Standard, including the companies in the sample of this dissertation. These comprise the publication of quarterly reports, the holding of at least one analyst event per year and the disclosure of any necessary ad hoc announcements in English (Deutsche Börse AG, 2023).

The following can be summarised regarding the relevance of these explanations to this dissertation. Studies find that information, especially discretionary information, is higher in market-based financial systems than in bank-based financial systems,[36] such as Germany. Since credit institutions in Germany have access to comprehensive corporate information, the need or requirement for voluntary, public disclosures tends to be less pronounced (Ali & Hwang, 2000, p. 2). The controlling shareholders characteristic of the German corporate market are also less dependent on public disclosures since they often receive their information directly from the company. However, this is also countered by arguments about why the liberal application of Integrated Reporting could be significant for the German reporting landscape. In the context of the shareholders mentioned above, their co-determination and sometimes the corresponding ownership concentration could migrate to a strategic interest beyond pure short-term profit maximisation. This line of argument leads to the conclusion that in countries where the focus is not exclusively on the shareholder, including its more short-term-motivated target dimensions, but instead on several stakeholder groups, the implementation and application of Integrated Reporting finds a more favourable framework. Furthermore, it can be seen that Germany mandated the disclosure of specific nonfinancial information and aspects in the management report before the NFRD was transposed into German law within the context of GAS 20. While this does not explicitly impose the use of the International Integrated Reporting Framework, it finally opens the possibility of increasing the publication of such information and thus provides a breeding ground for Integrated Reporting to spread further.

[36] Ali & Hwang (2000) refer to previous studies that consider the value relevance of accounting data in bank-oriented and market-oriented financial systems. Jensen & Berg (2012, p. 310) have shown that integrated reports are more likely to be published in countries with a higher level of market orientation.

2.5. SUMMARY OF THE THEORETICAL CONTEXT AND CONCEPTUAL DELIMITATION

The second chapter aims to provide the theoretical context and the conceptual, definitional delimitation of the dissertation. To this end, the usefulness of information for decision-making was first discussed. It became clear that a suitable instrument is needed to counter the increasing information overload and the growing number of different types of company reports. This seems more necessary than ever, as the original purpose of reporting – namely, reducing prevailing information asymmetry – is becoming increasingly difficult to achieve. Companies are, therefore, under increasing pressure to take the interests and needs of stakeholders adequately into account.

The integrated approach is discussed as a possible solution in this context. Integrated Thinking is first presented as a guiding maxim of normative management. At the centre of the considerations is an integrated and holistic view of business activities and processes to achieve efficiency and sustainability goals. Ultimately, Integrated Thinking should help to improve decision-making processes and thus also intensify the fulfilment of stakeholder needs. Integrated Thinking and Integrated Reporting can be characterised as inseparable and interwoven.

In order to fully understand Integrated Reporting, the increasing importance and development of institutionalised Integrated Reporting is then examined in more detail. Conceptually, the history can be divided into four successive phases, which ultimately lead to the formulation of the International Integrated Reporting Framework. Building on this, the International Integrated Reporting Framework and the basic terminology are described. It is crucial to diagnose the interrelationships between the three Fundamental Concepts, the seven Guiding Principles and the eight Content Elements. The full potential benefits of Integrated Reporting can only be realised if the individual components are in a balanced and symbiotic relationship with each other.

The potential benefits and obstacles of implementing Integrated Reporting are analysed and evaluated from multiple perspectives within a critical discussion. The benefits of implementation emphasise the assumption that Integrated Reporting can be understood as a holistic management tool.

Afterwards, the Integrated Reporting approach is classified into the existing reporting landscape. Here, it becomes clear that there are arguments in favour of assigning it to a further development of original financial reporting and that it can also be understood as a further development of sustainability reporting. Referring to the initial basic ideas of Integrated Reporting, it is suggested that simultaneous consideration of financial and non-financial information to evaluate the company's ability to create value is the best way to capture the characteristics of Integrated Reporting.

Finally, this chapter briefly examines both the motivation for the selection of countries for the study and the respective corporate reporting environments. It then becomes clear that South Africa can be regarded as a pioneer of Integrated Reporting. It has a long history in the South African corporate reporting environment and has already been established as an essential component. In Germany, the use of Integrated Reporting is still lagging. Nevertheless, financial and non-financial information must be disclosed during the reporting process. Against this background, it will be interesting to analyse in this dissertation which changes arise in the context of voluntary and mandatory reporting.

III – COURSE OF INVESTIGATION AND RESEARCH METHODOLOGY

III - COURSE OF INVESTIGATION AND RESEARCH METHODOLOGY

3.1. THE ASSESSMENT OF INTEGRATED REPORTING – STATE OF THE ART ON PREVIOUS RESEARCH

3.1.1. General Aspects on the research of Integrated Reporting

After Integrated Reporting has already been examined in detail in Chapter 2, the following chapter evaluates the relevant literature on Integrated Reporting. Consequently, against the backdrop of diverse and growing research, it is necessary to look at the prevailing literature which is relevant to this dissertation.

It should be noted that this section of the research does not claim to be holistic or exhaustive, as this would not justify the scope of this study and would, therefore, exceed the scope of this dissertation. Nevertheless, the different literature streams of the existing research on Integrated Reporting should be given an overview here to derive the dissertation’s hypotheses in symbiosis with the theories described in the following chapters. The accentuated focus of this literature review is on the empirical research of the determinants and the economic consequences of Integrated Reporting and the associated assessment of its quality or degree.

This literature review was conducted using keyword-based, reference-based as well as abstract-based techniques. While the keyword search focuses explicitly on selected keywords, the reference-based method includes the analysis of reference lists from previous studies. The abstract-based method accentuates the substitution with the abstract of a paper to determine whether it is considered relevant (Yu & Menzies, 2019). These methods can ensure that the identified literature is up-to-date and reduce the risk of so-called citation cartels (Kornmeier, 2007, p. 117). This was followed by a structured literature review, which dealt decisively with the quality assessment of Integrated Reporting (Mock, 2023).

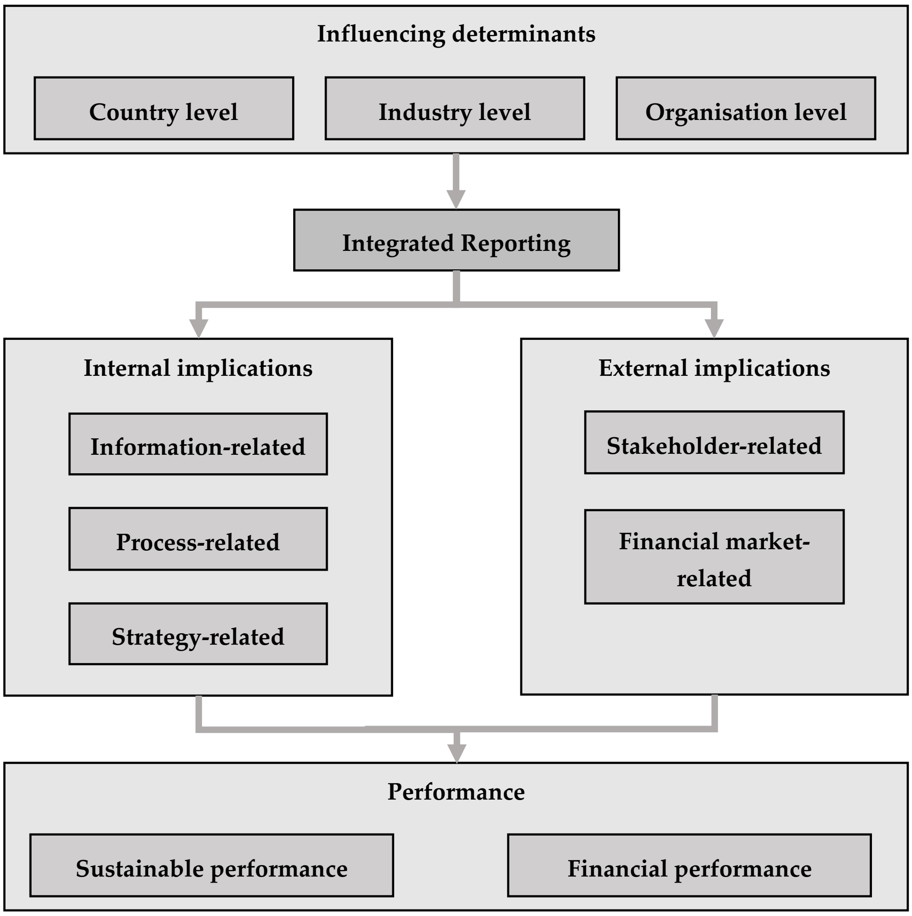
The work of Eccles & Krzus (2010) represents the impetus or initial publication in the research field of Integrated Reporting. Since Integrated Reporting is still a relatively new reporting format, scientific literature on the subject is still at an early stage (Dumay et al., 2016, p. 168; Petty & Guthrie, 2000), although the number of corresponding studies has gradually increased in recent years (Rinaldi et al., 2018, pp. 1300–1302).

Initial studies in the field of Integrated Reporting were characterised by the presentation of the various bodies and stakeholders involved in participating in the International Integrated Reporting Framework (Rinaldi et al., 2018, p. 1295). With the first publication of the International Integrated Reporting Framework in December 2013, normative and theoretical studies began to discuss the role and objectives of the underlying concept (Berndt et al., 2014; Brown & Dillard, 2014; Cheng et al., 2014; Coulson et al., 2015; Haller & van Staden, 2014; Rowbottom & Locke, 2016; van Bommel, 2014). In particular, the differentiation from other sustainability reporting formats and the critical examination of this topic was the focus of theoretical and normative research considerations.

With the increasing importance and establishment of the reporting format, the content and form of integrated reports were gradually scrutinised. The initial focus was on companies listed on the JSE in South Africa, which had to prepare an integrated report based on the comply-or-explain approach (Haji & Anifowose, 2016; Makiwane & Padia, 2013; Setia et al., 2015). However, some studies also found that Integrated Reporting was seen as a compliance exercise rather than a way of achieving holistic reporting (Clayton et al., 2015, p. 15; Marx & Mohammadali-Haji, 2014, p. 244). A variety of different Integrated Reporting practices were also identified (Clayton et al., 2015; Haji & Anifowose, 2016; Lee & Yeo, 2016; Marx & Mohammadali-Haji, 2014; Zhou et al., 2017). In this context, the study of Integrated Reporting with international samples in specific countries increased (Eccles et al., 2019; Ghosh, 2019; Kılıç & Kuzey, 2018; Liu et al., 2019; Stent & Dowler, 2015).

Subsequently, the already existing literature was enriched by empirical research, which elaborates on the motivators and effects of Integrated Reporting (Kannenberg & Schreck, 2019, p. 517; Vitolla, Raimo, & Rubino, 2019a, pp. 519–520). Figure 12 summarises the classifications of research on Integrated Reporting and is based on the considerations of Kannenberg & Schreck, (2019, p. 523).

Figure 12. Classification of research on Integrated Reporting



Author's elaboration adapted from Kannenberg & Schreck (2019), p. 523

3.1.2. State of research on the determinants of Integrated Reporting

Regarding the determinants and motivating factors, it can be noted that these appear at the country, industry, or organisation level (Kannenberg & Schreck (2019), p. 523). In one of the first studies to look at the determinants of Integrated Reporting at the country level, the authors of the study conclude that the decision to implement Integrated Reporting is based on investor and labour protection laws, the level of market orientation and ownership concentration, the degree of economic, environmental, and social development, the extent of national corporate responsibility and the value system of the country of origin (Jensen & Berg, 2012, p. 299). In addition, companies operating in countries with comparable cultural systems are found to have homogeneous patterns for implementing and applying Integrated Reporting (García-Sánchez et al., 2013, p. 835). However, Jensen & Berg (2012) found no significance that the country's legal system influences the implementation of Integrated Reporting. Nevertheless, it has been researched that companies headquartered in civil law countries may be assumed to have a higher probability of disclosing Integrated Reporting (Frías-Aceituno, Rodríguez-Ariza, et al., 2013, pp. 45–48). Vitolla, Raimo, Rubino et al. (2020) underline the significant relationship between a country's legal system and the disclosed Integrated Reporting quality at the level of financial institutions (Vitolla, Raimo, Rubino, et al., 2020, p. 434). Similar to García- Sánchez et al. (2013), the results of Vaz et al. (2016) indicate that in countries where the common good is considered essential, in collectivist countries, the probability of publishing an integrated report increases (Vaz et al., 2016, p. 587). Vena et al. (2020) also note that the national cultural context significantly influences Integrated Reporting. Integrated Reporting is expected to have positively impact on countries with a low power distance and collective values (Vena et al., 2020, p. 1).

Overall, and nevertheless, it can be seen that the results are ambiguous and even partially ambivalent for country-specific levels. There is, thus, an urgent need for a better understanding of institutional factors in the context of the voluntary application of Integrated Reporting (Vitolla, Raimo, & Rubino, 2019a, p. 519). The research design of this dissertation is intended to address this and to provide an extension of scientific research in this area.

In addition, various studies exist at the industry and organisation level. In addition to country-specific determinants, García-Sánchez et al. (2013) also examine factors influencing Integrated Reporting at the company level and conclude that the industry, size, and profitability correspond positively with implementing Integrated Reporting (García-Sánchez et al., 2013, p. 837). Frias-Aceituno et al. (2014) can partially confirm these results and indicate that a positive influence of company size and profitability on the likelihood of implementing Integrated Reporting pays off. However, they cannot identify indications of the industry's effect. Another finding is that companies in monopolistic environments are less willing and ready to publish integrated reports (Frías-Aceituno et al., 2014, pp. 67–68). Similarly, Sierra-García et al. (2015) and Frias-Aceituno, Rodriguez-Ariza, et al. (2013) identify positive influencing factors. While the former study finds that the publication of an integrated report is positively linked to assurance, year, and size (Sierra-García et al., 2015, p. 291), the latter study concludes that board size and board gender diversity, as well as firm size and growth opportunities, have a significant impact on the adoption of Integrated Reporting (Frías-Aceituno, Rodriguez-Ariza, et al., 2013, pp. 226–227). Also, in the context of company-level determinants, it is evident that the results are sometimes ambiguous, as Vaz et al. (2016), for example, discover no evidence that specific company characteristics contribute to decision-making on adopting Integrated Reporting (Vaz et al., 2016, p. 587). In analogy to the country-level determinants, the industry and organisation-level determinants also provide a mixed picture of results.

Research regarding the determinants associated with Integrated Reporting quality assessment is relatively sparse. Melloni, (2015) uses textual analysis and Integrated Reporting tonality as a proxy for quality of integrated reports and examines company characteristics to determine the extent to which they influence the Integrated Reporting tone index. The study signals that companies report in an integrated manner to distract from declining rentability and to mitigate externally determined pressures (Melloni, 2015, p. 676). For example, Gerwanski et al. (2019) examine the effect of specific characteristics on materiality disclosure quality within the disclosure of integrated reports. According to their results, there is a relationship between materiality disclosure quality, learning effects, the assurance of non-financial information, and gender diversity (Gerwanski et al., 2019, p. 750). Several studies use the scoreboard Pistoni et al. (2018) developed to assess Integrated Reporting quality determinants. Vitolla, Raimo, & Rubino (2020) accentuate different board characteristics in the context of Integrated Reporting quality. They identify positive and significant influences on Integrated Reporting quality in terms of board size, board independence, board diversity, and board activity. In their study, Vitolla, Raimo, Rubino, et al. (2020) examine the financial and country-specific determinants of financial institutions. They find a positive relationship between profitability, firm size, leverage, the country’s civil law system and the quality of disclosed integrated information (Vitolla, Raimo, Rubino, et al., 2020, p. 429).

It is noticeable that there are several (structured) literature reviews in the research field of Integrated Reporting in general (Cheng et al., 2014; de Villiers et al., 2014; de Villiers, Hsiao, et al., 2017; de Villiers, Venter, et al., 2017; Dumay et al., 2016; Kannenberg & Schreck, 2019; Oll & Rommerskirchen, 2018; Rinaldi et al., 2018; Velte, 2022a; Velte & Stawinoga, 2017; Veltri & Silvestri, 2020; Vitolla, Raimo, & Rubino, 2019a), but less related to the assessment of Integrated Reporting.

Against the background of these potentials, Mock (2023) examined the quality assessment of Integrated Reporting and its determinants with the help of a structured literature review[37]. This study, which covers a period from 2013 to 2021, shows that, particularly from 2019 onwards, there was a sharp increase in publications concerning the quality assessment of Integrated Reporting. From 2020 onwards, this is also reflected in a noteworthy increase in citations. This, in turn, is due, on the one hand, to the fact that the reporting format first had to establish itself to be subject to a quality assessment. On the other hand, it also shows that the relevance of the research field continues to increase. The fact that only a limited number of publications could be identified again shows the necessity of related research to close any research gaps and derive corresponding practical implications for business practice.

3.1.3. State of research on the implications of Integrated Reporting

The effects of Integrated Reporting can be both internally and externally induced (Kannenberg & Schreck, 2019, p. 523). Thus, studies that focus on the impact of Integrated Reporting on the reporting company prioritise interviews, surveys, and case studies to gain insight into the approach of Integrated Thinking and the implementation of Integrated Reporting. In this context, studies have been

[37] A structured literature review provides insights into a still emerging field of research (Bracci et al., 2019, p. 104; Dumay et al., 2016, p. 168; Massaro et al., 2016, pp. 769–770). Due to the dedicated approach, a structured literature review provides high-quality results and is essential for developing an evidence base (Cook et al., 1997; Tranfield et al., 2003, p. 209).

conducted in particular on the changes brought associated with introducing Integrated Reporting (e.g., Havlová, 2015) or on the motives and internal mechanisms for establishing Integrated Reporting and how stakeholders have promoted this application accordingly (e.g., Gatti et al., 2018; Lodhia, 2015; Lueg et al., 2016; Macias & Farfan-Lievano, 2017; Stubbs & Higgins, 2014; Vorster & Marais, 2015). Nevertheless, other research studies have emphasised the interdependencies between Integrated Reporting, Integrated Thinking, and the necessary internal processes (e.g., Al-Htaybat & von Alberti-Alhtaybat, 2018; Chiucchi et al., 2018; Esch et al., 2019; Feng et al., 2017; Guthrie et al., 2017; Higgins et al., 2014). Finally, studies have also examined the challenges and hurdles that can arise when introducing Integrated Reporting and implementing the International Integrated Reporting Framework (e.g., Bernardi, 2020; Dumay et al., 2017; McNally et al., 2017; Perego et al., 2016). The external perspective, ergo the effects of Integrated Reporting on the behaviour of other market participants and stakeholders, is essentially based on research conducted as part of archival studies. These studies focus primarily on the relationship between Integrated Reporting and its degree of correlation with various economic indicators, which can be subsumed under enterprise value, corporate performance, cost of capital and liquidity (de Villiers, Venter, et al., 2017, pp. 951–952).

As presented several times and presumable against the background of the prevailing reporting practice in South Africa, many studies investigate the impact of Integrated Reporting use South African data. The work of Lee & Yeo (2016) can be regarded as a first leading study. The Integrated Reporting score that they construct is intended to reflect the degree of compliance with published information and the International Integrated Reporting Framework. Although there is a mandatory nature to the application of Integrated Reporting for companies listed on the JSE, they found only a moderate level of accordance, which they attribute to the principle-based approach of the framework. Nevertheless, they conclude that the benefits of Integrated Reporting compensate the average implementation costs. In this context, the effects are stronger the higher the organisational complexity and the higher the financing requirements (Lee & Yeo, 2016, p. 1244). In their analysis, Zhou et al. (2017) found that companies listed on the JSE have an increasing but relatively low level of Integrated Reporting, the basis of which they suspect to be mainly in the early stages of adopting the relevant reporting format (Zhou et al., 2017, p. 109). According to their analysis, a higher level of congruence of South African companies' reports with the International Integrated Reporting Framework is related with lower cost of equity and less analyst forecast error (Zhou et al., 2017, p. 123). M. E. Barth et al. (2017) indicate that a higher Integrated Reporting level positively relates to liquidity and future cash flows. However, in contrast to Zhou et al. (2017), they do not identify any statistically significant correlations between the quality of Integrated Reporting and the cost of capital in their data analysis. In the context of market sensitivity, Cosma et al. (2018) find that the capital market responds positively to finalists and winners of so-called Integrated Reporting competitions and that a high level of Integrated Reporting affects firm value (Cosma et al., 2018, p. 78).

Beyond the borders of South Africa, there are also archival studies, albeit fewer, which could sometimes be due to the sample selection proving to be challenging. Existing databases such as the Integrated Reporting Examples Database, the GRI Sustainability Disclosure Database, the Corporate Register or the International Integrated Reporting Council Pilot Programme are then used to draw appropriate samples but may not provide uniform information (Eccles et al., 2019, p. 5).

This methodological limitation of existing studies further underpins the identified research gap. In particular, companies can adopt Integrated Reporting without declaring themselves as Integrated Reporting adopters and thus appearing in one of the databases mentioned above or having participated in the International Integrated Reporting Council Pilot Programme. The research thus contributes to a more holistic view of the reporting landscape in the context of holistic and integrated reporting, creating value over the short, medium, and long term.

For example, Pavlopoulos et al. (2017) figure out that companies with a high degree of measures corresponding to Integrated Reporting engage in less profit management, have a high level of debt, and have to deal with fewer agency costs. Furthermore, a relationship with effective corporate governance mechanisms can be identified (Pavlopoulos et al., 2017, p. 42). However, their Integrated Reporting score is grounded on King III. Vena et al. (2020) see a correlation between a pronounced degree of Integrated Reporting application and the decline in the cost of capital (Vena et al., 2020, p. 191). This effect is validated by Vitolla, Salvi, Raimo, et al. (2020), who discover that not only the originating Integrated Reporting quality impact the cost of equity, but even the immediate adoption of the reporting format (Vitolla, Salvi, et al., 2020, p. 526).

Cortesi & Vena (2019) find the positive relationship between Integrated Reporting quality and earnings per share (Cortesi & Vena, 2019, p. 745). García-Sánchez & Noguera-Gámez (2017a) recognise the benefits of Integrated Reporting in lowering the cost of capital (García-Sánchez & Noguera-Gámez, 2017a, p. 972). In another analysis, based on the same datasets, they identify that the degree of Integrated Reporting can mitigate agency risks and reduce information asymmetry (García-Sánchez & Noguera-Gámez, 2017b, p. 395).

Mervelskemper & Streit (2017) identify a relationship with environmental measures. They show that higher environmental, social, and governance (ESG) performance scores are associated with the publication of standalone or integrated ESG reports (Mervelskemper & Streit, 2017, p. 546).

In contrast to previous studies, Wahl et al. (2020) spot no significant relationship between the grand of Integrated Reporting and the effects studied. They show that Integrated Reporting is neither significantly related to the accuracy of analysts' earnings prognosis nor the company value (Wahl et al., 2020, pp. 2542, 2553). Indifferent results regarding that specific impact are found by Gal & Akisik (2020). However, they identify a high impact potential of Integrated Reporting for companies with effective internal control systems and external assurance (Gal & Akisik, 2020, p. 1228).

Some studies also provide adverse outcomes of Integrated Reporting. For example, the results of Maniora (2017) indicate a negative relationship between Integrated Reporting and a company's economic as well as ESG-induced performance. She subsumes that companies cannot generate added value when switching from a sole ESG report to an integrated report (Maniora, 2017, pp. 783–784). Landau et al. (2020) project their reasoning and study to the largest companies listed in the STOXX Europe 50. In their study, they locate a negative and significant correlation between Integrated Reporting and the market value of a company, which can be mitigated by applying the GRI reporting standards (Landau et al., 2020, p. 1757).

Finally, concerning the implications of Integrated Reporting, it can be stated that most studies that include South African companies determine that market-level metrics respond positively to the degree of Integrated Reporting in corporate reports on the one hand. On the other hand, outside of South Africa, further investigation of Integrated Reporting content is needed. This appears necessary since almost no study considers companies that do not position themselves as Integrated Reporting adopters, even though they unconsciously use the International Integrated Reporting Framework and meet its content requirements without making a self-declaration, which results in bias (Jablowski, 2021, pp. 63–64).

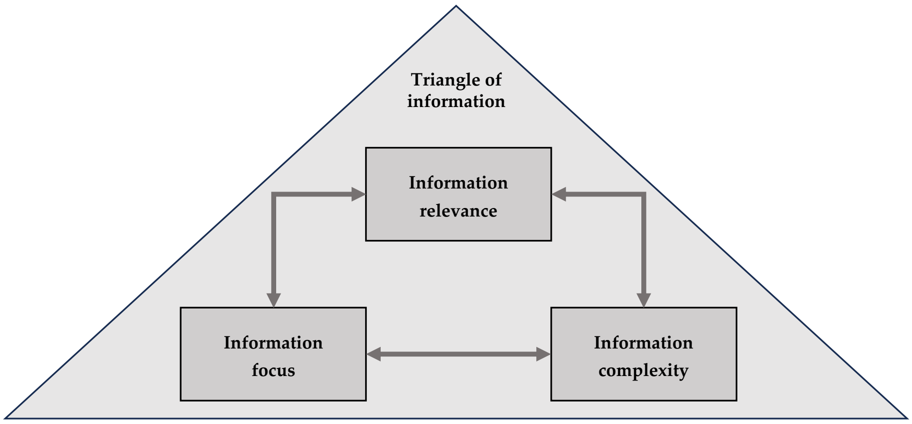
Therefore, one of the significant limitations of previous studies, outlined in the explanations above, is that they rely on existing databases that usually make a binary division between adopters and non-adopters. This limitation will be countered by not making such a binary distinction in this dissertation but by explicitly analysing corporate reports for elements of Integrated Reporting to identify the degree and mindset, regardless of their institutional status as adopters. This is expected to have a higher research benefit, as it will bring the companies' philosophy into the foreground to report in an integrated way. As a result, this contributes to the benefit of decision-making and a more efficient allocation of capital. This research design, further explained and built upon in the following sections, allows to reveal the actual implementation of voluntary, potentially integrated, and non-imposed reporting in the reporting landscape.

3.2. THEORY DERIVATION AND HYPOTHESIS DEVELOPMENT

3.2.1. The dimensions of information

The degree of quality or materiality of information is the core of Integrated Reporting. According to Krzus (2011), the information approach advocated by Vitolla, Marrone, et al. (2020) and Mishra et al. (2021) is adopted and is conceptually abstracted in order to derive the corresponding theories underlying this study. The approach, according to Krzus (2011), supplemented by a further component (namely information focus), leads to three crucial information dimensions (Mock et al., 2021, p. 78), which are presented in Figure 13.

Figure 13. Triangle of information



Author's elaboration developed from Krzus (2011)

The increasing demand and requirements of stakeholders for information emphasises the importance of information relevance. (Cortesi & Vena, 2019, p. 745; Dumay et al., 2016, p. 177). Decisive knowledge of corporate value drivers is essential for decision-making. However, such information is only partially available in traditional corporate reports (Krzus, 2011, p. 274; La Torre et al., 2018, pp. 342–343). Another need for increasing information relevance arises from the fact that intangible assets are progressively contributing to market value and taking a steadily growing share of it (Elsten & Hill, 2017, p. 245). In this respect, it is imperative that corporate reporting also provides relevant information on intangible assets to make the decision-making process more efficient for stakeholders and management (Bernardi, 2020, p. 1; Massingham et al., 2019, pp. 63–65).

This contrasts with the fact that information is becoming increasingly complex, providing less transparency and more uncertainty (Hartanto et al., 2020, p. 47). This is partly because reporting requirements are constantly increasing, either from the market or from a regulatory perspective. Furthermore, new reporting formats are constantly added, making the reporting landscape more complex. These framework conditions lead to duplications and redundancies that complicate information communication instead of reducing complexity (de Villiers et al., 2014, p. 1043). The original core idea of corporate reporting – the reduction of information asymmetry – can thus no longer be fulfilled.

Finally, it requires a look at the focus of information. To counteract the increase in redundancy and the suffering of transparency, the focus on information is becoming increasingly relevant. In general, information will have to be measured even more in the future in terms of how it contributes to value creation and what substantial added value it can provide for internal and external decision-making processes (Sriani & Agustia, 2020, p. 2).

Ultimately, the usefulness of information for decision-making is relevant. Users evaluate disclosed information in terms of its suitability for decision-making. The higher the perceived usefulness, the greater its influence on decision-making (Staubus, 1999, pp. 331–334). Against this background, published information must fulfil the requirements regarding relevance, complexity and focus to contribute to decision usefulness. It is initially irrelevant whether this is published in a mandatory or voluntary context. The voluntary publication of information represents the free choice to publish helpful information for the decision-making needs of the addressees of the company report (Meek et al., 1995, p. 555). These considerations can be traced back to Grossmann & Hart (1980) and Milgrom (1981), who assumed an information advantage on the part of management, even if the markets were efficient (Healy & Palepu, 2001, p. 420). The task of voluntary disclosure is to minimise these information asymmetries (Beyer et al., 2010, pp. 296, 300–301, 305; Hannen, 2017, p. 107; Zhou et al., 2017, p. 98).

The information dimensions explained and the motivation for voluntary disclosure must now be placed in the context of essential scientific constructs abstractly to derive the theories relevant to this study. In this context, previous archival research on Integrated Reporting includes various theories (Velte & Stawinoga, 2017). In the following chapters, the most relevant theories are analysed, and the implications for the research of this thesis are elaborated.

3.2.2. Principal Agent Theory

A key motivation for companies to disclose non-financial information is to increase their financial capital and profit. This argument is based on many relevant conceptual theories in the academic literature, which attempt to justify reasons for voluntary reporting (Camilleri, 2018, p. 569). These theories then, in turn, form the basis for deriving the research hypotheses.

The framework of the Principal Agent Theory (M. C. Jensen & Meckling, 1976) describes a relationship between two parties, namely the principals (commissions service) and an agent (provides service) (Eisenhardt, 1989, p. 58). The delegation of decision-making and acting on behalf of the principal is named an agency relationship (M. C. Jensen & Meckling, 1976, p. 308). Despite this connection, information asymmetries exist to varying degrees, sometimes leading to conflicts (Pfaff & Zweifel, 1998, p. 184; Spremann, 1990, pp. 562–563). Moreover, notwithstanding the apparently clearly regulated positioning, there may be situations in which agents feel constrained by the structures and control mechanisms imposed by their principals (Davis et al., 1997, pp. 23–24).

The imbalance of information leads to so-called agency problems. These need to be considered in detail in terms of their existence and their approach to solving them, which will now be examined in more detail below. For the principals it is difficult to evaluate the quality of the agent's performance before concluding the contract (hidden characteristics) (Picot, 1991, p. 152; Spremann, 1987, p. 11). This circumstance causes the principal only to offer the prospect of remuneration that corresponds to the average (Horsch, 2005, p. 86), which results in above-average agents discontinuing their service offer. The so-called adverse selection leads to a spiral of a continuous reduction of the quality and remuneration offered (Akerlof, 1970, p. 488). Furthermore, principals may be exposed to two types of moral hazards (Arrow, 1985, p. 38). First, agents may engage in so-called hidden actions after signing the contract (Hartmann-Wendels, 1989, p. 714). Firstly, it is possible for them, on the one hand, to use the company's resources opportunistically for their purposes or, on the other hand, to reduce their efforts, both of which would not be observable to the principal (Decker, 1994, p. 20). Secondly, it is almost impossible for the principal to check all the agent's actions to see if they are advantageous, even if they can observe the actions (Arrow, 1985, pp. 38–39; Stiglitz & Weiss, 1981, pp. 393–398), pp. 38–39; Stiglitz & Weiss, 1981, pp. 393–398).

The agency problems based on information asymmetries result to agency costs (M. C. Jensen & Meckling, 1976, p. 308). In order to solve the problems mentioned above, the principals could, on the one hand, synchronise their interests with the actions of the agents, which would lead to bonding costs. On the other hand, the principals could monitor the activities of the agents, which in turn would lead to monitoring costs. However, since the asymmetries cannot be resolved entirely and eliminated, a loss of benefit must inevitably be expected, also referred to as residual loss. The bonding costs, monitoring costs and the residual loss add to the agency costs.

Nevertheless, both parties can cushion the agency problems. The principals can significantly reduce the prevailing information asymmetry, for example, by observing the behaviour of the agent (screening) before the contract is concluded (Stiglitz, 1975) or by monitoring the agent after the contract is concluded (Göbel, 2002, p. 112). In contrast, agents can mitigate the problem of hidden characteristics by signalling their characteristics prior to contracting (Spence, 1973, p. 357). After the conclusion of the contract, they can report on their activities (Spence, 1973, p. 355).

The Principal Agent Theory explains the rationale behind voluntary disclosure of information (Chow & Wong-Boren, 1987; Cooke, 1989; Firth, 1980; Hossain et al., 1995). It is thus quite suitable for capturing the logic and rationale behind Integrated Reporting (Girella et al., 2022, p. 565). Corporate reporting, or Integrated Reporting, is regarded as an instrument of corporate management to solve the agency problems or reduce information asymmetries. This is the case when companies are aware of the value of their intellectual capital and how it contributes to the value creation process (Garanina & Dumay, 2017, p. 144). In this respect, Integrated Reporting seems to be a suitable medium since it signals to stakeholders that the company is of quality. This applies, in particular, to financial investments in the company, as it is an instrument for reducing information asymmetries prior to the conclusion of a contract. Integrated Reporting confirms the quality of the company and the factors associated with it through the value-added reporting approach (Hannen, 2017, p. 107). In the Principle Agent Theory, Integrated Reporting can thus be understood both or after the conclusion of a contract as a meaningful and efficient tool that specifically reduces prevailing information asymmetries.

3.2.3. Stewardship Theory

Within the framework of the Stewardship Theory, the intrinsic, self-motivated value orientation of an organisation is in the foreground. It describes a collectively serving model. In this case, the organisation aligns its activities with what is best for society and its environment (L. Donaldson & Davis, 1991, pp. 60–61). This is because the management of the company is not driven by individual objectives, but their motivation is to align their activities with the objectives of the principals (Davis et al., 1997, p. 21). The impact of stewardship is expressed in the form of principals benefiting from the positive impact of profits on dividends and share prices. It can thus be assumed that the action is focused on cooperation and less on defection, as this is seen as a more significant benefit for the parties. Cooperation is given a much higher focus, and activity is less geared towards defection. The theory indicates a strong correlation between successful organisations and the satisfaction of their principals or stakeholders (Camilleri, 2018, p. 570).

It can be assumed that stewards who can successfully increase an organisation's performance can also satisfy other needs of the different stakeholder groups in the long term. Pro-organisational stewards, therefore, use their motivation to maximise their corporate performance while serving and satisfying the divergent, often competing demands and interests of shareholders. According to the theory, the expected utility of this behaviour is more significant than that which could have been achieved through self-interested behaviour and action. The theory goes hand in hand with the stewards' belief that their interests are congruent with those of the company that recruited them. In this respect, pro-organisational action on their part is a logical consequence (Muth & Donaldson, 1998, p. 10).

A parallel can be drawn regarding Integrated Reporting since the International Integrated Reporting Framework reflects the presented ideal of the Stewardship Theory in parts. It encompasses a broad spectrum of interdependent interests within the stakeholder landscape, with the assumption of responsibility towards the Capitals defined therein.[38] Even recently, it was evident that disclosing information on, for example, social or environmental capital has been an almost blind spot in corporate reporting (C. A. Adams et al., 2016; CSR Europe and Global Reporting Initiative, 2017, p. 6). Reluctance to disclose this information at this stage (Ioannou & Serafeim, 2023, pp. 15, 20) can sometimes be attributed to a lack of awareness of the need to disclose such activities (Camilleri, 2015, pp. 234, 238). However, the reporting landscape has increasingly evolved towards publishing non-financial information alongside financial information. The aspiration set out in the guildeline that all stakeholders should benefit equally from the integrated report (International Integrated Reporting Council, 2021a, p. 2) is an essential feature of the Stewardship Theory. This is why the importance and relevance of Integrated Reporting can also be derived from this context.

3.2.4. Positive Accounting Theory

The Positive Accounting Theory aims to find explanations for certain accounting methods used by specific companies (Watts & Zimmerman, 1986, p. 7). As a basis, it is assumed that the operating parties act in their respective self-interest, in case it maximises their utility (Deegan & Unerman, 2011, p. 256). The theory attempts to explain this in the relationships between the parties providing resources. In this context, the enterprise is described as an interweaving of many agency-contract relationships (Deegan & Unerman, 2011, p. 265). The Positive Accounting Theory is based on three hypotheses: the bonus hypothesis, the debt hypothesis, and the political cost hypothesis.

Based on the bonding costs associated with reducing agency problems, the bonus hypothesis states that variable compensation binds management to firm performance. The bonus is paid when the company's interests align with the owners' interests (Deegan & Unerman, 2011, p. 277). This, in turn, leads to the fact that under benefit maximisation aspects, i.e., the personal remuneration of the management, is accompanied by a congruence increase and an increase in the

[38] The Capitals, according to the International Integrated Reporting Framework, are outlined in Chapter 2.3.2.

company's performance (Healy, 1985). A change in accounting models or the implementation of a new reporting format, such as Integrated Reporting, could also influence the bonus payments of management, provided that a corresponding change in performance is to be expected (Deegan & Unerman, 2011, p. 279).

The debt hypothesis assumes that accounting and the corresponding reporting can be determined in two ways by raising debt capital. The relationship between the company management and the debt capital providers can also be interpreted as an agency relationship. The debt provider can be seen as the principal and the management as the agent. The logical consequence is that the debt capital providers are not interested in the company undertaking risky activities, as credit risk is inherent to them. In addition to agreeing covenants, conditions can be imposed on accounting and reporting methods. For example, one possibility in this context would be the implicit use of conservative accounting approaches to achieve the intended aims (Zhang, 2008, pp. 29–31). However, this effect can also have a counteracting effect. If the company is at risk of violating covenants, the incentive for management is to present the company as positively as possible.

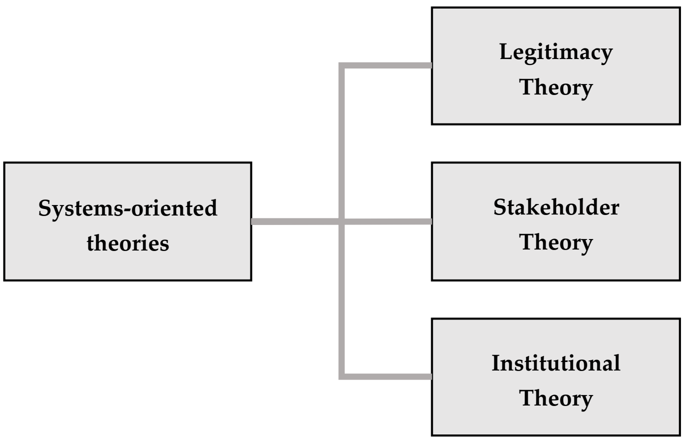
Furthermore, the political cost hypothesis must be considered. The stakeholders of a company also include political parties, trade unions, associations, and other external interest groups. The unique feature associated with these stakeholders is that they can influence the company even without a contractual connection to it. For example, they can influence the company's results by changing taxes, adjusting wage structures through collective agreements, or distributing subsidies (Watts & Zimmerman, 1978, pp. 115–116). This is particularly the case for large or politically sensitive companies. The company's reaction may be to keep profits as low as possible or to change its image to reduce external political influence (Watts & Zimmerman, 1978, pp. 115–121). Dealing with the outcomes of corporate activities, i.e., in a broader sense dealing with sustainability and the corresponding considerations in management, can represent such a confrontation with the external impact. It does not matter whether it is intrinsically or extrinsically motivated. However, it can be assumed that the increasing political pressure could favour and thus expect the use of Integrated Reporting.

