



**UNIVERSITY OF TM
KWAZULU-NATAL**

**INYUVESI
YAKWAZULU-NATALI**

**ESTABLISHING A CAUSAL RELATIONSHIP BETWEEN AUDIT COMMITTEE
CHARACTERISTICS AND ENVIRONMENTAL, SOCIAL AND GOVERNANCE
REPORTING FOR THE TOP 100 JOHANNESBURG LISTED CORPORATIONS**

By

Ruth Mutsa Ruziwa

218026025

**A dissertation submitted in fulfilment of the requirements for the degree of
Masters in Accounting**

**School of Accounting, Economics and Finance
College of Law and Management Studies**

**Supervisor: Professor Bomi Nomlala
Co-Supervisor: Dr Jean Damascene Mvunabandi**

2024

Declaration

I, Ruth Mutsa Ruziwa declare that:

- (i) The research reported in this dissertation, except where otherwise indicated, is my original research.
- (ii) This dissertation has not been submitted for any degree or examination at any other university.
- (iii) This dissertation does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons.
- (iv) This dissertation does not contain other persons' writing, unless specifically acknowledged as being sourced from other researchers. Where other written sources have been quoted, then:
 - a) their words have been re-written but the general information attributed to them has been referenced;
 - b) where their exact words have been used, their writing has been placed inside quotation marks, and referenced.
- (v) Where I have reproduced a publication of which I am author, co-author or editor, I have indicated in detail which part of the publication was actually written by myself alone and have fully referenced such publications.
- (vi) This dissertation does not contain text, graphics or tables copied and pasted from the Internet, unless specifically acknowledged, and the source being detailed in the dissertation and in the References sections. The dissertation was subjected to a plagiarism check using Turnitin software, and the originality report had a similarity index of 10%.

Signed:

- 218026025

Date: 16/07/2024

Acknowledgements

I would like to acknowledge the following people for assisting me to achieve this milestone:

- My supervisors, Professor Nomlala and Doctor Mvunabandi for their unwavering support and expert guidance.
- My late parents, Kenneth and Patricia, for instilling in me a relentless spirit.
- My children, Mufaro and Malcolm for their understanding and patience as I balanced my time between them and the demands of this research.
- My husband, for believing in me.
- My sisters, for their constant moral support.

List of Abbreviations and Acronyms

CDP	Carbon Disclosure Protocol
CDSB	Climate Disclosure Standards Board
CSR	Corporate Social Responsibility
CSRD	Corporate Sustainability Reporting Directive
EPS	Earnings per Share
ESG	Environmental, Social and Governance
EU	European Union
EY	Ernst & Young
GRI	Global Reporting Initiative
IIRC	International Integrated Reporting Council
IRI	Integrated Reporting Index
IRS	Integrated Reporting Scoreboard
ISSB	International Sustainability Standards Board
JSE	Johannesburg Stock Exchange
King IV	King IV Report on Corporate Governance
NFRD	Non-Financial Reporting Directive
NGX	Nigerian Exchange Group
PIEs	Public Interest Entities
ROA	Return on Assets
ROE	Return on Capital Employed
SASB	Sustainability Accounting Standards Board
SDGs	Sustainable Development Goals
TCFD	Task Force on Climate-Related Financial Disclosures
UN	United Nations
VIF	Variance Inflation Factor
VRF	Value Reporting Foundation
WEF	World Economic Forum

Abstract

This study investigated whether a causal relationship exists between audit committee characteristics and the quality of Environmental, Social, and Governance (ESG) reporting among the top 100 Johannesburg Stock Exchange (JSE) listed corporations. Against the backdrop of increasing stakeholder demand for credible ESG reporting, the study employed the agency and legitimacy theories to analyse how corporate governance practices, particularly audit committees, influence the quality of ESG reporting. Three audit committee characteristics were examined: independence, meeting frequency and average age. The research adopted a positivist research paradigm, which supports a scientific approach to research, thereby allowing for hypothesis testing and empirical validation. A quantitative research methodology was therefore employed. Data was drawn from Ernst & Young's Excellence in Integrated Reporting Awards and the Bloomberg database and analysed using panel data regression models. The study found a significant positive relationship between ESG reporting quality and audit committee independence, suggesting that independent members are better able to oversee ESG reporting. However, no significant correlation was established between ESG reporting quality and the frequency of audit committee meetings which suggests a need for companies to focus more on the qualitative metrics of such meetings. The average age of audit committee members also did not have a significant impact on ESG reporting quality. The study contributes to the existing literature by highlighting the role of internal assurance, particularly audit committees, in enhancing ESG reporting, a critical aspect given stakeholder apprehension regarding sustainability and corporate responsibility. The findings from this study highlight the need for policymakers and regulators to implement policies that enhance the quality of ESG reporting. Recommendations are made based on the findings and suggestions are offered for further research, particularly on the broader governance factors that influence the quality of ESG reporting.

Keywords: Agency Theory, Audit Committees, Corporate Governance, ESG Reporting Quality, Integrated Reporting, Legitimacy Theory, Top 100 JSE-Listed Companies

Table of Contents

Declaration	i
Acknowledgements	ii
List of Abbreviations and Acronyms	iii
Abstract	iv
List of Tables	xi
CHAPTER 1: INTRODUCTION AND BACKGROUND	12
1.1 Introduction	12
1.2 Background to the Study	12
1.3 Problem Statement	16
1.4 Objectives of the Study	17
1.5 Statement of Hypotheses	17
1.6 Significance of the Study	17
1.7 Assumptions of the Study	18
1.8 Limitations of the Study	18
1.9 Delimitations of the Study	18
1.10 Organisation of the Study	19
1.11 Chapter Summary	20
CHAPTER 2: LITERATURE REVIEW	22
2.1 Introduction	22
2.2 Theoretical Literature	22
2.2.1 Agency Theory	23
2.2.2 Legitimacy Theory	24
2.2.3 Mixed Theoretical Framework	25
2.3 Conceptual Framework	26
2.4 Empirical Literature	27
2.4.1 Environmental, Social and Governance (ESG) Reporting	27
2.4.1.1 Multiple ESG Reporting Frameworks	28

2.4.1.2 Standardised ESG Reporting Framework.....	30
2.4.1.3 JSE ESG Reporting Requirements	30
2.4.1.4 Measuring ESG Reporting Quality	31
2.4.2 <i>Determinants of ESG Reporting</i>	34
2.4.2.1 Country-level Determinants of ESG Reporting	34
2.4.2.2 Company-level Determinants of ESG Reporting.....	34
2.4.2.2.1 Corporate Governance and ESG Reporting.....	35
2.4.3 <i>Audit Committees and ESG Reporting</i>	37
2.4.3.1 Audit Committee Independence	38
2.4.3.2 Audit Committee Meeting Frequency	39
2.4.3.3 Average Age of Members of the Audit Committee	39
2.5 Gaps in the Literature	40
2.6 Chapter Summary	40
CHAPTER 3: RESEARCH METHODOLOGY	42
3.1 Introduction.....	42
3.2 Research Paradigm	42
3.2.1 <i>Epistemological Assumptions</i>	42
3.2.2 <i>Ontological Assumptions</i>	43
3.2.3 <i>Rationale for Adopting a Positivist-epistemological Research Paradigm</i>	43
3.3 Research Design	44
3.3.1 <i>Research Approaches</i>	44
3.3.1.1 Deductive and Inductive Approaches.....	44
3.3.1.2 Rationale for Adopting a Deductive Approach	44
3.3.2 <i>Research Method</i>	44
3.3.2.1 Qualitative Research Method	45
3.3.2.2 Quantitative Research Method	45
3.3.2.3 Mixed Research Method.....	45
3.3.2.4 Rationale for Selecting a Quantitative Research Method	46

3.4 Research Population	46
3.5 Research Sample	46
3.5.1 Probability Sampling	46
3.5.2 Non-Probability Sampling	47
3.5.3 Rationale for Selecting a Quota Sampling Method	48
3.6 Data Types and Sources	48
3.7 Model Specification	49
3.7.1 Quantitative Research Model	49
3.8 Justification of Variables	51
3.8.1 Dependent Variable	51
3.8.2 Independent Variables	51
3.8.3 Control Variables	51
3.9 Data Collection Methods and Instruments	52
3.9.1 Developing ESG Reporting Quality Scores	52
3.9.2 Audit Committee Characteristics	52
3.10 Data Validity and Reliability	53
3.11 Data Presentation and Analysis Procedure	53
3.11.1 Descriptive Analysis	53
3.11.1.1 Mean, Median and Mode	54
3.11.1.2 Standard Deviation and Range	54
3.11.2 Multicollinearity Tests	54
3.11.3 Regression Analysis	55
3.11.3.1 Panel Data	55
3.11.3.2 Panel Data Regression Models	56
3.11.3.3 Selecting a Regression Model	56
3.12 Ethical Considerations	57
3.13 Chapter Summary	57
CHAPTER 4: DATA PRESENTATION AND ANALYSIS	59

4.1 Introduction	59
4.2 Results Presentation and Analysis	59
4.2.1 Descriptive Statistics	59
4.2.1.1 Audit Committee Independence	60
4.2.1.2 Audit Committee Meeting Frequency	60
4.2.1.3 Average Age of Audit Committee Members	60
4.2.1.4 Control Variables	61
4.2.2 Multicollinearity Results	61
4.2.3 Regression Model Results	62
4.2.3.1 Audit Committee Independence	63
4.2.3.2 Audit Committee Meeting Frequency	64
4.2.3.3 Average Age of Audit Committee Members	64
4.2.3.4 Control Variables	64
4.3 Chapter Summary	65
CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	66
5.1 Introduction	66
5.2 Summary and Conclusions	66
5.2.1 Summary	66
5.2.2 Establish whether a Causal Relationship Exists between ESG Reporting Quality and Audit Committee Characteristics of JSE-listed Corporations	67
5.2.3 Suggest Recommendations Based on the Causal Linkages between Audit Committee Characteristics and ESG Reporting Quality of JSE-listed Corporations	68
5.3 Recommendations	68
5.4 Suggestions for Future Research	69
REFERENCES	70
APPENDICES	80
Appendix A: Ethical Clearance	80
Appendix B: Turnitin Report	81

Appendix C: Editor's Confirmation Letter 83

List of Figures

Figure 1-1: Overview of literature review	22
---	----

List of Tables

Table 1: The characteristics of research paradigms	43
Table 2: Descriptive statistics	59
Table 3: Diagnostic test results	61
Table 4: Regression model results	63
Table 5: Summary of the hypotheses results	68

CHAPTER 1: INTRODUCTION AND BACKGROUND

1.1 Introduction

This chapter serves as an introduction to the study. The background to the research sheds light on stakeholder concerns regarding the credibility of environmental, social, and governance (ESG) reporting. Drawing insights from the combined assurance model, it highlights the evolving role of internal assurance providers in enhancing the credibility of ESG reporting. This is followed by the problem statement and the study's objectives, hypotheses, and significance. The chapter concludes with the structure of the dissertation.

1.2 Background to the Study

Traditionally, financial results were an ideal metric to gauge overall company performance and make investment decisions (Muzanya, 2022). However, this changed as investors and corporates alike realised that climate change, poverty and social injustices equally impact businesses' overall performance (Diwan & Amarayil, 2023). This gave rise to stakeholder capitalism, whereby investors demanded that corporations engage in sustainable practices for the long-term good of the environment and society (Morais et al., 2024). Global supply chains were not spared as they were blamed for their role in exacerbating climate change through gas emissions and deforestation (Diwan & Amarayil, 2023). Thus, ESG reporting serves as a useful tool to disclose an entity's sustainability efforts, including corporate governance and social justice (Wan et al., 2023).

Disclosing ESG performance helps to identify the opportunities and risks associated with the reporting entity and assists stakeholders in making informed decisions. Importantly, entities with better ESG performance tend to have a good reputation, lower cost of capital, higher market valuation, and more diverse investors (Wan et al., 2023). The importance of ESG reporting is evidenced by its endorsement by regulators and policymakers.

Stakeholder demand for ESG reporting is driven by the need to hold businesses accountable for their impact on the environment and community (Wang & Phillips-Fein, 2023). As such, stakeholders expect corporates to engage in sustainable business practices that leave a positive environmental and social footprint (Nahar & Khurana, 2023). This is particularly important considering the climate risks, social injustices and financial crises that are a result of unsustainable business practices (Diwan & Amarayil, 2023). Stakeholders argue that such crises could be averted if businesses demonstrated greater transparency and refrained from withholding unfavourable ESG disclosures in pursuit of legitimacy (Arif et al., 2021). Over the

past decades, several events have led to even more stakeholder scepticism on the quality and decision-usefulness of ESG reporting (Pozzoli, Pagani & Paolone, 2022).

Incidences of reporting scandals in the past two decades involving major companies and auditing firms led stakeholders to question the effectiveness and transparency of corporate governance mechanisms (Dorfleitner, Kreuzer, & Sparrer, 2022). In addition, the global financial crisis of 2007-2008 led to the loss of homes, jobs and investments, resulting in stakeholder criticism of the failure of businesses to disclose risk information (Kantor, 2018).

The recent COVID-19 pandemic further highlighted the need for organisations to evaluate their resilience and long-term viability, particularly in the face of supply chain disruptions caused by the pandemic (Ndung'u, 2022). The pandemic also exposed the need for companies to consider the health and safety of their employees and the community at large (Neri, 2021).

The preceding events have awakened businesses and stakeholders alike, to the need for sound governance strategies to deal with crises and related operational risks (Pozzoli et al., 2022). Likewise, academics have attempted to address governance concerns by studying the relationship between corporate governance and ESG reporting. Among the governance concerns by stakeholders are issues around ownership structures and the independence of the board of directors and its sub-committees (Ma, Ahmadi & Torelli, 2024). As such, previous studies have focused on the role of the board of directors in ESG reporting. This is justifiably so, given that the board's role includes establishing corporate social initiatives and formulating strategies for sustainable business practices (Bamahros et al., 2022).

Prior studies have established that board independence and gender diversity positively affect ESG reporting in Gulf countries (Arayssi, Jizi & Tabaja, 2020). This was in line with an earlier study that found board age and gender diversity to be positively related to ESG reporting in Malaysia (Ismail & Latiff, 2019). Furthermore, prior literature found that female board members positively influenced ESG reporting among companies in Thailand (Khunkaew & Wichianrak, 2023) and South Africa (Toerien, Breedts & de Jager, 2023). On the contrary, a separate study of JSE-listed non-financial firms noted a negative association between board gender diversity and ESG reporting (Abdelkader, Gao & Elamer, 2024). These findings are attributed to the stereotypes surrounding females, which inadvertently pressure them to demonstrate their competence in the short term at the expense of sustainable decision-making. On the other hand, Arayssi et al. (2020) argue that ESG performance can be enhanced by implementing stronger corporate governance measures. This includes assigning more active

roles to internal corporate governance units, including internal audit and audit committees (Mohammed, 2023).

More recent studies have focused on audit committees, which are a pillar of the corporate governance framework (Pozzoli et al, 2022; Mohammed, 2023; Ma et al, 2024). Notably, audit committee appointments are reinforced by regulation, with many jurisdictions requiring their appointment (Ma et al., 2023). The United Kingdom (UK) code of corporate governance requires companies to appoint independent audit committees (Mohammed, 2023). In South Africa, the Companies Act requires the appointment of independent audit committees. At the same time, the King IV Report on Corporate Governance (King IV) explicitly recommends that all audit committee members be independent and non-executive board members (King IV, 2016). Companies listed on the Johannesburg Stock Exchange (JSE) are mandated to apply the recommendations of King IV (JSE, 2022).

Over the years, ESG reporting has evolved in South Africa, particularly for JSE-listed companies, with significant advances in the standard of ESG reporting and depiction of value-creation processes (Ernst & Young, 2022). Thus, JSE-listed companies present researchers with credible empirical evidence of a regulatory-driven ESG reporting environment (Kılıç & Kuzey, 2018; Malola & Maroun, 2019; Mans-Kemp & Van der Lugt, 2020). Nonetheless, while some JSE-listed companies excel at depicting the integration between their ESG initiatives and value creation as well as their business models, others present incoherent disclosures which lack detailed ESG metrics and do not adequately portray value proposition in both the present and future (Ernst & Young, 2022).

Such findings, coupled with high incidences of accounting scandals, the global financial crisis and the COVID pandemic, have sparked renewed stakeholder interest in the credibility of ESG reporting (Wang, Zhou & Wang, 2020; Mans-Kemp & Van der Lugt, 2020). Notably, audit committees have been established as effective moderators of ESG reporting (Ma et al., 2024). Therefore, from an agency viewpoint, audit committees mitigate agency issues by enhancing the quality of ESG reporting and lowering information asymmetry between management and stakeholders. In short, audit committees are a control mechanism that determines how the company portrays its ESG performance.

Prior research has established specific characteristics necessary for effectively undertaking the audit committee's monitoring role. These include independence, size, meeting frequency (activism), financial literacy, gender diversity, and tenure (Buallay & AIDhaen 2018; Arif et

al., 2021; Matta et al., 2024). In a study involving Australian energy firms, ESG reporting was found to be positively associated with audit committee activism and independence (Arif et al., 2021). The findings on audit committee independence were corroborated by studies undertaken in European member states (Pozzoli et al., 2022), Indian-listed companies (Matta et al., 2024) and Saudi corporations (Bamahros et al., 2022).

However, considering that some of these studies focused on specific sectors and different jurisdictions, their generalisation must be applied cautiously. In addition, the absence of a harmonised ESG reporting framework creates variations in ESG disclosures and scores, which has a bearing on the comparability of these findings (Matta et al., 2024). There are also conflicting findings. While Matta et al. (2024) found a positive association between audit committee expertise and ESG reporting, Buallay & AIDhaen (2018) established the contrary. At the same time, the role of audit committees in ESG reporting in South Africa remains underexplored. To the researcher's knowledge, existing literature has focused on the relationship between board gender diversity and ESG reporting (Torien, Breedt & de Jager, 2023; Abdelkader, Gao & Elamer, 2024).

Notably, most existing literature on South African companies focuses on the role of audit committees in integrated reporting. Justifiably so, considering that the JSE requires companies to disclose their ESG performance in the integrated reports (JSE, 2022). Haji & Anifowose (2016) and Chariri & Januarti (2016) found integrated reporting to be positively related to audit committee members' independence. While these findings do not match those Australian and European companies, they were in line with the legitimacy theory, which sees the appointment of independent audit committees as a mere compliance exercise with no significant effect on ESG reporting (Haji & Anifowose, 2016).

At the same time, these empirical findings do not support the current regulatory requirements for audit committees in South Africa. Therefore, there is a risk that regulators and policymakers could focus on insignificant attributes of audit committees (Sultana, Singh & Rahman, 2019). Against this background, this study investigated whether causal relationships exist between audit committee members' independence, meeting frequency, and average age, and ESG reporting by the top 100 JSE-listed corporations during the five years from 2017 to 2021.