3.2.5. Systems-oriented theories

3.2.5.1. General remarks to systems-oriented theories

Within the framework of systems-oriented theories, an attempt is made to answer why companies provide certain information. It, therefore, has a similar focus as the Positive Accounting Theory described earlier. The Positive Accounting Theory and the system-oriented theories assume that an organisation and the society or environment in which it operates form a system characterised by reciprocal influences and interdependencies (Deegan & Unerman, 2011, p. 321). Concerning the system-oriented view, the importance and relevance of information and its disclosure between the organisation, the social environment in which it operates, and the company-specific interest groups are brought into focus (R. Gray et al., 1996, p. 45). Legitimacy Theory, Stakeholder Theory and Institutional Theory can be subsumed as systems-oriented theories, which is shown in Figure 14.

Figure 14. Overview of systems-oriented theories



Author's elaboration

3.2.5.2. Legitimacy Theory

At the heart of the Legitimacy Theory thinking is that a kind of social contract exists between an organisation and the society in which it operates (Deegan, 2002, p. 295; Shocker & Sethi, 1973, p. 97). This covers both the implicit and explicit expectations of society towards the behaviour of the organisation. While traditionally, profit maximisation was the primary expectation (Ramanathan, 1976, p. 516), this expectation has evolved. In addition to purely economic considerations, environmental and social objectives are also becoming part of society's expectations of organisations (Heard & Bolce, 1981). Thus, business activities must align with the economy, ecology, and social issues triad. In order to be perceived as legitimate, companies must operate within social boundaries and norms (Deegan & Unerman, 2011, p. 323). This is the only way to ensure their legitimacy and survival in society (Beck et al., 2017, pp. 194–195; Deegan, 2002, pp. 282–283). In the context of the Legitimacy Theory, legitimacy is thus considered a corporate resource that needs to be managed analogously to traditional resources (Dowling & Pfeffer, 1975, p. 127; O'Donovan, 2002, p. 347; Suchman, 1995, p. 576). Stakeholders then classify organisations as legitimate, provided their activities are deemed appropriate within a system of norms and values. The degree of legitimacy is significantly influenced by society's perception of it (Suchman, 1995, p. 574). However, if the expectations of the company's activities do not match the actual activities of the company, a so-called legitimacy gap arises (O'Donovan, 2002, pp. 346–347). Therefore, according to the Legitimacy Theory, it is the task of a company to keep this gap as small as possible and to significantly increase the intersection between external expectations and actual activities (O'Donovan, 2002, p. 347). It should be noted that stakeholder groups sanction companies, that does not synchronise its actions congruently with the system of norms and values (Camilleri, 2018, p. 572). In this context, a company's reputation management is also of particular importance, as it has the task of minimising the prevailing information asymmetries to manage stakeholders' perceptions (González Sánchez & Morales de Vega, 2018, p. 1242).

As mentioned above, legitimacy can also be understood as an entrepreneurial resource that the organisation's management can dispose of (Suchman, 1995, p. 576). However, legitimacy can also be interpreted as strategic because it arises from revolving conflicts between a company's management and its stakeholders (Dacin et al., 2007, pp. 170–171; Suchman, 1995, pp. 575–576). This, in turn, ensures that corporate reporting takes into account more of the external environment than if it were to focus exclusively on internal factors (Deegan & Unerman, 2011, p. 325). Nevertheless, it can also lead to the reporting and disclosure of (non-)financial information reflecting the values and expectations of the institutional environment and stakeholders (Camilleri, 2015). In this way, it is possible to gain legitimacy among stakeholders and create trust in the long term (Hahn & Lülfs, 2014, p. 404).

However, management can influence perception through certain adjusting screws. For example, corporate reporting lends itself to influencing perception and thus also the resource of legitimacy (Woodward et al., 1996, pp. 342–344). Despite any requirements determined by external stakeholders, it is crucial to note that changes in corporate reporting are essentially made for materiality reasons (Eccles et al., 2015b, p. 119). Therefore, the long-term task of management is to ensure organisational legitimacy by publishing financial and non-financial information.

Integrated Reporting tries to connect and integrate financial, social, and environmental perspectives through the different Capitals. Therefore, Integrated Reporting offers a possible strategy to address legitimacy as a resource and influence perceptions in this regard. Finally, the theory leaves room to assume that Integrated Reporting is used by organisations to maintain, stabilise, or restore legitimacy with stakeholders (de Villiers, Venter, et al., 2017).

3.2.5.3. ***Stakeholder Theory***

The Stakeholder Theory is closely related to the Legitimacy Theory. On the one hand, there are certain distinguishing features (Näsi et al., 1997, p. 296), on the other hand, they partly overlap with each other (R. Gray et al., 1995, p. 52). Its first significant formulation was by Freeman (1984) and involved the idea that a company's management should consider the interests of different social groups. The existence of an organisation depends on its successful management and interaction with its stakeholders. Since the interests of the different stakeholders are very heterogeneous, the respective requirements must be met individually. This means that a balanced distribution of information should be created between the groups that influence the company and those that the company influences (Freeman, 1984, p. 49). Against this background, the Stakeholder Theory assumes that organisations enter several social contracts with each stakeholder group, not just one social contract, as assumed in the Legitimacy Theory (Deegan & Unerman, 2011, p. 348).

The Stakeholder Theory can be divided into three approaches. These include the descriptive, normative, and instrumental dimension (T. Donaldson & Preston, 1995, pp. 66, 69–73). Inherent in the descriptive approach, it attempts to explain why and how companies can consider and meet the needs of heterogeneous stakeholders (T. Donaldson & Preston, 1995, p. 70).

The normative approach focuses on ethical principles. This approach can be traced back to the Kantian principle of respect for human beings. According to this, every human being should be regarded as an individual and less to the end of overriding goals (T. Donaldson & Preston, 1995, p. 71). In this context, stakeholders are defined as moral subjects who have their rights. Since an organisation has a significant influence on the activities and existence of its stakeholders, the ethical and moral branch of the Stakeholder Theory points out that organisations must grant their stakeholders these certain minimum rights in order to emphasise their significance and importance (Deegan & Unerman, 2011, p. 349). Congruent with a company's accountability to its stakeholders (R. Gray et al., 1996, p. 38) is the right to be informed about how organisation's activities affect them (O'Dwyer, 2005, p. 28).

There is also the instrumental, organisation-centred dimension of the Stakeholder Theory (T. Donaldson & Preston, 1995, p. 71; R. Gray et al., 1996, p. 46). The instrumental approach sees opportunistic, strategic motives of corporate management in consideration of stakeholder requirements. The strategic importance is seen in particular in identifying the benefits of the contributions and interests of the various stakeholders, which are regarded as a necessary prerequisite for existence, competitiveness and the pursuit of financial equilibrium (Freeman, 1984). Since a company can control its stakeholders (Deegan & Unerman, 2011, p. 353), it is possible that the stakeholder group's authority and influence determines the extent to which the company complies with the demands of the group (Näsi et al., 1997, p. 303). Against this background, companies tend to develop and implement best practices for their stakeholder management (Bendheim et al., 1998, pp. 328–329). Best practice approaches are identified and designed with particular reference to the relevance and importance of stakeholder influence (Mitchell et al., 1997, p. 882).

Applying these approaches to corporate reporting, it can be stated that, concerning the normative level, the interests and requirements of all stakeholders are taken into account; this applies regardless of the relevance or the possibility of influencing the company. The inherent right of stakeholders to corporate information thus arises from the ethical-normative responsibility of a company in the context of its reporting and the corresponding disclosure (Deegan & Unerman, 2011). This right includes financial and non-financial, social, and environmental aspects. Especially at the ethical and normative level, stakeholder management is strongly influenced by national culture (Orij, 2010, pp. 885–886). Against this background, the present study only takes certain regions into account in order to be able to make an appropriate comparison.

As mentioned, the instrumental approach assumes that further development of disclosure practices can lead to increased corporate performance (Berman et al., 1999, pp. 501–503). Since the degree of influence and relevance of stakeholders plays a significant role, from a strategic perspective, companies should prioritise those interests whose stakeholders have the most influence to significantly impact company performance (R. Gray et al., 1996; Mitchell et al., 1997, p. 882). Need satisfaction and information disclosure should, of course, be demand-driven in order to sufficiently satisfy stakeholders' interests (Deegan & Blomquist, 2006; Guthrie et al., 2004, pp. 283–284). In the context of the instrumental perspective, national culture also plays an essential role concerning country-specific requirements and needs. It can even be assumed that national culture is a contextual factor that significantly determines management behaviour regarding information disclosure (van der Laan Smith et al., 2005, pp. 146–147). This is because stakeholders have specific expectations primarily dictated by the cultural conditions that shape them (García-Sánchez et al., 2013, pp. 835–837). This, in turn, influences the underlying values and norms (Bustamante, 2011, pp. 1, 9; Carroll, 1979, p. 499) and, consequently, the decisions to be made regarding the forms of disclosure (Fernandez-Feijoo et al., 2011).

This, in combination with the theoretical background of the Stakeholder Theory on a normative and instrumental level, shows that culture is a crucial determinant in corporate reporting. Results of one study even show that national culture impacts the quality of Integrated Reporting. The national culture can thus also be described as a value substrate in which a corporate culture is formed and promotes Integrated Thinking (Vitolla, Raimo, Rubino, et al., 2019b, p. 1568). In addition, providing financial and non-financial information is a response to the information needs of stakeholders. Against this background, the quality of Integrated Reporting, also in interaction with the Legitimacy Theory, is a significant component for achieving higher legitimacy (Vitolla, Raimo, Rubino, et al., 2019b, p. 1566). Therefore, corporate reports, integrated reports, and other communication tools can be used to manage stakeholders actively. With the help of these tools, it is possible to significantly influence opinion-forming, decision-making and support on the company's part.

3.2.5.4. ***Institutional Theory***

Finally, the Institutional Theory must be illuminated. Essentially, it tries to find explanations for why organisations that operate in a similar or comparable environment adopt similar characteristics and essential structures (Larrinaga-González, 2007). On the one hand, structures and institutions are created, established, and adapted within a period of time. On the other hand, they can also become obsolete, decay, and no longer be needed over time (Camilleri, 2018, p. 570). In the context of this theory, it is assumed that organisations or individuals have the ability and capacity, or learn to create, maintain, and change institutions through various mechanisms (Meyer & Rowan, 1977, p. 353). Companies must abide by their immediate operating environment's existing norms and rules. Their adherence to norms and formal rules gives them legitimacy among their stakeholders (Beck et al., 2017, pp. 194–195; Dacin, 1997, p. 56; Deephouse, 1996; Hahn & Lülfs, 2014, p. 404; Suchman, 1995, pp. 575–576). The adjustments that come with the institutional pressure to change could be rewarded with maintained or even increased legitimacy, too (Meyer & Rowan, 1977, p. 340).

In the context of the Institutional Theory, the term *isomorphism* needs to be explained (Dacin, 1997). Isomorphism is a constraining process. Individual units in a population are forced to resemble other units if exposed to similar environmental conditions (DiMaggio & Powell, 1983, p. 149). This means that when ideas and innovations are embodied through cultural and associative processes, they are then adopted in different individual contexts (Dacin, 1997, pp. 51–52; Deephouse, 1996, pp. 1033–1034). This leads to homogeneity of entrepreneurial activities and structures among themselves (C. Oliver, 1997, p. 700).

Isomorphism has three different mechanisms. *Coercive isomorphism* arises from influential stakeholders and the common legal environment. To a certain extent, organisations depend on these factors, as they can exert formal and informal pressure on the company to meet their specific requirements, and the company aligns its practices and methods accordingly (DiMaggio & Powell, 1983, p. 150). In contrast, *mimetic isomorphism* arises from a company's uncertainty. Since companies cannot be fully aware of the institutional practices of a competing company, this leads them to adopt the methods and procedures of the competition. In doing so, they try to imitate or improve upon them. The motivation lies in the organisations' desire to generate a competitive advantage over their competitors or evade a competitive disadvantage (DiMaggio & Powell, 1983, p. 151). Thus, they try to imitate organisations which seem to be more successful (Vaz et al., 2016, p. 578). The third form is *normative isomorphism*. It includes pressure that group norms can implicitly exert on an organisation. Here, professionalisation, in particular, plays a decisive role. The pressure involves organisations adopting certain practices to comply with the group norms (DiMaggio & Powell, 1983, p. 152).

Isomorphism can therefore also be a possible explanation for why corporate reporting changes over time. There are studies on how external institutions can influence the behaviour of companies, especially concerning the disclosure of non-financial, sustainable, or integrated information (C. A. Adams, 2015). This is not surprising, as the concept of corporate social responsibility has evolved from institutionalised forms of social solidarity. Against this backdrop, the Institutional Theory offers excellent starting points for examining the beginning of influence (Camilleri, 2018, pp. 570–571). The trigger for their responsible action is often rooted in the concerns of the interest groups (Elving et al., 2015, pp. 122–123). The implementation can thus be traced back to the dichotomy of an organisation's voluntary commitment and its socially binding responsibility resulting from the norms and rules (Brammer et al., 2012, pp. 16, 21). The publication of CSR-relevant or previously volunteered information is becoming increasingly binding (Dumay et al., 2019), yet in many respects, it remains rather voluntary or undefined. On the road to Integrated Reporting, many institutions have participated in its development individually and collectively (Camilleri, 2018, p. 571; Jackson & Apostolakou, 2010, pp. 371–372; J. C. Jensen & Berg, 2012, p. 302). In particular, institutions such as the UN Global Compact, the ISO, the GRI, the Organisation for Economic Co-operation and Development (OECD), and the International Integrated Reporting Council have contributed to the spread of non-financial reporting (Camilleri, 2015, pp. 237–238, 2018, p. 571). Humphrey et al. (2017) go so far as to say that the International Integrated Reporting Council has claimed an institutional space for itself that includes competing, non-integrated corporate reporting initiatives. However, the Integrated Reporting Framework offers at least something for each company to use to attract potentially interested new investors that the company can retain over the long term. Therefore, isomorphism can be interpreted in favour of Integrated Reporting as disclosing such information will find broad acceptance among companies in the long term (C. A. Adams et al., 2016; Deephouse, 1996).

3.2.6. Hypotheses development

Based on these scientific theoretical foundations, a set of hypotheses can be developed. In the context of the deductive approach, research hypotheses are now derived from theory and presented. In this dissertation, hypotheses of difference and hypotheses of change are used. These postulate a change in a variable using the same sample or sub-sample over two measurement time points. Only the research, or the so-called alternative, hypotheses are described below for better and clearer presentation of the hypotheses. The corresponding null hypothesis negates the effect and states that there is no difference or no change (Döring, 2023, p. 151).

The hypotheses primarily concern the degree of Integrated Reporting. This is not about the strict adherence to the Integrated Reporting guidance institutionally prescribed by the International Integrated Reporting Council, but rather about the implementation of the Content Elements addressed within the International Integrated Reporting Framework. A decoupling from the defined International Integrated Reporting Framework makes it possible to assess the extent to which the idea or the original intention of the Integrated Reporting is implemented (Eccles et al., 2015a, p. 11).

South African companies listed at the JSE must report on the scope of application of the King regulations. However, if they do not apply it, the non-application must be explained in the annual report (Johannesburg Stock Exchange Limited, 2022, Section 8.62(a)). The provisions relating to King III, which applied in March 2010, require companies to apply Integrated Reporting. Here too, the apply-or-explain approach is valid, i.e., companies are obliged to explain if they do not apply Integrated Reporting (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2009b, pp. 17–18). In the context of King IV, this was changed to an apply-and-explain approach and became effective in 2017 (Institute of Directors in Southern Africa & King Committee on Corporate Governance, 2016, p. 7). In Germnay, there is no mandatory application of Integrated Reporting for the relevant reporting periods. The apply-or/and-explain principle alone exerts such pressure on South African companies that they will apply Integrated Reporting without explicit regulation. This can be attributed to the theories described in the previous sections so that various intrinsically or extrinsically motivated factors can be identified that lead companies to implement and use Integrated Reporting.

Concerning Integrated Reporting, the theories described can be practically projected as follows. On the one hand, according to the Principal Agent Theory, organisations could implement and apply Integrated Reporting to reduce existing information asymmetries. This reduction is then accompanied by a reduction in the corresponding agency costs, as investors are provided with financial and non-financial information, ensuring they receive a more holistic overview of the value creation process. On the other hand, Integrated Reporting can serve as an instrument to present the company and its situation in a way that corresponds to the inclinations and preferences of management, in line with the Positive Accounting Theory. This would correspond primarily to the bonus and debt hypothesis and meet management's interests. However, the political cost hypothesis within the framework of the Positive Accounting Theory can also be align with Integrated Reporting. It could have a prejudicial effect against a mandatory reporting obligation since companies already deal with comprehensive information and its materiality without needing an external requirement. Even political decisions that intervene deeply in companies' business activities could be avoided or reduced with Integrated Reporting since transparent reporting satisfies the public interest. With the application of Integrated Reporting, organisations have not an insignificant possibility of discretionary leeway to determine which aspects are presented in the context of the publications. This is based, in particular, on the materiality determination process and the underlying principle-based approach.

A starting point for implementing Integrated Reporting can also be found concerning the Stewardship Theory. Thus, equal consideration is also given by the application of Integrated Reporting, in which this reporting format can cover many perspectives of the company, and thus a holistic picture of the value creation process and the company is given.

The Legitimacy Theory and the Stakeholder Theory are also covered because stakeholders expect companies to provide open and transparent reporting. By implementing this requirement, legitimacy can be enhanced, and the company's livelihood can be strengthened. Furthermore, it is possible to satisfy the needs and requirements of specific stakeholder groups to gain confirmation and legitimacy. If one follows the Institutional Theory, it can be assumed that the stakeholders' expectations of the company lead to coercive isomorphism. This, in turn, ultimately leads organisations to start applying Integrated Reporting and to push ahead with its implementation. Furthermore, the establishment and application of Integrated Reporting can also be argued from the mimetic or normative perspective of isomorphism. On the one hand, the pressure to use Integrated Reporting could arise because competitors are increasingly using Integrated Reporting. This is accompanied by the need to give in to this pressure and introduce this reporting format to avoid being cut off from the competition. On the other hand, Integrated Reporting could also develop as a professional standard so that there is no way around using this reporting format. Due to the theoretical explanations und derivations from theory, the first research hypothesis is as follows and presented in Figure 15.

Figure 15. Hypothesis 1

Hypothesis 1: The degree of Integrated Reporting has increased between the financial years 2013 and 2022.

Author's elaboration

The preceding chain of reasoning and legitimation readily applies to South African and German companies. The apply-and-explain approach that prevails in South Africa nowadays will significantly influence the application of Integrated Reporting. However, it is not firmly defined by which reporting format this should be done. Thus, it can be assumed that in comparing countries and regions, a clear difference in Integrated Reporting practice can be recognised and that the quality of Integrated Reporting will be higher for South African companies than German companies. For this reason, the second research hypothesis is as follows and illustrated in Figure 16.

Figure 16. Hypothesis 2

Hypothesis 2: South African companies show a higher degree of Integrated Reporting than German companies in the financial year 2013.

Author's elaboration

As explained in Chapter 2.2.2, there has been a long transition and road map to Integrated Reporting. In addition to several mergers and acquisitions in this context, the International Integrated Reporting Framework, initially published in 2013, was revised in 2021. Against this background, the time factor also plays a decisive role in the quality assessment. It can be assumed that the longer the time, the better the degree or quality of Integrated Reporting. This is due, among other things, to the implementation effort and the necessary establishment and anchoring of Integrated Reporting in an organisation, which requires a detailed examination of itself and the Integrated Thinking approach. Even though these approaches have increasingly found their way into Germany through European guidelines

(European Union, 2014, 2022), it can be assumed that the degree of implementation and establishment is not as high as in South African companies. Against this background, the third research hypothesis is as follows and shown in Figure 17.

Figure 17. Hypothesis 3

Hypothesis 3: South African companies show a higher degree of Integrated Reporting than German companies in the financial year 2022.

Author's elaboration

In addition to comparing the regions, it is now necessary to look at each region over time. In analogy to the derivation just carried out, it can also be assumed when looking at the individual regions that several years of practice in dealing with Integrated Reporting leads to a better wealth of experience. Finally, the application of the King regulations has led to South African companies having experience with this type of corporate reporting, supported by the apply-and-explain approach. It is, therefore, conceivable that the implementation, acceptance, and realisation of the integrated approach, i.e., Integrated Thinking and Integrated Reporting, has progressed. In line with the isomorphism, it is thus expected that a higher degree of quality in Integrated Reporting is foreseeable in the South African companies. Therefore, the fourth research hypothesis is as follows and presented in Figure 18.

Figure 18. Hypothesis 4

Hypothesis 4: South African companies show a higher degree of Integrated Reporting in the financial year 2022 than in the financial year 2013.

Author's elaboration

An apply-and-explain approach did not exist in Germany for Integrated Reporting. A corresponding approach, except for national legislation and European guidelines on sustainable reporting, to Integrated Reporting thus did not exist, as in analogy to South African companies. However, a few guidelines were already issued during this period, which strengthen non-financial and a kind of increasingly holistic reporting as described in Chapter 2.4.3. Thus, Integrated Reporting-relevant content and aspects were already covered. Even if Integrated Reporting is entering the German reporting landscape with a delay and on a less mandatory basis, it can be assumed that the degree of Integrated Reporting has improved between the financial years 2022 and 2013. For this reason, the fifth research hypothesis is as follows and presented in Figure 19.

Figure 19. Hypothesis 5

Hypothesis 5:
German companies show a higher degree of Integrated Reporting in the financial year 2022 than in the financial year 2013.

Author's elaboration

To the best knowledge of the author, this research presents the first study in this specific context. The individual five hypotheses are illustrated in Figure 20 and will be analysed within the framework of the study presented in the following chapters.

Figure 20. Overview of the Hypotheses

Hypothesis 1:
The degree of Integrated Reporting has increased between the financial years 2013 and 2022.

Hypothesis 2:
South African companies show a higher degree of Integrated Reporting than German companies in the financial year 2013.

Hypothesis 3:
South African companies show a higher degree of Integrated Reporting than German companies in the financial year 2022.

Hypothesis 4:
South African companies show a higher degree of Integrated Reporting in the financial year 2022 than in the financial year 2013.

Hypothesis 5:
German companies show a higher degree of Integrated Reporting in the financial year 2022 than in the financial year 2013.

Author's elaboration

3.3. GENERAL RESEARCH DESIGN

3.3.1. Standards of science in the context of social research

Empirical social research aims to gain scientific knowledge about social facts, whereby the research process plays an essential role. To evaluate the quality of research, the research process is assessed against the background of its quality. To this end, the research must first be examined concerning the four standards of science. It should be pointed out here that it is hardly possible to conduct an ideal study that can fulfil all the quality criteria to a maximum degree since, on the one hand, there are limitations of the research and, on the other hand, the tension relationship between the individual criteria must be taken into account (Döring, 2023, p. 80). The definition, application and assessment of the quality criteria also represent a separate research subject in social research (Barker & Pistrang, 2005; Breuer & Reichertz, 2001; Bryman et al., 2008).

The four standards of science are scientific research problem, scientific research process, science and research ethics, and research project documentation (Döring, 2023, p. 83). It should be noted that the assessment of the scientific validity of a study is not gradual but categorical. The study can be classified as scientific as long as there are no insensitive violations of these four standards (Döring, 2023, p. 84).

In the context of formulating the scientific research problem, it must be recognisable that theoretically explainable facts are addressed based on the currently prevailing state of scientific knowledge (Döring, 2023, p. 83). By the preceding elaboration of the state of the art of the research within the scope of the hermeneutic literature work as well as the representation of substantial scientific theories, this dissertation satisfies the first standard of the science and arranges the research topic in an existing scientific research area and publication context.

The next step is to assess the realisation of a scientific research proposal to the extent that it is tailored to the identified research problem. The approach and derivation must be justified in terms of scientific theory. In this context, the methodology should be oriented to the research problem, supported by specific methodological literature, and scientifically recognised (Döring, 2023, p. 83). The present study meets this criterion insofar as the research process is presented transparently in every respect and illuminated with the help of methodological literature references. The content analysis, which represents the core instrument of the data evaluation, is also dedicated to a separate section, in which it is explained and critically evaluated, along with scientific literature, and on the research problem of this dissertation. Furthermore, this dissertation is guided by the scientific and research ethics standards and follows the corresponding rules as far as they apply to this research.

Finally, the documentation of the research project has to be considered. The research process should be traceable and replicable to establish intersubjectivity. Against this background, the present dissertation follows an extensive literature review to enable the derivations and strands of argumentation to be traced at all times. In addition, the content analysis, the presentation of the categories, and the scoring procedure are explicitly explained to meet this standard. The description, derivation and justification of the research problem and the chosen methodology complete this.

Thus, it can be stated that this dissertation meets the four standards of science and can be classified as a scientific work.

3.3.2. Criteria of scientific quality

Four criteria of scientific quality can be directly assigned to the four standards of science. They are shown in Figure 21.

Figure 21. Criteria of scientific research

Relevance

- Contribution to scientific research (theoretical relevance)
- Contribution to the solution of practical problems (practical relevance)

Methodological rigour

- Suitability for dealing with the research problems / questions
- Rule-compliant implementation

Ethical rigour

- Consistent and comprehensive orientation to scientific and research ethics
- Critical self-reflection

Presentation quality

- Completeness and structuredness of the study
- Comprehensible presentation of the results and the resulting discussion

Author's elaboration

The scientific research problem is contrasted with the relevance of the content. In this framework, how the study, on the one hand, contributes to progress in scientific knowledge and, on the other hand, to the solution and representation of practical problems and solutions is judged (Döring, 2023, p. 89). An essential criterion in this context is that a study with a relevant research question that is difficult to interpret or has ambiguous results is less important than research that presents unambiguous results and is helpful for further research activities. In both respects, this dissertation meets the standards of quality and content relevance. First, it has high scientific theoretical relevance by closing the research gap that previous studies have left open. Furthermore, the theoretical relevance of the dissertation is also given since it is intensely focused and thus contributes to the expansion of the scientific literature (Döring, 2023, p. 90). This dualistic relevance claim of the dissertation thus sets out the quality claim. Second, this research develops a holistic concept for implementing Integrated Reporting and derives critical success factors from both hermeneutic and empirical findings. This is also of practical relevance since recommendations for action are derived directly from this research and prepared in an applicable manner.

The scientific research process standard corresponds with the dissertation's methodological rigour. The question is to what extent the chosen methodologies and methods are suitable for solving the research problem and their application following the rules (Döring, 2023, pp. 89–90). The dissertation meets this quality criterion by deducing why the chosen methodologies and methods are adequate to answer the research questions and substantiating and explaining this with appropriate literature. Furthermore, the research procedure is detailed so that all steps for data collection and analysis are disclosed.

Ethical rigour is the corresponding criterion of scientific quality to the standard of science and research ethics. This quality criterion assesses the extent to which individual scientific and research ethics standards are met (Döring, 2023, pp. 89–90). While research ethics plays a rather subordinate role against the background of this dissertation, scientific ethics takes on a greater significance. Scientific ethics includes the codes of scholarly conduct. Emphasis is placed on generating, analysing, interpreting, evaluating, and publishing scientific results (Döring, 2023, p. 130). The dissertation meets this quality standard by being based on a current state of research and thus presents neither outdated methods nor useless research results. Furthermore, it meets the requirement of critical self-reflection by pointing out essential limitations in Chapter 7.3, thus enabling possibilities for future research (Chapter 7.4).

Finally, presentation quality is also a criterion of scientific quality. In this context, the primary criterion is the extent to which the work is structured and presented, complete and comprehensible (Döring, 2023, pp. 89–91). The dissertation also meets this quality criterion by giving adequate weight to the individual aspects in this work and systematically deriving the contents, hypotheses, and research methods. Furthermore, figures and tables are used to illustrate the content of the thesis. This is particularly important against the background of the target group adequacy since this work pursues the claim to fulfil both a scientific-theoretical and practical relevance.

Overall, it can thus be stated that this dissertation complies with the standards of science and the criteria of scientific quality. Even if the latter cannot be answered categorically, it represents a continuous characteristic. Thus, scientific quality must be understood as a multidimensional concept that includes aspects with a very high scientific quality and other aspects with challenges and limitations (Döring, 2023, p. 91). According to the claim of self-reflection of the scientific quality of this work, Chapter 7.3 explicitly deals with the limitations, especially with the methodological and content-related aspects.

3.3.3. Context of the study's research design

The underlying objective of this dissertation also requires an examination of the general discussion of study design. In this context, it is crucial to characterise the study's methodological approach and classify it in its dimensions established in the literature (e.g., Montero & León (2007)).

Along with the research argumentation underlying this dissertation and the overarching objective, it can primarily be classified as a descriptive study with subsequent descriptive and inferential statistics analyses (Döring, 2023, pp. 185, 602). This is because the research interest of the dissertation is, on the one hand, descriptive and, on the other hand, hypothesis testing. The descriptive approach of the dissertation thus succeeds in determining the degree of Integrated Reporting of the sample population, ergo of the analysed companies. Moreover, the research intends to test the hypotheses derived and thus also the theories from which they arise (Döring, 2023, pp. 194–195).

Concerning the subject of the study, this dissertation can be described as an empirical study since the research question is answered with the underlying research hypothesis through data collection and data analysis (Döring, 2023, p. 188).

The accompanying data basis originates from a primary analysis since the empirical data are obtained, analysed, and evaluated by the researcher (Döring, 2023, p. 193; Glass, 1976, p. 3). The great added value of this approach is that the data, i.e., the sample and the collection methods, are explicitly tailored to the self-selected research objective, and the data set can be aligned with the research objective. Inherent in this approach, however, is the disadvantage that against the background of research economics, manageable data sets can be generated, analysed, and evaluated (Döring, 2023, p. 193). In the context of the self-critical examination of the research project, this circumstance will also represent a significant limitation, which will be explained in detail and fundamentally in Chapter 7.3.

With the help of this classification, the choice of the research design meets both the research economic question of design feasibility and the epistemological question of the goal of the dissertation.

3.3.4. Mixed-Methods approach and triangulation

An essential classification feature of a study is to place the study in a scientific theoretical context or paradigm (Döring, 2023, p. 185). Depending on the research concern, qualitative or quantitative research is used here.

The following can be stated in a basic summary and abstraction of the two research approaches, very much simplified and shortened. On the one hand, the qualitative research approach attempts to investigate open research questions in great detail with few research units and essentially with unstructured or partially structured data collection methods. The primary goal of the research approach is theory building. Here, the collected data are usually evaluated interpretatively (Döring, 2023, p. 186).

On the other hand, the quantitative research approach has the primary goal of theory testing. For this purpose, research hypotheses derived from theory are first examined on many units of inquiry. The quantitative data obtained using structured data collection methods are statistically analysed (Döring, 2023, p. 186).

In the context of the present research question, it makes sense to combine both a qualitative and quantitative approach (Döring, 2023, pp. 17–18, 186). This approach thus represents a valuable combination of research methods to achieve maximum knowledge gain (Schreier & Odağ, 2020; Tashakkori et al., 2020; Tashakkori & Teddlie, 2010), which is in the interest of the researcher. For the purpose of this dissertation, the mixed-methods approach, which is primarily practiced in basic and applied research, is used. Within the mixed-methods approach, different variants exist (T. Clark et al., 2021, pp. 555–577; Creswell & Clark, 2017), which will not be considered further here, as this would be outside the scope of the dissertation.

The underlying rationale in the context of this dissertation is that the methodology is characterised by an inductive-deductive alternating relationship, which is essential in gaining knowledge for the dissertation (Rost, 2003, p. 9). While deduction represents the logical conclusion from the general to the particular, induction is understood as a process for forming generalisations and theories based on the observations made (Döring, 2023, p. 35). First, deductively derived hypotheses are developed by reviewing the relevant literature and general economic theories. The hypotheses are then analysed and tested with the help of content analysis. Inductively, the observations made will then be abstracted and generalised. In the specific case of this dissertation, the observations are used to design a holistic approach to implementing Integrated Reporting. In principle, however, the findings obtained from the dissertation are not verifiable but only falsifiable (Popper, 2013, p. 3). However, the inductive-deductive interrelationship inherent in this dissertation is intended to ensure that the quality of the research is hardened and enhanced through the adequate combination.

In this context, this dissertation does justice to the approach of methodological triangulation, which is defined as one of four types of triangulation (Denzin, 1989, pp. 237–241). Methodological triangulation is valuable because it helps to avoid research bias by looking at facts from multiple perspectives (Cohen et al., 2018, p. 265; Flick, 2018, p. 191). The use of triangulation allows the systematic expansion of the achieved knowledge. Thus, the dissertation's final findings can be based on a broader foundation (Flick, 2018, p. 192).

3.4. CONTENT ANALYSIS

3.4.1. Content analysis as a fundamental analysis method

An essential variable in the context of this study is the degree of Integrated Reporting in corporate reporting. In order to determine this degree of Integrated Reporting, a specially designed Integrated Reporting score was developed to cover the corresponding components as comprehensively as possible. The dedicated procedure and derivation of the Integrated Reporting score will be explained in the following.

The publication and disclosure of information in the context of reporting is sometimes regarded as an abstract construct that cannot be measured (Cooke & Wallace, 1989, p. 51). Measuring the quality of reporting is difficult because quality is tough to capture (Botosan, 2004, p. 290). To be able to assess quality comprehensively, a content-analytical catalogue would be necessary, which weighs the individual items (Beretta & Bozzolan, 2008, pp. 337–338). In this concept, the weighting could, for example, be carried out by the researcher himself or with the users' or Integrated Reporting users' sense of importance. However, such weighting has a certain degree of subjectivity and could ultimately distort and bias the results of the study (D. Barth, 2009, p. 122; Cooke & Wallace, 1989, p. 51). In addition, weighting would lead to generalisability and replicability being challenging to achieve, as the study results would then be characterised by a perception-influenced weighting and materiality classification of the items.

Against this background, the present study uses the term "degree" instead of "quality". The term "degree" represents a much more neutral way of interpreting the measure of reporting and thus requires less of the sometimes subjectively coloured "quality". Therefore, it is logical that the present study explicitly refrains from weighting the items to ensure the highest possible objectivity of this study. The degree of Integrated Reporting could thus be seen as a measure representing the level of integration and implementation and to what extent the Content Elements from the underlying International Integrated Reporting Framework are considered.

The primary research tool of this study is a content analysis. In this context, it is worth mentioning that the use of technology and computers in the scientific analysis of texts has become increasingly important in terms of their characteristics, such as similarity, readability, and sentiment (Loughran & McDonald, 2016). Nevertheless, human information dissemination to study and analyse the content of narrative disclosures is considered necessary against the backdrop of the limited level of standardisation (Menacher et al., 2017, p. 224). Therefore, content analysis represents the most commonly used research method for analysing and evaluating narrative disclosures, especially when disclosing non-financial information and aspects in annual reports (Milne & Adler, 1999, p. 237).

Content analysis is used to examine the degree of Integrated Reporting. Generally, this analysis technique provides a comprehensive and structured way to describe and reveal the content of communication tools (Berelson, 1952, pp. 14–18). According to Berelson's (1952) definition, three criteria are required for content analysis. They include objectivity, systematisation, and quantification. Kassarjian (1977) gives an overview of different definitions of content analysis. However, all definitions and approaches have in common that they use these three criteria to assess the quality of analysis.

Looking at the criterion of objectivity, it can be stated that the analysis is considered objective exactly when the underlying analysis criteria are so precisely defined and outlined that different researchers would achieve the same results using content analysis (Berelson, 1952, p. 16). Regarding systematisation, the analysis must follow appropriate guidance. Thus, consistent, and pre-defined rules must exist for including items in the analysis, excluding, and evaluating them (Holsti, 1969, p. 4). Finally, care must be taken to ensure that the items are quantified. This makes it possible to subject the collected data to statistical methods for analysis and evaluate them (Kassarjian, 1977, pp. 9–10). The criteria can also be applied to this thesis.

As noted, existing research with international samples primarily uses dichotomous variables. Based on self-reflection, these indicate whether a company issues an integrated report or not. However, this neglects that some companies do more or less Integrated Reporting or even those that do it to a certain degree without declaring and identifying it as an integrated report (Eccles & Serafeim, 2017, p. 161). Therefore, the content analysis in this research is designed without this dichotomous variable. This is intended to reflect the diversity and heterogeneity of reporting practices in the countries studied and thus to capture the degree of Integrated Reporting. In analogy to existing studies, especially those with a South African research background (Haji & Anifowose, 2016; Lee & Yeo, 2016; Zhou et al., 2017), the International Integrated Reporting Framework is used as a basis for analysis, and corresponding evaluation criteria are derived from it to capture the degree of Integrated Reporting.

The International Integrated Reporting Framework comprises a principles-based approach. In scoring, the focus on Content Elements is considered the most appropriate, as the Guiding Principles only provide the frame and not the concrete content of a report. As mentioned in Chapter 2.1, information increasingly plays an essential role in the efficient allocation of capital and decision-making by stakeholders. This leads to the higher meaning of Content Elements within the scope of Integrated Reporting. Against the backdrop of the increasing analysis of reports through artificial intelligence, it can also be assumed that the importance of information is growing. In this case, it is less the form or the design of the report that is decisive but rather the information itself. Therefore, the study focuses on the Content Elements. However, the Guiding Principles and the Content Elements overlap somewhat. This is because the explanations of the principles sometimes explicitly refer to specific content, which is then processed within the Content Elements. Since the Guiding Principles refer to other aspects of reporting, such as the report format, the analysis to be carried out was deliberately focused on the Content Elements representing a report's integral content aspects. In addition, the Content Elements are more specific, operationalised and therefore more objective than the other critical characteristics of Integrated Reporting. Furthermore, due to the principles-based approach of the International Integrated Reporting Framework, the annual reports are not analysed automatically with software. However, the hand-collect content analysis fulfils the requirement to capture the individual cognitive and associative complex relationships of the individual components of Integrated Reporting. The holistic idea of Integrated Reporting is thus clearly represented.

The design of the study is intended to meet the criteria just described (objectivity, systematisation, and quantification) for content analysis. Nevertheless, a particular subjectivity bias cannot be excluded (Kromrey et al., 2016, pp. 321–322). This inherent risk is present because one person hand-collected and analysed the data. Against this background, the quality criteria are a particular focus of this research.

To minimise the risk of subjectivity and, at the same time, increase objectivity and consistency, a dedicated content analysis catalogue was designed. This catalogue should ensure that the individual contents of the companies can be categorised in the same way during the data collection. The catalogue selects a defined description for all items based on the International Integrated Reporting Framework.

In this context, it is essential to emphasise that a pre-test was carried out with the help of the designed content analysis catalogue. This pre-test included reports from companies both in and out of the sample. In particular, the fact that companies outside the sample were also considered helps to toughen the underlying analysis items, as they are also echoed here in a different context. A post-test was also carried out to increase further the consistency of the analysis procedure and the items. This involved recollection of the data from the reports first tested to ensure that no shift in the focus of the analysis occurred during the analyses.

To further strengthen both objectivity and consistency, software was used. When manually collecting content-related data within the reports, the search function of the pdf reader was used to facilitate the collection and to achieve more comparable results after having read the reports step by step analytically.[39] Consequently, the search for keywords was used for the purpose of strengthening robustness. The software was also used to collect, collate, and analyse the data collected by hand.

In order to ensure the systematisation of the data, the content analysis catalogue was very closely aligned with the predefined Content Elements of Integrated Reporting and is thus based on the International Integrated Reporting

[39] Scoring is explicitly explained in Chapter 3.4.3.

Framework. Of course, this also applies to the definition and design of the items. It should be noted that each item used in the content analysis catalogue is referenced to the framework to disclose the basis for the analysis and its meaning.

The quantification criterion is given because the individual items can be measured. The content analysis catalogue is designed so that the items are categorical (primarily binary) variables. In this respect, the content analysis catalogue can be attested to a corresponding quantification. In this context, totals, subtotals, or normalised key figures can be calculated to conduct comparisons and further analyses.

In addition, the classification procedure by which the texts are evaluated with the help of content categories must produce reliable and valid variables (Weber, 1990, p. 12), in order to be able to conclude the company reports examined. Well-known around with the use of self-constructed scores (Healy & Palepu, 2001, pp. 426–427),[40] two substantial advantages result from using such a self-constructed score in the context of the research to the voluntary disclosure of information. First, there is greater confidence in a self-constructed score because the measure truly captures what it intends to capture (Healy & Palepu, 2001, p. 427). Second, samples subject to self-constructed measures are independent of and not limited to the selection of companies by external third parties, making selection bias less severe (Lee & Yeo, 2016, pp. 1230–1231).

As a result, the content analysis provides a self-developed Integrated Reporting score based on a coding scheme (Weber, 1990, p. 21). For this purpose, explicit reference was made to previous analyses on the assessment of Integrated Reporting (see Chapter 3.1) and general thoughts on the assessment of corporate reports were considered (Hammond & Miles, 2004). The score quantifies the degree of Integrated Reporting of the annual report, notwithstanding the self-declaration of the report status (adopter or non-adopter). For this purpose, different item groups and items are formed which are derived from the aspects of the Content Elements. A detailed derivation of the Integrated Reporting score and the coding framework used in this context is explained in the following Chapter 3.4.2.

[40] The limitations associated with this study, and in particular with a content analysis, are described in Chapter 7.3.

3.4.2. Design and elements of the content analysis catalogue

Table 1 maps the content analysis catalogue on an aggregated level. The category of the content analysis catalogue is to be equated with the respective Content Element. This category can, in turn, be broken down into so-called item groups, which describe a subordinate, thematic context following the International Integrated Reporting Framework. Within this item group, individual items can be included based on specific Content Elements' scope. Thus, the catalogue comprises eight categories corresponding to the number of Content Elements and a total of 77 items. The appendix contains a detailed version of the catalogue that breaks down the catalogue into individual items (APPENDIX 1).

Table 1. General structure of the content analysis catalogue

General structure of the content analysis catalogue				
Category / Item group		**Section(s) in the International Integrated Reporting Framework**	**Items**	**Maximum points**
Organizational overview and external environment (OVERV)		**4A**	**16**	**16**
OVERV_1	Legitimation, culture, ethics and values	4.4	4	4
OVERV_2	Ownership structure	4.5	1	1
OVERV_3	Competitive landscape and value chain	4.5	2	2
OVERV_4	Key quantitative information	4.5	1	1
OVERV_5	External environment	4.6 - 4.7	8	8
Governance (GOVER)		**4B**	**7**	**7**
GOVER_1	Leadership structure	4.9	1	1
GOVER_2	Strategic support and risk management	4.9	2	2
GOVER_3	Further areas of application of governance	4.9	3	3
GOVER_4	Remuneration and incentives	4.9	1	1
Business model (BUSIM)		**4C**	**16**	**16**
BUSIM_1	Key features for the business model and connectivity	4.11 - 4.13	4	4
BUSIM_2	Stakeholder dependencies	4.13	1	1
BUSIM_3	Inputs	4.14 - 4.15	3	3
BUSIM_4	Business activities	4.16 - 4.17	5	5
BUSIM_5	Outputs	4.18	1	1
BUSIM_6	Outcomes	4.19 - 4.23	2	2
Risks and opportunities (RIOP)		**4D**	**6**	**6**
RIOP_1	Risk assessment	4.25 - 4.27	3	3
RIOP_2	Opportunity assessment	4.25 - 4.27	3	3
Strategy and resource allocation (STRA)		**4E**	**11**	**11**
STRA_1	Strategic objectives	4.29	4	4
STRA_2	Linkage between the organization's strategy and other factors	4.30	3	3
STRA_3	Competitive differentiation and advantage	4.30	3	3
STRA_4	Stakeholder engagement	4.30	1	1
Performance (PERF)		**4F**	**7**	**7**
PERF_1	Explanation of quantitative indicators	4.32 - 4.33	1	1
PERF_2	Organization's performance effects	4.32	2	2
PERF_3	Stakeholder relationships	4.32	1	1
PERF_4	Temporal relations	4.32	1	1
PERF_5	Combined key performance indicators	4.33	1	1
PERF_6	Regulations	4.34	1	1
Outlook (OUTL)		**4G**	**10**	**10**
OUTL_1	Anticipated changes over time	4.36	3	3
OUTL_2	Realism of expressed expectations	4.37	1	1
OUTL_3	Potential implications (on financial performance)	4.38	2	2
OUTL_4	Key aspects of the outlook	4.39 - 4.40	4	4
Basis of preparation and presentation (BAPP)		**4H**	**4**	**4**
BAPP_1	Summary of materiality determination process	4.43	2	2
BAPP_2	Reporting boundary	4.44 - 4.47	1	1
BAPP_3	Summary of significant frameworks and methods for quantification	4.48 - 4.49	1	1
TOTAL			**77**	**77**

Author's elaboration

Accordingly, the first category corresponds to the first Content Element, ergo, *Organizational overview and external environment* (OVERV). Sixteen items can be identified within this category, subsumed into five item groups. While the first item group (OVERV_1) is primarily dedicated to the legitimation basis, i.e., its purpose, vision, and mission, as well as the culture, ethics, and values of an organisation. The second item group (OVERV_2) deals with the ownership structure. The third item group in this category (OVERV_3) covers the competitive landscape and value chain. The summary of the key quantitative information is included in the fourth item group (OVERV_4). Finally, the critical aspects of the external environment in which a company operates are subsumed in the fifth category (OVERV_5).

Governance (GOVER) represents the following category and includes a total of four item groups covering seven items. The first group of items examines the organisation's leadership structure (GOVER_1). The focus of the considerations for the second item group (GOVER_2) is the supporting effect of the underlying processes for stable decision-making and the related approach to risk management. While the third item group (GOVER_3) includes various aspects, such as implementing governance practices beyond legal requirements, the fourth item group (GOVER_4) evaluates remuneration and incentives.

With sixteen separate items, the *Business model* (BUSIM) category is the most comprehensive together with the *Organizational overview and external environment* category. There are six item groups in this context. The first item group (BUSIM_1) accentuates the business model's essential features and the connectivity to additional information covered by other Content Elements. The subsequent item group identifies critical stakeholder dependencies and essential factors influencing the external environment (BUSIM_2). The following item groups include items related to inputs (BUSIM_3), business activities (BUSIM_4), outputs (BUSIM_5) and outcomes (BUSIM_6).

The organisation's *Risks and opportunities* (RIOP) represent the following category, which includes two item groups that are structured almost identically. While the first item group (RIOP_1) deals with risk assessment, i.e., the specification of the main risks, the likelihood assessment, the magnitude of its effects and the possibility of managing and mitigating these risks, item group two

(RIOP_2) comprises the same considerations and assessment groups about the opportunities arising for the organisation.

The *Strategy and resource allocation* (STRA) category contains a total of eleven items, which are divided into four item groups. Item group one (STRA_1) comprises the strategic goals pursued by the company in the short, medium, and long term. In addition, this item is intended to provide information on which specific strategies are being used or are planned to be used to achieve these objectives. Finally, obtaining information on how the relevant resources are allocated and how the achievements will be measured is also vital. Item group two (STRA_2) subsumes the connection between the organisational strategy and other factors with its individual items. For example, information is to be provided on which business model changes might be necessary to implement selected strategies or which effects might arise on capital. In the context of item group three (STRA_3), it is evaluated what differentiates the company from other organisations concerning the role of innovations, the use of intellectual capital or the extent to which environmental or social reflexions have found their way into the organisational strategy. Finally, item group four (STRA_4) includes the stakeholder consultation to formulate the strategy or resource allocation plan.

The *Performance* (PERF) category includes six item groups. In the context of the analysis, the explanation of the quantitative indicators (PERF_1) comprises indicators in terms of goals, risks, and opportunities, including their significance, the effects and the methods of their creation are to be considered here. The second group of items includes the positive and negative effects of the organisations on the capital (PERF_2). In addition, the state of stakeholder relations and the satisfaction of legitimate needs are assessed and evaluated (PERF_3). The interrelationships between past and current performance on the one hand and current and future performance on the other hand, i.e., the temporal interrelationships, are the focus of the investigation (PERF_4). Key performance indicators based on combined information play a role in the scoring process. Thus, indicators that combine financial measures with other components are to be evaluated or explain the financial impacts of effects on other capitals and other causal relationships (PERF_5). The sixth item group assesses whether regulations affect performance or whether performance is likely to be adversely affected by non-compliance with laws or regulations (PERF_6).

The *Outlook* (OUTL) Content Element represents the next category. First, the anticipated changes over time are assessed, with particular emphasis on how the external environment will affect the organisation and how it intends to respond to challenges or even uncertainties (OUTL_1). In addition, there is a check whether these statements are based on reality and correspondingly realistic assessments (OUTL_2). The next item group subsumes the potential implications arising from the external environment and opportunities and risks and how these could influence the strategic objective, including capital availability, quality, and affordability. In addition, the key relationships, and their potential to create value over time are consulted (OUTL_3). The fourth item group comprises lead indicators of the outlook extracted from external sources or sensitivity analyses, a summary of the assumptions made in the outlook, a target/actual comparison, and the fact that the outlook complies with prevailing law and regulatory requirements (OUTL_4).

Finally, the category or Content Element *Basis of preparation and presentation* (BAPP) must be examined. Item group one summarises the materiality determination process, the role of management and key personnel in identifying and prioritising such aspects, and a reference to the detailed description of the materiality determination process (BAPP_1). In addition, the definition and justification of the reporting boundary is an evaluation criterion (BAPP_2). Finally, it is checked whether the integrated report contains a summary of significant frameworks and methods for quantification (BAPP_3).

The content analysis catalogue is also to be designed according to the criteria for content analysis by Berelson (1952, p. 18). In this context, the quality criteria of objectivity, reliability and validity must be ensured (Döring, 2023, pp. 437–443). The content of the scientific quality criteria is very similar to Berelson's (1952) explanations and will therefore only be briefly examined.

In the context of validity, it needs to be ensured that the research actually measures what it is intended to measure and thus serves to answer the research question(s) (Döring, 2023, p. 440; Krippendorff, 2019, p. 360). The items and their descriptions are detailed documented to ensure that validity is adequately considered. In addition, the procedure for creating the item groups and categories is written comprehensibly. The scoring methodology is also explained in the following section, contributing to comprehensibility. Finally, the research questions and the hypotheses derived from theory make it clear what exactly is to be measured by the content analysis.

In addition, reliability, i.e., the replicability of the findings when the content analysis is repeated, is required. It must be ensured that the same results can be obtained at different points in time and under possibly other circumstances when the analysis is carried out (Döring, 2023, p. 438; Krippendorff, 2019, pp. 24, 277). A very narrow definition of the individual prerequisites for evaluating the respective items was undertaken to ensure realism. Moreover, pre- and post-tests were conducted to determine whether the researcher of this thesis achieve the same results when conducting the content analysis on randomly selected company reports at different times.

Finally, objectivity as a scientific quality criterion must be considered appropriately. The aim is to ensure the analyses are user-independent (Döring, 2023, p. 438; Krippendorff, 2019, p. 25). However, it should be noted that subjective bias cannot be wholly ruled out despite appropriate precautions. To minimise this risk, however, care was taken when creating the content analysis catalogue to ensure that it was aligned with the International Integrated Reporting Framework, so there was little room for interpretation of the items. In addition, specific requirements were set for the scoring and, therefore, for evaluating the content analysis.

3.4.3. Data collection and scoring

After the content analysis catalogue has been presented in detail, the data collection and scoring procedure must now be illustrated. Against the background of the diversity of the items, these are divided into two different types. The background to the division lies in the dissimilar characteristics of the variables. The content analysis catalogue consists of categorical variables, with most items being binary (type A items). However, a small proportion of the items are ordinal, as this does more justice to the divergent properties of the items when they are subject to different scores or when it makes sense to order the values in the context of the

International Integrated Reporting Framework (type B items). The scores per item and, thus, per category result from the integer or continuous format scoring scheme. Against this background, and to maintain consistency, a division of the variables appears expedient. The allocation of the items to the individual item types and the prerequisite(s) for awarding points can be found in the detailed structure of the content analysis catalogue in the appendix (Appendix 1).

The items were analysed and evaluated in a two-stage process. In the first step, the entire reports were analysed thoroughly according to the document analysis method (Legewie, 1994). If no information on specific items was identified, the second step explicitly searched for keywords using the search function. This procedure ensures that no information is overlooked. However, it should be emphasised that the focus of the content analysis was on the manual document analysis and less on the keyword search. This is a key feature of this dissertation. The fact that the reports were read made it possible to recognise in particular the necessary content aspects regarding interdependencies, connections and links between them. In addition, the keyword analysis is initially only of a quantitative nature. This means that no context, reference, or connection to other aspects can be recognised, which can only be identified from a manual analysis. For type A items, one point is awarded if the information in the report is congruent with the predefined requirements. If the requirements of the item are not satisfied, no point is awarded (Marston & Shrives, 1991, p. 198). The scoring of type B items is split into half points to meet the specific requirements of the corresponding item.

In sum, care has been taken to define specific requirements for awarding points. On the one hand, this increases the systematisation and objectivity of the study since it is evident for what points are awarded and for which circumstances, they are not. On the other hand, the precise formulation and the clear gradation of points prevent subjective bias from inherent in this study. Thus, the catalogue meets the quality criteria of empirical research.

This approach ensures that the criteria of content analysis are met (Berelson, 1952, pp. 14–18). The systematisation is given in the sense that the structure of the content analysis catalogue, as well as the items contained therein, are very closely based on the International Integrated Reporting Framework so that a high degree of congruence with the ideal-typical conception of an integrated report can be guaranteed. In addition, the content analysis catalogue is provided with corresponding references to the framework. This also goes hand in hand with the quality criterion of objectivity, as the requirements for allocating points are precisely described and defined. Furthermore, the content analysis catalogue was pre-tested with randomly selected company reports. Finally, a post-test ensured that the first company reports examined were also evaluated at the end of the research process. Concerning the qualification criterion, it should be noted that this is given by using categorical variables.

Consequently, the total score across all categories is 77 points. The scores are initially awarded on an absolute basis. However, in order to be able to establish a higher degree of generalisability and comparability with other studies if required, the values are analysed and presented in a normalised form. This applies to both the total score and the sub-scores.

IV – RESULTS OF THE STUDY

IV - RESULTS OF THE STUDY

4.1. SAMPLE DESCRIPTION

4.1.1. Definition of the sample size

The sample used in this study includes 164 firm-year observations of 41 companies listed either at the Financial Times Stock Exchange (FTSE) / JSE All-Share Index in South Africa or at the Deutscher Aktienindex 100 (HDAX)[41] in Germany. The data collection period covers the annual reports of the financial years 2013 and 2022.

Nevertheless, some exclusion criteria had to be used to create a consistent database. The initial sample was based on the companies listed in the FTSE/JSE All-Share Index in South Africa or at the HDAX in Germany as of 31 December 2022 (472 firm-year observations). All firms not listed in the same index as of 31 December 2013 were removed. Thus, 76 firms (152 firm-year observations) were extracted from the sample. Next, all financial (service) companies were excluded (Standard Industrial Classification (SIC) 6000-6999), which amounts to 38 firms and 76 firm-year observations.

The exclusion of financial services firms has several reasons. For example, the asset structure and the financial leverage differ from conventional industrial companies (Fama & French, 1992; Francis, Reichelt, et al., 2005; Viale et al., 2009). In addition, significant differences in their accounting standards and practices can be observed, providing a further reason for exclusion (Frías-Aceituno, Rodriguez-Ariza, et al., 2013). Finally, both the stricter supervision and the sector-specific regulatory reporting requirements are two essential aspects (J. R. Barth et al., 2004), which is why the elimination seems necessary to finally present a comparable data sample (Gerwanski et al., 2019, p. 754; Li & Yang, 2016, p. 937; Velte, 2022b, p. 1660).

[41] When the index was introduced, it contained one hundred components. However, the total number of shares included in the index is now variable (Deutsche Börse AG, 2019, p. 16).

Next, another ten firms (20 firm-year observations) were removed due to missing or inconsistent data items. In addition, 13 firms (26 firm-year observations) were excluded because their financial year 2013 ended before 30 April 2013. This is substantial because the Consultation Draft for the International Integrated Reporting Framework was published in April 2013 (International Integrated Reporting Council, 2013a), and therefore, could not have been considered by the companies. However, a direct reference to the International Integrated Reporting Framework (International Integrated Reporting Council, 2013b, 2021a) of the International Integrated Reporting Council is not a constitutive criterion for consideration in the data sample. This is because the self-bias of claiming to be an Integrated Reporting adopter is reduced, thus better reflecting the original approach of Integrated Reporting. Finally, five other companies (ten firm-year observations) were excluded because their reports or data were unavailable. In total, 142 firms or 284 firm-year observations were filtered out that did not meet the corresponding criteria. In order to achieve a balanced sample in the country comparison, the sample size of Germany was adjusted to the sample size of South Africa by randomly removing 12 companies (24 firm-year observations) from the sample.

The final sample consists of 164 firm-year observations from 82 firms of which are 41 from South Africa and 41 from Germany. Table 2 provides an overview of the definition and derivation of the sample.

Table 2. Definition of the sample size

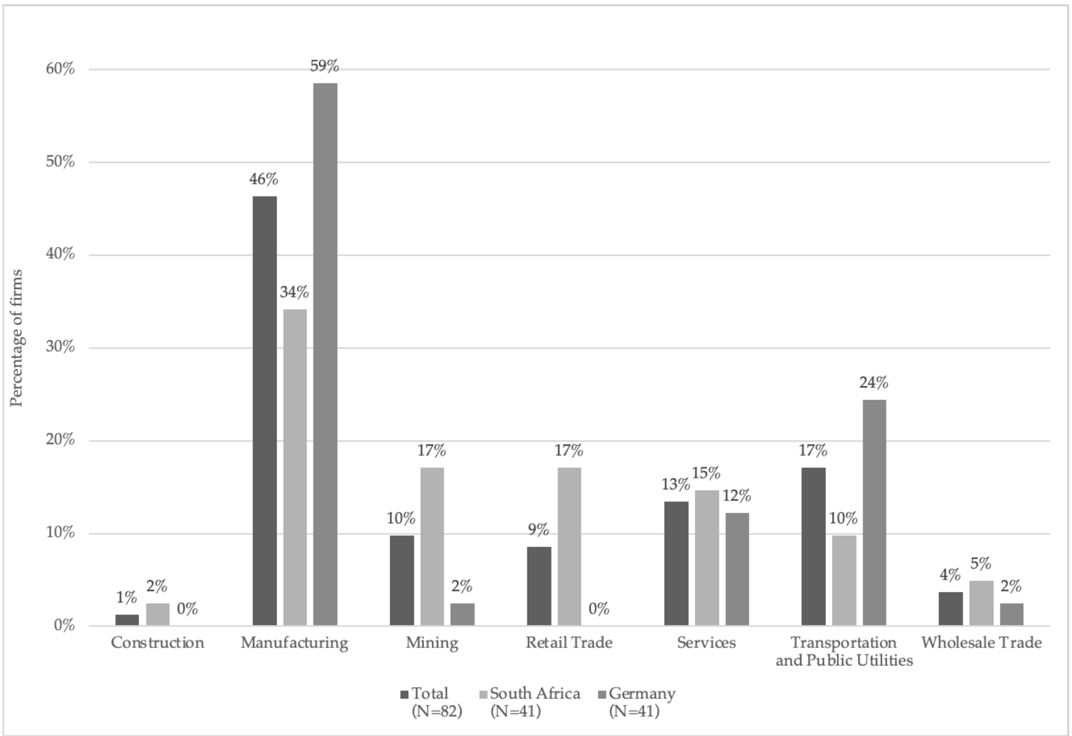
Definition of the sample size				
Criterion	Sample size			
	South Africa	Germany	Total	
	Firms	Firms	Firms	Firm years
Initial sample of FTSE/JSE All-Share and HDAX as of 31 December 2022	136	100	236	472
less firms not listed in the same index as of 31 December 2013	-41	-35	-76	-152
less firms from the financial sector (SIC 6000-6999)	-29	-9	-38	-76
less firms with missing or inconsistent data items	-7	-3	-10	-20
less firms whose financial year 2013 ended before 30 April 2013	-13	0	-13	-26
less firms whose reports/data were not available or which are delisted	-5	0	-5	-10
Subtotal	**41**	**53**	**94**	**188**
less random selection to achieve a balanced sample	0	-12	-12	-24
Total / Final sample	**41**	**41**	**82**	**164**

Author's elaboration

4.1.2. Industry distribution

The companies in the sample belong to different sectors. The classification into different industries or sectors is based on the SIC. This classification scheme is used in the United States of America (USA) but has the advantage that both German and South African companies were equipped with this feature in Datastream. Although this classification scheme has been replaced by the North American Industry Classification System, developed jointly by the USA, Canada, and Mexico, it is still used by some authorities, such as the United States Securities and Exchange Commission. Figure 22 illustrates the distribution by industries by the first two digits of the corresponding SIC.

Figure 22. Industry distribution of the sample firms



Author's elaboration

The sector most strongly represented – at the overall and the country-specific level – is the Manufacturing sector, with 46 per cent of the total population (number of the observations (N) = 82). Construction represents the smallest sampling segment with 1 per cent. Despite the high allocation (total: 46 per cent; South Africa: 34 per cent; Germany: 59 per cent) within one segment (manufacturing), the thesis does not deviate from the classification of companies according to the first two digits of the SIC, as this does not add any value to answering the research question and testing the hypotheses.

The most remarkable differences in distribution between South Africa and Germany are found in the Manufacturing segment (South Africa: 34 per cent; Germany: 59 per cent). In addition, the Mining and Retail Trade segments contain a higher percentage of the South African sub-sample (17 per cent and 17 per cent, respectively) than the German sub-sample (2 per cent and 0 per cent respectively). In contrast, the Transportation and Public Utilities segment plays a more critical role in the German sub-sample (24 per cent) than in the South African one (10 per cent). In the segments of Construction, Services and Wholesale Trade, the sub-sample distribution is almost balanced.

4.2. KEY FINDINGS

4.2.1. The degree of the total Integrated Reporting score

In this chapter, the results of the content analysis of the annual reports from South Africa and Germany are processed and presented. The first step is to look at the overall Integrated Reporting score and then at the sub-scores concerning the respective Content Elements. The specially designed content analysis catalogue is the basis for the analysis and evaluation. The Integrated Reporting score and the sub-scores are normalised for better evaluation of the results, the subsequent discussion and comparability with other studies. [42]

The average Integrated Reporting score for the entire sample is 0.55, which corresponds to 42.35 points out of a total of 77 points to be achieved. The median is at the same level as the mean at 0.55, also equalling 42.35 points. However, based on the annual reports evaluated, a scattering of the Integrated Reporting score can be identified regarding the standard deviation of 0.12. Meanwhile, the interquartile range (Q75-Q25) is 0.15. The lowest Integrated Reporting score obtained is 0.26 (20 points), and the highest is 0.86 (66 points). While the highest Integrated Reporting score is from the South Africa 2022 sub-sample, the lowest is from the Germany

[42] In general, the results are rounded to two decimal places. For this reason, minor deviations may arise in the presented tables due to rounding. If additional decimal places are necessary due to various calculations, these are inserted at the appropriate place.

2013 sub-sample.[43] Table 3 provides an overview of the descriptive statistics of the Integrated Reporting score.[44]

Table 3. Descriptive statistics of the Integrated Reporting score

Descriptive statistics of the Integrated Reporting score									
Variable [a)]	**Sample**	**Mean**	**St. dev.**	**Min.**	**Q25**	**Median**	**Q75**	**Max.**	**N**
Integrated Reporting score	**Total sample**	**0.55**	**0.12**	**0.26**	**0.47**	**0.55**	**0.62**	**0.86**	**164**

[a)] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

Author's elaboration

Since the median of the total Integrated Reporting score of 0.55 is at the same level as the mean of 0.55, a first indication can be derived that the available data are normally distributed. Figure 3 highlights the distribution of the Integrated Reporting scores compared to the normal distribution. Therefore, it is also indicated graphically that the sample almost follows a normal distribution.

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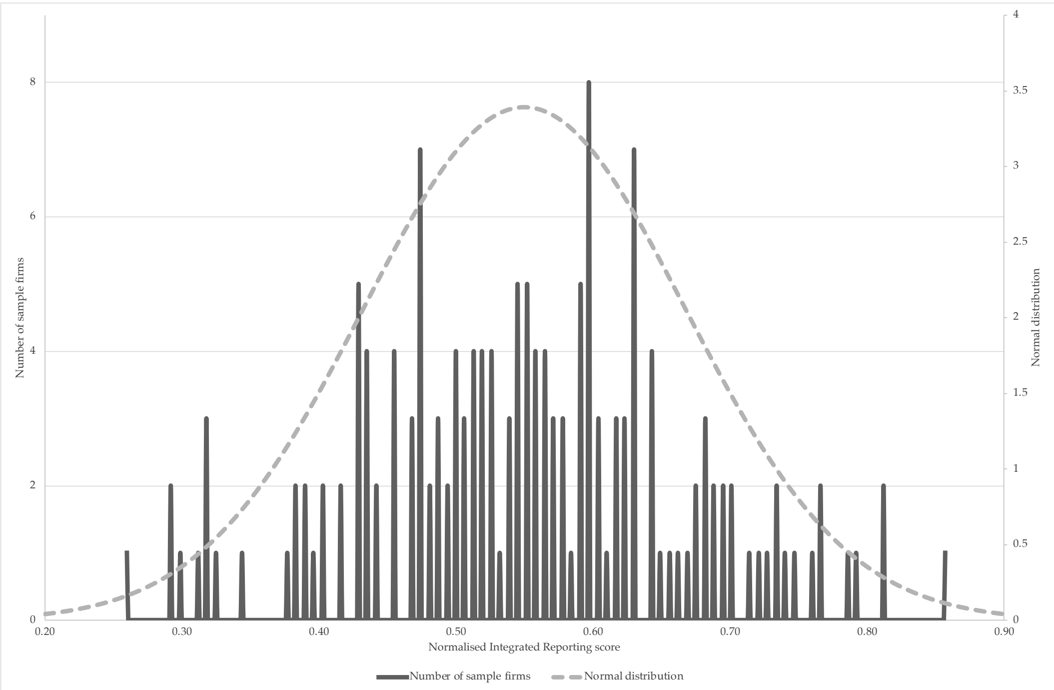
43 The results of the different sub-samples are analysed in detail later.

44 The tables for descriptive statistics for each year-country sub-sample as well for the sub-scores provide information about the mean, the standard deviation (St. dev.), the minimum (Min.), the 25 per cent quartile (Q25), the median, the 75 per cent quartile (Q75), the maximum (Max.) and the number of observations (N).

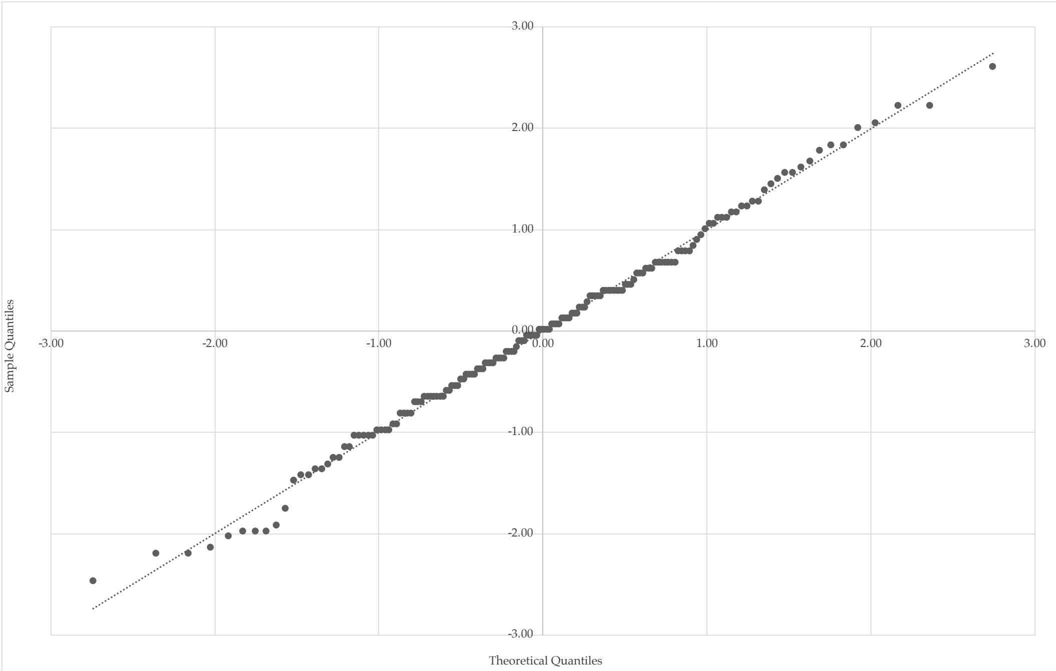
Figure 23. Distribution of the Integrated Reporting score



Author's elaboration

The assumption of a normal distribution is also graphically supported by the quantile-quantile plot (Q-Q plot). The Q-Q plot is a non-parametric approach used to examine the similarity between the distribution of a numerical variable and the normal distribution and is also more diagnostic than a histogram (Gnanadesikan, 1997, p. 193; Thode, 2002, p. 22; Wilk & Gnanadesikan, 1968). Since no significant, consistent, systematic deviations from the identity line (y = x) are apparent, there is no indication that the theoretical and empirical distributions of the data differ significantly. Figure 24 presents the Q-Q plot.

Figure 24. Q-Q plot



Author's elaboration

Moreover, to strengthen the assumption of normal distribution, some analytical tests were also conducted, namely the Kolmogorov-Smirnov goodness-of-fit test (KS test) and the Shapiro-Wilk test. The KS test examines whether the observed data correspond to a specific distribution and, therefore, refers to the empirical distribution function. The null hypothesis of this test states that the data follow a specific distribution, in this case, the normal distribution. The alternative hypothesis postulates that a different distribution function exists in this context (Hedderich & Sachs, 2020, p. 484). The result of the KS test is shown Table 4.

Table 4. Kolmogorov-Smirnov goodness-of-fit test for the total sample

Kolmogorov-Smirnov goodness-of-fit test for the total sample [a)]	
Variable	**Value**
Critical value	0.0410 ***
p-value	0.9346
alpha	0.0500

[a)] The non-parametric Kolmogorov-Smirnov goodness-of-fit test is used to test the following hypothesis:
H_0: The sample follows normal distribution
H_a: The sample does not follow normal distribution
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

Author's elaboration

The analysis shows the KS statistic of 0.0410. This statistic contains a probability value (p-value) of 0.9346. This value indicates that the sample with a significance level at the 5 per cent level (alpha = 0.05) is approximately normally distributed. Since the p-value is also higher than alpha = 0.01, the null hypothesis cannot be rejected at the 1 per cent level. Accordingly, this also applies to the significance level at the 10 per cent level.

In addition, a Shapiro-Wilk test is carried out to test normality. This additional test is carried out because the Shapiro-Wilk test appears more suitable with a decreasing sample size and has a higher power than the KS test (Hedderich & Sachs, 2020, p. 487; Mohd Razali & Bee Wah, 2011, p. 21). In this case, the null hypothesis is that the residues of the sample are normally distributed. So, if the p-value is smaller than the selected alpha, the null hypothesis is rejected. In other words, if the p-value exceeds the alpha level, the null hypothesis cannot be rejected (Hedderich & Sachs, 2020, pp. 487–488). Table 5 presents the results of the Shapiro-Wilk test.

Table 5. Shapiro-Wilk test for the total sample

Shapiro-Wilk test for the total sample [a)]	
Variable	**Value**
Critical value	0.9945 ***
p-value	0.8047
alpha	0.0500

[a)] The Shapiro-Wilk test is used to test the following hypothesis:
H_0: The residues follow a normal distribution
H_a: The residues do not follow a normal distribution
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

Author's elaboration

The Shapiro-Wilk test also shows that the analysed data follow a normal distribution at the 5 per cent level as well as at the 10 per cent level and the 1 per cent level. It can be stated that both the results of the analytical tests and the graphical tests for normal distribution of the total sample can be assumed to have a normal distribution.[45]

[45] For the (sub-)score analyses of the sub-samples, only the Shapiro-Wilk test is conducted to test the normal distribution, as this is more suitable for smaller samples and has a higher power (Hedderich & Sachs, 2020, p. 487; Mohd Razali & Bee Wah, 2011, p. 21).

4.2.2. The degree of the total Integrated Reporting score of the sub-samples

To enable a more in-depth analysis, the total Integrated Reporting score is presented in the following four tables, by industry (Table 6), financial year (Table 7), country (Table 8) and finally in a country-financial year sample (Table 9).

Table 6. Descriptive statistics of the Integrated Reporting score by industry

Descriptive statistics of the Integrated Reporting score by industry									
Variable [a)]	**Sample**	**Mean**	**St. dev.**	**Min.**	**Q25**	**Median**	**Q75**	**Max.**	**N**
Integrated Reporting score	Construction	0.47	0.25	0.29	0.38	0.47	0.55	0.64	2
	Manufacturing	0.54	0.11	0.26	0.47	0.54	0.60	0.79	76
	Mining	0.60	0.14	0.29	0.54	0.60	0.66	0.81	16
	Retail Trade	0.56	0.14	0.30	0.50	0.58	0.64	0.86	14
	Services	0.54	0.12	0.31	0.44	0.55	0.63	0.74	22
	Transportation and Public Utilities	0.56	0.10	0.40	0.49	0.58	0.64	0.73	28
	Wholesale Trade	0.52	0.12	0.34	0.48	0.51	0.56	0.71	6
	Total sample	**0.55**	**0.12**	**0.26**	**0.47**	**0.55**	**0.62**	**0.86**	**164**

[a)] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

Author's elaboration

Concerning the sector-related results, which can be taken from Table 6, it can be determined that the highest mean of 0.60 and median of 0.60 comes from the Mining sector. The lowest mean and median of 0.47 each are from the Construction sector. While the highest Integrated Reporting score of 0.86 results from the industry sector Retail Trade, the lowest Integrated Reporting score of 0.26 comes from the Manufacturing segment. The strikingly high standard deviation in the Construction segment of 0.25 is because this sub-sample contains only two samples, one logically from 2013 and the other from 2022, and thus represents the improvement of the degree of Integrated Reporting of this one specific single company.

Table 7. Descriptive statistics of the Integrated Reporting score by financial year

Descriptive statistics of the Integrated Reporting score by financial year									
Variable [a)]	**Sample**	**Mean**	**St. dev.**	**Min.**	**Q25**	**Median**	**Q75**	**Max.**	**N**
Integrated Reporting score	Financial year 2013	0.48	0.10	0.26	0.43	0.49	0.55	0.68	82
	Financial year 2022	0.61	0.10	0.43	0.55	0.60	0.69	0.86	82
	Total sample	**0.55**	**0.12**	**0.26**	**0.47**	**0.55**	**0.62**	**0.86**	**164**

[a)] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

Author's elaboration

The breakdown of the Integrated Reporting score by financial year, presented in Table 7, indicates that the level of Integrated Reporting in 2022 is higher regarding the mean (2022: 0.61; 2013: 0.48) and median (2022: 0.60; 2013: 0.49). The lowest Integrated Reporting score is 0.26 in 2013, and the highest is 0.86 in 2022. It should be noted that the standard deviation in 2013 and 2022 is identical.

Table 8. Descriptive statistics of the Integrated Reporting score by country

Descriptive statistics of the Integrated Reporting score by country									
Variable [a)]	**Sample**	**Mean**	**St. dev.**	**Min.**	**Q25**	**Median**	**Q75**	**Max.**	**N**
Integrated Reporting score	South Africa	0.59	0.12	0.29	0.51	0.60	0.66	0.86	82
	Germany	0.51	0.10	0.26	0.44	0.52	0.57	0.77	82
	Total sample	**0.55**	**0.12**	**0.26**	**0.47**	**0.55**	**0.62**	**0.86**	**164**

[a)] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

Author's elaboration

Table 8 shows a breakdown of the Integrated Reporting score based on the countries examined, South Africa and Germany. It can be observed that both the mean of 0.59 and the median of 0.60 in South Africa are higher than the corresponding values in Germany (mean: 0.51; median: 0.52). While the highest Integrated Reporting score of 0.86 is measured in South Africa, the lowest Integrated Reporting score of 0.26 is from Germany.

Table 9. Descriptive statistics of the Integrated Reporting score by country-financial year

Descriptive statistics of the Integrated Reporting score by country-financial year									
Variable [a)]	**Sample**	**Mean**	**St. dev.**	**Min.**	**Q25**	**Median**	**Q75**	**Max.**	**N**
Integrated Reporting score	South Africa 2013	0.50	0.10	0.29	0.45	0.52	0.58	0.67	41
	South Africa 2022	0.67	0.09	0.45	0.60	0.66	0.73	0.86	41
	Germany 2013	0.47	0.09	0.26	0.40	0.47	0.52	0.68	41
	Germany 2022	0.56	0.08	0.43	0.50	0.56	0.60	0.77	41
	Total sample	**0.55**	**0.12**	**0.26**	**0.47**	**0.55**	**0.62**	**0.86**	**164**

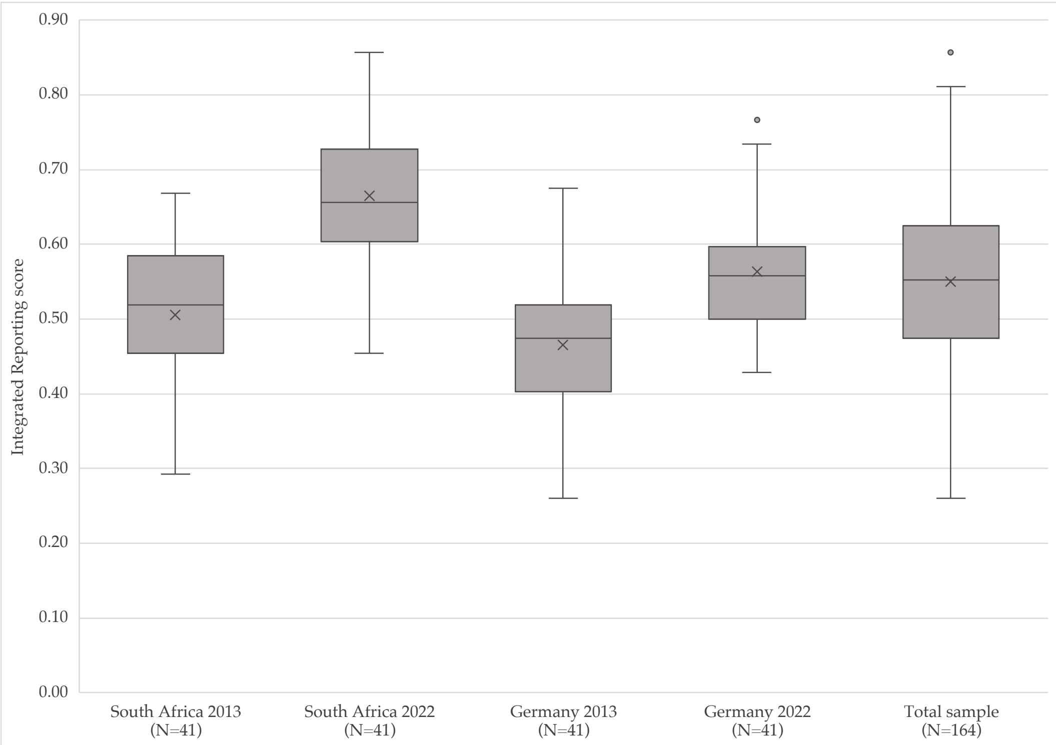
[a)] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

Author's elaboration

Table 9 compares the country-financial year sub-samples. The highest mean of 0.67 and the highest median of 0.66 are found in the South Africa 2022 sub-sample. Both the lowest mean of 0.47 and median of 0.47 come from the Germany 2013 sub-sample. The minimum of 0.26 also comes from the Germany 2013 sub-sample. The maximum of 0.86 of the examined data is taken from the South Africa 2022 sub-sample.