This study provides the researcher with a critical opportunity to address the gap in literature regarding the relationship between audit committee characteristics and ESG reporting in the South African context. By not conducting this study, the researcher would deprive

policymakers, regulators, and corporate stakeholders of valuable insights necessary to improve ESG disclosure practices and enhance corporate transparency, which are increasingly vital in today's sustainability-focused business environment.

Notably, this study focused on ESG reporting rather than the entire integrated report. This was mainly because, in light of climate-related risks and opportunities, there is increased awareness of sustainability practices and stakeholder demand for comprehensive ESG reporting (Greenstone Plus, 2023). A survey by EY found that, due to the COVID-19 pandemic, 90% of the investors who participated in the study had a vested interest in ESG performance (Ernst & Young, 2022).

The EY Excellence in Integrated Reporting Awards were used as a proxy for ESG reporting quality. As such, their population of the top 100 (by market capitalisation) JSE-listed corporations was used. The awards judge the integrated reports of the selected companies against a marking plan based on the IIRC principles, with an emphasis on the depiction of value creation, the business model, governance, risks and opportunities, and the external environment, among other disclosures (Ernst & Young, 2022). While some scholars have noted the risk of the adjudicators' subjectivity (Hossain, Bose & Shamsuddin, 2023), the majority have affirmed that the awards are a reliable measure of ESG reporting quality, particularly where there are variations in ESG disclosures (Malola & Maroun, 2019; Mans- Kemp & Van der Lugt, 2020; Eloff & Steenkamp, 2022); hence their use in this study.

1.3 Problem Statement

The problem underpinning this study stems from the deficiencies in the credibility and quality of ESG reporting among JSE-listed companies, with over 50% in 2022 lacking quality disclosures, thereby fuelling stakeholder scepticism and risking reputational damage (Ernst & Young, 2022). This is despite over a decade of mandatory ESG reporting requirements for JSE-listed companies. Compounding this problem is the conflicting evidence regarding the role of audit committees in ensuring high-quality ESG reporting — particularly audit committee independence and meeting frequency (Bamahros et al., 2022; Matta et al., 2024). Moreover, some audit committee attributes, such as the average age of members, remain unexplored, with existing studies only exploring its impact on financial reporting quality (Sultana et al., 2019) and earnings management (Alhossini, Ntim & Zalata, 2021). In the wake of crises, and more recently, the COVID-19 pandemic, the demand for transparency and sustainability has surged (Ernst & Young, 2022). While prior studies have largely confirmed the positive impact of audit

committees in safeguarding the integrity of ESG reporting, this area remains largely unexplored in South Africa. Amid declining infrastructure, load shedding and logistical challenges, many JSE-listed companies have been left in zombie status (Marais, 2024). Consequently, robust ESG monitoring processes remain crucial for resuscitating growth and gaining stakeholder trust. This study directly addresses these gaps, aiming to uncover the true impact of audit committee characteristics on the quality of ESG reporting by JSE-listed corporations, addressing stakeholder demand for credible ESG reporting and ultimately enhancing the credibility of corporate reporting.

1.4 Objectives of the Study

This research aimed to:

- Establish whether a causal relationship exists between ESG reporting quality and audit committee characteristics of JSE-listed corporations.
- Suggest recommendations to address concerns on casual linkages between audit committee characteristics and ESG reporting quality of JSE-listed corporations.

1.5 Statement of Hypotheses

The following hypotheses, rather than research questions, were formulated and tested for this study:

H0: There is no causal relationship between ESG reporting quality and audit committee members' independence, meeting frequency and average age.

H1: There is a causal relationship between ESG reporting quality and audit committee members' independence, meeting frequency and average age.

1.6 Significance of the Study

This study adds to the literature on ESG reporting, focusing on South Africa, renowned for being a global leader in promoting corporate governance. Considering stakeholder apprehensiveness regarding the ambiguity of ESG reporting, the role of audit committees in enhancing its quality is highly valuable in practice and academic inquiry. As such, the study offers valuable insights for regulators, managers and academics.

Regulators can use the findings to develop or revise corporate governance codes and regulations to encourage the formation of independent and committed audit committees that promote transparency in ESG reporting. Considering stakeholder apprehensiveness regarding the ambiguity of ESG reporting, the role of audit committees in enhancing ESG reporting is highly valuable in practice and academic inquiry. This could include mandating specific

thresholds for independence, meeting frequency, and age of members within audit committees to ensure robust governance. The findings will also guide managers in enhancing the legitimacy of their operations by forming audit committees that focus on the quality of ESG reporting. This can help mitigate issues related to agency and legitimacy, ultimately improving corporate governance and stakeholder trust. Finally, academics can further build on these findings to explore the relationship between audit committee characteristics and ESG performance and provide a basis for formulating frameworks and metrics to enhance ESG reporting.

1.7 Assumptions of the Study

The study assumes a positivist-epistemological research paradigm, under which reality is presumed to be objective, observable, measurable and can be analysed statistically (Sun, 2021). This aligns with the structured data collection and analysis methods employed in the study.

In addition, the study assumes that all the top 100 JSE-listed companies comply with King IV recommendations as mandated by the JSE. As a result, these companies will apply the combined assurance model and rely on audit committees to monitor and provide independent oversight over ESG reporting.

1.8 Limitations of the Study

The first limitation of this study is that it was confined to the top 100 JSE-listed companies. As a result, some listed and non-listed companies that undertake ESG reporting were left out. In addition, the top 100 JSE-listed companies were selected by market capitalisation, leaving out smaller companies. Consequently, the findings from this study may not apply to smaller companies. Furthermore, the results cannot be generalised to different reporting jurisdictions and corporate cultures.

A further limitation is that the study adopted a solely quantitative approach. While this research methodology provides strong statistical evidence, it may not capture the qualitative dimensions of audit committees.

1.9 Delimitations of the Study

The research population for the study comprised the top 100 JSE-listed companies selected based on their market capitalisation. While some listed companies were left out, they were largely represented as the top 100 companies represent approximately 95 % of JSE's market capitalisation (Robbetze, 2023).

The study used EY Excellence in Integrated Reporting Awards as a proxy for ESG reporting quality. While self-developed scores or other measures of quality, such as Bloomberg's ESG score and Pistoni's scoreboard, could have been used, the EY awards were used as they have proven to be a reliable measure, particularly where there are variations in the quality of ESG disclosures (Malola & Maroun, 2019; Mans- Kemp & Van der Lugt, 2020; Eloff & Steenkamp, 2022). In addition, scholars have tested and confirmed their reliability and validity (Wang et al., 2020; Hossain et al., 2023).

Only certain audit committee characteristics, namely independence, meeting frequency, and average age, were included as independent variables. These were identified from prior literature as characteristics relevant to the role of audit committees in ESG reporting (Buallay & AIDhaen, 2018; Arif et al., 2021; Matta et al., 2024).

1.10 Organisation of the Study

The dissertation is organised as follows:

Chapter 1: Introduction and Background

This chapter provides a background of ESG reporting and explores the existing literature on the monitoring role of audit committees. It highlights the crises that have increased stakeholder demand for sustainability disclosures in South Africa and worldwide. The corporate governance mechanisms in South Africa are discussed with particular reference to King IV's combined assurance model, comprising external and internal assurers, including audit committees. The research problem is presented, focusing on the inconsistent ESG reporting by JSE-listed companies. This is followed by research objectives and the hypotheses that will be tested to address these objectives. The significance of the study to various parties is also explained. Lastly, an overview of all the chapters in the study is provided, followed by a chapter summary.

Chapter 2: Literature Review

In this chapter, a review of theoretical and empirical literature is conducted. The chapter explores a mixed theoretical framework comprising the agency and legitimacy theories. These theories are contextualised to audit committees' role in ESG reporting. Furthermore, an empirical literature review is undertaken to identify the gaps in the literature. A detailed overview of ESG reporting is presented, including JSE's ESG reporting requirements. This is followed by a discussion of integrated reporting, its adoption, quality measures, and its connection with audit committees. The empirical literature on audit committee characteristics

is discussed, followed by a summary of gaps in the literature and, finally, a summary of the chapter.

Chapter 3: Research Methodology

This chapter details the research methodology for the study and identifies positivist epistemology as the appropriate research paradigm. It highlights the research design and justifies the researcher's choice of the deductive approach. Research methods are discussed, including the rationale for selecting the quantitative research method. The study variables are explained, including the regression model used to assess their correlation. The research population and sample are identified, followed by a discussion of the data collection instruments. Data presentation and analysis are covered, including the descriptive and multicollinearity tests undertaken in the study. The ethical considerations made during research are highlighted, followed by a chapter summary.

Chapter 4: Data Presentation and Analysis

This chapter presents and analyses the findings from the study, including descriptive results for each variable. The results of the multicollinearity tests are analysed, followed by an interpretation and analysis of the results of the regression model. Lastly, a summary of the chapter is provided.

Chapter 5: Summary, Conclusions and Recommendations

This chapter summarises the findings of the study. Conclusions are also made, highlighting the major findings on the role of audit committees in ESG reporting. The chapter makes recommendations emphasising the need for companies to appoint independent audit committees to improve the standard of ESG reporting. Finally, suggestions for future research are made, encouraging researchers to explore additional audit committee attributes and consider their qualitative features.