The standard deviations in the respective sup-samples are not widely dispersed and are highest in the South Africa 2013 sub-sample at 0.10 and lowest in the Germany 2022 sub-sample at 0.08. The interquartile ranges for the South African sub-samples are 0.13 in the year 2013 and 0.26 in the year 2022. The interquartile ranges in the German sub-samples are 0.28 in the year 2013 and 0.27 in the year 2022. This emphasises a certain resemblance in the variation. The similarity is shown graphically in the following non-parametric Box-Whisker-Plots in Figure 25. However, they also reveal the differences in the medians. In the Germany 2022 sub-sample as well as in the total sample, one outlier each can be identified that is outside the 1.5-fold interquartile range (Hedderich & Sachs, 2020, p. 86).

Figure 25. Box-Whisker-Plots



Author's elaboration

With a mean of 0.50 and a median of 0.52, the South Africa 2013 sub-sample exceeds the corresponding values of the Germany 2013 sub-sample (mean: 0.47; median: 0.47) by 0.03 and 0.05 respectively. The values of the South Africa 2022 sub-sample (mean: 0.67; median: 0.66) also exceed the corresponding values in the Germany 2022 sub-sample (mean: 0.56; median: 0.56) in this case by 0.11 and 0.10 respectively.

Various differences between the year-country subsamples can be identified. The mean of 0.50 and the median of 0.52 of the South Africa 2013 sub-sample are much lower than the South Africa 2022 sub-sample at 0.17 and 0.14, respectively (mean: 0.67; median: 0.66). A similar situation, albeit not with such a large difference, can be observed in the German sub-samples. In the Germany 2013 sub-sample, the mean is 0.47, and the median is 0.47, too. The values of the Germany

2022 sub-sample are higher, with a difference of 0.09 and 0.08, respectively (mean: 0.56; median: 0.56).

In order to examine the differences between the sub-samples for statistical significance, unpaired two-sample and two-tailed t-tests and unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) tests are performed. While the t-test assumes that the data follow a normal distribution, the distribution does not play a role when applying the Wilcoxon rank-sum (Mann-Whitney-U) test to compare two samples (Hedderich & Sachs, 2020, p. 553). Table 10 presents the tests of the respective sub-samples for normal distribution using the Shapiro-Wilk test.

Table 10. Shapiro-Wilk test for the sub-samples

Shapiro-Wilk test for the sub-samples		
Variable [a)]	**Sample**	**Test of normal distribution** — **Shapiro-Wilk test** [b)] **w-statistics** [c)]
Integrated Reporting score	Financial year 2013	0.9784
	Financial year 2022	0.9835
	South Africa	0.9833
	Germany	0.9893
	South Africa 2013	0.9497 *
	South Africa 2022	0.9903
	Germany 2013	0.9824
	Germany 2022	0.9606
	Total sample	0.9945

a) The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

b) The Shapiro-Wilk test is used to test the following hypothesis:

H_0: The residues follow a normal distribution
H_a: The residues do not follow a normal distribution
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

c) The column w-statistics shows the w-value of the Shapiro-Wilk test.

Author's elaboration

Table 10 indicates that it can be analytically assumed that a normal distribution is primarily given. Even if the normal distribution assumption is essential for the t-test, some studies have concluded that the t-tests are relatively robust to violations of the normal distribution assumption (Kubinger et al., 2009; Rasch & Guiard, 2004).

Another prerequisite of the unpaired two-sample and two-tailed t-test, which has to be considered, is homoscedasticity. If homoscedasticity is given, the variance in the two random samples is to be considered equal (Hedderich & Sachs, 2020, p. 520). The Levene test of equality of variances is used for this purpose (Levene, 1960). The Levene test can be performed on the mean or the median. This thesis uses the latter, which is considered the more robust variant (Gastwirth et al., 2009, p. 347).[46] The results of the test can be found in Table 11.

Table 11. Levene test for the sub-samples

Levene test for the sub-samples			
Variable [a)]	**Sample 1**	**Test of comparison of two variances or Test of homoscedasticity** **Levene test** [b)] **f-statistics** [c)]	**Sample 2**
Integrated Reporting score	Financial year 2022	0.0034 *	Financial year 2013
	South Africa	3.0479 *	Germany
	South Africa 2013	0.8509	Germany 2013
	South Africa 2022	0.3132	Germany 2022
	South Africa 2022	0.9271	South Africa 2013
	Germany 2022	0.2844	Germany 2013

[a)] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

[b)] The Levene test, based on median, is used to test the following hypothesis:

H_0: The variances of Sample 1 and Sample 2 are not significantly different
H_a: At least one of the variances is significantly different from another
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c)] The column f-statistics shows the f-value of the Levene test, based on median.

Author's elaboration

However, even though normal distribution and homoscedasticity seems plausible for the various samples of the Integrated Reporting score, the non-

[46] For the sub-score analyses of the sub-samples, Shapiro-Wilk tests to test the normal distribution and Levene tests to test the equality of variances are conducted, too. The results of the respective tests can be found in APPENDIX 2 and APPENDIX 3.

parametric alternative in the form of the Wilcoxon rank-sum (Mann-Whitney-U) test is additionally applied for robustness purposes. The results of the tests of comparison are presented in the following Tables 12 to 17. The analyses and presentation of results were divided into six Panels A to F.

Table 12. Panel A: Financial year 2022 versus Financial year 2013

Panel A: Financial year 2022 versus Financial year 2013										
Variable [a)]	Sub-sample 1 Financial year 2022			Sub-sample 2 Financial year 2013			Differences		Tests of comparison	
	Mean	Median	N	Mean	Median	N	Mean	Median	t-test [b)] t-statistics [d)]	Wilcoxon rank-sum (Mann-Whitney-U) test [c)] z-statistics [e)]
Integrated Reporting score	0.61	0.60	82	0.48	0.49	82	0.13 27.08%	0.11 22.45%	8.3578 ***	6.9759 ***

[a)] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

[b)] The unpaired two-sample and two-tailed t-test is used to test the following hypothesis:

H_0: Mean sub-sample 1 - Mean sub-sample 2 = 0
H_a: Mean sub-sample 1 - Mean sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c)] The unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test is used to test the following hypothesis:

H_0: Location sub-sample 1 - Location sub-sample 2 = 0
H_a: Location sub-sample 1 - Location sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[d)] The column t-statistics shows the t-value of the unpaired two-sample and two-tailed t-test.

[e)] The column z-statistics shows the z-value of the unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test.

Author's elaboration

Table 12 presents the results of Panel A, in which the sub-sample financial year 2022 is compared with the financial year 2013. The results of the content analysis show a mean of 0.61 and a median of 0.60 in 2022. In 2013, the mean is 0.48, and the median 0.49. In absolute terms, the mean has increased by 0.13 and the median by 0.11. The relative change displays that the mean has increased by 27.08 per cent and the median by 22.45 per cent. Here, too, the tests of comparison show statistical significance at the 1 per cent level.

Table 13. Panel B: South Africa versus Germany

Panel B: South Africa versus Germany										
Variable [a)]	Sub-sample 1 South Africa			Sub-sample 2 Germany			Differences		Tests of comparison	
	Mean	Median	N	Mean	Median	N	Mean	Median	t-test [b)] t-statistics [d)]	Wilcoxon rank-sum (Mann-Whitney-U) test [c)] z-statistics [e)]
Integrated Reporting score	0.59	0.60	82	0.51	0.52	82	0.08 15.69%	0.08 15.38%	4.0408 ***	4.0990 ***

[a)] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

[b)] The unpaired two-sample and two-tailed t-test is used to test the following hypothesis:

H_0: Mean sub-sample 1 - Mean sub-sample 2 = 0
H_a: Mean sub-sample 1 - Mean sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c)] The unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test is used to test the following hypothesis:

H_0: Location sub-sample 1 - Location sub-sample 2 = 0
H_a: Location sub-sample 1 - Location sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[d)] The column t-statistics shows the t-value of the unpaired two-sample and two-tailed t-test.

[e)] The column z-statistics shows the z-value of the unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test.

Author's elaboration

Panel B compares the two sub-samples, South Africa and Germany (Table 13). While a mean of 0.59 and median of 0.60 is measured in South Africa, a mean of 0.51 and median of 0.52 results from the content analysis in Germany. Therefore, the difference between mean and median is 0.08 in both cases. In relative terms, the mean has risen by 15.69 per cent and the median by 15.38 per cent. The two tests of comparison show that the difference is statistically significant at the 1 per cent level.

Table 14. Panel C: South Africa 2013 versus Germany 2013

Panel C: South Africa 2013 versus Germany 2013										
Variable [a]	**Sub-sample 1 South Africa 2013**			**Sub-sample 2 Germany 2013**			**Differences**		**Tests of comparison**	
	Mean	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**t-test [b]** t-statistics [d]	**Wilcoxon rank-sum (Mann-Whitney-U) test [c]** z-statistics [e]
Integrated Reporting score	0.50	0.52	41	0.47	0.47	41	0.03 6.38%	0.05 10.64%	1.8620 *	1.8884 *

[a] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

[b] The unpaired two-sample and two-tailed t-test is used to test the following hypothesis:

H_0: Mean sub-sample 1 - Mean sub-sample 2 = 0
H_a: Mean sub-sample 1 - Mean sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c] The unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test is used to test the following hypothesis:

H_0: Location sub-sample 1 - Location sub-sample 2 = 0
H_a: Location sub-sample 1 - Location sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[d] The column t-statistics shows the t-value of the unpaired two-sample and two-tailed t-test.

[e] The column z-statistics shows the z-value of the unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test.

Author's elaboration

Panel C, which shows the Integrated Reporting scores of the respective countries in 2013, can be found in Table 14. With a mean of 0.50 and median of 0.52, the South Africa 2013 sub-sample is 0.03 and 0.05 higher than the Germany 2013 sub-sample with a mean and median of 0.47 each. In relative terms, the mean has increased by 6.38 per cent and the median by 10.64 per cent. However, the statistical significance in this panel is only given at the 10 per cent level.

Table 15. Panel D: South Africa 2022 versus Germany 2022

Panel D: South Africa 2022 versus Germany 2022										
Variable [a]	Sub-sample 1 South Africa 2022			Sub-sample 2 Germany 2022			Differences		Tests of comparison	
	Mean	Median	N	Mean	Median	N	Mean	Median	t-test [b] t-statistics [d]	Wilcoxon rank-sum (Mann-Whitney-U) test [c] z-statistics [e]
Integrated Reporting score	0.67	0.66	41	0.56	0.56	41	0.11 19.64%	0.10 17.86%	5.4208 ***	4.8495 ***

[a] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

[b] The unpaired two-sample and two-tailed t-test is used to test the following hypothesis:
H_0: Mean sub-sample 1 - Mean sub-sample 2 = 0
H_a: Mean sub-sample 1 - Mean sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c] The unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test is used to test the following hypothesis:
H_0: Location sub-sample 1 - Location sub-sample 2 = 0
H_a: Location sub-sample 1 - Location sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[d] The column t-statistics shows the t-value of the unpaired two-sample and two-tailed t-test.

[e] The column z-statistics shows the z-value of the unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test.

Author's elaboration

Table 15 presents the results of Panel D, in which the sub-samples South Africa 2022 and Germany 2022 are scrutinised. The results of the content analysis indicate that the South Africa 2022 sub-sample has a mean of 0.67 and a median of 0.66. This contrasts with a mean and median of 0.56 in the Germany 2022 sub-sample, meaning that the mean has risen by 0.11 and the median by 0.10. This is equivalent to a relative increase of 19.64 per cent in the mean and 17.86 per cent in the median. The tests of comparison provide results with statistical significance at the 1 per cent level.

Table 16. Panel E: South Africa 2022 versus South Africa 2013

Panel E: South Africa 2022 versus South Africa 2013										
Variable [a]	Sub-sample 1 South Africa 2022			Sub-sample 2 South Africa 2013			Differences		Tests of comparison	
	Mean	Median	N	Mean	Median	N	Mean	Median	t-test [b] t-statistics [d]	Wilcoxon rank-sum (Mann-Whitney-U) test [c] z-statistics [e]
Integrated Reporting score	0.67	0.66	41	0.50	0.52	41	0.17 34.00%	0.14 26.92%	7.6236 ***	6.0351 ***

[a] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

[b] The unpaired two-sample and two-tailed t-test is used to test the following hypothesis:

H_0: Mean sub-sample 1 - Mean sub-sample 2 = 0
H_a: Mean sub-sample 1 - Mean sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c] The unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test is used to test the following hypothesis:

H_0: Location sub-sample 1 - Location sub-sample 2 = 0
H_a: Location sub-sample 1 - Location sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[d] The column t-statistics shows the t-value of the unpaired two-sample and two-tailed t-test.

[e] The column z-statistics shows the z-value of the unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test.

Author's elaboration

Panel E compares the Integrated Reporting score in 2022 and 2013 at the country level in South Africa and is presented in Table 16. This shows that a mean of 0.67 and a median of 0.66 are measured in 2022. In 2013, the mean of the Integrated Reporting Score is 0.50, and the median is 0.52. This results in an increase in the mean of 0.17 and the median of 0.14. The relative change in this respect is 34.00 per cent in the mean and 26.92 per cent in the median. The findings of the tests of comparison are statistically significant at the 1 per cent level.

Table 17. Panel F: Germany 2022 versus Germany 2013

Panel F: Germany 2022 versus Germany 2013										
Variable [a]	Sub-sample 1 Germany 2022			Sub-sample 2 Germany 2013			Differences		Tests of comparison	
	Mean	Median	N	Mean	Median	N	Mean	Median	t-test [b] t-statistics [d]	Wilcoxon rank-sum (Mann-Whitney-U) test [c] z-statistics [e]
Integrated Reporting score	0.56	0.56	41	0.47	0.47	41	0.09 19.15%	0.09 19.15%	5.0670 ***	4.4638 ***

[a] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

[b] The unpaired two-sample and two-tailed t-test is used to test the following hypothesis:

H_0: Mean sub-sample 1 - Mean sub-sample 2 = 0
H_a: Mean sub-sample 1 - Mean sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c] The unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test is used to test the following hypothesis:

H_0: Location sub-sample 1 - Location sub-sample 2 = 0
H_a: Location sub-sample 1 - Location sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[d] The column t-statistics shows the t-value of the unpaired two-sample and two-tailed t-test.

[e] The column z-statistics shows the z-value of the unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test.

Author's elaboration

Finally, the analysis of the year-on-year comparison of 2022 and 2013 in Germany is shown in Panel F (Table 17). In 2022, the mean and the median of the Integrated Reporting score in Germany are 0.56. In 2013, the mean and the median are the same at 0.47. This results in an absolute increase of 0.09 and a relative growth of 19.15 per cent for both parameters. The tests of comparison also reveal statistical significance at the 1 per cent level in this context.

The differences in means and medians can already be read from the panel study. In order to highlight the development and evolution of Integrated Reporting, the changes in the Integrated Reporting score (deltas) over time for each country/year sub-sample will now be examined in more detail. The deltas shown in Table 18 represent the statistical analysis of data after having built the difference between the score determined for a company in 2022 and the corresponding score for the company in 2013.

Table 18. Descriptive statistics of the Delta Integrated Reporting score

Descriptive statistics of the Delta Integrated Reporting score									
Variable [a)]	**Sample**	**Mean**	**St. dev.**	**Min.**	**Q25**	**Median**	**Q75**	**Max.**	**N**
Delta Integrated Reporting score	South Africa 2022-2013	0.16	0.11	-0.07	0.09	0.17	0.24	0.38	82
	Germany 2022-2013	0.10	0.08	-0.15	0.06	0.09	0.15	0.25	82
	Total sample 2022-2013	**0.13**	**0.10**	**-0.15**	**0.07**	**0.13**	**0.18**	**0.38**	**164**

[a)] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

Due to rounding, there may be minor divergences in this table compared to the previous tables.

Author's elaboration

In Table 19, the analysis of the delta for both countries shows that the difference-in-differences is significant at the 1 per cent level.[47] The difference-in-differences research design can be used to estimate causal effects as well to test pre- and post-effects (Dang et al., 2020, p. 49; Rothbard et al., 2023, p. 1). It is also used in various studies in the context of applying IFRS (Chen et al., 2015; Doukakis, 2014; Hong et al., 2014; Li & Yang, 2016). This form of comparison makes it clear that although changes can occur within the groups, however, the group-level fixed effects remain.[48] Because the sub-samples are designed in a balanced way, it is possible to use this difference-in-differences approach. In this study, the difference-in-differences approach is modified to a certain degree by performing a t-test and a Wilcoxon rank-sum (Mann-Whitney-U) test.[49, 50] The results are presented in the following Table 19.

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47 The significance refers to the t-test result.

48 For detailed explanations and further examples of applying difference-in-differences research design, see Angrist & Pischke (2009, pp. 227–243).

49 Adapted from Hannen (2017, p. 136). A dedicated application of the approach does not seem necessary to answer the research question and the corroborating hypotheses. However, this can be done in future studies with a modulated research question and corresponding hypotheses (for further suggestions for research, see Chapter 7.4).

50 The Shapiro-Wilk tests and the Levene test required for the t-test can be found in APPENDIX 4 and APPENDIX 5.

Table 19. Delta Integrated Reporting score South Africa 2022-2013 versus Delta Integrated Reporting score Germany 2022-2013

Delta Integrated Reporting score South Africa 2022-2013 versus Delta Integrated Reporting score Germany 2022-2013										
Variable [a)]	Sub-sample 1 South Africa 2022-2013			Sub-sample 2 Germany 2022-2013			Differences		Tests of comparison	
	Mean	Median	N	Mean	Median	N	Mean	Median	t-test [b)] t-statistics [d)]	Wilcoxon rank-sum (Mann-Whitney-U) test [c)] z-statistics [e)]
Delta Integrated Reporting score	0.16	0.17	82	0.10	0.09	82	0.06 60.00%	0.08 88.89%	3.0525 ***	-0.7188

[a)] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

[b)] The unpaired two-sample and two-tailed t-test is used to test the following hypothesis:
H_0: Mean sub-sample 1 - Mean sub-sample 2 = 0
H_a: Mean sub-sample 1 - Mean sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c)] The unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test is used to test the following hypothesis:
H_0: Location sub-sample 1 - Location sub-sample 2 = 0
H_a: Location sub-sample 1 - Location sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[d)] The column t-statistics shows the t-value of the unpaired two-sample and two-tailed t-test.

[e)] The column z-statistics shows the z-value of the unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test.

Due to rounding, there may be minor divergences in this table compared to the previous tables.

Author's elaboration

Concerning the investigation in this study, these primary considerations can be broken down as follows. If only the situation in 2013 is examined, the year of publication of the International Integrated Reporting Framework, and the situation in 2022 with the help of a simple comparison, a general time trend would be neglected. This would not consider the continuous development of the reporting landscape and the market, regulatory and stakeholder-induced environmental changes. Furthermore, comparing the two countries in 2013 and 2022 would contribute to already existing country differences and country-specific characteristics being ignored. Against this background, the difference-in-differences approach is a suitable additional method to harden the research results.

Finally, the results of the content analysis concerning the Integrated Reporting score are discussed in Chapter 5.

4.2.3. The degree of the Integrated Reporting sub-scores

While the previous chapter deals with the total Integrated Reporting score results, this chapter serves to analyse the sub-scores for a higher granularity. For the sake of consistency with the previous chapter and mainly for comparability reasons, the sub-scores are presented normalised to not create a bias due to the different item composition of the eight Content Elements.[51] The patterns between the individual sub-samples already observed in the overall score are also reflected in most of the sub-scores represented by the Content Elements of the International Integrated Reporting Framework. Table 20 below gives an overview of the sub-scores achieved. For the sake of clarity, the entire Integrated Reporting score is also shown.

Table 20. Descriptive statistics of the Integrated Reporting sub-scores

Descriptive statistics of the Integrated Reporting sub-scores									
Variables [a)]	**Sample**	**Mean**	**St. dev.**	**Min.**	**Q25**	**Median**	**Q75**	**Max.**	**N**
Integrated Reporting score	Financial year 2013	0.48	0.10	0.26	0.43	0.49	0.55	0.68	82
	Financial year 2022	0.61	0.10	0.43	0.55	0.60	0.69	0.86	82
	South Africa	0.59	0.12	0.29	0.51	0.60	0.66	0.86	82
	Germany	0.51	0.10	0.26	0.44	0.52	0.57	0.77	82
	South Africa 2013	0.50	0.10	0.29	0.45	0.52	0.58	0.67	41
	South Africa 2022	0.67	0.09	0.45	0.60	0.66	0.73	0.86	41
	Germany 2013	0.47	0.09	0.26	0.40	0.47	0.52	0.68	41
	Germany 2022	0.56	0.08	0.43	0.50	0.56	0.60	0.77	41
	Total sample	**0.55**	**0.12**	**0.26**	**0.47**	**0.55**	**0.62**	**0.86**	**164**
Sub-score OVERV	Financial year 2013	0.63	0.13	0.25	0.54	0.63	0.72	0.88	82
	Financial year 2022	0.75	0.12	0.50	0.69	0.78	0.81	1.00	82
	South Africa	0.70	0.13	0.25	0.59	0.72	0.80	0.91	82
	Germany	0.67	0.14	0.31	0.57	0.66	0.78	1.00	82
	South Africa 2013	0.66	0.13	0.25	0.56	0.69	0.75	0.88	41
	South Africa 2022	0.75	0.11	0.50	0.72	0.78	0.81	0.91	41
	Germany 2013	0.59	0.12	0.31	0.53	0.59	0.66	0.84	41
	Germany 2022	0.75	0.12	0.50	0.66	0.75	0.84	1.00	41
	Total sample	**0.69**	**0.14**	**0.25**	**0.59**	**0.72**	**0.78**	**1.00**	**164**

[a)] The variables represent the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

continued on page 186

[51] Due to the different levels of detail within the International Integrated Reporting Framework, the Content Elements have a varying number of assessment items, see Chapter 3.4.2.

Table 20. Descriptive statistics of the Integrated Reporting sub-scores (continued)

Descriptive statistics of the Integrated Reporting sub-scores (continued)									
Variables [a]	**Sample**	**Mean**	**St. dev.**	**Min.**	**Q25**	**Median**	**Q75**	**Max.**	**N**
Sub-score GOVER	Financial year 2013	0.45	0.15	0.07	0.36	0.43	0.55	0.71	82
	Financial year 2022	0.60	0.19	0.14	0.43	0.57	0.71	1.00	82
	South Africa	0.57	0.19	0.14	0.43	0.57	0.71	1.00	82
	Germany	0.48	0.17	0.07	0.36	0.50	0.57	0.86	82
	South Africa 2013	0.49	0.14	0.21	0.43	0.43	0.57	0.71	41
	South Africa 2022	0.65	0.21	0.14	0.50	0.71	0.86	1.00	41
	Germany 2013	0.41	0.15	0.07	0.36	0.36	0.50	0.71	41
	Germany 2022	0.55	0.17	0.21	0.43	0.57	0.71	0.86	41
	Total sample	**0.52**	**0.19**	**0.07**	**0.43**	**0.50**	**0.64**	**1.00**	**164**
Sub-score BUSIM	Financial year 2013	0.44	0.11	0.16	0.38	0.44	0.50	0.69	82
	Financial year 2022	0.56	0.14	0.19	0.44	0.56	0.66	0.97	82
	South Africa	0.55	0.15	0.16	0.47	0.53	0.66	0.97	82
	Germany	0.45	0.11	0.19	0.38	0.44	0.50	0.72	82
	South Africa 2013	0.45	0.11	0.16	0.41	0.47	0.53	0.69	41
	South Africa 2022	0.65	0.12	0.34	0.56	0.66	0.72	0.97	41
	Germany 2013	0.42	0.10	0.22	0.34	0.44	0.50	0.63	41
	Germany 2022	0.48	0.11	0.19	0.41	0.47	0.53	0.72	41
	Total sample	**0.50**	**0.14**	**0.16**	**0.41**	**0.47**	**0.56**	**0.97**	**164**
Sub-score RIOP	Financial year 2013	0.52	0.22	0.00	0.33	0.50	0.67	0.83	82
	Financial year 2022	0.72	0.16	0.33	0.67	0.67	0.83	1.00	82
	South Africa	0.52	0.22	0.00	0.33	0.50	0.67	1.00	82
	Germany	0.73	0.17	0.33	0.67	0.67	0.83	1.00	82
	South Africa 2013	0.39	0.20	0.00	0.33	0.33	0.50	0.83	41
	South Africa 2022	0.65	0.15	0.33	0.50	0.67	0.67	1.00	41
	Germany 2013	0.65	0.15	0.33	0.50	0.67	0.83	0.83	41
	Germany 2022	0.80	0.14	0.50	0.67	0.83	0.83	1.00	41
	Total sample	**0.62**	**0.22**	**0.00**	**0.50**	**0.67**	**0.83**	**1.00**	**164**
Sub-score STRA	Financial year 2013	0.50	0.15	0.00	0.41	0.50	0.59	0.82	82
	Financial year 2022	0.58	0.19	0.09	0.50	0.59	0.68	1.00	82
	South Africa	0.60	0.17	0.00	0.50	0.59	0.68	1.00	82
	Germany	0.48	0.15	0.05	0.41	0.50	0.59	0.82	82
	South Africa 2013	0.52	0.16	0.00	0.41	0.55	0.64	0.77	41
	South Africa 2022	0.68	0.15	0.36	0.59	0.68	0.77	1.00	41
	Germany 2013	0.48	0.14	0.05	0.41	0.50	0.59	0.82	41
	Germany 2022	0.48	0.17	0.09	0.36	0.50	0.59	0.73	41
	Total sample	**0.54**	**0.17**	**0.00**	**0.41**	**0.55**	**0.65**	**1.00**	**164**

[a] The variables represent the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

continued on page 187

Table 20. Descriptive statistics of the Integrated Reporting sub-scores (continued)

Descriptive statistics of the Integrated Reporting sub-scores (continued)									
Variables [a)]	**Sample**	**Mean**	**St. dev.**	**Min.**	**Q25**	**Median**	**Q75**	**Max.**	**N**
Sub-score PERF	Financial year 2013	0.35	0.14	0.14	0.21	0.36	0.43	0.71	82
	Financial year 2022	0.52	0.22	0.14	0.36	0.47	0.71	1.00	82
	South Africa	0.54	0.20	0.21	0.43	0.54	0.71	1.00	82
	Germany	0.32	0.13	0.14	0.21	0.29	0.43	0.71	82
	South Africa 2013	0.42	0.13	0.21	0.29	0.43	0.50	0.71	41
	South Africa 2022	0.67	0.18	0.29	0.57	0.71	0.79	1.00	41
	Germany 2013	0.28	0.11	0.14	0.21	0.21	0.36	0.50	41
	Germany 2022	0.36	0.13	0.14	0.29	0.36	0.43	0.71	41
	Total sample	**0.43**	**0.20**	**0.14**	**0.29**	**0.43**	**0.57**	**1.00**	**164**
Sub-score OUTL	Financial year 2013	0.39	0.15	0.10	0.30	0.38	0.50	0.75	82
	Financial year 2022	0.48	0.16	0.10	0.35	0.50	0.59	0.75	82
	South Africa	0.41	0.16	0.10	0.30	0.40	0.55	0.75	82
	Germany	0.47	0.16	0.10	0.35	0.45	0.55	0.75	82
	South Africa 2013	0.36	0.15	0.10	0.25	0.35	0.45	0.75	41
	South Africa 2022	0.46	0.15	0.10	0.35	0.45	0.55	0.75	41
	Germany 2013	0.42	0.15	0.10	0.30	0.40	0.55	0.75	41
	Germany 2022	0.51	0.16	0.10	0.45	0.55	0.65	0.75	41
	Total sample	**0.44**	**0.16**	**0.10**	**0.30**	**0.45**	**0.55**	**0.75**	**164**
Sub-score BAPP	Financial year 2013	0.57	0.31	0.00	0.25	0.50	0.75	1.00	82
	Financial year 2022	0.74	0.30	0.00	0.50	0.75	1.00	1.00	82
	South Africa	0.88	0.20	0.00	0.75	1.00	1.00	1.00	82
	Germany	0.43	0.25	0.00	0.25	0.38	0.50	1.00	82
	South Africa 2013	0.80	0.23	0.00	0.75	0.75	1.00	1.00	41
	South Africa 2022	0.95	0.11	0.50	1.00	1.00	1.00	1.00	41
	Germany 2013	0.34	0.18	0.00	0.25	0.25	0.50	1.00	41
	Germany 2022	0.52	0.27	0.00	0.25	0.50	0.75	1.00	41
	Total sample	**0.65**	**0.31**	**0.00**	**0.25**	**0.75**	**1.00**	**1.00**	**164**

[a)] The variables represent the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

Author's elaboration

In addition, the sub-scores of an analysis considering Panels G to L were also performed. In order to examine the differences between sub-samples for statistical significance, t-tests and non-parametric Wilcoxon rank-sum (Mann-Whitney-U) tests are performed.[52] The analyses' results are shown in the following tables.

[52] For the sub-score analyses of the sub-samples, Shapiro-Wilk tests to test the normal distribution and Levene tests to test the equality of variances are conducted, too. The results of the respective tests can be found in APPENDIX 2 and APPENDIX 3.

Table 21. Panel G: Financial year 2022 versus Financial year 2013 (sub-scores)

Panel G: Financial year 2022 versus Financial year 2013 (sub-scores)										
Variables [a]	Sub-sample 1 Financial year 2022			Sub-sample 2 Financial year 2013			Differences		Tests of comparison	
	Mean	Median	N	Mean	Median	N	Mean	Median	t-test [b] t-statistics [d]	Wilcoxon rank-sum (Mann-Whitney-U) test [c] z-statistics [e]
Integrated Reporting score	0.61	0.60	82	0.48	0.49	82	0.13 27.08%	0.11 22.45%	8.3578 ***	6.9759 ***
Sub-score OVERV	0.75	0.78	82	0.63	0.63	82	0.12 19.05%	0.15 23.81%	6.5249 ***	5.8544 ***
Sub-score GOVER	0.60	0.57	82	0.45	0.43	82	0.15 33.33%	0.14 32.56%	5.4284 ***	4.9111 ***
Sub-score BUSIM	0.56	0.56	82	0.44	0.44	82	0.12 27.27%	0.12 27.27%	6.4012 ***	5.4897 ***
Sub-score RIOP	0.72	0.67	82	0.52	0.50	82	0.20 38.46%	0.17 34.00%	6.6826 ***	5.6885 ***
Sub-score STRA	0.58	0.59	82	0.50	0.50	82	0.08 16.00%	0.09 18.00%	3.1048 ***	3.1098 ***
Sub-score PERF	0.52	0.47	82	0.35	0.36	82	0.17 48.57%	0.11 30.56%	5.7786 ***	4.8482 ***
Sub-score OUTL	0.48	0.50	82	0.39	0.38	82	0.09 23.08%	0.12 31.58%	3.924 ***	3.7397 ***
Sub-score BAPP	0.74	0.75	82	0.57	0.50	82	0.17 29.82%	0.25 50.00%	3.5407 ***	3.5097 ***

[a] The variables represent the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

[b] The unpaired two-sample and two-tailed t-test is used to test the following hypothesis:
H_0: Mean sub-sample 1 - Mean sub-sample 2 = 0
H_a: Mean sub-sample 1 - Mean sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c] The unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test is used to test the following hypothesis:
H_0: Location sub-sample 1 - Location sub-sample 2 = 0
H_a: Location sub-sample 1 - Location sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[d] The column t-statistics shows the t-value of the unpaired two-sample and two-tailed t-test.

[e] The column z-statistics shows the z-value of the unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test.

Author's elaboration

The comparison of the financial years 2022 and 2013 in Panel G (Table 21) shows a statistically significant change in the various individual sub-scores at the 1 per cent level in every respect. The highest absolute positive change can be identified in the sub-score RIOP (0.20). Here, the mean increases from 0.52 in 2013 to 0.72 in 2022. The most remarkable relative change is attributable to the sub-score PERF. About the mean, a relative increase of 48.57 per cent is measured.

Table 22. Panel H: South Africa versus Germany (sub-scores)

Panel H: South Africa versus Germany (sub-scores)										
Variables [a]	Sub-sample 1 South Africa			Sub-sample 2 Germany			Differences		Tests of comparison	
	Mean	Median	N	Mean	Median	N	Mean	Median	t-test [b] t-statistics [d]	Wilcoxon rank-sum (Mann-Whitney-U) test [c] z-statistics [e]
Integrated Reporting score	0.59	0.60	82	0.51	0.52	82	0.08 15.69%	0.08 15.38%	4.0408 ***	4.0990 ***
Sub-score OVERV	0.70	0.72	82	0.67	0.66	82	0.03 4.48%	0.06 9.09%	1.4200	1.5151
Sub-score GOVER	0.57	0.57	82	0.48	0.50	82	0.09 18.75%	0.07 14.00%	3.1215 ***	2.8846 ***
Sub-score BUSIM	0.55	0.53	82	0.45	0.44	82	0.10 22.22%	0.09 20.45%	4.9115 ***	4.8169 ***
Sub-score RIOP	0.52	0.50	82	0.73	0.67	82	-0.21 -28.77%	-0.17 -25.37%	-7.0289 ***	-6.2010 ***
Sub-score STRA	0.60	0.59	82	0.48	0.50	82	0.12 25.00%	0.09 18.00%	4.5446 ***	4.4180 ***
Sub-score PERF	0.54	0.54	82	0.32	0.29	82	0.22 68.75%	0.25 86.21%	8.4563 ***	7.0619 ***
Sub-score OUTL	0.41	0.40	82	0.47	0.45	82	-0.06 -12.77%	-0.05 -11.11%	-2.3367 **	-2.3293 **
Sub-score BAPP	0.88	1.00	82	0.43	0.38	82	0.45 104.65%	0.62 163.16%	12.7083 ***	9.0345 ***

[a] The variables represent the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

[b] The unpaired two-sample and two-tailed t-test is used to test the following hypothesis:
H_0: Mean sub-sample 1 - Mean sub-sample 2 = 0
H_a: Mean sub-sample 1 - Mean sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c] The unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test is used to test the following hypothesis:
H_0: Location sub-sample 1 - Location sub-sample 2 = 0
H_a: Location sub-sample 1 - Location sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[d] The column t-statistics shows the t-value of the unpaired two-sample and two-tailed t-test.

[e] The column z-statistics shows the z-value of the unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test.

Author's elaboration

Panel F (Table 22) compares the sub-scores of South Africa and Germany. Except for the sub-score OVERV, the comparison results are statistically significant, at least at the 5 per cent level. The sub-score BAPP (0.45) identifies the most notable difference. Here, a mean of 0.88 is measured in South Africa and only 0.43 in Germany. It also stands out that Germany achieved a better sub-score in RIOP (South Africa: mean: 0.52, median: 0.50; Germany: mean: 0.73, median: 0.67) and OUTL (South Africa: mean: 0.41, median: 0.40; Germany: mean: 0.47, median: 0.45).

Table 23. Panel I: South Africa 2013 versus Germany 2013 (sub-scores)

Panel I: South Africa 2013 versus Germany 2013 (sub-scores)										
Variables [a)]	**Sub-sample 1 South Africa 2013**			**Sub-sample 2 Germany 2013**			**Differences**		**Tests of comparison**	
	Mean	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**t-test** [b)] **t-statistics** [d)]	**Wilcoxon rank-sum (Mann-Whitney-U) test** [c)] **z-statistics** [e)]
Integrated Reporting score	0.50	0.52	41	0.47	0.47	41	0.03 6.38%	0.05 10.64%	1.8620 *	1.8884 *
Sub-score OVERV	0.66	0.69	41	0.59	0.59	41	0.07 11.86%	0.10 16.95%	2.3897 **	2.3812 **
Sub-score GOVER	0.49	0.43	41	0.41	0.36	41	0.08 19.51%	0.07 19.44%	2.3567 **	2.3334 **
Sub-score BUSIM	0.45	0.47	41	0.42	0.44	41	0.03 7.14%	0.03 6.82%	1.3623	1.5183
Sub-score RIOP	0.39	0.33	41	0.65	0.67	41	-0.26 -40.00%	-0.34 -50.75%	-6.8850 ***	-5.5546 ***
Sub-score STRA	0.52	0.55	41	0.48	0.50	41	0.04 8.33%	0.05 10.00%	1.1115	1.4135
Sub-score PERF	0.42	0.43	41	0.28	0.21	41	0.14 50.00%	0.22 104.76%	5.0908 ***	4.4732 ***
Sub-score OUTL	0.36	0.35	41	0.42	0.40	41	-0.06 -14.29%	-0.05 -12.50%	-1.8110 *	-1.6949 *
Sub-score BAPP	0.80	0.75	41	0.34	0.25	41	0.46 135.29%	0.50 200.00%	9.9036 ***	6.6585 ***

[a)] The variables represent the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

[b)] The unpaired two-sample and two-tailed t-test is used to test the following hypothesis:

H_0: Mean sub-sample 1 - Mean sub-sample 2 = 0
H_a: Mean sub-sample 1 - Mean sub-sample 2 $\neq$ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c)] The unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test is used to test the following hypothesis:

H_0: Location sub-sample 1 - Location sub-sample 2 = 0
H_a: Location sub-sample 1 - Location sub-sample 2 $\neq$ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[d)] The column t-statistics shows the t-value of the unpaired two-sample and two-tailed t-test.

[e)] The column z-statistics shows the z-value of the unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test.

Author's elaboration

Panel I (Table 23) indicates that South African companies are mostly more aligned with Integrated Reporting requirements than German companies in 2013. This is true for all sub-scores except RIOP (South Africa: mean: 0.39; median: 0.33 and Germany: mean: 0.65; median: 0.67) and OUTL (South Africa: mean: 0.36; median: 0.35 and Germany: mean: 0.42; median: 0.40). Except for the BUSIM and STRA sub-scores, statistical significance is at least at the 10 per cent level.

From the results of Panel J (Table 24), it can be concluded that even in 2022, South African companies meet the requirements for Integrated Reporting mostly better than German companies in the same year of the study. This finding holds except for the sub-scores OVERV (South Africa: mean: 0.75; median: 0.78 and Germany: mean: 0.75; median: 0.75), RIOP (South Africa: mean: 0.65; median: 0.67 and Germany: mean: 0.80; median: 0.83) and OUTL (South Africa: mean: 0.46; median: 0.45 and Germany: mean: 0.51; median: 0.55). Except for the sub-scores OVERV and OUTL, statistical significance is at least at the 10 per cent level.