1.11 Chapter Summary

Stakeholder capitalism has led investors to demand more sustainable practices from corporations. Despite JSE's mandatory ESG reporting requirements, the quality of ESG reporting varies significantly, raising concerns about their credibility. This is despite the existence of governance mechanisms like audit committees whose role is to oversee and enhance the quality of ESG reporting.

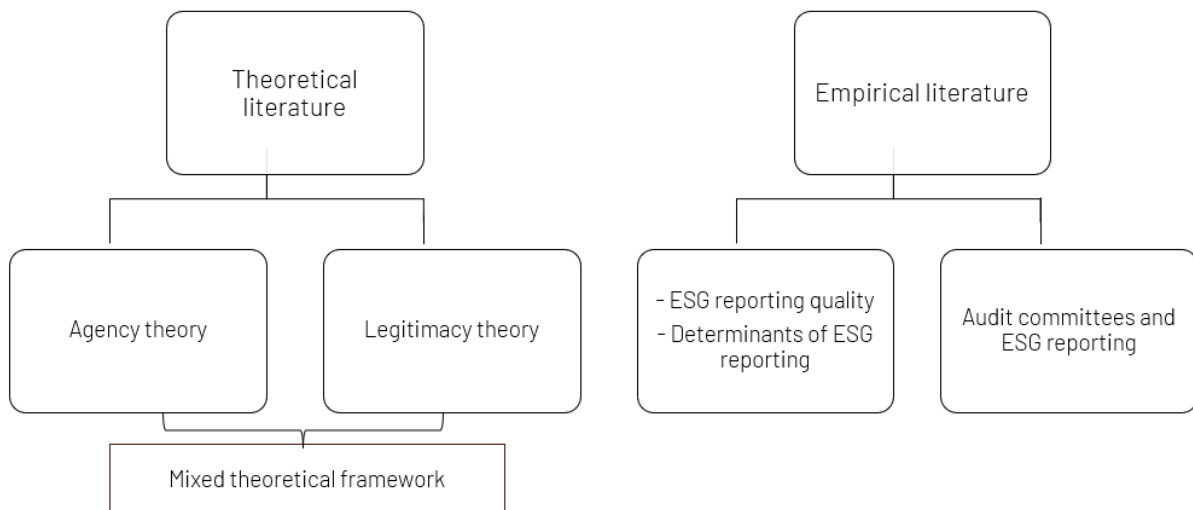
The study addresses this by investigating the impact of three key audit committee characteristics, namely, independence, meeting frequency, and average age, on ESG reporting quality. Using agency and legitimacy theories, the study hypothesises that independent audit committees, meeting frequency, and average age may improve the credibility of ESG reporting. These hypotheses are tested, and the results are analysed and discussed in a later chapter.

The following chapter presents a review of the theoretical literature which informed the theoretical framework adopted for this study. It also presents a review of the empirical literature.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The aim of a literature review is to explore existing studies related to the topic under investigation, including the relevant theoretical framework (Munn et al., 2018). This literature review begins with the theoretical literature, followed by empirical literature pertaining to integrated reporting quality as well as the role of audit committees. It draws on journal articles, theses, Internet sources, books, and reporting frameworks. The empirical literature review begins by exploring integrated reporting quality, including its determinants and thereafter, narrows the focus down to audit committees' influence on integrated reporting, both internationally and in South Africa. The gaps in the literature are then summarised. Figure 1-1 below presents an overview of the literature review.



Source: Own compilation

Figure 1-1: Overview of literature review

2.2 Theoretical Literature

A theoretical framework provides a basis for the structure and rationale for a study. It uses existing, tested theories to provide clarity on the origins of the research problem under study (Varpio et al., 2020). The research problem for this study highlighted conflicting findings on the contributions made by audit committees to ESG reporting. As such, like previous studies on corporate reporting, this theoretical framework comprised a mix of economics-based (agency theory) and socio-political (legitimacy theory) theories (Haji & Anifowose, 2016; Wang et al., 2020; Mans-Kemp & Van der Lugt, 2020). Economics-based theories assume that

stakeholder and organisational activity is driven by self-interest, while socio-political theories hold that organisational activity is motivated by societal norms and standards (Eisenhardt, 1989; Velte, 2018). Although these theories offer divergent views, they are complementary as they have both proven helpful in understanding corporate practices, particularly integrated reporting (Lakhani & Herbert, 2022). Consequently, this study used both the agency and legitimacy theories to explore the economic, societal, and political issues affecting audit committees' monitoring role.

2.2.1 Agency Theory

The agency theory is among the most commonly used theoretical perspectives in corporate reporting (Donkor et al., 2021). It aims to mitigate issues arising from the agency relationship between the principal (shareholders) and agent (management). In terms of the agency theory, there tends to be discordant interests between management and shareholders with the former potentially misusing the powers entrusted to them by the latter (Jensen & Meckling, 1976). The result is agency conflict.

At the centre of agency conflict is the asymmetry of information whereby management exploits the separation of powers between it and shareholders for its own benefit (Chouaibi, 2022). This often results in management engaging in self-serving behaviour and creating agency problems such as concealing or manipulating information, wasteful expenditure and poor investment decisions (Raimo et al., 2021).

To minimise agency conflicts, management should provide adequate disclosure that meets stakeholder information needs (Hossain et al., 2023). Corporate governance mechanisms therefore serve to monitor the behaviour of agents and ensure high-quality corporate reporting (Wang et al., 2020). In this regard, the audit committee's monitoring and supervisory role is intended to protect shareholder interests and reduce agency costs (Raimo et al., 2021). Audit committees provide oversight of both financial and non-financial reporting processes, including assurance, thereby enhancing the quality of disclosures and minimising information asymmetry.

Therefore, from an agency theory standpoint, the use of ESG reports aims to reduce information asymmetries and lessen conflicts between stakeholders and management (Qaderi et al., 2022). ESG reporting serves to enhance the standard of information accessible to providers of financial capital, such as equity and debt holders, as well as lenders and creditors (IIRC, 2021). Hence, these stakeholders are the principals who are concerned about the

possibility that agents (management) may impede, vaguely represent, or misrepresent value creation (Wang et al., 2020). As a credibility-enhancing mechanism, audit committees, help to ensure transparent disclosures and align the interests of management to those of stakeholders.

This is important, particularly in light of company failures, environmental catastrophes and reporting scandals, which have led to increased demand for credible ESG reporting (Haji & Anifowose, 2016). Less credible ESG reporting potentially result in high agency costs (Hossain et al., 2023). At the same time, to provide reliable disclosures, entities should be well-governed and better able to monitor agents' behaviour (Wang et al., 2020). Accordingly, the use of internal and external assurance mechanisms is a manifestation of the agency theory. Likewise, the audit committee's monitoring role is aimed at mitigating agency costs by improving the quality of ESG reporting and its decision-usefulness (Velte, 2018; Sriani & Agustia, 2020; Chouaibi, 2022). In line with economics-based theories, the agency theory assumes that audit committees positively affect the standard of ESG reporting (Beasley et al., 2009; Velte, 2018). This study argues that audit committee members are a crucial determinant of ESG reporting quality whose role is to improve integrated reporting processes and reduce agency costs.

2.2.2 Legitimacy Theory

The legitimacy theory suggests that, in order for organisations to be considered legitimate, they must conform to societal expectations, including values, standards, and laws (Beasley et al., 2009). Legitimacy is, therefore, achieved if society is satisfied that an organisation's actions conform to its needs and expectations (Dorfleitner, Kreuzer & Sparrer, 2022). The reward for legitimacy often takes the form of enhanced firm value and stakeholder trust, which ultimately translates to the continued existence of the business (Velte, 2022). However, societal expectations can be relative. In politically unstable environments, they may be accepting of unethical behaviour such as bribery (Dorfleitner et al., 2022). It can be argued that legitimacy is not always associated with ethical business conduct.

Loss of legitimacy has negative implications for organisations such as restricted access to financial resources and increased costs of capital (Dorfleitner et al., 2022). Notably, organisations that fail to achieve legitimacy expose themselves to stakeholder criticism and rejection (Kannenberg & Schreck, 2019). This is often followed by stakeholder calls for reforms and regulations that address their legitimacy concerns (Dorfleitner et al., 2022). The presentation of integrated reports can be seen as a means of achieving legitimacy. Organisations use these reports to disclose value creation in line with societal expectations of

ESG performance (Fuhrmann, 2019). Previous studies have established that sustainability reporting enhances legitimacy (Arvidsson & Dumay, 2022). It can also be restored through the adoption of ESG reporting (Kannenberg & Schreck, 2019).

The IIRC's framework promotes the legitimacy of integrated reporting by requiring organisations to prepare reports that are cognisant of stakeholders' legitimate needs and interests (IIRC, 2021). Stakeholder expectations with regard to corporate reporting are met if entities are able to satisfy stakeholder information needs by presenting relevant financial and non-financial information. Hence, the JSE's mandatory requirement that listed companies present ESG reports. While this is meant to curb misrepresentation, it does not guarantee quality integrated reports as management may only make symbolic disclosures aimed at achieving legitimacy (Velte, 2022). It is for this reason that the use of corporate governance mechanisms is considered.

King IV and South Africa's Companies Act require entities to abide by corporate governance mechanisms, including the establishment of audit committees to enhance the integrity of integrated reports (Mans-Kemp & Van der Lugt, 2020). The evolving role of audit committees can be attributed to growing stakeholder demand for more credible ESG reporting. In essence, the introduction of a combined assurance model is in line with societal expectations of credible corporate disclosures.

From a legitimacy theory perspective, the use of corporate governance mechanisms can be genuine or undertaken as impression management (Velte, 2022). There is a risk that corporate governance mechanisms, including audit committees, are symbolic rather and aimed at attaining legitimacy and ensuring survival (Lakhani & Herbert, 2022). A similar view is shared by socio-political theories which predict a negative association between the quality of non-financial disclosures and audit committees (Velte, 2018). Similarly, this study argues that audit committees' involvement in ESG reporting is aimed at achieving organisational legitimacy.

2.2.3 Mixed Theoretical Framework

The integration of economics-based and socio-political theories is a common phenomenon in research on corporate reporting (Fuhrmann, 2019). While the agency theory emphasises the need for quality disclosures in order to lower agency costs, it does not explain management's incentive for making the disclosures (Wang et al., 2020). The legitimacy theory fills this gap by establishing the motive for ESG reporting. At the same time, the legitimacy theory offers a

conflicting perspective by suggesting that disclosures by management may only be substantial, as opposed to reducing information asymmetry as proposed by the agency theory.

Although they contradict each other in some respects, the agency and legitimacy theories are complementary as they can be used to establish how audit committees can contribute to quality integrated reporting and at the same time, address the legitimate concerns of stakeholders (Wang et al., 2020). This study used the agency theory to determine the agency role of audit committees in relation to ESG reporting, while also exploring the legitimacy of these disclosures. The mixed theoretical framework also informed the empirical literature review that explored the agency of corporate governance mechanisms as well as the determinants of ESG reporting quality which are born out of stakeholder legitimacy concerns.

The use of an integrated theoretical framework in this study ensured that the research problem was viewed through different lenses, providing balanced insights on audit committees' contribution to ESG reporting.

2.3 Conceptual Framework

Audit committee characteristics are essential in enhancing the quality of ESG reporting, which is increasingly critical in a business environment characterised by environmental and social crises (Diwan & Amarayil, 2023). Independent audit committee members play a key role in providing objective oversight and reducing agency conflicts between management and stakeholders, which enhances the quality and credibility of ESG reporting (Raimo et al., 2021). Frequent audit committee meetings allow for more thorough discussions on governance issues, enabling better monitoring of the firm's ESG initiatives. Meeting frequency has been linked to more effective decision-making processes that can improve transparency and ensure that ESG reporting meets stakeholder expectations (Arif et al., 2021). Another important, yet underexplored aspect is the average age of audit committee members, which may affect their experience and perspectives on sustainability, governance, and reporting practices.

In addition to audit committee characteristics, several company-specific factors, such as firm size, financial performance, and industry type, influence ESG reporting quality. Larger firms, for instance, may have more resources dedicated to sustainability initiatives and are likely to be under greater scrutiny from regulators and stakeholders (Kılıç & Kuzey, 2018). High financial performance can provide the capacity for better ESG integration, while industry-specific factors may dictate the extent of ESG reporting. Companies listed on the JSE must adhere to the King IV corporate governance principles, which emphasise independent oversight

and sustainability, further enhancing the relevance of audit committees in shaping high-quality ESG reporting.

2.4 Empirical Literature

An empirical literature review uncovers knowledge gaps by exploring previous research in the area under study (Bell, Bryman & Harley, 2022). ESG reporting research has evolved from normative to descriptive research. Normative research aimed to evaluate implementation challenges, whereas descriptive studies involve more empirical research aimed at analysing the after-effects and consequences of the adoption of ESG reporting (Vitolla et al., 2019). Given this shift, it is expected that, apart from countries where ESG reporting practices have been newly-adopted, more recent studies tend to be inclined towards empirical research.

2.4.1 Environmental, Social and Governance (ESG) Reporting

The history of ESG reporting dates back to the 1970s when businesses engaged in corporate social responsibility (CSR) in response to public lobbying against social injustices and unfair labour practices (Wang & Phillips-Fein, 2023). Corporate Social Responsibility promotes sustainable community development and ethical business practices (Nahar & Khurana, 2023). It is essentially concerned with leaving a positive environmental and social footprint. Thus, businesses use CSR disclosures to achieve legitimacy in the societies in which they operate (Janang, Joseph & Said, 2020).

In 2004, the United Nations (UN) officially launched the term ESG in its report “Who Cares Wins” (Wan et al., 2023). It encouraged organisations to enhance their ESG performance and clearly communicate their value drivers and related challenges (Pollman, 2022). It also encouraged regulators to formulate standards and regulatory frameworks to support businesses’ integration of financial and ESG information (Gwalani & Mazumdar, 2022). In short, the UN report highlighted the importance of corporate citizenship and the role of key players in enhancing overall ESG reporting and performance.

Environmental, Social and Governance reporting is embedded in stakeholder capitalism, where corporate behaviour aligns with stakeholders' legal and moral expectations (Morais et al., 2024). In response to stakeholders' concerns about the risks associated with climate change, social injustices, and other sustainability-related issues (Diwan & Amarayil, 2023), it integrates corporate disclosure on efforts to promote social justice, environmental protection, and economic development (Wan et al., 2023).

Companies with higher ESG performance enjoy lower system risk, reduced cost of capital, and high market valuation, which all translate to lower agency costs (Arvidsson & Dumay, 2022). Therefore, ESG reporting offers practical solutions to sustainability issues while securing businesses' legitimacy. At the same time, there is a risk that information on ESG performance may be distorted to conceal the adverse impact of the organisation's operations on the environment and community.

Due to disruptions in the macro environment such as economic recessions, climate change, and, more recently, the COVID-19 pandemic (Neri, 2021), investor demand for ESG reporting has increased over the years (Torien et al., 2023). In response, ESG reporting frameworks are continuously evolving to improve and standardise disclosure of ESG performance (Pozzoli et al., 2022). Similarly, academic research has shifted from focusing on financial reporting to ESG reporting, including how the latter is affected by regulation, institutional pressures and corporate governance practices (Diwan & Amarayil, 2023).

2.4.1.1 Multiple ESG Reporting Frameworks

Environmental, Social and Governance reporting frameworks provide structured and standardised guidelines to disclose ESG performance (Wang & Phillips-Fein, 2023). They help businesses to present consistent and understandable ESG reports that assist information users to evaluate resource allocation and its impact on sustainability (Bose, 2020). Several ESG reporting frameworks have been developed over the years, including those by voluntary standard setters such as the GRI, IIRC and the Sustainability Accounting Standards Board (SASB).

The GRI standards were introduced in 1997 to improve the quality of ESG reporting and enhance the global comparability of ESG reporting (Arvidsson & Dumay, 2022). They guide organisations in making various disclosures, including governance, structure, stakeholder engagement and strategy (Bose, 2020). The standards also guide materiality determination. The GRI standards continue to be improved and are one of the widely adopted standards for ESG reporting (Stocker et al., 2020).

The IIRC's integrated reporting framework, which was enacted in 2010, is another prominent ESG reporting framework. It was formulated in the aftermath of the 2008-2009 global financial crisis, which led to the loss of homes, jobs and investments, resulting in stakeholder criticism of financial reporting's failure to disclose risk information (Kantor, 2018). Therefore, integrated reporting was introduced to present users with information on value creation,

including associated risks and opportunities (IIRC, 2021). Unlike financial reporting that focuses on past performance, integrated reporting centres on value creation not only in the short term but in the medium and long term, thereby providing users with forward-looking information (Velte, 2018).

While the IIRC's framework is relatively popular, it's criticised for its narrow focus on providers of financial capital and neglect of context-based sustainability factors (Bose, 2020). However, its multi-capital approach is commendable as it provides comprehensive information on value creation.

Industry-specific and climate-change-specific ESG reporting frameworks have also been issued. In 2011, the SASB issued industry-specific standards to guide businesses in determining ESG issues that have a material effect on financial performance (Bose, 2020). The Task Force on Climate-Related Financial Disclosures (TCFD) that was launched in 2015 guides reporting on climate-related financial information, including related risks and opportunities (JSE, 2022). Other climate change-related reporting frameworks include the Carbon-Disclosure Protocol (CDP) and the Climate Disclosure Standards Board (CDSB) (Bose, 2020).

International organisations have also issued ESG reporting frameworks for use by their member states. In 2014, the European Union (EU) launched the Non-Financial Reporting Directive (NFRD) that requires large public interest entities to disclose diversity information, key ESG performance metrics and related risks (Aluchna, Roszkowska-Menkes & Kamiński, 2022). Effective January 2024, the NFRD was replaced by the Corporate Sustainability Reporting Directive (CSRD), which has a broader scope and requires more disclosures, particularly with respect to social responsibility, human rights and sustainability risks (JSE, 2022).

In its ongoing pursuit of sustainability, the UN developed the Sustainable Development Goals (SDGs) in 2015. They comprise goals organisations must work towards to address global challenges such as climate change, poverty, environmental degradation, and inequality (JSE, 2022). Governments of member states are required to track and report on progress made towards achieving the SDGs using metrics on the SDG indicator (Bose, 2020). As such, the SDGs are a quantitative measure of ESG performance.

2.4.1.2 Standardised ESG Reporting Framework

Companies have a variety of ESG reporting frameworks to choose from and investors can thus take advantage of the uniqueness of the multiple frameworks. While frameworks like the GRI standards are stakeholder-oriented, some, like the SASB and IIRC, focus on investors, while others specifically target climate-related disclosures (Bose, 2020). Companies can fulfil investors varying information needs by applying a mix of these frameworks.

The downside, however, is that there is no common framework to guide corporate ESG reporting (Bose, 2020). Investors are concerned about the lack of comparability of such disclosures, potentially reducing their decision-usefulness (Davies, Dudek & Wyatt, 2020). Organisations such as the World Economic Forum (WEF) have also emphasised the need for harmonised ESG reporting (Davies et al., 2020). In response, standard setters continue to make significant efforts to converge ESG reporting frameworks and standards.