Table 24. Panel J: South Africa 2022 versus Germany 2022 (sub-scores)

Panel J: South Africa 2022 versus Germany 2022 (sub-scores)										
Variables [a]	**Sub-sample 1 South Africa 2022**			**Sub-sample 2 Germany 2022**			**Differences**		**Tests of comparison**	
	Mean	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**t-test** [b] **t-statistics** [d]	**Wilcoxon rank-sum (Mann-Whitney-U) test** [c] **z-statistics** [e]
Integrated Reporting score	0.67	0.66	41	0.56	0.56	41	0.11 / 19.64%	0.10 / 17.86%	5.4208 ***	4.8495 ***
Sub-score OVERV	0.75	0.78	41	0.75	0.75	41	0.00 / 0.00%	0.03 / 4.00%	-0.2089	-0.0513
Sub-score GOVER	0.65	0.71	41	0.55	0.57	41	0.10 / 18.18%	0.14 / 24.56%	2.4708 **	2.3763 **
Sub-score BUSIM	0.65	0.66	41	0.48	0.47	41	0.17 / 35.42%	0.19 / 40.43%	6.6834 ***	5.423 ***
Sub-score RIOP	0.65	0.67	41	0.80	0.83	41	-0.15 / -18.75%	-0.16 / -19.28%	-4.8121 ***	-4.3833 ***
Sub-score STRA	0.68	0.68	41	0.48	0.50	41	0.20 / 41.67%	0.18 / 36.00%	5.5581 ***	4.6766 ***
Sub-score PERF	0.67	0.71	41	0.36	0.36	41	0.31 / 86.11%	0.35 / 97.22%	8.8672 ***	6.3103 ***
Sub-score OUTL	0.46	0.45	41	0.51	0.55	41	-0.05 / -9.80%	-0.10 / -18.18%	-1.6353	-1.7367 *
Sub-score BAPP	0.95	1.00	41	0.52	0.50	41	0.43 / 82.69%	0.50 / 100.00%	9.4047 ***	6.7075 ***

[a] The variables represent the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

[b] The unpaired two-sample and two-tailed t-test is used to test the following hypothesis:

H_0: Mean sub-sample 1 - Mean sub-sample 2 = 0
H_a: Mean sub-sample 1 - Mean sub-sample 2 $\neq$ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c] The unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test is used to test the following hypothesis:

H_0: Location sub-sample 1 - Location sub-sample 2 = 0
H_a: Location sub-sample 1 - Location sub-sample 2 $\neq$ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[d] The column t-statistics shows the t-value of the unpaired two-sample and two-tailed t-test.

[e] The column z-statistics shows the z-value of the unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test.

Author's elaboration

Table 25 below presents the comparison of the financial years 2022 and 2013 in South Africa. The differences in mean and median are analysed statistically.

Table 25. Panel K: South Africa 2022 versus South Africa 2013 (sub-scores)

Panel K: South Africa 2022 versus South Africa 2013 (sub-scores)										
Variables [a]	Sub-sample 1 South Africa 2022			Sub-sample 2 South Africa 2013			Differences		Tests of comparison	
	Mean	Median	N	Mean	Median	N	Mean	Median	t-test [b] t-statistics [d]	Wilcoxon rank-sum (Mann-Whitney-U) test [c] z-statistics [e]
Integrated Reporting score	0.67	0.66	41	0.50	0.52	41	0.17 / 34.00%	0.14 / 26.92%	7.6236 ***	6.0351 ***
Sub-score OVERV	0.75	0.78	41	0.66	0.69	41	0.09 / 13.64%	0.09 / 13.04%	3.3069 ***	3.2301 ***
Sub-score GOVER	0.65	0.71	41	0.49	0.43	41	0.16 / 32.65%	0.28 / 65.12%	4.0860 ***	3.7171 ***
Sub-score BUSIM	0.65	0.66	41	0.45	0.47	41	0.20 / 44.44%	0.19 / 40.43%	7.5958 ***	6.2347 ***
Sub-score RIOP	0.65	0.67	41	0.39	0.33	41	0.26 / 66.67%	0.34 / 103.03%	6.8463 ***	5.6283 ***
Sub-score STRA	0.68	0.68	41	0.52	0.55	41	0.16 / 30.77%	0.13 / 23.64%	4.7451 ***	4.2607 ***
Sub-score PERF	0.67	0.71	41	0.42	0.43	41	0.25 / 59.52%	0.28 / 65.12%	7.3002 ***	5.7255 ***
Sub-score OUTL	0.46	0.45	41	0.36	0.35	41	0.10 / 27.78%	0.10 / 28.57%	2.9185 ***	2.6644 ***
Sub-score BAPP	0.95	1.00	41	0.80	0.75	41	0.15 / 18.75%	0.25 / 33.33%	3.7710 ***	3.8504 ***

[a] The variables represent the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

[b] The unpaired two-sample and two-tailed t-test is used to test the following hypothesis:
H_0: Mean sub-sample 1 - Mean sub-sample 2 = 0
H_a: Mean sub-sample 1 - Mean sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c] The unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test is used to test the following hypothesis:
H_0: Location sub-sample 1 - Location sub-sample 2 = 0
H_a: Location sub-sample 1 - Location sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[d] The column t-statistics shows the t-value of the unpaired two-sample and two-tailed t-test.

[e] The column z-statistics shows the z-value of the unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test.

Author's elaboration

The results of Panel K (Table 25) indicate that the company reports' total score and all sub-scores examined improved from 2013 to 2022 in South Africa. The sub-scores RIOP (0.26), PERF (0.25) and BUSIM (0.20) show the most noteworthy absolute increase in mean. The same applies to the relative increase in the sub-scores' mean. The lowest absolute increase in mean can be attributed to the sub-scores BAPP (0.15), OUTL (0.10) and OVERV (0.09). The same applies to the relative increase in the sub-scores' mean but in a different order. The tests of comparison all show statistical significance at the 1 per cent level.

Table 26. Panel L: Germany 2022 versus Germany 2013 (sub-scores)

Panel L: Germany 2022 versus Germany 2013 (sub-scores)

Variables [a)]	Sub-sample 1 Germany 2022			Sub-sample 2 Germany 2013			Differences		Tests of comparison	
	Mean	Median	N	Mean	Median	N	Mean	Median	t-test [b)] t-statistics [d)]	Wilcoxon rank-sum (Mann-Whitney-U) test [c)] z-statistics [e)]
Integrated Reporting score	0.56	0.56	41	0.47	0.47	41	0.09 19.15%	0.09 19.15%	5.0670 ***	4.4638 ***
Sub-score OVERV	0.75	0.75	41	0.59	0.59	41	0.16 27.12%	0.16 27.12%	6.0626 ***	5.0706 ***
Sub-score GOVER	0.55	0.57	41	0.41	0.36	41	0.14 34.15%	0.21 58.33%	3.8182 ***	3.4842 ***
Sub-score BUSIM	0.48	0.47	41	0.42	0.44	41	0.06 14.29%	0.03 6.82%	2.4599 **	2.0698 **
Sub-score RIOP	0.80	0.83	41	0.65	0.67	41	0.15 23.08%	0.16 23.88%	4.4031 ***	3.8765 ***
Sub-score STRA	0.48	0.50	41	0.48	0.50	41	0.00 0.00%	0.00 0.00%	0.0648	0.1078
Sub-score PERF	0.36	0.36	41	0.28	0.21	41	0.08 28.57%	0.15 71.43%	2.9658 ***	2.8003 ***
Sub-score OUTL	0.51	0.55	41	0.42	0.40	41	0.09 21.43%	0.15 37.50%	2.7029 ***	2.6697 ***
Sub-score BAPP	0.52	0.50	41	0.34	0.25	41	0.18 52.94%	0.25 100.00%	3.6168***	3.3358 ***

[a)] The variables represent the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

[b)] The unpaired two-sample and two-tailed t-test is used to test the following hypothesis:

H_0: Mean sub-sample 1 - Mean sub-sample 2 = 0
H_a: Mean sub-sample 1 - Mean sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c)] The unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test is used to test the following hypothesis:

H_0: Location sub-sample 1 - Location sub-sample 2 = 0
H_a: Location sub-sample 1 - Location sub-sample 2 ≠ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[d)] The column t-statistics shows the t-value of the unpaired two-sample and two-tailed t-test.

[e)] The column z-statistics shows the z-value of the unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test.

Author's elaboration

The results of Panel L (Table 26) show the comparison of the sub-samples Germany 2022 versus Germany 2013. Although with a wide dispersion, they have improved the sub-scores for the companies studied in Germany. The most considerable absolute changes in the mean are in the sub-scores BAPP (0.18), OVERV (0.16), and RIOP (0.15). In terms of relative change, the sub-scores BAPP (52.94 per cent), GOVER (34.15 per cent), and PERF (28.57 per cent) are the most noteworthy drivers of change. However, regarding the absolute change in the mean, PERF represents the third most minor change (0.08), followed by BUSIM (0.06). There is no change in the sub-score STRA. Thus, there is no statistical significance for this sub-score. However, statistical significance is given at the 1 per cent level for most sub-scores, excerpt for the sub-score BUSIM, whose change is significant at the 5 per cent level.

A difference-in-differences approach is also performed in this context. The deltas shown in Table 27 represent the statistical analysis of data after having built the difference between the sub-scores determined for a company in 2022 and the corresponding sub-scores for the company in 2013. The subsequent Table 28 highlights the findings of the difference-in-differences analyses for the sub-scores.[53]

[53] The Shapiro-Wilk tests and the Levene tests required for the t-test can be found in APPENDIX 6 and APPENDIX 7.

Table 27. Descriptive statistics of the Delta Integrated Reporting sub-scores

Descriptive statistics of the Delta Integrated Reporting sub-scores									
Variables [a)]	**Sample**	**Mean**	**St. dev.**	**Min.**	**Q25**	**Median**	**Q75**	**Max.**	**N**
Delta Integrated Reporting score	South Africa 2022-2013	0.16	0.11	-0.07	0.09	0.17	0.24	0.38	82
	Germany 2022-2013	0.10	0.08	-0.15	0.06	0.09	0.15	0.25	82
	Total sample 2022-2013	**0.13**	**0.10**	**-0.15**	**0.07**	**0.13**	**0.18**	**0.38**	**164**
Delta sub-score OVERV	South Africa 2022-2013	0.09	0.14	-0.22	0.03	0.09	0.19	0.35	82
	Germany 2022-2013	0.16	0.13	-0.15	0.06	0.18	0.25	0.44	82
	Total sample 2022-2013	**0.12**	**0.14**	**-0.22**	**0.03**	**0.13**	**0.22**	**0.44**	**164**
Delta sub-score GOVER	South Africa 2022-2013	0.16	0.23	-0.42	0.00	0.14	0.29	0.64	82
	Germany 2022-2013	0.13	0.21	-0.29	-0.07	0.14	0.22	0.65	82
	Total sample 2022-2013	**0.15**	**0.22**	**-0.42**	**0.00**	**0.14**	**0.29**	**0.65**	**164**
Delta sub-score BUSIM	South Africa 2022-2013	0.20	0.16	-0.13	0.07	0.16	0.31	0.53	82
	Germany 2022-2013	0.06	0.12	-0.19	0.00	0.06	0.13	0.32	82
	Total sample 2022-2013	**0.13**	**0.15**	**-0.19**	**0.03**	**0.11**	**0.22**	**0.53**	**164**
Delta sub-score RIOP	South Africa 2022-2013	0.26	0.24	-0.34	0.17	0.33	0.34	0.67	82
	Germany 2022-2013	0.15	0.19	-0.16	0.00	0.16	0.33	0.67	82
	Total sample 2022-2013	**0.20**	**0.22**	**-0.34**	**0.00**	**0.17**	**0.34**	**0.67**	**164**
Delta sub-score STRA	South Africa 2022-2013	0.16	0.20	-0.32	0.05	0.18	0.27	0.68	82
	Germany 2022-2013	0.00	0.20	-0.46	-0.14	0.04	0.18	0.32	82
	Total sample 2022-2013	**0.08**	**0.22**	**-0.46**	**-0.04**	**0.09**	**0.23**	**0.68**	**164**
Delta sub-score PERF	South Africa 2022-2013	0.25	0.19	-0.21	0.14	0.28	0.36	0.57	82
	Germany 2022-2013	0.08	0.15	-0.29	0.00	0.08	0.22	0.29	82
	Total sample 2022-2013	**0.16**	**0.19**	**-0.29**	**0.07**	**0.21**	**0.28**	**0.57**	**164**

[a)] The variables represent the respective normalised Integrated Reporting sub-scores from the content analysis catalogue.

Due to rounding, there may be minor divergences in this table compared to the previous tables.

continued on page 197

Table 27. Descriptive statistics of the Delta Integrated Reporting sub-scores (continued)

Descriptive statistics of the Delta Integrated Reporting sub-scores (continued)									
Variables [a)]	**Sample**	**Mean**	**St. dev.**	**Min.**	**Q25**	**Median**	**Q75**	**Max.**	**N**
Delta sub-score OUTL	South Africa 2022-2013	0.10	0.17	-0.35	0.00	0.15	0.20	0.40	82
	Germany 2022-2013	0.09	0.16	-0.30	0.00	0.10	0.20	0.45	82
	Total sample 2022-2013	**0.09**	**0.16**	**-0.35**	**0.00**	**0.13**	**0.20**	**0.45**	**164**
Delta sub-score BAPP	South Africa 2022-2013	0.15	0.24	-0.50	0.00	0.25	0.25	0.75	82
	Germany 2022-2013	0.18	0.30	-0.75	0.00	0.25	0.50	0.75	82
	Total sample 2022-2013	**0.17**	**0.27**	**-0.75**	**0.00**	**0.25**	**0.25**	**0.75**	**164**

[a)] The variables represent the respective normalised Integrated Reporting sub-scores from the content analysis catalogue.

Due to rounding, there may be minor divergences in this table compared to the previous tables.

Author's elaboration

Table 28. Delta Integrated Reporting sub-scores South Africa 2022-2013 versus Delta Integrated Reporting sub-scores Germany 2022-2013

Delta Integrated Reporting sub-scores South Africa 2022-2013 versus Delta Integrated Reporting sub-scores Germany 2022-2013										
Variables [a]	**Sub-sample 1 South Africa 2022-2013**			**Sub-sample 2 Germany 2022-2013**			**Differences**		**Tests of comparison**	
	Mean	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**t-test** [b] **t-statistics** [d]	**Wilcoxon rank-sum (Mann-Whitney-U) test** [c] **z-statistics** [e]
Delta Integrated Reporting score	0.16	0.17	82	0.10	0.09	82	0.06 60.00%	0.08 88.89%	3.0525 ***	-0.7188
Delta sub-score OVERV	0.09	0.09	41	0.16	0.18	41	-0.07 -43.75%	-0.09 -50.00%	-2.4520 **	-2.3415 **
Delta sub-score GOVER	0.16	0.14	41	0.13	0.14	41	0.03 23.08%	0.00 0.00%	0.5698	-4.1093 ***
Delta sub-score BUSIM	0.20	0.16	41	0.06	0.06	41	0.14 233.33%	0.10 166.67%	4.5170 ***	3.8923 ***
Delta sub-score RIOP	0.26	0.33	41	0.15	0.16	41	0.11 73.33%	0.17 106.25%	2.3678 **	1.3259
Delta sub-score STRA	0.16	0.18	41	0.00	0.04	41	0.16 n/a	0.14 350.00%	3.5967 ***	-2.4516 **
Delta sub-score PERF	0.25	0.28	41	0.08	0.08	41	0.17 212.50%	0.20 250.00%	4.4166 ***	-4.4745 ***
Delta sub-score OUTL	0.10	0.15	41	0.09	0.10	41	0.01 11.11%	0.05 50.00%	0.1018	-5.8533 ***
Delta sub-score BAPP	0.15	0.25	41	0.18	0.25	41	-0.03 -16.67%	0.00 0.00%	-0.5046	-0,4408

[a] The variables represent the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

[b] The unpaired two-sample and two-tailed t-test is used to test the following hypothesis:

H_0: Mean sub-sample 1 - Mean sub-sample 2 = 0
H_a: Mean sub-sample 1 - Mean sub-sample 2 $\neq$ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c] The unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test is used to test the following hypothesis:

H_0: Location sub-sample 1 - Location sub-sample 2 = 0
H_a: Location sub-sample 1 - Location sub-sample 2 $\neq$ 0
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[d] The column t-statistics shows the t-value of the unpaired two-sample and two-tailed t-test.

[e] The column z-statistics shows the z-value of the unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) test.

Due to rounding, there may be minor divergences in this table compared to the previous tables.

Author's elaboration

The analyses indicate that, except for the GOVER, OUTL and BAPP sub-scores, statistical significance is at least at the 5 per cent level.[54] The qualitative considerations for applying this further analysis are in line with the statements already made at the corresponding point in Chapter 4.2.1 for the total Integrated Reporting score.

Finally, the findings of the content analysis concerning the Integrated Reporting sub-scores are discussed in Chapter 5.

4.3. SUMMARY OF THE RESULTS

A pointedly reduced summary of the statistical findings allows the following economic interpretation from the results. With a mean of 0.55 and a median of 0.55 concerning the total sample, there is still considerable scope for increasing the degree of Integrated Reporting.

The fact that the mean was already 0.48 and the median was 0.49 in 2013 (South Africa 2013: mean: 0.50; median: 0.52 and Germany 2013: mean: 0.47; median: 0.47) supports the point that Integrated Reporting was already practised in South Africa on the one hand – albeit under different conditions – and that parts of the Integrated Reporting approach were already included in traditional business reporting, on the other hand.

Even though an increased mean of 0.61 and median of 0.60 could already be determined for the year 2022 (South Africa 2022: mean: 0.67; median: 0.66 and Germany 2022: mean: 0.56; median: 0.56), further potentials are evident and underline the increasing release of Integrated Reporting. Even if the maximum value in 2022 is already 0.86, the minimum is 0.43, which indicates that the approach of Integrated Reporting has not yet been fully penetrated.

The differences in the means and median, as well as the statistical significance at the 1 per cent level of Panel E and F, suggest that Integrated Reporting has increased in South Africa (difference in mean: 0.17; difference in median: 0.14) and

[54] The significance refers to the t-test result. However, for the sub-scores GOVER and OUTL, a statistical significance at the 1 per cent level related to the Wilcoxon rank-sum (Man-Whitney-U) test is given.

Germany (difference in mean: 0.09; difference in median: 0.09) between 2013 and 2022, respectively.

Similar patterns can also be seen for the individual sub-scores. With a mean of 0.69 (median: 0.72), OVERV represents the highest sub-score concerning the total sample, while PERF, with a mean of 0.43 (median: 0.43), represents the lowest sub-score. The 2013 country comparison shows that the company reports of South African companies are superior to those of German companies, except for the RIOP and OUTL sub-scores. In the 2022 country comparison, the sub-scores RIOP and OUTL are also more pronounced in the corporate reports of the German firms. An improvement can be identified in each South African and German sub-score in a year-on-year comparison within the respective countries.

V – DISCUSSION OF THE RESULTS

V - DISCUSSION OF THE RESULTS

5.1. DISCUSSION OF THE INTEGRATED REPORTING SCORE

The statistical evaluation of the content analysis emphasises that the Integrated Reporting score for the total sample (N=164) concerning the mean is 0.55 (median: 0.55). It can, therefore, be assumed that there is a moderate level of Integrated Reporting in the countries studied in 2013 and 2022, namely South Africa and Germany. It is worth noting that no distinction was made between postulated Integrated Reporting adopters and non-adopters in the company selection. This is because the degree of Integrated Reporting was to be recorded without breaking down institutional frameworks. This accentuates that companies already use and implement components of Integrated Reporting but do not explicitly label their reports as integrated.

In South Africa, the degree of Integrated Reporting is much more advanced than in Germany, with a mean of 0.59 (median: 0.60). In particular, this is because the use of Integrated Reporting elements in the South African reporting landscape already has a longer tradition and development history.[55] However, a level in the mean of 0.51 (median: 0.52) can also be identified in Germany. This degree of accordance with the International Integrated Reporting Framework, without having institutionalised it, accordingly, already seems to be given by the institutional framework and regulatory requirements for corporate reporting, especially management reporting, that the organisations apply.

With a mean of 0.48 (median: 0.49) in 2013 and a mean of 0.61 (median: 0.60) in 2022, there is an increase in the Integrated Reporting score on an annual basis. Regardless of the country under review, the company reports achieve a higher degree of Integrated Reporting score on an annual basis. As mentioned, this study includes all company reports, regardless of whether they are labelled as Integrated Reports or not. Pavlopoulos et al. (2017) find, based on examining companies listed in the Integrated Reporting Examples Database, that there is an increasing trend in

[55] For further information, see Chapter 2.4.

alignment with the requirements of the International Integrated Reporting Framework. In this context, the International Integrated Reporting Council already argued in 2012 that the Guiding Principles and Content Elements of the International Integrated Reporting Council Framework require several corporate reporting cycles to be fully considered and implemented by companies (International Integrated Reporting Council, 2012, p. 3). Melloni et al. (2017) support these considerations and subsume that Integrated Reporting is a relatively new approach to corporate reporting. Against this background, a lead time is essential. Only appropriate preparation and a successive approach to this reporting format can ensure that the approach's potential can be fully exploited and that the quality of the published content increases in the long term (Melloni et al., 2017, p. 235). This aligns with the fact that organisations constantly strive to improve their reporting processes and structures. This continuous improvement approach also increases alignment over time (Feng et al., 2017, p. 347). Overall, Integrated Reporting is not the detached preparation of another or substitute corporate report. Instead, it includes the interaction of many company-relevant areas under the maxim of Integrated Thinking and thus represents a complex process of interdependent activities that should be applied in an integrated and holistic manner (Lodhia, 2015, p. 597). It can, therefore, be assumed that considering the preceding arguments and findings, a steadily increasing level of Integrated Reporting could be achieved.

The fact that South African companies have a higher score than the German companies in both 2013 and 2022, while the Integrated Reporting scores in Germany also increased in the years mentioned, can also be explained against the background of the Institutional Theory. In this context, management decision-making is significantly influenced by the institutional setting. In particular, the coercive isomorphic change [56] provides arguments for the higher degree of Integrated Reporting in South Africa than in Germany. Nevertheless, the process of mimetic isomorphism is likely to apply in part to the reporting landscape in Germany since, on the one hand, the relevant guidelines have been issued (e.g., CSR-RUG). On the other hand, German companies also have more Integrated

[56] For further explanation of institutional isomorphism, Chapter 3.2.5.4.

Reporting elements in their reports and have explicitly designated them as integrated reports, leading to imitations of other organisations. In this context, it is quite possible that the reporting practice of disclosing more integrated information can be traced back to the influence of the relevant peers.

Extensive global studies on the adoption of Integrated Reporting support the findings of this analysis of corporate reporting in South Africa and Germany in 2013 and 2022. Gibassier et al. (2019) highlight some countries' relatively high concentration of integrated reports. South Africa and Japan represent the countries with the most corporate reports that can be understood as integrated reports. Germany is identified in this study as a latecomer to Integrated Reporting implementation (Gibassier et al., 2019, pp. 20–22). Labelling as an integrated report was also not a constitutive prerequisite for inclusion in the sample (Gibassier et al., 2019, p. 15). Particularly in light of the effects of coercive isomorphic change and mimetic isomorphism just described, the global study underscores these conceptual and theoretical conclusions.

5.2. DISCUSSION OF THE INTEGRATED REPORTING SUB-SCORES

5.2.1. Organizational overview and external environment

In addition to discussing the Integrated Reporting total score and its changes in the respective sub-samples, the sub-scores reflecting the eight Content Elements of the International Integrated Reporting Framework will now be explained in more detail.

Concerning the total sample, the sub-score OVERV shows the highest mean of 0.69 (median: 0.72). It is hardly surprising that the highest degree is measured in this context. Firstly, this category examines and evaluates the essential basics of a company. Secondly, reference can be made to the prevailing reporting landscape. While essential reporting elements of Integrated Reporting have already been implemented in South Africa, comparing the requirements of GAS 20 is worthwhile for Germany. According to GAS 20, the basic principles of the group's business model (GAS 20.36-38), information on research and development (GAS 20.48-52), macroeconomic and sector-related conditions (GAS 20.59-61) and the course of business (GAS 20.62-63) as well as financial and non-financial performance indicators (GAS 20.101-113) are to be included in the management report.

In terms of the year-on-year comparison of the respective countries, it can be seen that the OVERV sub-score has improved in each case. The comparison between the countries shows that the sub-score in South Africa was higher than in Germany in 2013, but in 2022, the mean German sub-score is equal to the South African one. Given the continuous increase in regulatory requirements and the implementation of European regulations on non-financial reporting, it is hardly surprising that the mean score in Germany increased by 0.16 (27.12 per cent) from 2013 to 2022 (the corresponding increase in South Africa was 0.09 (13.64 per cent)).

During the content analysis, it was noticeable that the South African companies reported much more intensively on their purpose, vision, mission values and culture than German companies. This underscores the more advanced implementation and adoption of the whole-hit integrated approach at both the Integrated Thinking and Integrated Reporting levels, which has been alluded to several times. In this context, it was evident that the purpose, vision, and mission were interpreted differently, and the terms were not used consistently. This shows that companies must focus more on these topics to create a standardised understanding. This will not only create added value for external stakeholders but also for internal stakeholders, as they will be able to identify more with the company.

Another key differentiator is that South African companies are more detailed and goal-oriented in reporting legitimate stakeholder requirements and interests. The approach of holistically assessing all the factors influencing the company thus has a much higher priority in South Africa, but this can also be attributed to the development of the reporting landscape and its local specifications. When analysing the corporate reports of German companies, it can be seen that the reports in 2013 give stakeholders a subordinate role or only rarely describe their particular interests. In contrast, the German companies placed much more emphasis on the market forces that determine them and addressed the political framework conditions of the countries where they operate more frequently. This shows, among other things, that the fulfilment of the regulatory requirements placed on German companies is given a high priority in reporting and that qualitative information is reported less frequently in terms of the holistic approach.

In addition to the content classification and discussion of the results of the OVERV sub-score, it should be noted that these research results align with previous studies concerning the content of this category. These have obtained similar results regarding the study of Content Elements in other jurisdictions (Liu et al., 2019, p. 250; Pistoni et al., 2018, p. 499).

5.2.2. Governance

The Governance sub-score has a mean of 0.52 (median: 0.50). This can be substantially attributed to the high regulatory requirements. In a year-on-year comparison of the respective countries, it can be seen that the sub-score has increased in each case. In both South Africa and Germany, the increase in the mean of the sub-score is significant (South Africa: 0.16, 32.65 per cent; Germany: 0.14, 34.15 per cent). A comparison of the two countries shows that the GOVER sub-score in South Africa was significantly higher than in Germany in 2013 and 2022.

In this context, it was noticeable in the content analysis of the company reports that South African companies pay significant attention to the disclosure of their leadership structure. This can be seen from the fact that they explicitly address the respective skills and diversity aspects of their reporting. In addition, a much closer connection and linkage between governance, strategy and risk management can be seen in the corporate reports of South African companies. The process and monitoring of strategic decision-making are highlighted much more clearly here. To summarise, it can be stated that South African companies place a very high value on the governance report as part of their disclosure.

In the search for possible explanations for this, it can again refered to the specifics of the different reporting landscapes explained Chapter 2.4. As is already evident in the OVERV sub-score, the interests of the stakeholders and their pacification play a much more significant role in South Africa. Accordingly, it is rational that there is also more extensive reporting in this regard – especially concerning governance issues. This is also understandable concerning the Stakeholder Theory explained in Chapter 3.2.5.3. Previous studies have shown that high-quality disclosures offset monitoring costs and have their roots and justification in stakeholder-inclusive reporting (Bushee et al., 2014; Bushee & Noe, 2000; Healy et al., 1999).

5.2.3. Business model

The sub-score for BUSIM in the total sample is a mean of 0.50 (median: 0.47). Comparing the 2013 and 2022 values of the sub-score within the respective countries, a significant increase in the mean can be seen in each case (South Africa: 0.20, 44.44 per cent; Germany: 0.06, 14.29 per cent). The comparison between the two countries shows that the BUSIM sub-score was higher in South Africa in 2013 and 2022. In 2022, the difference in the mean was 0.17 (35.42 per cent).

Once again, one of the key differentiators is how the business model is handled and considered. South African companies report much more comprehensively on their stakeholders, their needs, and the dependencies between these findings and the business model. They also describe the influence they and the external environment have on the business model and the resulting implications for business performance. The reference to the Stakeholder theory and the underlying requirements for South African corporate reports has been adequately explained.

It is also clear that in Germany, companies seldom report how they use the various capital resources and inputs to create value. For the most part, only the essential elements of the business model are described without going into detail about their individual factors and how the company holistically creates value. This is underlined in particular by the fact that, although the positive outcomes resulting from the company's business activities are reported regularly, the negative aspects are reported much less frequently. It can thus be assumed that the description and explanation of the business model at German companies is reported in a much more isolated and less connective manner, with a lack of linkage to other content elements.

Concerning GAS 20.36-38, the requirements for reporting on the business model are very generic. Accordingly, only the organisational structures, segments, locations, products and services, business processes, sales markets, and external influencing factors must be addressed. However, there is no indication that it is necessary to report on the extent to which value is created in the short, medium, and long term. Furthermore, the link between these elements is not required, so German companies' predominant isolated and less integrated reporting on these topics is unsurprising.

The results of the content analysis conducted are also consistent with the results of previous studies. For example, Liu et al. (2019) and Pistoni et al. (2018) conclude that the innovative new features of the International Integrated Reporting Framework are underdeveloped in contrast to typical reporting content in corporate reports. This is not surprising, as applying the Content Elements in their entirety is not mandatory, especially in Germany. Even though Integrated Reporting already exists in various forms in South Africa, it cannot be assumed to be fully implemented given the current development (Feng et al., 2017, p. 347). However, that the application and implementation of the International Integrated Reporting Framework are having an impact is evident from the fact that the difference in mean between South Africa and Germany in the BUSIM sub-score is significantly more eminent in 2022 than in 2013 (2022: 0.17, 35.42 per cent; 2013: 0.03, 7.14 per cent). Simply presenting the business model without narrowing it down to the strict requirements and elements of the International Integrated Reporting Framework would also allow companies to report on it flexibly. Besides this, Dumay et al. (2019) also note that companies are hesitant in reporting when it comes to publishing sensitive business model information (Dumay et al., 2019, p. 19). In addition, the demand for a holistic presentation and description of the business model, including its implications and interdependencies, poses major challenges, especially for companies in complex industries (Lai et al., 2017, p. 537).

5.2.4. Risks and opportunities

With a mean of 0.62 (median: 0.67), the sub-score RIOP is among the better-performing sub-scores. The year-on-year comparison indicates that the mean of the sub-score increases for both countries (South Africa: 0.26, 66.67 per cent; Germany: 0.15, 23.08 per cent). However, the RIOP sub-score is one of two sub-scores in 2013 and 2022 in which Germany achieves a higher mean score than South Africa (difference in 2013: 0.26, 40.00 per cent; difference in 2022: 0.15, 18.75 per cent).

One fact has emerged in the context of the content analysis of the company reports. The difference between the two countries is due to the lack of disclosures regarding opportunities in South Africa. While the opportunities in the South African companies were in some cases derived and described, in many cases, specification and evaluation of the probability of occurrence and the magnitude of the potential impact were missing. Furthermore, concrete steps to manage the opportunities and create value from them are rarely described. Except for the less pronounced disclosure of the quantitative assessment of the probability of occurrence and impact of risks, there are hardly any differences in the risk reporting.

The rationale for the higher sub-score in Germany is due to the strict and tight regulations of GAS 20.116-167. This stipulates that the company's development must be assessed and explained based on risks and opportunities. According to GAS 20.117, whether the risks are reported in a risk report, and the opportunities in an opportunity report separately or together is irrelevant. It should be noted that there are strict regulatory requirements for the publication and reporting of risks and opportunities, so it is hardly surprising that the RIOP sub-score is the highest in Germany in both 2013 and 2022.

The fact that, in principle, reporting on opportunities and risks achieves a higher score aligns with previous studies dealing with the analysis of integrated reports. This is because reporting on opportunities and risks is very closely regulated and is one of the primary content elements in financial statements (Pistoni et al., 2018, p. 502).

5.2.5. Strategy and resource allocation

The content analysis showed a mean in the sub-score STRA related to the total sample of 0.54 (median: 0.55). Essentially, two significant observations can be made. First, regarding a country-level comparison, it should be noted that the corporate reports of South African companies perform significantly better than those of German companies. Whereas in 2013, there was a difference of 0.04 (8.33 per cent) in the mean between South Africa and Germany, the difference between the mean values in 2022 increased sharply (0.20, 41.67 per cent). Second, it should be noted that there has been no development in this sub-score in Germany between the years 2013 and 2022 (mean 2013: 0.48; mean 2022: 0.48). This contrasts with the substantial large change in the mean in South Africa over the same period (mean 2013: 0.52; mean 2022: 0.68; an increase of 0.16, 30.77 per cent).

Looking at the items of the content analysis, it can be seen that the differences between South Africa and Germany are mainly due to the strategic differentiation from the competition and the disclosure of competitive advantages. In the context of corporate reporting in South Africa, the companies are much more successful in naming and presenting the competitive advantages resulting from their strategy. While German companies are more successful in placing technological change and the need for innovation in this context, South African companies report more intensely on the consideration of their intellectual capital in order to generate competitive advantages and gain market share. In addition, their reporting on environmental and social issues is more firmly anchored in their strategy. Another critical point of differentiation is stakeholder engagement, in this case, in the context of a company's strategic orientation. The South African companies report much more clearly on how they involve their stakeholders in the strategy development process and consider their interests and requirements. What both countries have in common is that the disclosure of interdependencies and dependencies between the strategy and other Content Elements could be more pronounced. There is also potential in the scope of reporting on the path, the measures for achieving the goals, and the corresponding use of the different capital and resources. In this context, it should be added that in many cases, the description of strategic directions is only short to medium term at most. Long term strategies are rarely considered or only briefly addressed. This observation applies more to German than to South African companies. However, a pattern can be recognised here. The further the information on a long-term strategy lies in the future, the less concretely it is described and backed up with concrete measures.

One possible explanation for the differences between the two countries could be the management reporting requirements. This is because there is no direct obligation for German companies to disclose and report information or detailed explanations about their corporate strategy in their reports. GAS 20.39 leaves it up to companies to carry out voluntary strategy reporting. In this case, the company could report on its strategic goals and the extent to which it has achieved them, provided that it wants to include these elements in its reporting. This would explain why, on the one hand, South African company reports show a higher degree of strategic disclosure and, on the other hand, why the sub-score STRA has remained unchanged year-on-year in Germany.

In analogy to the observed results and the discussion based on them are also previous studies. In other jurisdictions, such as the United Kingdom, Spain, Australia, Japan, Singapore, and the Netherlands, only very little and rare information on measures to achieve the strategic goals is disclosed (de Villiers et al., 2014, pp. 1051–1052; Sukhari & de Villiers, 2019, p. 708). A study indicates that listed German companies have much potential for improving their voluntary strategy reporting (Zülch & Winter, 2019, p. 49). Even in high-quality and awarded integrated reports, there is often a lack of linkage between strategic goals, key performance indicators and risks. In addition, it is inherent in companies that a concrete timeframe rarely underpins strategic goals. In this context, they also discovered the partially missing link between a company’s strategic orientation and the corresponding business model (Sukhari & de Villiers, 2019, p. 722). Nevertheless, they also found that the adoption of mandatory Integrated Reporting in South Africa was accompanied by a significant improvement in disclosing strategic and business model issues. These findings are congruent with the results of this dissertation.

5.2.6. Performance

With a mean of 0.43 concerning the total sample, the sub-score PERF represents the lowest mean in the analysis. In 2013 and 2022, the mean achieved in South Africa (2013: 0.42; 2022: 0.67) is higher than in Germany (2013: 0.28; 2022: 0.36). Once again, it is clear that the year-on-year improvements per country are singular. For example, the sub-score in South Africa increased by 0.25 (59.52 per cent) from 2013 to 2022 and by 0.08 (28.57 per cent) in Germany. The country comparison per year shows that the values differ by 0.14 (50.00 per cent) in 2013 and by 0.31 (86.11 per cent) in 2022.

The content analysis research reveals that the effects of corporate performance are much more widely voiced in the reports of South African companies than in their German counterparts. Even though the negative implications of performance were explained and presented much less frequently, the positive effects, particularly, are described in the South African reports. Another significant difference emerged concerning stakeholder relationships. In South Africa, it is not only the relationships with stakeholders that are disclosed but also the response of the companies, how and with which performance the legitimate demands and needs of the stakeholders are addressed. These two observations align with the respective countries' regulatory conditions mentioned several times and the related emphasis on stakeholder consultation and disclosure. The ownership structures prevailing in South Africa could also indicate why disclosing information regarding corporate performance could be of greater importance.

Potential for improvement in both countries is evident for the combined key performance indicators. In both cases, companies can better build their performance indicators between financial measures and other components and more effectively describe the financial impact on the various capital items.

However, it is striking that the corporate reports of the German companies were much more likely to describe the relationship between past, present, and future performance. Whereas the South African companies were constrained on comparing past and current figures, the German company reports extended this comparison to include the components of the outlook.

5.2.7. Outlook

The sub-score OUTL has a mean of 0.44 (median: 0.45) concerning the total sample, making it the second-lowest score measured, just ahead of the sub-score PERF. In a year-to-year comparison within the respective countries, the content analysis reveals that from the year 2013 to the year 2022, an improvement in the score of 0.10 (27.78 per cent) can be observed in South Africa and an improvement of 0.09 (21.43 per cent) in Germany. A comparison of the countries with each other per year shows that Germany achieved a higher mean in both 2013 (South Africa: 0.36; Germany: 0.42) and 2022 (South Africa: 0.46; Germany: 0.51).

From the content analysis, it appears that while the South African company reports tend to disclose the preparations and equipment to respond to challenges that are likely to arise, the German company reports accentuate the impact of the external environment on the organisation. Moreover, the disclosed information in the German companies' reports plays a role in disclosing summary assumptions for the outlook. Finally, it can be stated that, in line with the observations of the PERF sub-score, the reports in Germany disclose a comparison between the predefined targets and the actual performance achieved. A cautious attitude can be observed concerning statements on the company's future performance. While macroeconomic outlooks are sometimes presented very decidedly in corporate reports of German companies, future company statements are relatively rare the longer the time horizon is.

Also, in this context, the rationale for the higher sub-score in Germany can be identified in the regulatory environment. As explained elsewhere, management reporting following GAS 20.116-167 requires a report explaining expected developments, opportunities, and risks. The report on expected developments, specified in GAS 20.118-134, is intended to disclose forecasts on the development of business and the situation of the group and present these in condensed form. The main assumptions on which the forecasts are ultimately based must also be stated. It should be borne in mind that the forecasts consider financial and non-financial key performance indicators. It should also be noted that the forecast period is at least one year. It is mandatory to disclose any expected changes that could alter the forecasts accordingly. The forward-looking key performance indicators must be presented in terms of intensity and the change direction (GAS 20.118-134). Such pronounced and detailed regulatory requirements for forward-looking statements are not found in the South African reporting landscape, so the corresponding score difference between the two countries can be explained and plausibilised.

Previous studies, such as Mio, Marchini, et al. (2020) have already dealt with forward-looking disclosure and found, among other things, that such information is disclosed very heterogeneously. Based on the Integrated Reporting Examples Database, they found that the stakeholders' needs and requirements for forward-looking information are not satisfied (Mio, Marchini, et al., 2020, p. 2212). These findings are in line with other studies attesting that forward-looking information and expectations of future developments, including the assessment regarding the impact on the company and key performance indicators, are represented low in integrated reports (Kılıç & Kuzey, 2018; Pistoni et al., 2018; Stacchezzini et al., 2016).

5.2.8. Basis of preparation and presentation

The sub-score BAPP is the second-highest score achieved, with a mean of 0.65 (median: 0.75) concerning the total sample. However, this high score is mainly due to the values of the company report from South Africa. While a mean of only 0.34 was achieved in Germany in 2013, the corresponding annual value in South Africa was 0.80. In 2022, the sub-score in the mean in South Africa is 0.95, while in Germany, it is still only 0.52.

In the context of the content analysis, it can be observed that South African companies disclose much more detailed information on the determination of the reporting boundary and provide a bundled and focused presentation of the critical frameworks and methodologies used to evaluate and quantify material issues. In addition, the results suggest that South African companies report much more powerfully and with more information on the process for identifying material issues and their relevance assessment. Nevertheless, the analysis also shows that this process is mentioned but not explicitly analysed in detail. This is where the concrete potential benefits lie, especially against the background of the actual idea of determining materiality. This, in turn, can be attributed to the different focus on the target groups and addressees of the report. In South Africa, there is an exceptionally high level of interest in which issues are rated as material and, more specifically, how this materiality was determined.

In an international study, Gerwanski et al. (2019) conclude that companies should generally assign a higher priority to the materiality matrix. Similarly, companies should consider opportunities in the materiality analysis and critically assess and include material risks (Gerwanski et al., 2019, p. 763). However, this study also finds that materiality disclosures are significantly more qualitative and sophisticated in a mandatory environment (Gerwanski et al., 2019, pp. 759–760). This is thus congruent with the dissertation’s findings in the sub-score BAPP.

5.3. SUMMARY OF THE DISCUSSION AND HYPOTHESIS ANALYSIS

This chapter summarises the discussions on the results of the Integrated Reporting score and sub-scores in the various sub-samples. After the content analysis results have been discussed in detail and compared with other study results in the previous sections, the results will now finally be analysed against the theoretical considerations and tested against the hypotheses derived from them. The following Table 29, deriving from the results of the panel analyses, aims to show the average Integrated Reporting scores in total and between the respective sub-samples. Table 29 shows, on the one hand, the absolute difference of the means and, on the other hand, the corresponding significance levels of the unpaired two-sample and two-tailed t-tests and the unpaired two-sample and two-tailed non-parametric Wilcoxon rank-sum (Mann-Whitney-U) tests.

Table 29. Overview of the differences in mean

Overview of the differences in mean						
(Sub)-sample [a)]	**Total sample 2022**	**Total sample South Africa**	**South Africa 2022**	**South Africa 2013**	**Germany 2022**	**Germany 2013**
Total sample 2013	0.13 *** (***)	---	---	---	---	---
Total sample Germany	---	0.08 *** (***)	---	---	---	---
South Africa 2022	---	---	---	---	---	---
South Africa 2013	---	---	0.17 *** (***)	---	---	---
Germnay 2022	---	---	0.11 *** (***)	---	---	---
Germany 2013	---	---	---	0.03 * (*)	0.09 *** (***)	---

[a)] The table represents the following mean differences:
Mean sub-sample column - Mean sub-sample row
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels of the t-tests.
(*), (**), (***) indicate statistical significance at the 10%, 5% and 1% levels of the Wilcoxon rank-sum (Mann-Whitney-U) tests.

Author's elaboration

The difference between the total sample in 2013 and 2022 is 0.13. As shown by the t-test and Wilcoxon rank-sum (Mann-Whitney-U) test, this change is highly significant at the 1 per cent level. It is thus clear that the level or degree of Integrated Reporting has improved in a year-on-year comparison. Thus, the results align with the argumentation of the Principal Agent Theory that companies could apply holistic reporting to reduce the prevailing information asymmetries and thus reduce the agency costs incurred. Companies' intrinsic self-motivation could also be a reason within the context of the Stewardship Theory for why an increase in the degree of Integrated Reporting can be observed. The Content Elements have a wide range of topics to be covered, and their design can be implemented individually in terms of quality and quantity. The Content Elements can also play a role in shaping the company according to the leadership's vision. The range of options within the principles-based International Integrated Reporting Framework is wide. For example, the linking of various financial and non-financial information the use of diverse capitals of the forward-looking statements on the company's ability to create value, there is enough discretionary leeway to steer the reporting accordingly. Following the Positive Accounting Theory, the principles-based approach of Integrated Reporting could, therefore, ensure or help to present the company so that it can meet agreed-upon commitments or receive higher bonus payments. In contrast, it would also be conceivable to represent the company in such a way that it would be protected from political influences and costs. The change in the Integrated Reporting score from 2013 to 2022 is also comprehensible and plausible based on system-oriented theories. In line with the arguments of the Legitimacy Theory, perceived needs, requirements, or even pressure from society may also have led to the disclosure of a higher level of integrated information and publications. Companies thus try to create trust to reveal their actions' legitimacy ultimately. The Stakeholder Theory goes in the same direction. Thus, general and particular interests of specific stakeholder groups can lead to an increase in the degree of information relevance and focus and a decrease in information complexity. Finally, the Institutional Theory also provides insights that justify improving the degree of Integrated Reporting. Thus, it can be stated at this point that, on the one hand, companies increasingly tend to follow the structures of other companies and try to imitate them. On the other hand, competition can also be a corresponding pressure factor to report in an increasingly integrated and holistic manner.

Against this background, it can be concluded that the theoretical considerations align with the empirical analysis findings. Therefore, the empirical results support Hypothesis 1 of a higher degree of Integrated Reporting in 2022 compared to 2013, as also shown in Table 30.

Table 30. Result of the analysis of Hypothesis 1

Result of the analysis of Hypothesis 1		
Hypothesis		**Result**
1	The degree of Integrated Reporting has increased between the financial years 2013 and 2022.	supported

Author's elaboration

In 2013, the country difference between South Africa and Germany regarding Integrated Reporting score was 0.03. There is significance based on the t-test and Wilcoxon rank-sum (Mann-Whitney-U) test at the 10 per cent level. In this case, the above-described theory and its content also offer some attempts to explain why a country difference exists in 2013. In this context, however, the Stakeholder Theory and the Institutional Theory or the regulatory framework should be mentioned in particular. Whereas the historical approach in South Africa focused on the broader stakeholder group at a very early stage, and reporting was not designed exclusively for shareholders, the consideration of stakeholder interests and their materiality was less of a priority in Germany in 2013. This observation also emerges from the results of the content analysis. Institutional Theory considerations can also explain the countries' difference. According to the coercive isomorphic changes, companies are under pressure from other organisations or, in a broader sense, from the external environment, which can also include requirements for corporate reporting. In this context, King III plays a unique role in South Africa, which was applicable from March 2010. It recommends that South African companies publish integrated reports instead of separate and isolated annual and sustainability reports. Although these regulations were subject to the apply-or-explain approach, they have already led to the publication of various integrated reports without providing an institutional framework for this. This was then manifested first with the Consultation Draft of the International Integrated Reporting Framework (published in April 2013) and then ultimately with the publication of the International Integrated Reporting Framework in December 2013. The examination of the reports shows that some companies already refer to International Integrated Reporting Framework (or its Consultation Draft) immediately after publication. The higher level of Integrated Reporting in 2013 in South Africa compared to Germany can thus be deduced, although the average mean in two sub-scores in the German sub-sample was higher. Overall, the results of the content analysis support Hypothesis 2, presented in Table 31, that the degree of Integrated Reporting in 2013 is higher in South Africa than in Germany.

Table 31. Results of the analysis of Hypothesis 2

Result of the analysis of Hypothesis 2		
Hypothesis		**Result**
2	South African companies show a higher degree of Integrated Reporting than German companies in the financial year 2013.	supported

Author's elaboration

With a difference of 0.11 between South Africa and Germany, the degree of Integrated Reporting is also higher in 2022. The t-test and the Wilcoxon rank-sum (Mann-Whitney-U) test performed show high significance at the 1 per cent level. Except for three sub-scores, the results in the sub-scores are similar. While the arguments for the higher level in South Africa have already been presented in principle, further explanations can also be presented here. The de facto obligation to apply Integrated Reporting in South Africa has been strengthened by King IV in that an apply-and-explain approach now prevails. In addition, King IV explicitly references the International Integrated Reporting Framework to enable companies to comply with the requirements for Integrated Reporting. This fact directly leads to companies in South Africa having higher compliance with the International Integrated Reporting Framework than German companies. This direct link does not exist in Germany. Even in the new CSRD,[57] reference is only made to selecting frameworks for reporting, without any specific reference to the International Integrated Reporting Framework. This also applies to the NFRD which has been in

[57] The Directive entered into force on 5 January 2023. The new regulations must be implemented by the member states 18 months later (European Union, 2022).

effect during this research. While the country difference in 2013 was 0.03, the difference in 2022 increased substantially to 0.11 due to regulatory circumstances in addition to theoretical derivations. The content analysis results underscore the explanations for the country difference derived from the theory. The findings support Hypothesis 3, as shown in Table 32, that the degree of Integrated Reporting in 2022 is higher in South Africa than in Germany.

Table 32. Result of the analysis of Hypothesis 3

Result of the analysis of Hypothesis 3		
Hypothesis		**Result**
3	South African companies show a higher degree of Integrated Reporting than German companies in the financial year 2022.	supported

Author's elaboration

The difference in mean Integrated Reporting scores between companies in 2013 and 2022 in South Africa is 0.17 and highly significant at the 1 per cent level in both the t-test and the Wilcoxon rank-sum (Mann-Whitney-U) test. Moreover, it represents the highest difference in the total Integrated Reporting score research. All sub-scores also show highly significant increases at the 1 per cent level. While in 2013, King III was still valid, in which the application of Integrated Reporting was even less institutionalised, and the apply-or-explain principle had to be taken into account, in 2022, King IV was binding, which is based on an apply-and-explain approach and explicitly refers to the application of the International Integrated Reporting Framework. Thus, it can be assumed that the requirements for Integrated Reporting according to its framework were met. In addition, normative isomorphic change is a crucial issue in the interpretation of the development of results. Over the years, experience and skills have been developed to enhance the competence of Integrated Reporting. Thus, meeting the requirements more adequately and serving the content elements better might have been possible. The content analysis supports Hypothesis 4 of a higher degree of Integrated Reporting in 2022 than in 2013 in South Africa, as shown in Table 33.

Table 33. Result of the analysis of Hypothesis 4

Result of the analysis of Hypothesis 4		
Hypothesis		**Result**
4	South African companies show a higher degree of Integrated Reporting in the financial year 2022 than in the financial year 2013.	supported

Author's elaboration

In Germany, a highly significant increase of 0.09 at the 1 per cent level (both conducted tests) is evident in a year-on-year comparison of 2013 and 2022, too. However, it should also be mentioned at this point that, in analogy to South Africa, there is no mandatory application or apply-and-explain approach for Integrated Reporting. There are also no similar regulatory requirements. In the respective applicable regulations, it was only indicated that national, union-based, or international frameworks should be used to comply with the applicable regulations for the disclosure of information. Nevertheless, there was and is no specific link to the International Integrated Reporting Framework. Accordingly, there was no regulatory pressure directly related to Integrated Reporting. However, the reporting landscape in Europe, and in this specific context in Germany, has developed rapidly in recent years to consider more remarkable non-financial topics besides financial aspects and to link or even integrate these accordingly. Even if this did not take place under the label of the International Integrated Reporting Framework, an improvement in this direction was to be expected. On the one hand, as already stated, the International Integrated Reporting Framework contains some of the information already required in GAS 20. On the other hand, the Institutional Theory, including normative, coercive, and mimetic isomorphism, can be used to support this development. Also, the increasing accentuation of the entire stakeholders in the context of the reporting in Germany (Stakeholder Theory) pays on the observed progress. Therefore, it could be expected that the degree of Integrated Reporting in Germany would be higher in 2022 than in 2013. The content analysis supports these expectations and thus also Hypothesis 5, as seen in the following Table 34.

Table 34. Result of the analysis of Hypothesis 5

Result of the analysis of Hypothesis 5		
Hypothesis		**Result**
5	German companies show a higher degree of Integrated Reporting in the financial year 2022 than in the financial year 2013.	supported

Author's elaboration

Table 35 below provides an overview of the hypothesis analysis and its results.

Table 35. Overview of the analysis of the Hypotheses

Overview of the analysis of the Hypotheses		
Hypothesis		**Result**
1	The degree of Integrated Reporting has increased between the financial years 2013 and 2022.	supported
2	South African companies show a higher degree of Integrated Reporting than German companies in the financial year 2013.	supported
3	South African companies show a higher degree of Integrated Reporting than German companies in the financial year 2022.	supported
4	South African companies show a higher degree of Integrated Reporting in the financial year 2022 than in the financial year 2013.	supported
5	German companies show a higher degree of Integrated Reporting in the financial year 2022 than in the financial year 2013.	supported

Author's elaboration

In sum, there is a significant increase in the degree of Integrated Reporting in all study panels. The content analysis results support all five hypotheses derived from the theory. The analyses' results of the sub-scores essentially agree with the results of the total Integrated Reporting score and thus additionally support the hypotheses. The difference-in-differences approach shows that the degree in South Africa has progressed much further than in Germany, which is not unexpected given the theoretic derivation and the continuously changing regulatory environment in this respect.

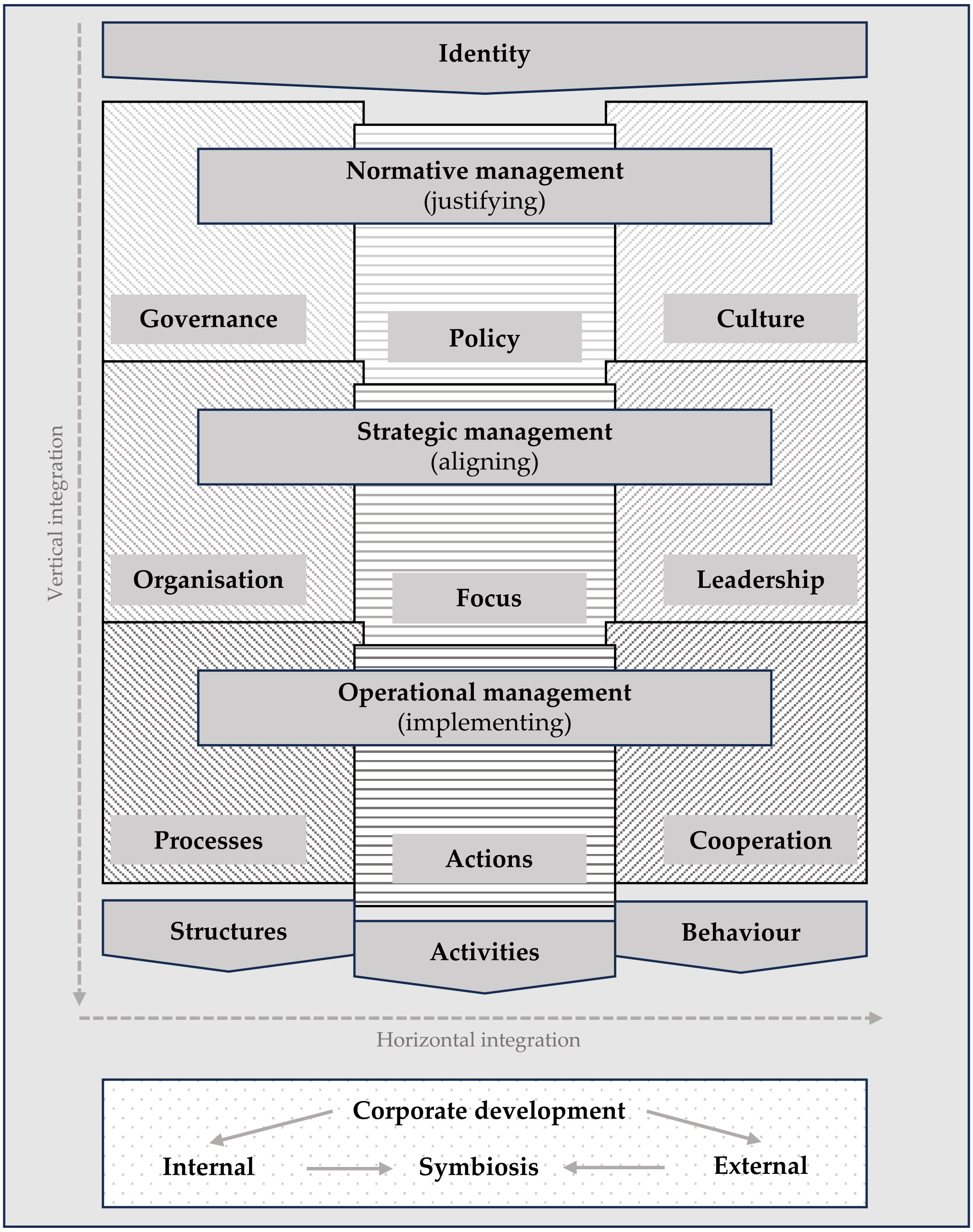
VI – CONCEPT DESIGN FOR A HOLISTIC IMPLEMENTATION

VI - CONCEPT DESIGN FOR A HOLISTIC IMPLEMENTATION

6.1. EVALUATION OF A COMPANY SPECIFIC CONCEPT

As has already become clear several times, Integrated Reporting is based on an approach that places the company's specifics at the centre of the reporting considerations (International Integrated Reporting Council, 2021a, pp. 5, 11). It is, therefore, only logical to ask how Integrated Reporting can be holistically implemented in a company. The Integrated Management Concept offers a possible approach. It can be traced back to the St. Gallen Management Model, first described in 1968, and can be seen as a further developed element (Abegglen & Bleicher, 2021, p. 30). This approach led to systematic thinking and understanding of companies as dynamic subjects directly integrated into and influenced by a multidimensional environment. By considering systems theory and cybernetics, it was possible to see companies holistically and synchronise their links with the environment and stakeholders (Abegglen & Bleicher, 2021, pp. 30–31). To be seen as a frame of reference, the concept distinguishes horizontally between three management levels, namely the normative, strategic, and operational. They represent delimiting levels that need to be considered in the context of corporate management. Viewed vertically, there are three pillars in this frame of reference. The pillars cover the activities required to generate benefits, the structure that holds the company together and the behaviour of the organisation's employees (Abegglen & Bleicher, 2021, pp. 31–32). Figure 26 below shows the horizontal levels and vertical pillars, taking into account the corresponding subject areas.

Figure 26. The three levels and pillars of management



Author's elaboration adapted from Abegglen & Bleicher (2021), p. 32

Even if the frame of reference appears static, it should not be misunderstood that the boundaries between the horizontal planes and the vertical columns are viewed in isolation. Instead, mutual interpenetration must be understood as an Integrated Management Concept that exhibits justifying, aligning, and implementing interdependencies and relationships (Abegglen & Bleicher, 2021, p. 33).

However, since this is a company-specific and individual concept, using the Integrated Management Concept can only serve as an orientation framework and general design recommendation and can only be partially generalised. Thus, the following chapters intend to create a simplified frame of reference to diagnose suitable optimisation potentials and develop potentially suitable solution proposals. As already stated, this model can be classified into three constitutive management levels (Gläser, 2014, p. 40), namely the normative, strategic, and operational level (Abegglen & Bleicher, 2021, p. 31).

Normative management essentially comprises the company's goals, principles, and standards in general (Abegglen & Bleicher, 2021, p. 40; Bleicher, 2003, p. 302). The main focus here is ensuring the company's viability and ability to develop itself (Schwaninger, 1989, p. 182). This is understood to mean transformation in the direction of positive change. The legitimacy of the company's actions is the benchmark for normative management (Abegglen & Bleicher, 2021, pp. 40–41). According to the Legitimacy Theory, a company achieves a degree of legitimacy if it creates a benefit for its stakeholders (Abegglen & Bleicher, 2021, p. 41; Deegan & Unerman, 2011, p. 323). Therefore, it can be stated that normative management has a justifying effect on all corporate activities (Abegglen & Bleicher, 2021, p. 41). The principle, therefore, applies that the constitution of a company should be designed to enable and promote its development. The normative level has three constitutive elements. These are governance, policy, and culture. In this context, the task of policy is to synchronise external determining factors with internal objectives to achieve adequacy between the external and internal environment. The governance and culture flank the corporate policy. The governance provides a standardising framework to find a balance between the interests of the internal and external environment or internal and external stakeholders. The culture shapes the behaviour of selecting objectives and measures (Abegglen & Bleicher, 2021, p. 298). Against this background, Integrated Thinking and Integrated Reporting are classified in Chapter 6.2.1 as normative constitutional and overarching value constructs within the framework of normative management and placed in the context of a learning organisation.

While building on this, strategic management defines corresponding guidelines and procedures for implementing and integrating the normatively defined orientation principles. It is, therefore, geared towards expanding, maintaining, and utilising the potential for success (Abegglen & Bleicher, 2021, p. 41). In this context, the creation of normatively induced benefits must be concretised for the individual stakeholders. Against this backdrop, appropriate directions binding for operational management must be defined. The aim is to identify and develop critical potential for success, creating potential benefits for the corporate environment and stakeholders (Pümpin, 1992, p. 47). However, the company's future must not be characterised exclusively by existing success potential and success positions but should instead emphasise the development of future success potential. Therefore, it can be stated that strategic management has an aligning effect on all corporate activities (Abegglen & Bleicher, 2021, p. 42). In the context of strategic management, it is crucial to consider the strategic direction, the design of the organisation and the understanding of leadership. The organisation defines the framework for the strategic focus and the associated leadership behaviour. The relationship between strategy and organisation must be evaluated reciprocally (Abegglen & Bleicher, 2021, pp. 400–401). It is imperative to evaluate which strategic opportunities are available based on the information available (Ansoff, 1976, p. 133). The corresponding leadership behaviour supplements this. This behaviour determines how solutions to entrepreneurial challenges are strategically conceived, initiated and then operationally implemented (Abegglen & Bleicher, 2021, p. 478). As the strategic directions and the resulting organisational structures and necessities of leadership behaviour result from an intensive examination of the internal and external environment, Chapter 6.2.2 takes a closer look at both the materiality analysis and the stakeholder dialogue.

The operational management comprises the procedural chains and activities for implementing the prior management levels. Therefore, it can be stated that operational management has an implementing effect. The company's activities should be aligned with its capabilities and resources (Abegglen & Bleicher, 2021, p. 43). Operational management covers the areas of processes, actions, and cooperation. These go hand in hand with implementing standards and strategies (Abegglen & Bleicher, 2021, p. 531). In particular, it is crucial to identify overall process-related interrelationships, reduce redundancies and optimise operations along the value chain. In this context, historically grown organisational dysfunctionalities must be replaced to release growth potential within the organisation (Abegglen & Bleicher, 2021, p. 533). The actions resulting from the processes should ensure internal and external realisation of the objectives. The management of these actions and any necessary prioritisation correspond to the actions resulting from the management process. Cooperation is a key criterion here. Reflections and insights from this triad will be cascaded into strategic and normative management (Abegglen & Bleicher, 2021, p. 554). In this way, the organisation once again lives up to the maxim of a learning organisation. In line with the great importance of efficient processes, actions, and cooperation, the connectivity of internal and external reporting is emphasised in Chapter 6.2.3.

The conceptual basis of the three constitutive management levels is inextricably linked to holistic thinking and requires concretisation. Moreover, the different levels are closely interwoven and show corresponding interdependencies. There are different feedforward and feedback processes between the levels. For example, normative constructs and strategic thrusts are decisive for operational business activities. However, unrealisable events based on such directions can lead to strategies and normative principles having to be adjusted (Abegglen & Bleicher, 2021, p. 39). A management philosophy at the meta-level is required to integrate the individual subject areas. The horizontal management levels, the vertical pillars, and the corresponding subject areas are aligned with this. This can also make it possible to balance the external and internal environment of corporate development. Influencing the future development of a company and achieving its objectives can only be achieved through the synthesis of normative, strategic, and operational management (Abegglen & Bleicher, 2021, pp. 47–48).

The following chapters describe the constitutive levels of the management approach and their potential to fully implement the idea of Integrated Reporting.

The application of the management-based framework is intended to ensure a holistic and comprehensive view of Integrated Reporting. This is an essential prerequisite for successfully implementing the reporting format. In this context, key findings from the content analysis flow into the concept design. Specific and recurring aspects are highlighted and categorised in the context of the Integrated Management Concept. In addition, the results of other studies are also included at appropriate points to substantiate the assumptions of the concept design.

6.2. INTEGRATED MANAGEMENT CONCEPT

6.2.1. Normative level: Integrated Thinking and Integrated Reporting as normative constitutions and overarching value constructs

The normative level is about establishing long-term and situationally resistant values in an organisation (Rüegg-Stürm & Grand, 2020, p. 217). The overarching and indispensable role of normative management can also be understood as the basis of all other management activities (Bleicher, 1994, p. 141). To implement Integrated Thinking and Integrated Reporting as a normative constitution and overarching value construct, a cultural change in the respective organisations is essential. This is the only way to ensure long-term and successful implementation. Thus, it is first necessary to examine the extent to which the status quo of normative anchoring is pronounced within a company. The starting point of the considerations in this context is the company's mission statement as well as the vision or purpose of the organisation. [58] Subsuming these, they form the foundation for internal and external stakeholders for the resulting strategies and operational goals. The elements represent the basis of the company's legitimacy

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[58] The purpose outlines the meaning- and identity-giving basis of legitimacy of a company and represents the contribution to the common good (Dillerup & Stoi, 2022, p. 102; Sichart & Preußig, 201923, p. 152). The purpose thus represents a philosophy. While the vision describes the company's own intrinsic aspirations, as the intended target state, the mission defines the company's objective and thus its range of services (Dillerup & Stoi, 2022, p. 108).

and existence and serve to represent the desired organisational culture (Dillerup & Stoi, 2022, pp. 136–137; Ottawa & Rietz, 2014, pp. 64–65).

It is essential to consider the formulated corporate values and interpret them in the overall context. The analysis and awareness of the recurring interdependencies are of particular importance. It is imperative to take them into account in further consideration. To promote normative anchoring and to sharpen the necessary ability of a company to change, the guiding principle of a learning organisation is required. It is inherent that extrinsic and intrinsic impulses are taken up to exploit an organisation's full development potential. It thus represents a system that is exposed to constant change and movement. This should make it possible to expand the knowledge base of the company. Furthermore, the resulting room for manoeuvre should serve to adapt and, at best, even anticipate the changing requirements of the relevant market or the increasing information demands of the stakeholders. The ability to adapt to exogenous and endogenous influencing factors is not limited to a specific point in time but instead includes a continuous improvement process within the framework of permanent organisational change. The learning organisation must therefore be distinguished from an organisation that is capable of learning (Reinhardt & Schweiker, 1995, pp. 269–307). The ability to learn is not synonymous with an organisation's ability to innovate, which is a crucial prerequisite for a learning organisation (Wagner & Saar, 1995, pp. 59–68). The term "learning organisation" was defined by Peter M. Senge. In his opinion, an organisation must master five disciplines to develop into a learning organisation. These include (Senge, 2021, pp. 15–22):

- Individual growth: Continuously striving for further development is crucial for a learning organisation. This also requires regular reflection on one's abilities. The focus here is on the individual, who is again responsible for internalisation and self-determined implementation. The prevailing organisational culture again shapes this process.
- Mental models: The use of mental models serves to internalise the progressive learning processes, including their permanent reflection. The aim is to optimise decision-making and learning processes through disclosure and critical consideration of one's actions.

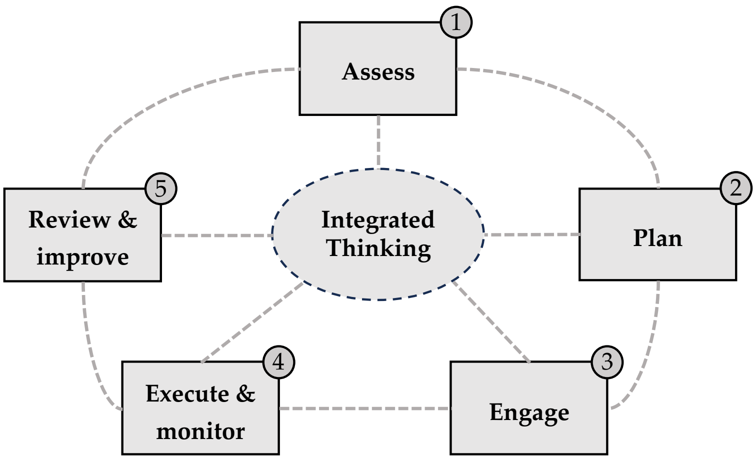
- Shared vision: The shared vision is considered an intrinsic motivating factor. With the help of this vision or the company's purpose, it becomes clear what a company stands for. However, this meaningful realisation does not need to be dogmatically imposed but voluntarily applied.
- Learning in a team: Learning in a team is characterised by emerging synergies in applying any cooperation. This means that the participants' strengths through their synergy effects in the group are more significant than the additive sum of the individual strengths. Pursuing a shared vision or purpose is the prerequisite for this.
- Thinking in systems: A holistic view of the system is indispensable to generate a general effect and added value from a learning organisation. This enables an organisation to anticipate mechanisms of action and future behaviour.

To develop a learning organisation, all five disciplines are needed. A synergetic effect of interdependencies based on the disciplines can be assumed and should be developed. Adaptation and development strategies can be derived in iterative and successive process steps (Bea & Haas, 2019, pp. 434–436). Due to the underlying causality between learning and a learning organisation's corporate culture, structure, and culture, it is inevitable for organisations that they are committed to applying the Integrated Thinking approach to create or successively expand framework conditions that promote learning (Bea & Haas, 2019, p. 438). A culture that promotes learning within an organisation is characterised by employees showing a high willingness to innovate and reasonable tolerance for mistakes (Franken & Franken, 2011, pp. 185–186). Furthermore, an open, permeable, transparent corporate culture is required to address and perceive changing environmental parameters (Bea & Haas, 2019, p. 438). A learning-promoting corporate culture should be built up by implementing multifunctional teams to reduce silo thinking on the one hand and to promote interdisciplinary knowledge exchange and development on the other hand (Bea & Haas, 2019, p. 438). Finally, a strategy that promotes learning must be established in organisations. This includes, among other things, the possibility that employees can participate in bottom-up processes and are thus also willing to support adjustments to actively participate in the strategy process of a company (Bea &

Haas, 2019, p. 439). Even if Integrated Thinking falls on the fertile ground during implementation, the acceptance of such modifications towards a learning organisation among employees must be ensured through sensitisation. Furthermore, it is essential to conduct appropriate training (Osterheider, 2015, p. 552). In applying the Integrated Thinking approach, considering the Guiding Principles of normative management, Integrated Reporting is embedded in the overall context of a learning organisation. To fully exploit the potential benefits of Integrated Reporting, a transdisciplinary perspective is required and not an isolated view of individual issues within a company. These connecting and recurring elements can be subsumed under Integrated Thinking (Velte, 2022b, p. 1657). The approach must be concretised accordingly at the strategic and operational level to ensure the potential benefits are fully realised.

Against this backdrop, the question now needs to be addressed regarding how a company can manage the transition to Integrated Thinking. A five-step process for full implementation is recommended, which aims a holistic implementation of Integrated Thinking at all management levels (Value Reporting Foundation, 2022b, p. 6). This process is illustrated in Figure 27.

Figure 27. Process of Integrated Thinking



Author's elaboration adapted from Value Reporting Foundation (2022b), p. 6

First of all, it is necessary to deal with the future goal and the current status quo so that it can be evaluated, at which point the company is currently on the way to Integrated Thinking. To enable benchmarking and to determine their status quo, companies can refer to practices and case studies of other companies. The next step is to define the specific objectives the company wants to achieve with their journey to Integrated Thinking. It can sometimes be helpful to prioritise the objectives according to the existing Integrated Thinking maturity level. The focus should be on building awareness and knowledge of how the organisation creates, preserves, or erodes value over time. This is especially true for companies still at the beginning of their transition (Value Reporting Foundation, 2022b, p. 7). In addition, another target state should be to promote connectivity through cross-functional collaboration and break down silos (Value Reporting Foundation, 2022b, p. 7). Finally, the long-term goal should be to integrate holistic decision-making processes into business practice, as this would allow for different time horizons, capitals, and stakeholders to be considered (Value Reporting Foundation, 2022b, p. 8).

The second step in the Integrated Thinking journey includes essential planning activities. Depending on the prevailing corporate culture, a top-down or bottom-up approach can be chosen (Value Reporting Foundation, 2022b, p. 8). The top-down approach is particularly suitable for companies with a clear and hierarchical structure (Value Reporting Foundation, 2022b, p. 9). In this case, the people responsible for managing the company are the driving forces. They are committed and ready to take over integrated decision-making processes. Whenever senior management is committed to a sustainable corporate culture, the Integrated Thinking approach becomes evident in an organisation (Herath et al., 2021, p. 874,901). To become part of the organisation's identification, Integrated Thinking must be implemented at the top level and permeate to the bottom. In this context, particular importance is attached to individual managers, especially the Chief Executive Officer (CEO). This is because the characteristics of the upper-level lead to strategic decisions, which in turn significantly influence an organisation's performance and operational strength (Hambrick & Mason, 1984). Therefore, the CEO of a company must be aware of the relationships between information, activities, and the external environment. If this is the case, an essential prerequisite for promoting Integrated Thinking is given (Churet & Eccles, 2014; Herath et al., 2021). In this case, senior and middle management can adopt such processes and practices, as they are directly encouraged and enabled to do so from above (Value Reporting Foundation, 2022b, p. 8). The bottom-up approach has proven particularly successful in companies with strong, flat cultural and structural organisations (Value Reporting Foundation, 2022b, p. 9). In this context, Integrated Thinking is driven by cross-functional teams that work directly with senior and middle management to introduce them to Integrated Thinking practices. Finally, knowledge and experience are transported to the top management to promote engagement.

The third step is to engage. Engagement is, in turn, based on four phases: inform, ask, listen, and determine. Depending on the approach chosen in the second step, these phases are passed through at different times and in various ways. However, these four phases must be rolled out to achieve a high level of engagement, regardless of the chosen approach (Value Reporting Foundation, 2022b, p. 9).

The fourth step is the actual implementation and monitoring after the status quo, the target picture, the approach to be chosen, and the main stakeholders have been defined. In order to start the implementation process, an appropriate kick-off programme is indispensable to pick up all persons involved in the implementation process so that they participate in the process and thus ensure a higher probability of success for the implementation. In this context, it is crucial to ensure the long-term participation of all persons involved in the process (Value Reporting Foundation, 2022b, p. 11).

This procedure enables the last step in the transition of Integrated Thinking, namely review and improvement. Here, it is vital to continuously compare the implementation performance to date with the previously defined desired target image in order to reveal the possible potential for improvement. Furthermore, it is also essential to involve the corresponding management levels to either inform them (top-down approach) or to point out advantages and further involve them (bottom-up approach) (Value Reporting Foundation, 2022b, p. 12).

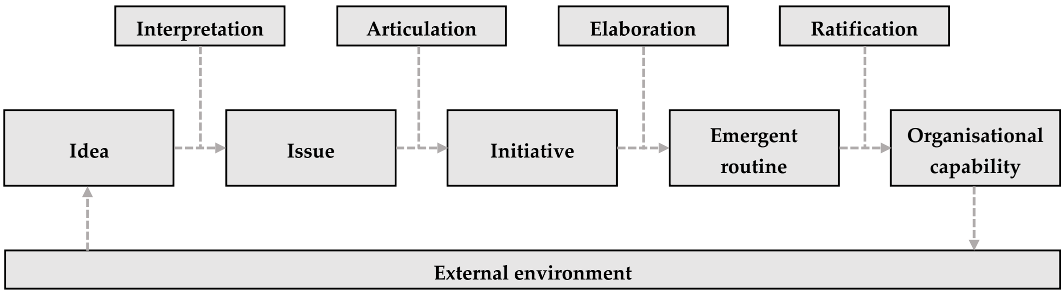
This dedicated approach makes it possible to advance the transition to Integrated Thinking successfully. The maxim of the learning organisation described above forms a suitable guiding framework for driving this type of implementation and transition forward and establishing Integrated Thinking holistically in the company. This makes it possible to embed Integrated Thinking and Integrated Reporting in the normative framework of a company.

To sum up, Integrated Thinking is the fundamental basis of (strategic) corporate management. This approach attempts to combine different dimensions and aspects and their mutual effects to generate competitive advantages. The management philosophy is based on proactive behaviour to exploit potential opportunities. Such a management philosophy is fundamental to developing and implementing high-quality reporting that reflects essential elements of a business (Vitolla, Marrone, et al., 2020, p. 287). It is also a way of transforming business-based models into stakeholder-centred approaches (Aras & Williams, 2022, p. 11). Against this background, the following chapter maps the strategic level and refers to materiality analysis.

6.2.2. Strategic level: Materiality analysis and stakeholder dialogue

After normative guidelines for the implementation and adoption of the Integrated Thinking and Reporting approach within the framework of a learning organisation have been presented, medium-term target ambitions are now to be worked out to be able to implement the integrated approaches strategically in a company. Based on the strategic level, creating the conditions for success for promising value creation and further development is necessary. In this context, it is essential to condense the organisation-specific view of the strategy concerning its value creation potentials (Rüegg-Stürm & Grand, 2020, p. 212). For this reason, elaborating and evaluating future-relevant opportunities are initially of particular importance. Specific possibilities for action and development must be derived for the opportunities arising from trends, for example (Rüegg-Stürm & Grand, 2020, p. 213). Only by taking significant trends into account and implementing trend scouting accordingly (Mock & Zehnter, 2023, p. 100), is it possible to develop a company's value creation potential further and strengthen or even change its competitive position in the long term (Rüegg-Stürm & Grand, 2020, p. 216). The strategic dimension is thus always understood as the interplay of the quartet interpretation, articulation, elaboration, and ratification (Floyd & Woolridge, 2020, p. 117). Figure 28 illustrates the development of strategic initiatives.

Figure 28. Development of strategic initiatives



Author's elaboration adapted from Flyod & Woolridge (2020), p. 117

Ideas, regardless of their source, are the starting point of a strategic process. The interpretation of the idea on the part of the company's management leads to a concretisation of the idea, eventually leading to the idea becoming an issue. As a result of the management's articulation of this issue to others, it hardens and places it on a broader basis since the issue is now also supported by an increasingly more extensive network, both vertically and horizontally, and thus an initiative is created, and elaboration is made possible. The company's top management ratifies the resulting organisational routines before they become part of the organisational capabilities (Floyd & Woolridge, 2020, p. 118). Both the materiality determination process and the stakeholder dialogue are of particular importance to support this strategy development process.

An essential success criterion for companies is, therefore, that strategy adequacy is given. This means that the stakeholders' requirements are satisfied in the long term, and their benefits are increased. It is, therefore, indispensable that the strategy and the company's demands are aligned. This results in downstream adequacy of the reporting and the information demanded by the addressees. This recurring connection generates added value for all those involved, especially for the providers of capital, who are thus able to allocate it efficiently.

To comply with this adequacy, it is necessary to deal decisively with essential aspects within the framework of the company's activities. This circumstance is considered in Integrated Reporting through the materiality determination process and a comprehensive stakeholder dialogue (International Integrated Reporting

Council, 2021a, pp. 28–33). Only a strong recognition of materiality and its operationalisation can significantly add value compared to stand-alone reporting (Velte, 2022b, p. 1656). This is because the consideration of materiality guarantees a balance between the conflicting interests of stakeholders and the complete satisfaction of the interests of shareholders or investors (Velte, 2022b, p. 1657).