In 2021, the IIRC merged with the SASB to form the Value Reporting Foundation (VRF), which focuses on streamlining ESG reporting and clarifying the meaning of enterprise value for the benefit of businesses and investors (JSE, 2022). The International Sustainability Standards Board (ISSB) and GRI are also collaborating to develop high-quality ESG reporting standards that appeal to multiple stakeholders (Ndung'u, 2022). The IASB and ISSB have also adopted the IIRC's integrated reporting framework to converge financial reporting and sustainability-related financial disclosures (Abela, 2022).

In the researcher's opinion, the dynamic macro-environment makes it challenging to have a standardised, all-encompassing ESG reporting framework. In converging such frameworks, standard-setters face the mammoth task of striking a balance between creating standards that cater to global differences and satisfy varying stakeholder information needs.

Currently, a single global ESG reporting framework is unavailable (Kula, 2024). Thus, companies either voluntarily apply ESG reporting frameworks or follow regulated reporting frameworks (Diwan et al., 2023). Given that this study focused on JSE-listed companies, the JSE's ESG reporting requirements were applied.

2.4.1.3 JSE ESG Reporting Requirements

The JSE's sustainability disclosure guidelines draw on several reporting standards, such as the GRI and ISSB (JSE, 2022). In addition, mandatory application of King IV by JSE-listed companies helps to ensure ethical and effective corporate governance.

Significant progress has been made by JSE-listed companies in integrating ESG factors into their corporate reporting (Morais et al., 2024). At the same time, mandatory ESG reporting does not automatically translate to improved ESG performance (Arvidsson & Dumay, 2022). According to a survey by Henley-Risk Insights, some JSE-listed companies tend to prioritise social factors over environmental factors at the expense of long-term sustainability (Morais et al., 2024). This is worrying given that comprehensive integration of ESG factors not only influences investor decision-making but also serves as a competitive strategy (Wan et al., 2023). As such, there is a need to establish ways to improve the standard of ESG reporting.

The presentation of integrated reports has been a requirement for companies listed on the JSE since 2010 (Grassmann, 2021). Indeed, the JSE remains the only capital market worldwide that imposes this requirement (Appiagyei, Djajadikerta & Mat Roni, 2023). South Africa, therefore, represents an example of a regulated integrated reporting environment. While integrated reporting by JSE-listed corporations can be seen as a legitimisation exercise, a number of previous studies on ESG have alluded to JSE-listed companies being a valuable point of reference (Wang et al., 2020; Raimo et al., 2021; Appiagyei et al., 2023).

An integrated report contains comprehensive disclosure of both financial and ESG performance (IIRC, 2021). These reports are stakeholder-centred and, as such, are designed to comprehensively address stakeholders' information needs, including ESG performance (Bose, 2020). At the same time, a stakeholder-focus approach does not translate to entities disclosing all ESG information. Instead, only material disclosures are made (JSE, 2022), calling for effective materiality determination.

2.4.1.4 Measuring ESG Reporting Quality

While the IIRC's framework does not explicitly define integrated reporting quality, it provides guiding principles and content elements for use in preparing integrated reports (IIRC, 2021). Hence, in determining the quality of integrated reports, researchers measure an organisation's adherence to the IIRC framework as well as compliance with applicable reporting laws and codes of corporate governance (Haji & Anifowose, 2016). As a result, a number of integrated reporting quality measures have been developed or adopted from external sources.

Omran et al. (2021) developed an IIRC framework-based checklist in order to calculate an integrated reporting quality index for Australian-listed companies. The checklist comprised five information categories covering content elements including the organisation's risks and opportunities, governance structure and guiding principles. The unweighted approach was used

to compute the integrated reporting index (IRI) - the proxy for the quality of integrated reports - by assigning a score of 1 for disclosure and 0 for non-disclosure (Kılıç & Kuzey 2018; Omran et al., 2021). Similarly, Haji and Anifowose (2016) developed a checklist aligned with the IIRC's framework and the King III Code (which is mandatory for JSE-listed companies). While a weighted scoring approach was used, the selection of weights was criticised as subjective, which could result in misleading findings (Omran et al., 2021). At the same time, weighted scoring is credited with providing more detailed results as it caters for the tone of disclosures (Kılıç & Kuzey 2018). Conceivably, the use of both weighted and unweighted scoring would resolve the aforementioned shortcomings.

Pistoni, Songini and Bavagnoli's (2018) study on integrated reporting quality suggested the use of an Integrated Reporting Scoreboard (IRS) focusing on four disclosure areas provided in the IIRC's framework, namely background, assurance and reliability, content, and form. The background provides general information, including the motive for integrated reporting, while assurance and reliability focus on the assurance of integrated reports both internally and by external assurers (Pistoni et al., 2018). Content focuses on the presence of the IIRC's content elements and guiding principles, while form relates to the readability, understandability, and availability of the integrated report (Raimo et al., 2021). Once all items in the disclosure areas are scored, they are summed up to give the measure of integrated reporting quality (Pistoni et al., 2018). Pistoni et al.'s (2018) scoreboard has been employed in several studies (Raimo et al., 2019, Beretta, Demartini & Trucco, 2020; Wang et al., 2020; Raimo et al., 2021; Songini et al., 2021). However, since it comprehensively covers disclosure, it is more suitable for determining the quality of integrated reports in their entirety (Songini et al., 2021). As such, where a study is concerned with specific aspects of an integrated report, it may be advisable to focus only on the relevant disclosure area.

Researchers have also used checklists and quality scores developed by tax and accounting firms as proxies for integrated reporting quality. Chouaibi's (2022) study on audit committees and integrated reporting quality by STOXX Europe 600 Index listed companies used Thomson Reuter's CSR score, which illustrates an entity's communication of ESG and how it is incorporated in daily decision-making processes.

Chariri and Januarti (2017) used the IIRC framework-aligned checklist developed by Nkonki as a proxy for the quality of JSE-listed companies' integrated reporting. Using content analysis, disclosed items were identified and scored out of the 64 items on the checklist. Onyabe (2022)

followed the same approach in a study on companies listed on the Nigerian Exchange Group (NGX).

Other researchers have relied on EY's Excellence in Integrated Reporting Awards as a proxy for integrated reporting quality (Wang et al., 2020; Eloff & Steenkamp, 2022). These awards are adjudicated against a marking plan comprising of the guiding principles and content elements in the IIRC's framework and categorised into five quality categories, namely top 10, excellent, good, average, and progress to be made (Wang et al., 2020). Most of these studies calculate the integrated reporting index by scoring the quality categories on a scale of 1 to 5 (Eloff & Steenkamp, 2022).

However, EY's Excellence in Integrated Reporting Awards are criticised for potential subjectivity on the part of the adjudicators with particular reference to their interpretation of the IIRC's framework (Mans-Kemp & Van der Lugt, 2020). Nonetheless, the adjudication panel comprises experienced, independent professionals, which enhances their reliability (Wang et al., 2020). Furthermore, the application of these awards is limited as they only apply to the top 100 JSE-listed corporations (Zouari & Dhifi, 2021).

The EY Excellence in Integrated Reporting Awards are used extensively as they have been proven to reliably represent the quality of integrated reports (Maroun, 2019). Several scholars have tested and confirmed their reliability and validity (Wang et al., 2020; Hossain et al., 2023). However, there is currently no consensus on whether self-developed or adopted integrated reporting indices constitutes the best measure of integrated reporting quality.

Matemane and Wentzel (2019) assert that, by employing reporting quality indices, researchers rely on secondary data, which translates to a lack of objectivity. In contrast, Maroun (2019) argues that where the validity of secondary data is supported by the existing literature, it becomes a reliable measure of integrated reporting quality as compared to self-developed scores. Regardless of these contrasting views, in deciding how to measure integrated reporting quality, it is crucial to focus on the quality rather than the quantity of ESG reporting (Wang et al., 2020). Ultimately, the ideal choice is one that is aligned with the IIRC's framework and is capable of adequately reflecting variations in integrated reporting quality.

2.4.2 Determinants of ESG Reporting

ESG reporting practices differ between entities and countries (Yu & Van, 2021; Helfaya, Morris & Aboud, 2023). These variations are attributed to factors that motivate companies to disclose ESG information at the country and company level (Martiny et al., 2024).

2.4.2.1 Country-level Determinants of ESG Reporting

At country level, ESG reporting is affected by political stability, corruption levels and national culture (Seow, 2024). Companies operating in countries with low democracy and political stability are more likely make ESG disclosures (Mooneepen, Abhayawansa, & Mamode Khan, 2022). This aligns with the legitimacy theory, which suggests that ESG reporting serves as a strategy for businesses to legitimise their operations and ensure their ongoing survival (Abdul Rahman & Alsayegh, 2021).

Regarding corruption levels, low corruption levels are positively associated with ESG reporting (Seow, 2024). On the contrary, entities operating in highly corrupt countries tend to conceal unethical business practices by making less ESG disclosures (Yu & Van, 2021). Notably, such countries are characterised by weak legal enforcement mechanisms (Hossain et al., 2023). As a result, the companies in these countries take advantage of the lack of regulatory oversight.