Against this background, looking at the Guiding Principle *Materiality* within the International Integrated Reporting Framework is crucial and considered one of the most essential guidelines. In this context, information within corporate reporting that has a material impact on the organisation and its ability to create value should be highlighted and disclosed (Lai et al., 2017, pp. 534–535). The focus on materiality at the strategic level of companies is thus indispensable. To meet the requirements of satisfying the needs of stakeholders and disclosing only relevant information, the Integrated Reporting Framework proposes a four-stage materiality determination process. In order to enable an ideal implementation of Integrated Reporting within a company, the materiality determination process must be integrated into the management processes and include engagement with the relevant stakeholders. Inherent in the process is that it encompasses both positive and negative aspects. It does not only address the potential opportunities of the business activities but also considers the corresponding risks that occur within the framework of the value creation process (International Integrated Reporting Council, 2021a, p. 30).

The first step of the materiality determination process is to identify the relevant information. Relevant matters are those aspects that have or could influence the capability of an organisation to create value. The views and perspectives of stakeholders must be brought into the process and considered.[59] The fact that the interests of various stakeholder groups can diverge substantially shows that this is particularly relevant. Therefore, medium- to long-term impacts, in particular, need to be considered in this process, even if they are sometimes more challenging to quantify and communicate. Potentially, they are also in conflict with short-term goals and impacts (International Integrated Reporting Council, 2021a,

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[59] The stakeholder dialogue, which is important in the context of the strategic management level, is explained and presented in detail later in this section.

p. 30). Subsequently, the characteristics identified in the first step are evaluated about their already known or possible effects on value creation. This evaluation is two-dimensional. On the one hand, the extent of the impact is evaluated and, on the other hand, the likelihood of the impact occurring in order to obtain an efficient overview of the impact and to be able to classify it accordingly. The implications can be assessed both individually and in an aggregated form. Depending on the type of impact, these are to be quantified; however, a qualitative description is a more appropriate approach for some aspects and is, therefore, also permissible (International Integrated Reporting Council, 2021a, p. 30). In considering impacts, the following parameters must be considered in sum. First, it must be determined whether the factors are quantitative or qualitative. In addition, whether this involves a financial, operational, strategic, reputational, or regulatory perspective must be examined. It is imperative to evaluate and critically question whether the effects are of an internal or external nature and in what time frame they occur (International Integrated Reporting Council, 2021a, p. 31). Based on this classification, the individual identified aspects are prioritised concerning their magnitude. This step should serve to focus on the most critical aspects (International Integrated Reporting Council, 2021a, p. 31). In the last sub-process step, deciding which information the companies disclose in their integrated reports is necessary. Once again, it is essential to think in a multi-perspective and integrated way, considering all possible levels (International Integrated Reporting Council, 2021a, p. 31; Lai et al., 2017, pp. 537–538).

The key to a successful materiality determination process is the concept of the reporting boundary (Biondi et al., 2020, p. 896; Girella, 2018; International Integrated Reporting Council, 2021a, p. 31), within which two essential aspects must be considered. The financial reporting entity plays an essential role here. The financial reporting entity is the central point, as providers of financial capital invest precisely in it and thus need to know certain information. Furthermore, the information in the financial statements is the anchor to which other data, information or issues can refer in an integrated report. The reporting entity is determined following the applicable accounting standards. These, in turn, include the concepts of control or significant influence (International Integrated Reporting Council, 2021a, pp. 32–33). Other aspects which have to be considered in defining the reporting boundary are risks, opportunities, and outcomes that are primarily attributable to other entities or stakeholders. They are outside the financial reporting entity but have a substantial impact on the capability of the financial reporting entity to create value (International Integrated Reporting Council, 2021a, pp. 32–33).

The Guiding Principle *Materiality* can be viewed in different ways. Within the materiality determination process, fundamental characteristics play a significant role. This determination process can take a different form depending on the size, sector, and key stakeholders. Thus, the characteristic of the principle-oriented approach of the International Integrated Reporting Framework is also reflected here. The procedure for determining materiality is only rudimentarily defined and leaves it up to the companies to make discretionary. This, in turn, is due to the individual specifics of each company and the associated principles-based approach. For this reason, the materiality determination process must be incorporated into management decisions and processes. As this is within the decision-making authority of management, is based on the substructure of Integrated Thinking, and directly impacts operational management, it is to be assigned to the strategic management level of a company. By filtering out unnecessary information and aspects within the framework of the materiality determination process and thus only taking them into account to a limited extent, the consistent application should improve both internal and external decision-making (Fasan & Mio, 2017, p. 303; Gerwanski et al., 2019, p. 763; Lai et al., 2017, p. 535). This is to be achieved by projecting the focus of resource allocation on the essential core issues of a company. This increases the quality and decision-making value of the information disclosed and made available (International Integrated Reporting Council, 2015, p. 4).

In their study, Mock et al. (2021) examined the Guiding Principle *Materiality* within the scope of increasing transparency and found that materiality is an essential issue in Integrated Reporting. This fundamentally showed that materiality as such and the materiality determination process are necessary and inevitable. The importance can be explained, for example, by the connection between materiality and corporate strategy (Lai et al., 2017). Integrated Reporting, particularly the materiality determination process, would continuously specify the company's strategic requirements and transform them into measures and results.

Therefore, it is the task of strategic management to ensure that the company maintains the credibility and trust of the capital market or even strengthens it with the help of an information policy that focuses on material aspects. (Lai et al., 2017, p. 548). The fact that integrated reports, therefore, increasingly refer to the Guiding Principles of *Materiality* and *Conciseness* is logical (Preuß et al., 2019, p. 111). However, it is also clear that companies should disclose and communicate more information regarding the targeted time horizon and material risks (Gerwanski et al., 2019, p. 763). Even though the principles-based approach of the International Integrated Reporting Framework applies in this context, it is evident that reporting on materiality is not company-specific but rather industry-specific. This, in turn, supports the current literature that the industrial sector is the driving force behind voluntary reporting (Mio & Fasan, 2014). Companies that have been engaged in sustainability for a more extended time and have been part of the International Integrated Reporting Council Pilot Programme also disclose more material information, as evident from the study by Fasan & Mio (2017). This makes it easier and more efficient for investors and stakeholders to recognise and appreciate the value-creation potential. For them, *Materiality* as a Guiding Principle, including the materiality determination process, is a dominant tool to consolidate and expand stakeholder engagement (Fasan & Mio, 2017, p. 303).

The results thus indicate that transparency in the integrated areas can be increased by dealing with materiality. To underline this importance, the International Integrated Reporting Council published a guideline in 2015 that focuses exclusively on materiality in integrated reports and provides corresponding guidance on preparing integrated reports (International Integrated Reporting Council, 2015). It enables companies to respond to individual specifications to meet individual stakeholders' expectations. Therefore, it is essential to embed the material determination process strategically in the company, as Integrated Reporting tailored to stakeholder expectations increases transparency and the quality of the published content. In the long run, this contributes to future-oriented corporate management and can lead to more intensive stakeholder dialogue and satisfying needs. Materiality can thus be interpreted on three levels (Mio, Fasan, et al., 2020). Firstly, the intrinsic nature of materiality. The intrinsic nature of materiality should result from the normative anchoring of the Integrated Thinking approach, which should be lived in the context of a learning organisation.

It is essential that this materiality analysis should not be understood as a one-off, disruptive project but should be permanently integrated into the context of the normatively created prerequisites of the organisation. Taking the normative level as a basis, it becomes secondly apparent from the strategic perspective that the related materiality determination process and the stakeholder expectations are fundamental. In this context, in addition to the internal processes for evaluating the materiality, external communication and interaction are necessary to be able to serve the corresponding needs adequately. Finally, which includes the third level of materiality, materiality must be operationalised and quantified accordingly.

To meet the International Integrated Reporting Framework's requirement of regular engagement with investors and stakeholders (International Integrated Reporting Council, 2021a, p. 30), a pronounced stakeholder dialogue is indispensable to elicit the essential issues of the stakeholders in order to balance the interests of the heterogenous groups (Stubbs & Higgins, 2018, p. 489). In particular, the explanations postulated in the Stakeholder and Legitimacy Theory make the stakeholder dialogue a crucial strategic instrument of a company to align the value creation process with the essential interests of the stakeholders to meet the requirements. By successively bringing corporate activities closer to the expectations and requirements of stakeholders, the legitimacy gap is gradually attempted to be reduced. As a result, studies show that stakeholder pressure leads to a higher quality of Integrated Reporting and underlines the need for corresponding dialogue and engagement (Vitolla, Raimo, Rubino, et al., 2019a, pp. 1601–1602). The need for stakeholder dialogue becomes even more apparent when studies conclude that the legitimacy gap has arisen because companies do not fully comprehend what specific information is valuable and useful for their stakeholders (Naynar et al., 2018, p. 241).

Against the background of the usefulness of the stakeholder dialogue, it is imperative to include it in the materiality determination process to meet the requirements and satisfy the concerns adequately. As can be seen from the observations of the content analysis, practical applications can be identified, for example, in the form of stakeholder surveys, regular stakeholder dialogues or close cooperation with authorities and municipalities. Once again, management's different levels and orientation frameworks intertwine in this context. The more strongly the normative value construct of Integrated Thinking is established in the company, the more comprehensively such consideration per se is undertaken and implemented (International Integrated Reporting Council, 2021a, p. 29).

Given these facts, it is essential to implement the decisive examination of materiality and stakeholder dialogue, which is already anchored in normative management through the approach of the learning organisation at the strategic management level. Now, it is necessary to find out what is needed at the operational management level to implement and establish the concept of Integrated Reporting holistically and comprehensively in a company.

6.2.3. Operational level: Connectivity of internal and external reporting

The operational level contains the processes and tasks necessary for implementing the normative guidelines and strategic thrusts. It is inherent in the fact that the internal and external performance of the company is increased. Thus, the operational level represents the efficient coordination of everyday activities and the optimal utilisation of resources (Rüegg-Stürm & Grand, 2020, p. 210). In order to adequately operationalise the normative basic ideas of the holistic implementation of Integrated Thinking and Integrated Reporting under the guiding maxim of a learning organisation, as well as the accentuation of the materiality determination process and the stakeholder dialogue that is sometimes associated with it, a fundamental evaluation of the symbiosis of internal and external reporting is required. In this context, a significant contribution is to ensure that scarce resources are allocated and utilised efficiently and that duplicate structures are avoided as far as possible (Rüegg-Stürm & Grand, 2020, p. 211).

It is evident that Integrated Reporting significantly impacts internal and external reporting. The relevant factors are future orientation, connectivity, materiality and conciseness of the information and the resulting reports, which can serve internal and external stakeholders (Kirchmann et al., 2015, pp. 70–73). In the context of the operational level, particular emphasis is now placed on *Connectivity*, which is also a Guiding Principle of the Integrated Reporting approach. This is because, in addition to the materiality consideration, which already has a high priority at the strategic level, connectivity is considered one of the elemental further developments compared to other reporting formats (Kajüter et al., 2013a, p. 199).

Due to its importance, *Connectivity of information* is a Guiding Principle of Integrated Reporting. In this context, companies should present information in its mutual interdependencies with effects on the value creation process of a company. The degree of connectivity can, in turn, be derived from the strength of considering the normative value construct of Integrated Thinking. In this context, the claim of information connectivity radiates to many sub-aspects of Integrated Reporting. For example, the Content Elements cannot be considered individually and in isolation but require holistic consideration. Likewise, it must be ensured that past, present, and future-related data are consistent and plausible and only represent real added value for the readers of the company reports when seen in the overall context. Furthermore, the linkage between quantitative and qualitative information and financial and non-financial information is an essential approach to Integrated Reporting (International Integrated Reporting Council, 2021a, pp. 26–27). The latter requirement, in particular, is accompanied by the need for more excellent connectivity between internal and external reporting.

In order to establish adequate connectivity at the level of internal and external reporting, coordination competence is first required, which is mapped in controlling and thus, central impulses should also emanate from there (Horváth et al., 2020, p. 37). Connectivity between internal and external reporting should include the following parameters. In addition to the content of the reports, the presentation and form of publication should also play a key role. In addition, processes, organisation, and collaboration in preparing reports should be synchronised. Finally, the corresponding information technology (IT) systems and landscapes should be adjusted (Kirchmann et al., 2015, p. 74).

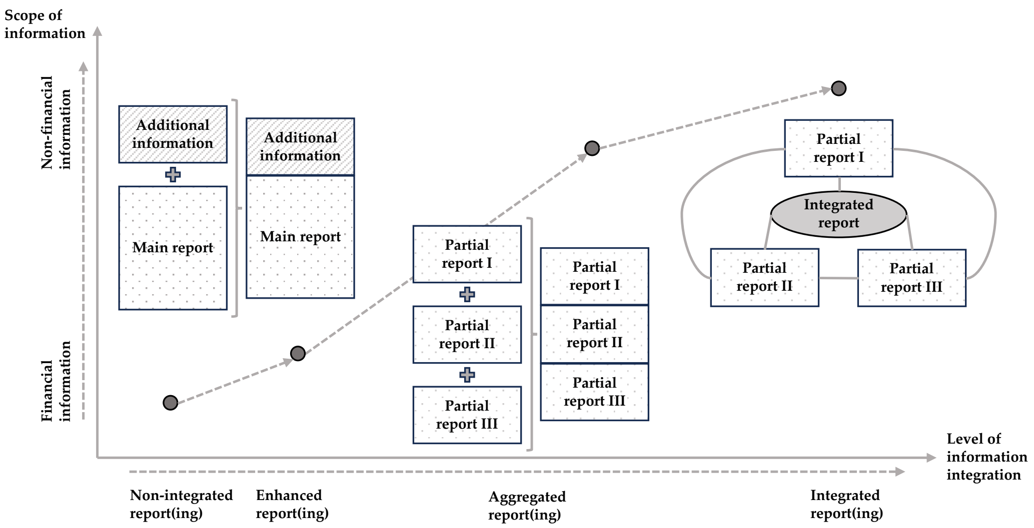
The Content Elements of the International Integrated Reporting Framework primarily determine the combined content of internal and external reporting. The content analysis results have shown that the level of Integrated Reporting is constantly improving over time. It can therefore be assumed that the inherent requirements of the reporting format, also driven by the underlying theories described in Chapter 3.2, promote the connection between internal and external reporting. However, the analysis also shows that some of the reporting covers essential content requirements of the International Integrated Reporting Framework, regardless of whether the its application is mandatory, or such information is disclosed voluntarily. This allows conclusions to be drawn about a company's existing reporting processes and shows that they already have initial indications of connecting internal and external reporting. In this respect, Integrated Reporting can also be strongly linked to the management approach (Horváth et al., 2020, p. 76), which implies that external reporting is enriched with internal reporting information for decision-making purposes to ensure consistency and completeness (Farías & Rodríguez, 2015, p. 118). Nevertheless, the potential for improving disclosure emerges from the content analysis, especially regarding the respective sub-scores.

In addition, a change in the forms of presentation must be considered to represent the interdependencies of the mutually influencing information adequately. In particular, considerations must also be given to the appropriate format. Initial tendencies have already become apparent in the context of the content analysis. While most companies in South Africa and Germany continue to practice the original provision using a static document, some companies have already published interactive reports. This can leverage the connectivity of the information by making it easy for the reader to be guided from information to information and to learn more background through interactive elements. Therefore, it must be ensured that the presentation meets the requirements of the content elements so that they can unfold their full potential benefits.

The third factor examines the processes, which must be coordinated accordingly, and the fourth parameter is the resulting cooperation between accounting and controlling. Building a mutual understanding of roles is crucial to promoting internal and external reporting convergence. Only when these two units see themselves as a single entity, it will be possible to identify and interpret interdependencies (Kirchmann et al., 2015, p. 77). For the implementation of the preceding proposals, efficient IT systems are needed to present and process the required information in terms of data and content. It can be assumed that with the increasing degree of Integrated Reporting, the demands on the IT landscape will also increase in order to continue to meet the needs arising from the holistic approach (Kirchmann et al., 2015, pp. 77–78).

The connectivity of internal and external reporting can be derived from a maturity model of reporting (Paternostro, 2013, p. 69). This is shown in Figure 29 below.

Figure 29. Maturity model of reporting



Author's elaboration adapted from Paternostro (2013, p. 69) and Kirchmann et al. (2015), p. 80

Within the framework of a deficient level of integration, the focus of reporting is initially mainly on financial information, which forms part of a central report, a non-integrated reporting system. As the degree of integration increases, the density of non-financial information also increases, which means that the integrated report can be understood as an aggregation. If the degree of integration between external and internal information increases even further, the report's boundaries are further broken down so that a report is presented in a narrower sense and is not merely the sum of partial reports (Kirchmann et al., 2015, pp. 80–81; Paternostro, 2013, p. 69). Once again, it becomes clear that it is necessary to collect and integrate the necessary and required information, as the maturity of Integrated Reporting goes hand in hand with the degree of integration of information (Kirchmann et al., 2015, p. 80).

However, the connectivity of the two strands of reporting does not exclusively have the potential of higher utility for external stakeholders outside a company or communication goals (Vaz et al., 2016, p. 577). Nevertheless, it can also be helpful for internal purposes (Esch et al., 2019, p. 599; Socea, 2012, p. 52). In this context, Burke & Clark (2016) found a higher quality of management and more efficient decision-making since management deals with both financial and non-financial aspects simultaneously and equally.

Recalling Eccles & Krzus (2010), the circle closes in the respect that early on, researchers understood the integrated approach as the call for a report. This report should synergistically combine financial and non-financial information, including their narratives (Eccles & Krzus, 2010, p. 10). The ongoing institutionalisation of Integrated Reporting reinforced this through the formulation of the International Integrated Reporting Framework.

6.3. CROSS-CUTTING SUCCESS FACTORS FOR IMPLEMENTATION

In the following, selected overarching success factors will be presented to ensure a holistic implementation of the Integrated Reporting approach at the three levels of management. The success factors represent the connecting and synergy-generating links between the management levels, the pillars, and the subject areas. First, there is an urgent need for the expansion of integrated knowledge to meet the increasing regulatory and stakeholder requirements, especially at the top management (Velte, 2022b, p. 1655). It should be noted that there is not yet sufficient commitment to support from top management (Robertson & Samy, 2019, p. 357). It is essential to ensure that Integrated Reporting is not seen as an additional compliance task but as an approach that can meet the future needs and requirements of the external environment (Vitolla et al., 2016, p. 1340, 2018, p. 238). In their study, Moolman et al. (2016) found in a survey of top management and high-level implementers in South Africa that during the introduction of Integrated Thinking and Integrated Reporting, significant changes were perceived in the context of strategic orientation, organisational culture and concerning risk and opportunity management (Moolman et al., 2019, p. 621). These perceived changes are manifested in the results of the content analysis of this thesis. In the respective sub-scores for *Risks and opportunities* and *Strategy and resource allocation*, significant and highly significant changes can be observed in year-on-year comparison in South Africa.

As this has already become clear from the previous explanations, the information demands of shareholders and stakeholders must be explicitly considered and reflected in the preparation of the report (Deegan & Rankin, 1997, p. 566). This is the only way to ensure that the potential benefits of Integrated Reporting can be fully exploited, and that the transparency-enhancing effect sets in (Lai et al., 2016; Mock et al., 2021). Finally, in order to achieve a balance between the conflicting interests and the complete satisfaction of the interests of the shareholders, stakeholders, or investors, it is necessary to deal decisively with materiality, which has already been discussed in detail at several points in the work (Velte, 2022b, p. 1657). Against this background, a pronounced stakeholder dialogue is indispensable to elicit the essential issues of the stakeholders to balance the interests of the heterogeneous groups (Stubbs & Higgins, 2018, p. 489). Only by involving all key stakeholders can decision-making be facilitated for investors and other stakeholders (García-Sánchez & Noguera-Gámez, 2017b, pp. 396, 411). In line with the Stakeholder Theory, even though stakeholder relationships are already predominantly considered (Lopes & Coelho, 2018, p. 415), there is still potential to intensify these activities to meet stakeholder expectations even more strongly and comprehensively (Lopes & Coelho, 2018, p. 419). Vitolla, Raimo, Rubino, et al. (2019b, pp. 1559, 1566) presents national culture as an essential determinant in this context. Accordingly, it is imperative to consider the cultural background of the countries in which the company operates and of the respective stakeholders, especially in the case of internationally operating companies, since the commonalities and differences that arise in the treatment can be explained by this (Tsakumis et al., 2007). This is because both the different accounting practices (S. J. Gray, 1988) and the resulting reporting formats diverge in terms of national culture (C. A. Adams & Kuasirikun, 2000; Langlois & Schlegelmilch, 1990; Neu et al., 1998; Salter & Niswander, 1995). This makes it even more important to choose a multistakeholder approach that does not only selectively take into account the particular interests of selected stakeholders but also considers the needs holistically in order to be able to react adequately to the interests and the possible gap in expectations (Naynar et al., 2018, pp. 254–255). In its new form, the International Integrated Reporting Framework also includes an improvement in the provision of information not only for providers of capital but also for all stakeholders (Dameri & Ferrando, 2022, p. 756). Against this background, companies should strive to intensify stakeholder dialogue to consider the essential aspects of their business activities on the one hand and to satisfy the interests and needs of stakeholders on the other.

To ensure a successful implementation, there is a need for accompanying, timely and target group-oriented communication. Such transparency-enhancing communication should contribute to intensifying and strengthening the stakeholder dialogue. However, it should be noted that the corresponding communication does not only have an external effect but also an internal one. Ideally, the organisation's ambition should be to balance inward and outward communication (Hesslau, 2007, p. 475). It is advisable to use a communication cascade that clearly defines how, when and with which medium the different stakeholder groups are to be informed. In this way, it is possible to demonstrate the informative character of communication and the educational and emotionalising potential of communication. This, in turn, can be classified as an essential success factor (Lies & Palt, 2015, pp. 227–228). Communication with internal and external stakeholders must not be limited to the implementation in the narrower sense but in advance and afterwards.

Another success factor of a holistic application of the Integrated Reporting approach is the sensitisation of employees. In principle, the aim is to avoid resistance and to increase identification with the guiding maxims behind Integrated Reporting. A related criterion for increasing this identification, which should not be neglected, is that strategic impulses can also be driven bottom-up. This participatory character of corporate decisions and reporting leads to the assumption that less resistance is expected in the overall process than if adjustments were imposed via top-down specifications. According to the guiding principle anchored in the normative understanding of creating a culture that promotes learning, it is inevitable to introduce qualification measures to minimise potential resistance or limit it from the outset so that it does not arise in the first place. In this context, one possible and recommended measure is to conduct training in small groups and rely less on mass qualification measures. To approach Integrated Thinking and Integrated Reporting effectively in this step, the participant structure of this training should be diversified across the relevant organisational units. This should help to break down silo thinking. Continuous sensitisation and training of employees to reduce resistance and increase identification are crucial success factors for implementing Integrated Reporting.

Finally, in the so-called post-implementation of Integrated Reporting, it is inevitable to claim a critical reflection and evaluation. The post-phase of an implementation includes the critical examination of whether the intended target states could be achieved and to what extent a continuous improvement process could be initiated based on this (H.-D. Haas & Neumair, 2010, p. 447). In this context, it must be critically examined to what extent the introduction has created synergies for the organisation. It should also be examined to what extent strategic Integrated Reporting could be efficiently adapted by the organisation. Reflection should be divided into two levels, namely the deviation and perspective orientation (Pietsch & Scherm, 2004, p. 537). While a deviation-oriented reflection essentially focuses on comparing target and actual values, the perspective-oriented approach pursues a more qualitative reflection. It aims to continuously generate optimisation suggestions from alternative selection patterns by evaluating one’s actions (Scherm & Süß, 2016, pp. 250–251). This is an ongoing process. Synergetic effects are achieved by feeding back experiences between the formally defined specifications and the actual corporate practice (Wunder, 2004, p. 40). In sum, to grant a holistic implementation if Integrated Reporting, a critical appraisal is required at all three management levels, analogous to the Integrated Management Concept. Critical self-reflection can provide the basis for continuous improvement processes. Ultimately, implementing Integrated Reporting must not be understood as a closed process but is permanently exposed to endogenous and exogenous determinants (Kasztner, 2009, p. 87), on which reporting must grow and develop further. This is particularly important because the requirements and needs of internal and external stakeholders are also changing.

6.4. SUMMARY OF THE CONCEPT DESIGN

Chapter 6 presents a holistic concept for the implementation of Integrated Reporting. It is imperative to consider that the Integrated Reporting approach emphasises the company-specific characteristics. Against this background, an approach is required that unites the different company structure levels in order to release symbiotic forces between them. The Integrated Management Concept offers an adequate approach for this. In principle, challenges should be structured in the context of a systems theory perspective by understanding organisations as complex systems in which functions, relationships, and sub-systems must interlock to be successful. The concept distinguishes between three management dimensions: normative, strategic, and operational management.

The strategic recommendations for action for the holistic and successful implementation of Integrated Reporting are orientated towards the three management dimensions. They are given concrete form by the findings of the content analysis, in which an attempt is made to project these inductively onto the corporate applicability and to make recommendations for action. An attempt is thus made to abstract and generalise the results of the preceding content analysis, knowing that inductive conclusions are not free of limitations. Recommendations are rounded off with specific references to existing literature and studies that substantiate the considerations.

At a normative level, it must be ensured that both Integrated Thinking and Integrated Reporting are established as normative guidelines and overarching value constitutions to create the corresponding mindset. The environment of a learning organisation is essential for this, as this is the only way to fully develop the normative maxim and allow it to take effect in the company. At a strategic level, the materiality analysis and stakeholder dialogue, in particular, need to be emphasised. By taking both strands into account, it is possible to implement strategic initiatives in an organisation. Strategy adequacy can be achieved by identifying material aspects, which are enriched by the stakeholder dialogue. This is the only way to generate added value. Therefore, both the materiality analysis and the stakeholder dialogue are essential strategic components in order to be able to implement the Integrated Reporting approach in the company entirely. At an operational level, more vital connectivity between internal and external reporting must be established. This should uncover and minimise both inefficiencies and inconsistencies. As a result, decision-making can be significantly strengthened and more targeted. New synergy potentials arise from this, particularly against the postulated need for materiality analysis and stakeholder dialogue. Finally, overarching success factors for implementation are presented. Particularly in post-implementation, it is crucial to initiate a continuous improvement process with the help of critical self-reflection.

VII – CONCLUSION

VII - CONCLUSION

7.1. SUMMARY OF KEY FINDINGS

Traditional corporate reporting is subject to many shortcomings. The increasing density of information and the growing amount of information published in different reports is constantly growing. Nevertheless, shareholders and stakeholders significantly depend on information companies publish. However, the changing external environment, regulatory requirements, and the resulting diversified reporting landscape limit and make the decision-making process inefficient. The resulting mismatch between the actual purpose of corporate reporting and the requirements and needs of a company's stakeholders weighs heavily.

The idea of Integrated Reporting was to counteract these deficits in corporate reporting. While the approach of integrated, holistic reporting has already been partially implemented without institutional definition, the International Integrated Reporting Council released the International Integrated Reporting Framework in 2013; a revised version was published in 2021. With this, Integrated Reporting should develop as the corporate reporting norm, in that companies should report in particular on how they create, preserve and erode value in the short, medium and long term. This was intended to rectify the shortcomings of corporate reporting that have been identified. 2023 marks the 10th anniversary of the first version of the International Integrated Reporting Framework. Thus, there is a need to review whether a higher degree of Integrated Reporting can be found in corporate reports. Based on the considerations that serve to answer the Research Question 1 and its sub-research questions, a Research Question 2 is to be answered in this thesis, which aims to determine how Integrated Reporting can be holistically integrated and implemented in a company. In sum, the dissertation is subject to the following Research Questions, which are illustrated in Figure 30.

Figure 30. Overview of the Research Questions

Research Question 1:
Is progress in Integrated Reporting evident in corporate reports?

Research Question 1.1:
What is the degree of Integrated Reporting in corporate reports from South Africa and Germany?

Research Question 1.2:
What changes in the degree of Integrated Reporting have occurred in corporate reports from South Africa and Germany comparing the financial years 2013 and 2022?

Research Question 2:
How can Integrated Reporting be implemented holistically in a company?

Author's elaboration

The conceptual hermeneutic analysis conducted in Chapter 2 first addresses the decision usefulness of information and the derivation of necessary instruments to disclose such information. Building on this, the integrated approach is examined in more detail. Integrated Thinking is defined as a guiding maxim of normative management and its significance in the overall corporate context is emphasised. Despite the recurring connection between Integrated Thinking and Integrated Reporting, Integrated Thinking can be seen as a prerequisite for Integrated Reporting, which is why, building on the primary considerations of Integrated Thinking, explanations and reflections are made on the increasing importance and development of institutionalised Integrated Reporting. The terminological delimitation of Integrated Reporting based on the published International Integrated Reporting Framework substantiates the explanations. First, a general definition is given, then the three Fundamental Concepts, the seven Guiding Principles, and the eight Content Elements are explicitly discussed, and their significance described. This is followed by a critical discussion of the benefits and resistance to implementing Integrated Reporting. Furthermore, the chapter distinguishes Integrated Reporting from the original annual report and the sustainability report. The chapter closes by essential information on the corporate reporting landscape in South Africa and Germany.

Chapter 3 outlines the course of investigation and research methodology. First, previous state of the art studies are presented, on the one hand, in general terms and, on the other hand, concerning the determinants and effects of Integrated Reporting. In this context, it becomes clear that the factors influencing, and implications of Integrated Reporting are widely spread. However, it is also evident from the literature review that the results vary widely and show mixed results. To develop meaningful hypotheses, the dimensions of information were first explained, and then crucial scientific theories and their relationships with Integrated Reporting were highlighted. The insights gained from the literature review and the consultation of the different theories finally led to the development and derivation of the five hypotheses relevant to this dissertation. These serve to answer Research Question 1, including its sub-research questions, and are as follows. They are illustrated in Figure 31.

Figure 31. Overview of the Hypotheses

Hypothesis 1:
The degree of Integrated Reporting has increased between the financial years 2013 and 2022.

Hypothesis 2:
South African companies show a higher degree of Integrated Reporting than German companies in the financial year 2013.

Hypothesis 3:
South African companies show a higher degree of Integrated Reporting than German companies in the financial year 2022.

Hypothesis 4:
South African companies show a higher degree of Integrated Reporting in the financial year 2022 than in the financial year 2013.

Hypothesis 5:
German companies show a higher degree of Integrated Reporting in the financial year 2022 than in the financial year 2013.

Author's elaboration

Based on this, the research design is presented, and the dissertation research is placed in the scientific context. Thus, the research design allows a year-on-year comparison and a cross-country comparison at two specific points in time. A difference-in-differences contemplation was also performed to strengthen the results and mitigate potential biases. The content analysis is considered the fundamental analysis method of the dissertation. Against this background, this method is explained and presented in detail, together with the corresponding correspondence of the associated quality criteria. With its eight categories and 77 items, the specially designed content analysis catalogue is presented to determine the Integrated Reporting score. It is pointed out to the implied contents in each case and the point mechanism.

After briefly describing the sample, Chapter 4 presents the study's main findings in terms of descriptive and inferential statistics. The analyses revealed that the degree of Integrated Reporting increased by 0.13 from 0.48 in 2013 to 0.61 in 2022, based on the mean of the total sample. The cross-country comparison in 2013 shows that the Integrated Reporting score of South Africa, with a mean of 0.50, is 0.03 above Germany's mean of 0.47. The corresponding analysis in 2022 indicates that the Integrated Reporting score of South Africa, with a mean of 0.67, is 0.11 above Germany's mean of 0.56. The year-on-year comparison in South Africa finds that the mean in 2022 of 0.67 is 0.17 higher than the mean in 2013 of 0.50. The year-on-year comparison in Germany also examines positive change in the mean of 0.09 from 0.47 in 2013 to 0.56 in 2022. Almost similar trends can also be seen in the analysis of the sub-scores.

Chapter 5 discusses the results obtained against the background of the underlying theories. In the context of the Principal Agent Theory, Integrated Reporting can be used to reduce information asymmetries and the associated agency costs. The principle-based approach of Integrated Reporting can also be helpful, considering the Positive Accounting Theory, in presenting the company according to its own ideas and interests. Finally, intrinsic motivation can also increase the degree of Integrated Reporting over the years (Stewardship Theory). Systems-oriented theories can also explain the observed results. The Legitimacy Theory and the Stakeholder Theory support the findings of the content analysis in that companies adequately meet the interests of stakeholders and society through a higher degree of application of Integrated Reporting. Finally, normative, coercive, and mimetic isomorphism also provide explanatory approaches that underpin the improvement in the degree of Integrated Reporting. Furthermore, the observed results are compared with the results of previous studies in order to strengthen their explanatory power. Subsumptive, all five hypotheses are supported by the results of the analysis. However, there is still further room for improvement, as not all potentials of the content elements are fully exploited yet.

Against the background of the open potential, Chapter 6 opens considerations for a concept design for the full implementation of Integrated Reporting in a company. This addresses Research Question 2 and attempts to answer it. In principle, it should be borne in mind that Integrated Reporting cannot be implemented partially but only holistically. The management reference framework used for this purpose, the Integrated Management Concept, accordingly, attempts to structure management-related challenges. This is done along the normative, strategic, and operational level. Within the scope of normative management, the maxims of Integrated Thinking and Integrated Reporting must be implemented and established at the highest level of the company. To be successful in the long term, it is necessary to follow the concept of a learning organisation and to create the corresponding framework conditions. To achieve competitive advantages and exploit the full potential benefits of Integrated Reporting, attention must be paid to materiality analysis and stakeholder dialog at the strategic level. Only a corporate structure focusing on essential aspects and stakeholders can adequately meet the corresponding requirements. Therefore, it is necessary to set up a materiality determination process that captures, from multiple perspectives, which aspects influence the company, and which are influenced by it. The stakeholders should play a central role in this process, as they can contribute valuable impetus to the company's strategic development in the context of stakeholder dialogues. Finally, a symbiosis of internal and external reporting should be pursued at the operational level. The basis for this is the Integrated Thinking concept used in normative management. This can help break down internal silos and report value-added information to internal management and external addressees.

It can be summarised that the results, findings, and conclusions of the different parts of the dissertation seamlessly overlap and synthesise. The overarching research questions, including the sub-research questions, can thus be answered appropriately. First, progress in Integrated Reporting can be seen in the corporate reports examined. The degree of Integrated Reporting has improved in all sub-samples from the year 2013 to the year 2022. Thus, progress is evident in the corporate reports of the countries and years studied. The Integrated Management Concept presents a suitable management reference framework that can be used to implement Integrated Reporting holistically in a corporate structure. This enables the potential benefits identified in the preceding studies to unfold and fully generate their positive impact.

7.2. IMPLICATIONS

From the conclusions of the thesis, further implications can be identified, which will be presented in more detail in the following. For better classification, the implications are summarised for the main groups that are in some way related to reporting.

First, the conceptual and hermeneutical analysis shows that the information used in integrated reports is generally relevant for providers of financial capital. The reports provide more than just financial information. Thus, value creation in companies becomes more explainable as other components are also included in the scope of disclosure. However, it should be noted that there is a trade-off between company-specific disclosures and comparability. The Guiding Principles and the Content Elements ensure that the information is more accessible and understandable for the providers of financial capital. With the revision of the International Integrated Reporting Framework, it can be observed that the focus is no longer primarily and exclusively on the providers of financial capital, but also on the perspectives of other stakeholders.

Second, the results are also projectable to practitioners. Even if introducing Integrated Reporting seems challenging concerning time and resources (Mervelskemper & Streit, 2017; Steyn, 2014), at first, positive effects may outweigh the preparation and implementation costs (Hail, 2011, p. 573). This leads to a questioning of established and long-used reporting formats and processes. The critical examination alone aligns with the overriding approach of Integrated Reporting and Integrated Thinking. The organisation must decide which information will be interpreted as material within the materiality determination process. Nevertheless, these considerations result in beneficial potentials for an organisation's management. For this purpose, an implementation approach based on the Integrated Management Concept was elaborated within this research. Using the concept as a basis and with the help of the empirical results, this study shows how Integrated Reporting can be holistically implemented into corporate structures normatively, strategically, and operationally and reveals possible overarching success factors that are supportive and ultimately anchoring during implementation. Ultimately, higher-quality information disclosure would give companies the benefit of efficient capital flows (Adhariani & de Villiers, 2019, p. 183) and more focused analyst judgments about future performance (Zhou et al., 2017, p. 123).

Third, this study has indirect implications for standard setters and regulators. Even if they view corporate reporting from a different perspective, it can be assumed that they also see Integrated Reporting as a format that provides a more realistic picture of a company and, thus, better discloses the company's value. Furthermore, the results of the study indicate that Integrated Reporting represents a sensible further development of the reporting landscape to cushion previous weaknesses of established reporting, which happens in particular through applying the Guiding Principles and Content Elements. Also, the fact that the International Integrated Reporting Framework remains at a meta-level to not interfere with other formats simplifies endorsement at the national level of the companies. Even if a complete application is not carried out, the ideas of Integrated Reporting can still find their way into national regulation. In this context, it would be compelling for German standard setters to promote the integration of financial and non-financial information, especially concerning the deficits of the Content Elements derived the content analysis. In general, the Institut der Wirtschaftsprüfer e.V. (IDW) welcomes the application of Integrated Reporting (Institut der Wirtschaftsprüfer in Deutschland e.V., 2020, pp. 5–9). Beyond the IDW's sympathising of Integrated Reporting, pronouncements on Integrated Reporting in Germany are rare. The recently published CSRD does not specify which frameworks will be used for publication. Finally, practical methods for conducting audits are needed in this context, where research is still very embryonic (Goicoechea et al., 2019, p. 1) as stakeholders have a higher interest in information and therefore attach more importance to it if it is accompanied by a higher level of assurance (Gal & Akisik, 2020, pp. 1236–1237).

Fourth, effects on institutional Integrated Reporting are expected. In this context, the content analysis and the empirical results provide valuable indications. For example, it is evident that the degree of integrated reports is improving since the use of the International Integrated Reporting Framework by the companies is becoming more routine, and the critical examination of the essential information is increasing. Furthermore, the study's results support the objectives of Integrated Reporting and thus contribute to investors allocating their capital efficiently (International Integrated Reporting Council, 2021a, p. 2). In addition, it is necessary to observe how institutionalised Integrated Reporting will continue to develop. In the past few years, there has been some cooperation here and finally some annoyance, so that Integrated Reporting is now part of the IFRS Foundation.

Finally, this dissertation presents a contribution to research. The thesis decreases and closes the identified research gap. The content analysis results enhance the literature on Integrated Reporting practices in the sense that it provides data based on the Content Elements derived from individual analysis of corporate reports to develop an Integrated Reporting score. Furthermore, it should be considered from a research point of view that development over time is presented here, and the corresponding changes in annual and country comparisons are dealt with in detail. In sum, the dissertation enriches the still young research field of Integrated Reporting. Nevertheless, the study reveals limitations and thus also potential for a future research agenda based on them. Both the limitations and the potential for future research efforts are explored in the following two chapters.

7.3. LIMITATIONS AND GENERALISIBILITY

Unavoidably, empirical research also comes with various limitations. First, the research has to face the question of generalisability or to what degree this can be achieved. The results could be influenced by the particularities of the respective countries, industries, or years that the dissertation takes as the basis of its investigations. Flexibility is to be critically questioned because while some jurisdictions have an increased perceived need for flexibility in accounting, other countries have a relatively uniform approach; despite all internationalisation and harmonisation efforts (S. J. Gray, 1988, p. 9). However, it should also be noted that a somewhat higher degree of generalisability is achieved because, unlike other studies, two countries and years have already been evaluated in a year-on-year and cross-country comparison, here. The difference-in-differences approach used in this context reduces biases, such as country fixed effects, and thus strengthens the results of the study (Angrist & Pischke, 2009, pp. 227–243). Another limitation of the thesis is that only the companies' annual reports were considered. In order to maximise comparability, the content of other communication tools is not taken into account in the analysis carried out in this thesis. Nevertheless, it would be possible to extend the research in the direction of other communication instruments.