Feminist and collectivist cultures prioritise ethics, good governance, and sustainability (Girella et al., 2019), increasing pressure on companies within these communities to provide comprehensive ESG reports (Helfaya et al., 2021). Additionally, in cultures with high levels of uncertainty avoidance, there is a greater demand for ESG reporting (Seow, 2024). As a result, companies in these environments utilise ESG reporting as a risk management tool to mitigate potential issues arising from unacceptable ESG practices, thereby reducing agency costs and achieving legitimacy (Helfaya et al., 2021). Overall, national cultures which emphasise social issues and equality are better inclined to adopt ESG reporting.

2.4.2.2 Company-level Determinants of ESG Reporting

Company-level determinants are widely regarded as key determinants, making up most of the literature explaining the variations of ESG reporting among firms (Martiny et al., 2024; Seow, 2024). Previous studies on company level factors focused on industry, company size, profitability, and corporate governance.

The literature indicates that, due to stakeholder pressure to disclose the environmental impact of their activities (Maama & Gani, 2022), companies in environmentally sensitive industries such as oil, gas, and chemicals, produce more extensive ESG reports than those in industries

with lower environmental impact, such as telecommunications and infrastructure (Yu & Van, 2021; Shaikh, 2022). The materiality of ESG disclosures in these industries may differ significantly, complicating direct comparisons (Fasan & Mio, 2017). Given the industry sensitivity of ESG disclosures, it is preferable to benchmark their materiality against industry-specific standards (Helfaya et al., 2021).

Research indicates a significant positive relationship between company size and ESG reporting (Sharma, Panday & Dangwal, 2020). Larger companies are subject to greater scrutiny from governments, the media, and the public (Maama & Gani, 2022). From a legitimacy theory perspective, these companies produce more comprehensive ESG reports to uphold social contracts and mitigate legitimacy risks (Abdul Rahman & Alsayegh, 2021). In contrast, stakeholders tend to have lower expectations of smaller organisations in terms of ESG reporting (Sharma et al., 2020).

Profitability, as measured by return on assets (ROA) and return on capital employed (ROCE), is positively correlated with higher-quality ESG reporting (Sharma et al., 2020; Abdul Rahman & Alsayegh, 2021). More profitable companies are more inclined to adopt ESG reporting due to the legitimacy risks posed by insufficient transparency in their disclosures (Girella et al., 2019; Manes-Rossi et al., 2021). Conversely, less profitable firms may refrain from engaging in ESG reporting due to the significant costs associated with implementing ESG practices (Mooneepen et al., 2022). Prior research on governance has focused on establishing the role of corporate governance structures in ESG reporting, as discussed in the next section.

2.4.2.2.1 Corporate Governance and ESG Reporting

Among internal governance structures is the board of directors, whose role is to act in the best interest of shareholders and set the direction for good corporate governance (Martiny et al., 2024). Previous studies have identified various board characteristics as determinants of ESG reporting. This section reviews the literature on board independence, size, and diversity.

From an agency theory perspective, independent boards prioritise stakeholder interests, maintain a long-term outlook (Bamahros et al., 2022), and autonomously oversee ESG processes, reducing agency costs (Khalid et al., 2022). Additionally, independent non-executive directors foster a culture of integrity and transparency among managers, mitigating information asymmetries (Bamahros et al., 2022). However, under legitimacy theory, appointing independent directors may serve as a legitimisation strategy with limited impact on

the board's monitoring role (Girella et al., 2019). For board independence to be truly effective, it must be complemented by appropriate levels of expertise and diversity (Toerien et al., 2023).

Larger boards facilitate a broader exchange of ideas and strategies (Toerien et al., 2023; Abdelkader, et al., 2024). While Omran et al. (2021) and Songini et al. (2021) argue that larger boards do not inherently lead to more effective monitoring of corporate disclosures, the majority of research identifies board size as a critical factor in ESG reporting. Studies have shown that organisations with larger boards tend to provide more comprehensive ESG disclosures (Ben Fatma & Chouaibi, 2021; Nuskiya et al., 2021; Yu & Van, 2021; Matta et al., 2024). Additionally, the board size should align with the corporation's size and operational characteristics (Bamahros et al., 2022).

Academics have demonstrated that board gender diversity significantly impacts ESG performance (Seow, 2024). Consistent with agency theory, female directors promote transparent ESG practices, reducing information asymmetries and agency costs (Ma et al., 2024). Furthermore, countries with more masculine cultures have been encouraged to appoint female board members to enhance ESG reporting effectiveness (Helfaya et al., 2021). Corporate governance reforms in various countries have also supported the inclusion of women on boards of directors (Ma et al., 2024). However, some researchers contend that the appointment of women is often driven by mandatory quotas, leaving them as a minority with limited influence in decision-making processes (Omran et al., 2021; Songini et al., 2021). To address this, previous studies have recommended extending the tenures of female directors to mitigate stereotypes and enable them to adjust their priorities over time (Abdelkader et al., 2024).

In addition to board characteristics, more recent studies on corporate governance-related determinants have taken a particular interest in the role of audit committees in enhancing the quality of integrated reports (Arif et al., 2021; Pozzoli et al., 2022). This is not surprising given growing use of a combined assurance model, which suggests that the credibility of corporate reporting can be enhanced by collective use of internal and external assurance mechanisms (Wang et al., 2020). In this regard, researchers have examined whether external assurance improves the dependability of integrated reports, with findings indicating that it significantly increases their credibility (Diwan & Sreeraman, 2024)

Currently, there are no specific assurance standards for ESG reporting, leading to a lack of uniformity in the scope and level of assurance provided by external auditors (DeSimone,

D'Onza & Sarens, 2021). While harmonised ESG assurance standards could improve the comparability of ESG reports, there is a concern that entities may prioritise compliance with these standards over genuinely improving ESG performance (Mohammed, 2023). Additionally, the effectiveness of external assurance may be compromised if auditors lack expertise in sustainability (DeSimone et al., 2021). At the same time, the quality of ESG reporting cannot be entirely premised on external assurers as they do not create credibility, but rather endorse it (Gerwanski et al., 2022).

In response to challenges with external assurance, academics and regulators have increasingly focused on internal assurance mechanisms. Audit committees, in particular, have gained prominence as a key component of effective corporate governance (Mohammed, 2023; Matta et al., 2024). This is against the backdrop of economic and social crises, which have heightened the social and environmental responsibilities of organisations (Matta et al., 2024). This shift aligns with the evolving role of audit committees, extending beyond financial oversight to include supervision of ESG reporting processes, as outlined in corporate governance codes (Arif et al., 2021). In South Africa, the Companies Act mandates the appointment of an audit committee - a requirement further reinforced by the King Code. South Africa represents a model for a regulated ESG reporting environment and provides valuable insights for academics, regulators, and standard setters (Kılıç & Kuzey, 2018; Maroun, 2019; Toerien et al., 2023).

However, to the researcher's knowledge, no existing studies have specifically examined the role of audit committees in ESG reporting within South African companies. Instead, previous studies have investigated the influence of audit committees on broader integrated reporting practices among large South African firms (Haji & Anifowose, 2016) and JSE-listed manufacturing companies (Chariri & Januarti, 2017), yielding mixed findings. This study addresses the gap in the literature by exploring the role of audit committees in ESG reporting among the top 100 JSE-listed companies.

2.4.3 Audit Committees and ESG Reporting

King III introduced the concept of combined assurance which emphasised a multiple line of defense approach to corporate governance comprising management, internal assurance units and external assurance providers (Haji & Anifowose, 2016). As noted previously, recent research on internal assurance has targeted audit committees and their role in ESG reporting. This is attributed mainly to the audit committee's role in overseeing internal controls and

monitoring ESG reporting, including associated risks and opportunities (Bamahros et al., 2022). Research has demonstrated that the effectiveness of audit committees in ESG reporting is influenced by several attributes, including their expertise, independence, activism, tenure, size, and meeting frequency (Arif et al., 2021; Helfaya et al., 2021; Bamahros et al., 2022; Pozzoli et al., 2022; Matta et al., 2024).

According to agency theory, independent audit committees facilitate transparent ESG reporting, while frequent meetings indicate that audit committees are actively pursuing their monitoring role (Bamahros et al., 2022). Consistent with the agency theory, this study examines the impact of audit committee independence and meeting frequency on ESG reporting. In addition, the average age of audit committee members is examined to fill in the gap in the existing literature. The legitimacy of these audit committee attributes will also be examined. The following sections review empirical literature related to the audit committee characteristics under study.

2.4.3.1 Audit Committee Independence

Audit committees are responsible for monitoring managerial decisions to ensure alignment with stakeholder interests (Bamahros et al., 2021). They also play a crucial role in overseeing key areas that affect the credibility of corporate reporting, such as internal controls, assurance processes, and risk management (Pozzoli et al., 2022). From an agency theory perspective, independent audit committees strengthen corporate integrity, promote transparency in reporting, and mitigate information asymmetries (Arif et al., 2021).

Existing literature links independent audit committees to increased audit committee activism and more effective corporate reporting processes (Bamahros et al., 2021; Pozzoli et al., 2022). Notably, independent audit committees have been found to enhance voluntary disclosures (Qaderi, Alhmoud & Ghaleb, 2020) and improve both the quality and quantity of ESG reporting, thereby empowering stakeholders with better information for decision-making (Buallay & Al-Ajmi, 2020; Arif et al., 2021). Moreover, they contribute to higher earnings quality and reduce earnings management practices (Diwan et al., 2024).

However, some studies present conflicting evidence. No significant relationship was found between audit committee independence and intellectual capital or CSR disclosures (Raimo et al., 2021). Despite these mixed findings, the prevailing body of literature supports the argument that independent audit committees have a favourable impact on ESG reporting. Assuming

independent audit committee members effectively fulfil their agency role, they are likely to positively influence ESG reporting.