Another drawback in the context of generalisability is the fact that almost only larger companies can apply Integrated Reporting to its full extent. Particularly concerning the scope of reporting regarding the complexity of the business model and its descriptions, considerable deviations and divergences can be identified. Even if the International Integrated Reporting Framework explicitly intends that Integrated Reporting applies to organisations of all sizes, this concept varies in reporting practice. Based on previous studies, predominantly large companies implement Integrated Reporting (Frías-Aceituno et al., 2014, pp. 57, 66). This results in the fact that research focuses on larger companies and less on smaller organisations.

In addition to the company's size, the number of organisations in the sample could also affect the generalisability of the results. In contrast to other large-scale archival studies (Velte, 2022b; You & Zhang, 2009), the sample size of 164 firm-year observations is comparatively small. Therefore, the study has a limited representative character and does not represent a total population. The division into different samples leads to a reduction of the sample size. In the context of this study, however, it is shown that the sample is subject to a normal distribution. Moreover, the small sample size allows manual data collection and analysis. Through this independent personal review, it was possible to capture the idea of Integrated Reporting according to the underlying framework. Therefore, this study goes far beyond several previous studies on Integrated Reporting practice. Manual analysis makes it possible to deliver more accurate and detailed data. Also, and especially when it comes to linking and connectivity of information, manual analysis is of particular advantage, as keyword searches or similar procedures can be dispensed with. This makes it possible to gain a more comprehensive insight into the information disclosed.

However, based on dedicated content analysis, this manual data collection and analysis for the Integrated Reporting Score entails limitations. Content analysis, even if based on strict, predefined criteria, can only cover partial aspects of all information with the help of document analysis and cannot fully preserve objectivity. Notably, the assessment of the integrated reports, their contexts and the corresponding scoring can be identified as substantial challenges of the research design (Flick, 2018, p. 383).

Human discernment and reasoning inevitably lead to the risk of subjectivity and bias (Kromrey et al., 2016, pp. 321–322; Schnell et al., 2013, pp. 403–404). However, methods are used that aim to avoid these shortcomings, particularly in the context of the data collection from the same researcher or measures taken to maintain consistency. Despite these vigorous efforts, it cannot be entirely ruled out that errors and biases will be excluded. It is also questionable whether professionals in the capital market evaluate company reports and published information differently. This is especially true against the background of advancing artificial intelligence and the use of specialised software.

Even though this research is based on a predefined content analysis catalogue to obtain reliable results, other researchers might interpret the information or the Integrated Reports differently, although they would also adhere to the analysis framework and catalogue presented here. Finally, it should be noted that the validity of study’s results is only temporally given until they are falsified by other research prospects (Bartel, 1990, p. 58).

7.4. OUTLOOK AND SUGGESTIONS FOR FURTHER RESEARCH

As can already be seen from the comprehensive literature review, research on Integrated Reporting is still at a very early stage compared to classic reporting formats, and only a few aspects have been thoroughly investigated so far. This results in considerable potential for future studies. In addition, suggestions for future research can be derived directly from the limitations.

Nevertheless, some aspects of the effects of using Integrated Reporting have already been covered. To be able to assess and evaluate the potential benefits of this reporting format even more efficiently, it would be motivating to examine the direct and indirect costs of preparing and producing an integrated report.

The International Integrated Reporting Framework is deliberately designed internationally. This means that, even concerning the principle-based approach, the research inevitably reflects the individual characteristics of the different countries in terms of culture, economy, and legal system. Various studies occasionally refer to individual, focused countries. Research on underrepresented countries and their comparisons would further enrich the research and generalise the results.

In addition to more broadly diversified research on countries, other findings would be helpful. Frías-Aceituno et al. (2014) find that company size is positively associated with using Integrated Reporting. This raises the question of whether and to what extent this reporting format could also be attractive for smaller companies. This is likely to depend, in particular, on the cost-benefit considerations of the companies. In relative terms, smaller companies are likely to generate less external benefit due to their non-listing, increasing the relative costs of preparing and implementing Integrated Reporting and making it more difficult to justify to their shareholders. However, if the costs outweigh the potential benefits of the reporting format, this would result in a restrictive reporting practice, which would completely contradict the Guiding Principles of Integrated Reporting (Kajüter et al., 2013b). In this context, the first step would be to qualitatively investigate whether the potential advantages of establishing Integrated Thinking could be realised. In a second step, this would then be measured quantitatively.

The present study weights all Content Elements equally in determining the Integrated Reporting score. This results in further aspects for future research into the assessment of Integrated Reporting. In order to gain a deeper insight into the significance of the Content Elements and their impact on specific key performance indicators, it would be interesting to weigh the Content Elements differently to evaluate their relevance in this respect. For this purpose, perception studies would help filter the perception of the published information and its perceived need. Finally, new insights or even different or more precise significances could emerge here in the context of the relationship analysis.

Furthermore, additional variables could be included in the analysis. For example, it would be possible to establish the relationship between the degree of an integrated report and the company's corresponding rating. Likewise, sustainability ratings could be included in the analysis. Based on the theoretical foundations and the associated scientific theories, there should be a positive correlation between the degree of Integrated Reporting and the corresponding rating score since at least the information asymmetry between the organisation and the report's addressee should have decreased significantly.

However, Integrated Reporting, particularly the inclusion of Integrated Thinking, does not exclusively mean the integrated presentation of the report as such. The traditional view that a company communicates exclusively through its report gets less. In further studies, it is essential to include other communication instruments besides reports in the analysis. It should also be noted that the communication instruments for each stakeholder group are individually tailored and thus require a separate analysis and a separate content analysis catalogue. Knowing that this is a considerable analysis effort, further valuable insights are expected to be gained. Particularly against the background of heterogeneous stakeholders, a multi-perspective investigation of the application of the Integrated Reporting approach in the entire communication concept of a company is required.

The heterogeneity is reflected in another possible field of investigation. Thus, this study fundamentally refers to the users of Integrated Reporting and the effects on the company's key performance indicators. The potential for improvement is that the quality assessment could also be projected to other stakeholders and the corresponding impacts. In this way, it could be possible to paint an even more holistic picture of Integrated Reporting and reveal the advantages of the reporting format at other levels.

The reporting occurs mainly online and becoming less via printed reports. Therefore, it would be of particular importance to investigate, with the help of artificial intelligence, which information is of higher importance to the reader of the integrated report. For example, standardised evaluation of the reports (Kerlin et al., 2022) or mouse and eye tracking could be used here (Sirois et al., 2018). From this, significant insights into the usefulness of the information can be gained. In addition, contrary to the advantages of manual text analysis, it would be possible to analyse the texts by machine. In the context of text mining, for example, a sentiment analysis could be carried out. This would make it possible to quickly assess whether the disclosed information and statements can be recognised as positive or negative. This machine-generated analysis could be of considerable benefit, particularly against the increasing amount of information published online between the publication dates. Precisely because the International Integrated Reporting Framework covers a principle-based approach, the question of which and how the information is presented is of existential importance in order to fully exploit the potential benefits of Integrated Reporting. In this context, the analysis of the degree of Integrated Reporting could also be extended to other communication tools.

Finally, longitude studies should be carried out. Here, the same study is conducted at several points in time. In this way, a comparability of the study results can be established, and thus a better generalisability can be aimed at. This means that the study should be conducted with the same sample at different points in time. In part, this thesis already meets this requirement by selecting two points in time. However, this can be done in a much more refined way. This way, intra-individual changes can be better captured. In addition, inter-individual changes can also be revealed in this way.

Regarding the future of Integrated Reporting, it will continue to be exciting to observe to what extent the reporting format becomes further adopted. Whether and to what extent Integrated Reporting can continue to establish itself in the reporting landscape depends, in particular, on the extent to which the mergers of recent years create synergies. Ultimately, however, it is also up to the regulators and especially the users and preparers to exploit the potential advantages of Integrated Reporting fully. Against this background, this dissertation contributes to the diffusion of the use of Integrated Reporting by revealing the benefits of the reporting format, showing in which areas companies still have the potential for improvement and how it can finally be successfully implemented throughout all management levels. The implementation and application of Integrated Reporting represent not only a paradigm shift in corporate reporting but also a substantial change in companies' mindset.

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IX – APPENDIXES

IX - APPENDIXES

APPENDIX 1. Detailed structure of the content analysis catalogue

Detailed structure of the content analysis catalogue

Category / Item group / Item		**Essential contents to be published**	**Section(s) [a)]**	**Type of item**	**Prerequisite(s) for awarding of points**
Organizational overview and external environment **An integrated report should answer the question: What does the organization do and what are the circumstances under which it operates?**			**4A; 4.4**		
OVERV_1	OVERV_1.1	Organization's purpose	4.4	A	1 point is awarded if the organization's purpose is described.
	OVERV_1.2	Organization's mission	4.4	A	1 point is awarded if the organization's mission is described.
	OVERV_1.3	Organization's vision	4.4	A	1 point is awarded if the organization's vision is described.
	OVERV_1.4	Organization's culture, ethics and values	4.5	B	0.5 points are awarded if the organization's culture is described. 0.5 points are awarded if the organization's ethics and values are described. 1 point is awarded if the organization's culture, ethics and values are described.
OVERV_2		Organization's ownership and operating structure	4.5	B	0.5 points are awarded if the organization's ownership structure is described. 0.5 points are awarded if the organization's operating structure is described. 1 point is awarded if the organization's ownership and operating structure are described.
OVERV_3	OVERV_3.1	Organization's competitive landscape and market positioning	4.5	A	1 point is awarded if the organization's competitive landscape and market positioning are described.
	OVERV_3.2	Organization's position within the value chain	4.5	A	1 point is awarded if the organization's position in the value chain is described.
OVERV_4		Summary of key quantitative information	4.5	B	0.5 points are awarded if only financial key performance indicators / statistics are described. 0.5 points are awarded if only non-financial key performance indicators / statistics are described. 1 point is awarded if financial and non-financial key performance indicators / statistics are described.
OVERV_5	OVERV_5.1	Legitimate requirements and interests of key stakeholders	4.7	A	1 point is awarded if the key stakeholders' legitimate requirements / needs and interests are described.
	OVERV_5.2	Macro and micro economic conditions	4.7	A	1 point is awarded if the macro and micro economic conditions are described (e.g., economic stability, globalization, and industry trends).
	OVERV_5.3	Market forces	4.7	A	1 point is awarded if the market forces are described (e.g., relative strengths and weaknesses of competitors and customer demand).
	OVERV_5.4	Speed and impact of technological change	4.7	A	1 point is awarded if the speed and impact of technological change are described.
	OVERV_5.5	Societal issues	4.7	A	1 point is awarded if social issues are described (e.g., population and demographic changes, human rights, health, poverty, collective values and educational systems).
	OVERV_5.6	Environmental challenges	4.7	A	1 point is awarded if environmental challenges are described (e.g., climate change, the loss of ecosystems, and resource shortages as planetary limits).
	OVERV_5.7	Organization's legislative and regulatory environment	4.7	A	1 point is awarded if the organization's legislative and regulatory enviroment are described.
	OVERV_5.8	Political environment of the countries in which the organization operates and those that may have an impact on the strategy	4.7	A	1 point is awarded if the political environment of the countries in which the organization operates and those that may have an impact on the strategy are described.
Items OVERV:	**16**				

[a)] The section(s) refer(s) to the International Integrated Reporting Framework.

continued on page 326

Detailed structure of the content analysis catalogue (continued)					
Category / Item group / Item		**Essential contents to be published**	**Section(s) a)**	**Type of item**	**Prerequisite(s) for awarding of points**
Governance **An integrated report should answer the question: How does the organization's governance structure support its ability to create value in the short, medium and long term?**			**4B; 4.8**		
GOVER_1		Organization's leadership structure including skills and diversity	4.9	B	0.5 points are awarded if the organization's leadership structure is described. 0.5 points are awarded if skills and diversity are additionally described. 1 point is awarded if organization's leadership structure including skills and diversity are described (e.g., range of backgrounds, gender, competence and experience).
GOVER_2	GOVER_2.1	Processes to make strategic decisions and to define and monitor the organization's culture	4.9	A	1 point is awarded if the processes to make strategic decisions and to define and monitor the organization's culture are described.
	GOVER_2.2	Actions to influence and monitor strategic alignment and risk management	4.9	A	1 point is awarded if the actions to influence and monitor strategic alignment and risk management are described.
GOVER_3	GOVER_3.1	Use of and impact on the Capitals by the organization's culture, ethics, and values	4.9	A	1 point is awarded if the use of and impact on the Capitals by the organization's culture, ethics, and values are described.
	GOVER_3.2	Implementation of governance practices beyond legal requirements	4.9	A	1 point is awarded if the implementation of governance practices beyond legal requirements is described.
	GOVER_3.3	Responsibility for promoting and enabling innovation	4.9	A	1 point is awarded if the responsibility for promoting and enabling innovation is described.
GOVER_4		Linking remuneration and incentives to value creation	4.9	A	1 point is awarded if linking remuneration and incentives to value creation are described.
Items GOVER:	7				

a) The section(s) refer(s) to the International Integrated Reporting Framework.

continued on page 327

Detailed structure of the content analysis catalogue (continued)

Category / Item group / Item		Essential contents to be published	Section(s) [a]	Type of item	Prerequisite(s) for awarding of points
Business Model **An integrated report should answer the question: What is the organization's business model?**			**4C; 4.10**		
BUSIM_1	BUSIM_1.1	Identification of the key elements of the business model	4.13	A	1 point is awarded if the identification of the key elements of the business model is described.
	BUSIM_1.2	Diagram that highlights the key elements of the business model. Classification and explanation of relevance	4.13	B	0.5 points are awarded if a diagram that highlights the key elements of the business model exists. 0.5 points are awarded if the classification and explanation of relevance is described. 1 point is awarded if a diagram that highlights the key elements of the business model exists and the classification and explanation of relevance is described.
	BUSIM_1.3	Organizationally individual and adapted narrative flow that appears logical	4.13	B	0.5 points are awarded if the organizationally individual and adapted narrative flow appears partially logical. 1 point is awarded if the rganizationally individual and adapted narrative flow appears logical.
	BUSIM_1.4	Link to information covered by other Content Elements	4.13	A	1 point is awarded if the link to information covered by other content elements is described.
BUSIM_2		Identification of key stakeholders, interdependencies and important factors that influence the external environment	4.13	A	1 point is awarded if the identification of key stakeholders, interdependencies and important factors that influence the external environment are described.
BUSIM_3	BUSIM_3.1	Linking of the inputs to the Capitals on which the organization depends	4.14	A	1 point is awarded if the linking of the inputs to the Capitals on which the organization depends is described.
	BUSIM_3.2	Inputs that are a differentiator	4.14	A	1 point is awarded if the inputs that are differentiator are described.
	BUSIM_3.3	Presentation of inputs that have a significant impact on the ability to create value in the short, medium and long term	4.15	A	1 point is awarded if inputs that have a significant impact on the ability to create value in the short, medium and long term are described.
BUSIM_4	BUSIM_4.1	Differentiation from the competition	4.16	A	1 point is awarded if differentiation from the competition is described.
	BUSIM_4.2	Business model based on revenue generation after the initial point of sale	4.16	A	1 point is awarded if the business model based on revenue generation after the initial point of sale is described.
	BUSIM_4.3	Dealing with the need for innovation	4.16	A	1 point is awarded if the dealing with the need for innovation is described.
	BUSIM_4.4	Design of the business model to adapt to changes	4.16	A	1 point is awarded if the design of the business model to adapt to changes is described.
	BUSIM_4.5	Initiatives for the long-term success of the business	4.17	A	1 point is awarded if initiatives for the long-term success of the business are described. (e.g., process improvement, employee training and relationship management).
BUSIM_5		Key products and services	4.18	A	1 point is awarded if the organization's key products and services are described.
BUSIM_6	BUSIM_6.1	Internal and external outcomes	4.19	B	0.5 points are awarded if internal outcomes are described. (e.g., employee morale, organizational reputation, revenue and cash flows) 0.5 points are awarded if external outcomes are described. (e.g., customer satisfaction, tax payments, brand loyalty, and social and environmental effects) 1 point is awarded if internal and external outcomes are described.
	BUSIM_6.2	Positive and negative outcomes associated with increases and decreases in capital assets	4.19	B	0.5 points are awarded if positive outcomes are described. (e.g., those that result in a net increase in the capitals and thereby create value) 0.5 points are awarded if negative outcomes are described. (e.g., those that result in a net decrease in the capitals and thereby erode value) 1 point is awarded if positive and negative outcomes are described.
Items BUSIM:	**16**				

[a] The section(s) refer(s) to the International Integrated Reporting Framework.

continued on page 328

Detailed structure of the content analysis catalogue (continued)					
Category / Item group / Item		**Essential contents to be published**	**Section(s) [a)]**	**Type of item**	**Prerequisite(s) for awarding of points**
Risks and opportunities **An integrated report should answer the question: What are the specific risks and opportunities that affect the organization's ability to create value over the short, medium and long term, and how is the organization dealing with them?**			**4D; 4.24**		
RIOP_1	RIOP_1.1	Specification of the source of external or internal risks	4.26	A	1 point is awarded if the specification of the source of external or internal risks is described.
	RIOP_1.2	Assessment of the probability of occurrence and the magnitude of the impact of the risk	4.26	A	1 point is awarded if the assessment of the probability of occurrence and the magnitude of the impact of the risk are described.
	RIOP_1.3	Concrete steps to manage and mitigate significant risks	4.26	A	1 point is awarded if the concrete steps to manage and mitigate significant risks are described.
RIOP_2	RIOP_2.1	Specification of the source of external or internal opportunities	4.26	A	1 point is awarded if the specification of the source of external or internal opportunities is described.
	RIOP_2.2	Assessment of the probability of occurrence and the magnitude of the impact of the opportunity	4.26	A	1 point is awarded if the assessment of the probability of occurrence and the magnitude of the impact of the opportunity are described.
	RIOP_2.2	Concrete steps to manage and create value from key opportunities	4.26	A	1 point is awarded if the concrete steps to manage and create value from key opportunities are described.
Items RIOP:	**6**				

[a)] The section(s) refer(s) to the International Integrated Reporting Framework.

continued on page 329

Detailed structure of the content analysis catalogue (continued)					
Category / Item group / Item		Essential contents to be published	Section(s) [a)]	Type of item	Prerequisite(s) for awarding of points
Strategy and resource allocation **An integrated report should answer the question: Where does the organization want to go and how does it intend to get there?**			**4E; 4.28**		
STRA_1	STRA_1.1	The organization's strategic objectives in the short, medium and long term	4.29	A	1 point is awarded if the organization's strategic objectives in the short, medium and long term are described.
	STRA_1.2	Strategies to achieve the strategic objectives or intended strategies	4.29	A	1 point is awarded if the strategies to achieve the strategic objectives or intended strategies are described.
	STRA_1.3	Resource allocation plans to implement the strategies	4.29	A	1 point is awarded if the resource allocation plans to implement the strategies are described.
	STRA_1.4	The way in which achievements and intended objectives are to be measured in the short, medium and long term	4.29	A	1 point is awarded if the way in which achievements and intended objectives are to be measured in the short, medium and long term is described.
STRA_2	STRA_2.1	Linkage of the strategy and resource allocation plan to the business model in order to create understanding of adaptability to change	4.30	A	1 point is awarded if the linkage of the strategy and resource allocation plan to the business model in order to create understanding of adaptability to change is described.
	STRA_2.2	Influence of external environment, opportunities and risks on strategy and resource allocation plan	4.30	B	0.5 points are awarded if the influence of external environment on strategy and resource allocation plan is described. 0.5 points are awarded if the influence of opportunities and risks on strategy and resource allocation plan are described. 1 point is awarded if the influence of external environment, opportunities and risks on strategy and resource allocation plan are described.
	STRA_2.3	Impact of the strategy and the resource allocation plan on capital and risk management	4.30	A	1 point is awarded if the impact of the strategy and the resource allocation plan on capital and risk management is described.
STRA_3	STRA_3.1	Role of innovation in the context of differentiation and generation of a competitive advantage	4.30	A	1 point is awarded if the role of innovation in the context of differentiation and generation of a competitive advantage is described.
	STRA_3.2	Development and use of intellectual capital in the context of differentiation and creation of a competitive advantage	4.30	A	1 point is awarded if the development and use of intellectual capital in the context of differentiation and creation of a competitive advantage are described.
	STRA_3.3	Extent to which environmental and social considerations are embedded in strategy to create competitive advantage	4.30	A	1 point is awarded if the extent to which environmental and social considerations are embedded in strategy to create competitive advantage is described.
STRA_4		Key features and results of stakeholder engagement in the context of strategy formulation and the definition of resource allocation plans	4.30	A	1 point is awarded if the key features and results of stakeholder engagement in the context of strategy formulation and the definition of resource allocation plans are described.
Items STRA:	**11**				

[a)] The section(s) refer(s) to the International Integrated Reporting Framework.

continued on page 330

Detailed structure of the content analysis catalogue (continued)					
Category / Item group / Item		**Essential contents to be published**	**Section(s) [a)]**	**Type of item**	**Prerequisite(s) for awarding of points**
Performance **An integrated report should answer the question: To what extent has the organization achieved its strategic objectives for the period and what are its outcomes in terms of effects on the capitals?**			**4F; 4.31**		
PERF_1		Quantitative key figures relating to objectives, risks and opportunities, including explanation of significance, effects and underlying methods and assumptions	4.32	B	0.5 points are awarded if quantitative key figures relating to objectives, risks and opportunities are described. 0.5 points are awarded if the corresponding explanation of significance, effects and underlying methods and assumptions are described. 1 point is awarded if the quantitative key figures relating to objectives, risks and opportunities, including explanation of significance, effects and underlying methods and assumptions are described.
PERF_2	PERF_2.1	Positive impact of the organization's performance on the Capitals	4.32	A	1 point is awarded if the positive impact of the organization's performance on the Capitals is described.
	PERF_2.2	Negative impact of the organization's performance on the Capitals	4.32	A	1 point is awarded if the negative impact of the organization's performance on the Capitals is described.
PERF_3		Relationship status with key stakeholders and response to their legitimate needs and interests	4.32	B	0.5 points are awarded if the relationship status with key stakeholders is described. 0.5 points are awarded if the response to the stakeholders' legitimate needs and interests is described. 1 point is awarded if the relationship status with key stakeholders and response to their legitimate needs and interests are described.
PERF_4		Relationship between past and current performance and current performance and the outlook	4.32	B	0.5 points are awarded if relationship between past and current performance is described. 0.5 points are awarded if the relationship between current performance and the outlook is described. 1 point is awarded if the relationship between past and current performance and current performance and the outlook is described.
PERF_5		Key performance indicators that link financial measures to other components or narratives that explain the financial impact on the Capitals or causal relationships	4.33	A	1 point is awarded if key performance indicators that link financial measures to other components or narratives that explain the financial impact on the Capitals or causal relationships are described.
PERF_6		Impact of regulations on performance or impairment of performance due to non-compliance with regulations	4.34	A	1 point is awarded if the impact of regulations on performance or impairment of performance due to non-compliance with regulations is described.
Items PERF:	**7**				

[a)] The section(s) refer(s) to the International Integrated Reporting Framework.

continued on page 331

Detailed structure of the content analysis catalogue (continued)					
Category / Item group / Item		**Essential contents to be published**	**Section(s) [a]**	**Type of item**	**Prerequisite(s) for awarding of points**
Outlook **An integrated report should answer the question: What challenges and uncertainties is the organization likely to encounter in pursuing its strategy, and what are the potential implications for its business model and future performance?**			**4G; 4.35**		
OUTL_1	OUTL_1.1	Expectations of the external environment in which the organization will operate in the short, medium and long term	4.36	A	1 point is awarded if the expectations of the external environment in which the organization will operate in the short, medium and long term are described.
	OUTL_1.2	Impact of the external environment on the organization	4.36	A	1 point is awarded if the impact of the external environment on the organization is described.
	OUTL_1.3	Preparations and equipment to respond to challenges that are likely to arise	4.36	A	1 point is awarded if the preparations and equipment to respond to challenges that are likely to arise are described.
OUTL_2		Realism of expressed expectations and aspirations in terms of competitive landscape, market positioning and exposed risks	4.37	A	1 point is awarded if the realism of expressed expectations and aspirations in terms of competitive landscape, market positioning and exposed risks is described.
OUTL_3	OUTL_3.1	Influence of the external environment, risks and opportunities on strategic goals	4.38	A	1 point is awarded if the influence of the external environment, risks and opportunities on strategic goals is described.
	OUTL_3.2	Availability, quality and affordability of capital that the organization uses or influences, including key stakeholder management and its relevance for value creation	4.38	B	0.5 points are awarded if availability, quality and affordability of capital that the organization uses or influences are described. 0.5 points are awarded if the key stakeholder management and its relevance for value creation are described. 1 point is awarded if the availability, quality and affordability of capital that the organization uses or influences, including key stakeholder management and its relevance for value creation are described.
OUTL_4	OUTL_4.1	Adoption of indicators or information from external sources or sensitivity analyses	4.39	A	1 point is awarded if the adoption of indicators or information from external sources or sensitivity analyses is described.
	OUTL_4.2	Summary of assumptions made for the outlook	4.39	A	1 point is awarded if the summary of assumptions made for the outlook is described.
	OUTL_4.3	Comparison of predefined targets with actual performance	4.39	A	1 point is awarded if the comparison of predefined targets with actual performance is described.
	OUTL_4.4	Outlook is oriented along the prevailing legal or regulatory requirements	4.40	A	1 point is awarded if the outlook is oriented along the prevailing legal or regulatory requirements.
Items OUTL:	**10**				

[a] The section(s) refer(s) to the International Integrated Reporting Framework.

continued on page 332

Detailed structure of the content analysis catalogue (continued)					
Category / Item group / Item		**Essential contents to be published**	**Section(s)** [a]	**Type of item**	**Prerequisite(s) for awarding of points**
Basis of preparation and presentation **An integrated report should answer the question: How does the organization determine what matters to include in the integrated report and how are such matters quantified or evaluated?**			**4H; 4.41**		
BAPP_1	BAPP_1.1	Process to identify material issues and assessment of their relevance	4.43	A	1 point is awarded if the process to identify material issues and assessment of their relevance is described.
	BAPP_1.2	Role of those charged with governance and key personnel in identifying and prioritizing material issues	4.43	A	1 point is awarded if the role of those charged with governance and key personnel in identifying and prioritizing material issues are described.
BAPP_2		Determination of the reporting boundary and justification of their compilation	4.44	A	1 point is awarded if the determination of the reporting boundary and justification of their compilation are described.
BAPP_3		Summary of significant frameworks and methodologies used to quantify or evaluate material issues in the report	4.48	A	1 point is awarded if the summary of significant frameworks and methodologies used to quantify or evaluate material issues in the report is described.
Items BAPP:	**4**				
Items total:	**77**				

[a] The section(s) refer(s) to the International Integrated Reporting Framework.

APPENDIX 2. Shapiro-Wilk tests for the sub-samples and sub-scores

Shapiro-Wilk test for the sub-samples and sub-scores		
Variables [a)]	Sample	Test of normality Shapiro-Wilk test [b)] w-statistics [c)]
Sub-score OVERV	Financial year 2013	0.9780
	Financial year 2022	0.9598 **
	South Africa	0.9440 ***
	Germany	0.9877
	South Africa 2013	0.9440 ***
	South Africa 2022	0.9577
	Germany 2013	0.9139 ***
	Germany 2022	0.9774
	Total sample	**0.9772** ***
Sub-score GOVER	Financial year 2013	0.9547 ***
	Financial year 2022	0.9635 **
	South Africa	0.9416 **
	Germany	0.9568 ***
	South Africa 2013	0.9225 ***
	South Africa 2022	0.9518 *
	Germany 2013	0.9416 **
	Germany 2022	0.9597
	Total sample	**0.9704** ***
Sub-score BUSIM	Financial year 2013	0.9843
	Financial year 2022	0.9825
	South Africa	0.9917
	Germany	0.9777
	South Africa 2013	0.9673
	South Africa 2022	0.9779
	Germany 2013	0.9792
	Germany 2022	0.9356**
	Total sample	**0.9854** *

a) The variable represents the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

b) The Shapiro-Wilk test is used to test the following hypothesis:

H_0: The residues follow a normal distribution
H_a: The residues do not follow a normal distribution
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

c) The column w-statistics shows the w-value of the Shapiro-Wilk test.

continued on page 334

Shapiro-Wilk test for the sub-samples and sub-scores (continued)		
Variables a)	Sample	Test of normality Shapiro-Wilk test b) w-statistics c)
Sub-score RIOP	Financial year 2013	0.9226 ***
	Financial year 2022	0.9021 ***
	South Africa	0.9407 ***
	Germany	0.8999 ***
	South Africa 2013	0.9278 **
	South Africa 2022	0.8695 ***
	Germany 2013	0.8570 ***
	Germany 2022	0.8684 ***
	Total sample	**0.9330** ***
Sub-score STRA	Financial year 2013	0.9480 ***
	Financial year 2022	0.9756
	South Africa	0.9714 *
	Germany	0.9571 ***
	South Africa 2013	0.9337 **
	South Africa 2022	0.9687
	Germany 2013	0.9413 **
	Germany 2022	0.9397 **
	Total sample	**0.9761** ***
Sub-score PERF	Financial year 2013	0.9413 ***
	Financial year 2022	0.9535 ***
	South Africa	0.9615 **
	Germany	0.9306 ***
	South Africa 2013	0.9501 *
	South Africa 2022	0.9473 *
	Germany 2013	0.8860 ***
	Germany 2022	0.9491 *
	Total sample	**0.9384** ****

a) The variable represents the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

b) The Shapiro-Wilk test is used to test the following hypothesis:

H_0: The residues follow a normal distribution
H_a: The residues do not follow a normal distribution
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

c) The column w-statistics shows the w-value of the Shapiro-Wilk test.

continued on page 335

Shapiro-Wilk test for the sub-samples and sub-scores (continued)		
Variables [a]	Sample	Test of normality Shapiro-Wilk test [b] w-statistics [c]
Sub-score OUTL	Financial year 2013	0.9716 *
	Financial year 2022	0.9636 **
	South Africa	0.9693 **
	Germany	0.9688 **
	South Africa 2013	0.9853
	South Africa 2022	0.9582
	Germany 2013	0.9742
	Germany 2022	0.9545
	Total sample	**0.9712** ***
Sub-score BAPP	Financial year 2013	0.8702 ***
	Financial year 2022	0.7963 ***
	South Africa	0.6492 ***
	Germany	0.8400 ***
	South Africa 2013	0.7453 ***
	South Africa 2022	0.4751 ***
	Germany 2013	0.7578 ***
	Germany 2022	0.8915 ***
	Total sample	**0.8455** ***

[a] The variable represents the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

[b] The Shapiro-Wilk test is used to test the following hypothesis:

H_0: The residues follow a normal distribution
H_a: The residues do not follow a normal distribution
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c] The column w-statistics shows the w-value of the Shapiro-Wilk test.

APPENDIX 3. Levene tests for the sub-samples and sub-scores

Levene test for the sub-samples and sub-scores			
Variables [a)]	**Sample 1**	**Test of comparison of two variances or Test of homoscedasticity** **Levene test** [b)] **f-statistics** [c)]	**Sample 2**
Sub-score OVERV	Financial year 2022	0.7262	Financial year 2013
	South Africa	1.0943	Germany
	South Africa 2013	0.6904	Germany 2013
	South Africa 2022	0.4149	Germany 2022
	South Africa 2022	1.1603	South Africa 2013
	Germany 2022	0.1401	Germany 2013
Sub-score GOVER	Financial year 2022	6.2498 **	Financial year 2013
	South Africa	1.4707	Germany
	South Africa 2013	0.0231	Germany 2013
	South Africa 2022	1.9724	Germany 2022
	South Africa 2022	5.0386 **	South Africa 2013
	Germany 2022	0.7084	Germany 2013
Sub-score BUSIM	Financial year 2022	8.1164 ***	Financial year 2013
	South Africa	7.2593 ***	Germany
	South Africa 2013	0.1252	Germany 2013
	South Africa 2022	0.1304	Germany 2022
	South Africa 2022	0.0495	South Africa 2013
	Germany 2022	0.0431	Germany 2013
Sub-score RIOP	Financial year 2022	7.3713 ***	Financial year 2013
	South Africa	2.9620 *	Germany
	South Africa 2013	0.8059	Germany 2013
	South Africa 2022	0.2606	Germany 2022
	South Africa 2022	2.9750 *	South Africa 2013
	Germany 2022	0.2929	Germany 2013

[a)] The variables represent the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

[b)] The Levene test, based on median, is used to test the following hypothesis:

H_0: The variances of Sample 1 and Sample 2 are not significantly different
H_a: At least one of the variances is significantly different from another
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c)] The column f-statistics shows the f-value of the Levene test, based on median.

continued on page 337

Levene test for the sub-samples and sub-scores (continued)			
Variables a)	Sample 1	Test of comparison of two variances or Test of homoscedasticity Levene test b) f-statistics c)	Sample 2
Sub-score STRA	Financial year 2022	4.1648 **	Financial year 2013
	South Africa	0.7195	Germany
	South Africa 2013	0.8097	Germany 2013
	South Africa 2022	0.4151	Germany 2022
	South Africa 2022	0.0634	South Africa 2013
	Germany 2022	1.6393	Germany 2013
Sub-score PERF	Financial year 2022	20.5246 ***	Financial year 2013
	South Africa	17.4117 ***	Germany
	South Africa 2013	0.2106	Germany 2013
	South Africa 2022	1.8748	Germany 2022
	South Africa 2022	2.1157	South Africa 2013
	Germany 2022	0.2975	Germany 2013
Sub-score OUTL	Financial year 2022	0.2412	Financial year 2013
	South Africa	0.2210	Germany
	South Africa 2013	0.4020	Germany 2013
	South Africa 2022	0.0523	Germany 2022
	South Africa 2022	0.3256	South Africa 2013
	Germany 2022	0.0818	Germany 2013
Sub-score BAPP	Financial year 2022	0.7289	Financial year 2013
	South Africa	7.7290 ***	Germany
	South Africa 2013	1.2678	Germany 2013
	South Africa 2022	25.1301 ***	Germany 2022
	South Africa 2022	11.3089 ***	South Africa 2013
	Germany 2022	6.0976 **	Germany 2013

a) The variables represent the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

b) The Levene test, based on median, is used to test the following hypothesis:

H_0: The variances of Sample 1 and Sample 2 are not significantly different
H_a: At least one of the variances is significantly different from another
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

c) The column f-statistics shows the f-value of the Levene test, based on median.

APPENDIX 4. Shapiro-Wilk tests for the Delta Integrated Reporting score

Shapiro-Wilk test for the Delta Integrated Reporting score		
Variable [a)]	**Sample**	**Test of normality**
		Shapiro-Wilk test [b)] **w-statistics** [c)]
Delta Integrated Reporting score	South Africa 2022-2013	0.9820
	Germany 2022-2013	0.9546
	Total sample 2022-2013	**0.9846**

[a)] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

[b)] The Shapiro-Wilk test is used to test the following hypothesis:

H_0: The residues follow a normal distribution
H_a: The residues do not follow a normal distribution
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c)] The column w-statistics shows the w-value of the Shapiro-Wilk test.

APPENDIX 5. Levene test for the Delta Integrated Reporting score

Levene test for the Delta Integrated Reporting score			
Variable [a)]	**Sample 1**	**Test of comparison of two variances or Test of homoscedasticity**	**Sample 2**
		Levene test [b)] **f-statistics** [c)]	
Delta Integrated Reporting score	South Africa 2022-2013	3.5214 *	Germany 2022-2013

[a)] The variable represents the respective normalised Integrated Reporting score from the content analysis catalogue.

[b)] The Levene test, based on median, is used to test the following hypothesis:

H_0: The variances of Sample 1 and Sample 2 are not significantly different
H_a: At least one of the variances is significantly different from another
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c)] The column f-statistics shows the f-value of the Levene test, based on median.

APPENDIX 6. Shapiro-Wilk tests for the Delta Integrated Reporting sub-scores

Shapiro-Wilk test for the Delta Integrated Reporting sub-scores		
Variables a)	Sample	Test of normality Shapiro-Wilk test b) w-statistics c)
Sub-score OVERV	South Africa 2022-2013	0.9762
	Germany 2022-2013	0.9743
	Total sample 2022-2013	**0.9840**
Sub-score GOVER	South Africa 2022-2013	0.9601
	Germany 2022-2013	0.9668
	Total sample 2022-2013	**0.9819**
Sub-score BUSIM	South Africa 2022-2013	0.9740
	Germany 2022-2013	0.9775
	Total sample 2022-2013	**0.9766**
Sub-score RIOP	South Africa 2022-2013	0.9448 **
	Germany 2022-2013	0.9071 ***
	Total sample 2022-2013	**0.9451** ***

a) The variable represents the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

b) The Shapiro-Wilk test is used to test the following hypothesis:

H_0: The residues follow a normal distribution
H_a: The residues do not follow a normal distribution
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

c) The column w-statistics shows the w-value of the Shapiro-Wilk test.

continued on page 340

Shapiro-Wilk test for the Delta Integrated Reporting sub-scores (continued)		
Variables [a)]	**Sample**	**Test of normality**
		Shapiro-Wilk test [b)] **w-statistics** [c)]
Sub-score STRA	South Africa 2022-2013	0.9792
	Germany 2022-2013	0.9564
	Total sample 2022-2013	**0.9807**
Sub-score PERF	South Africa 2022-2013	0.9623
	Germany 2022-2013	0.9131 ***
	Total sample 2022-2013	**0.9740** *
Sub-score OUTL	South Africa 2022-2013	0.9485 *
	Germany 2022-2013	0.9812
	Total sample 2022-2013	**0.9734** *
Sub-score BAPP	South Africa 2022-2013	0.8817
	Germany 2022-2013	0.8948
	Total sample 2022-2013	**0.8953** ***

[a)] The variable represents the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

[b)] The Shapiro-Wilk test is used to test the following hypothesis:

H_0: The residues follow a normal distribution
H_a: The residues do not follow a normal distribution
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c)] The column w-statistics shows the w-value of the Shapiro-Wilk test.

APPENDIX 7. Levene tests for the Delta Integrated Reporting sub-scores

Levene test for the Delta Integrated Reporting sub-scores			
Variables [a)]	Sample 1	Test of comparison of two variances or Test of homoscedasticity Levene test [b)] f-statistics [c)]	Sample 2
Delta sub-score OVERV	South Africa 2022-2013	0.0284	Germany 2022-2013
Delta sub-score GOVER	South Africa 2022-2013	0.1123	Germany 2022-2013
Delta sub-score BUSIM	South Africa 2022-2013	5.2046 **	Germany 2022-2013
Delta sub-score RIOP	South Africa 2022-2013	1.3181	Germany 2022-2013
Delta sub-score STRA	South Africa 2022-2013	0.0015	Germany 2022-2013
Delta sub-score PERF	South Africa 2022-2013	2.0722	Germany 2022-2013
Delta sub-score OUTL	South Africa 2022-2013	0.0929	Germany 2022-2013
Delta sub-score BAPP	South Africa 2022-2013	1.7197	Germany 2022-2013

[a)] The variables represent the respective normalised Integrated Reporting sub-score from the content analysis catalogue.

[b)] The Levene test, based on median, is used to test the following hypothesis:

H_0: The variances of Sample 1 and Sample 2 are not significantly different
H_a: At least one of the variances is significantly different from another
*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively

[c)] The column f-statistics shows the f-value of the Levene test, based on median.