2.4.3.2 Audit Committee Meeting Frequency

According to Bamahros et al. (2021), the frequency of audit committee meetings indicates the diligence and oversight that audit committee members apply in fulfilling their monitoring responsibilities. Given the scope of their duties, audit committees require regular meetings to assess corporate disclosures and address potential issues adequately (Musallam, 2018). From the agency theory perspective, frequent meetings enhance the committee's capacity to effectively monitor management and mitigate opportunistic behaviour (Arif et al., 2021).

Empirical evidence supports this link. Buallay and Al-Dhaen (2018) found a significant positive relationship between audit committee meeting frequency and sustainability disclosures. Likewise, Pozzoli et al. (2022) revealed that firms with audit committees meeting more frequently provided more comprehensive CSR disclosures. Further studies reinforced this relationship, with Arif et al. (2021) and Raimo et al. (2021) highlighting the positive impact of frequent meetings on ESG reporting and integrated reporting quality. Matta et al. (2024) also emphasised that regular meetings provide audit committees with the necessary time to oversee corporate reporting, ensuring high-quality ESG reporting.

Despite this trend, some research presents mixed findings. For instance, Madi et al. (2014) found no significant relationship between audit committee meeting frequency and CSR disclosures, while Mohd Ariff et al. (2023) identified a negative association with the quality of integrated reports. However, most existing literature indicates that frequent audit committee meetings enhance corporate disclosure quality. Thus, this study posits a positive relationship between audit committee meeting frequency and ESG reporting.

2.4.3.3 Average Age of Members of the Audit Committee

The age of audit committee members is commonly viewed as a proxy for experience (Sultana et al., 2019; Ghafran, O'Sullivan & Yasmin, 2022). From a risk aversion standpoint, prior research has demonstrated a positive correlation between older audit committee members and improved financial reporting quality (Sultana et al., 2019). Similarly, studies have shown that firms with older audit committee members report higher financial reporting quality and enjoy a lower cost of capital (Alhossini et al., 2021).

However, the literature presents mixed findings. Komal et al. (2023) suggest that younger audit committee members are more effective in reducing earnings management compared to their

older counterparts. Despite these inconsistencies, the prevailing research advocates for the appointment of more experienced members. Consequently, this study assumes that older audit committee members positively influence ESG reporting.

2.5 Gaps in the Literature

Existing literature positions audit committees as central to corporate governance, particularly overseeing corporate reporting. However, despite identifying several audit committee characteristics that may influence ESG reporting, previous research presents conflicting findings regarding their impact. This study aims to resolve these inconsistencies by re-examining the influence of audit committee independence, meeting frequency, and average age on ESG reporting. By revisiting these characteristics, the study clarifies their role in shaping the quality of ESG reporting.

Additionally, this study addresses the limited research on ESG reporting determinants for South African firms, focusing on the top 100 JSE-listed companies. Given South Africa's prominence as a leader in regulated ESG reporting, this research provides valuable insights into how corporate governance practices, particularly audit committees, influence ESG reporting. This focus offers an important reference for both academics and regulators.

Furthermore, this study introduces a fresh perspective by examining the average age of audit committee members. While existing research has largely concentrated on the relationship between age and financial reporting quality, this study expands the scope to explore its relevance in ESG reporting. The findings from this study are expected to provide new insights crucial for managers, regulators, and academics concerned with enhancing corporate governance and ESG reporting practices.

2.6 Chapter Summary

The theoretical foundations of audit committees' role in corporate governance and their impact on ESG reporting are rooted in agency and legitimacy theories. These theories suggest that audit committees are crucial in enhancing transparency, reducing information asymmetry between management and stakeholders and maintaining the legitimacy of companies. Key audit committee characteristics comprising independence, meeting frequency, and average age are examined for their potential influence on ESG reporting. Despite mandatory ESG reporting requirements in South Africa, the quality of disclosures remains inconsistent, highlighting gaps in governance practices.

This study seeks to address these gaps by exploring the impact of these audit committee characteristics on ESG reporting in JSE-listed companies. It offers insights into how audit committees can enhance the quality and credibility of ESG reporting.

The following chapter outlines the research methodology employed to conduct this research.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

The research methodology includes the procedures and techniques used by the researcher to solve a research problem (Bouchrika, 2021). It sets out the research design that is the plan for collecting and analysing data (Bell et al., 2022). The research methodology includes a research model, the variables under study, the study population and sample, data collection methods and instruments, and the techniques employed for data analysis (Kothari, 2017).

3.2 Research Paradigm

A research paradigm is necessary to formulate an effective research methodology. It is a set of beliefs and guidelines that shape the direction of research, including what should be studied, how the research should be conducted, and how the results should be interpreted (Bell et al., 2022). The research paradigm acts as a cognitive framework that directs the researcher's actions and decision-making processes. The two major research paradigms are positivism and interpretivism (Yaseen, 2019), each with different historical origins. Positivism was founded in order to promote the use of natural sciences to investigate social realities, while interpretivism originated to counter the application of scientific models in the social sciences (Bell et al., 2022).

Underpinning these paradigms are philosophical assumptions, namely, epistemology and ontology. These relate to how the world is perceived (Dauda, 2019).

3.2.1 *Epistemological Assumptions*

Epistemological assumptions are made based on what is considered acceptable or valid knowledge in a particular discipline (Sun, 2021). Put simply, they focus on how knowledge is created, acquired, and communicated (Yaseen, 2019). At the centre of epistemology is the argument concerning whether the research principles and procedures applied in the natural sciences are applicable to social sciences (Carter & Littlejohn, 2021).

The epistemological assumption underpinning positivism is that the researcher is independent of what is being researched (Sun, 2021). It thus only deals with observable and quantifiable phenomena. The positivist uses empirical data to make predictions and test claims based on theories and hypotheses (Yaseen, 2019). This includes establishing and examining the existence of causal relationships. As such, positivist epistemology often underpins quantitative research.

Interpretivist epistemology assumes that the researcher acquires knowledge through interacting with the subjects under study (Bell et al., 2022). This is achieved by soliciting the subjective experiences of the research population (Sun, 2021). Hence, the interpretivist paradigm is often narrative and qualitative.

3.2.2 Ontological Assumptions

Ontology seeks to comprehend the nature and structure of the social world and helps to make sense of its pattern and predictability (Bittle, 2022). In other words, ontology shapes our understanding of the social world, including what knowledge we can obtain from it, and how (Leavy, 2022). The ontological assumption underlying positivism is that there is only one reality and that this reality is objective (Yaseen, 2019). In contrast, interpretivist ontology assumes multiple realities that can be determined by interacting with participants (Bell et al., 2022). Reality is, therefore, subjective.

3.2.3 Rationale for Adopting a Positivist-epistemological Research Paradigm

The positivist-epistemological research paradigm underpinned this study. It was appropriate given that the study sought to clarify the role of audit committees by measuring and quantifying their impact on ESG reporting by organisations listed on the JSE. Hence, the epistemological assumption of this study was primarily positivist. The positivist paradigm is dominant in accounting research (Sun, 2021), and the research hypotheses are formulated using the theoretical framework and drawing on the empirical literature in the field (Yaseen, 2019). Consistent with positivism, structured data collection methods and meticulous analysis techniques are used to maintain objectivity.

The research methodology was, therefore, informed by positivist epistemology.

Table 1: The characteristics of research paradigms

	Positivism	Interpretivism
Ontology	Reality is objective.	Reality is subjective.
Epistemology	Data is observable, measurable and analysed statistically.	Qualitative data is used to obtain meaning.

Source: Adapted from Sun, 2021

3.3 Research Design

The research design is a comprehensive plan that outlines the procedures to be used to gather the information required to address the research problem (Bell et al., 2022). This includes determining the research approach as well as the methods to collect data.

3.3.1 Research Approaches

Research approaches refer to the reasoning used to connect theory to research. They can be broken down into deductive and inductive approaches.

3.3.1.1 Deductive and Inductive Approaches

Under a deductive approach, a theory or hypothesis is developed and tested through the collection and analysis of data (Bell et al., 2022). This is followed by a summary of the findings and an indication of whether the hypotheses are accepted or rejected. In short, the deductive approach starts with a theory, then uses hypotheses to either support or challenge it. This approach is often associated with quantitative research (Nyagope, Rajaram & Obagbuwa, 2023).

Unlike the deductive approach, an inductive approach moves from the bottom up. Participants' views are first determined and then used to develop a theory (Bell et al., 2022). The arguments are often based on experience (Phesa, 2021). As such, the inductive approach is synonymous with qualitative research.

3.3.1.2 Rationale for Adopting a Deductive Approach

This study employed a deductive approach, which is characterised by a clear, sequential top-down research process. Existing theory relating to integrated reporting was examined and research hypotheses were developed using a multi-theoretical framework. Data on the top 100 JSE-listed companies was collected based on the EY Excellence in Integrated Reporting Awards - a proxy for ESG reporting quality. This was followed by data analysis and interpretation of the findings.

3.3.2 Research Method

Selecting an appropriate data collection method—which can be quantitative, qualitative, or a combination of both (mixed research method)—is necessary to achieve the research objectives (Mudimba, 2021).

3.3.2.1 Qualitative Research Method

Qualitative research is used when the aim of the study is to explore and unpack the meaning of a particular social phenomenon (Leavy, 2022). It is more suitable where the aim of the study is to obtain insights from a target population (Shaheen & Pradhan, 2019). This is particularly necessary where information on the area studied is either limited or non-existent. Therefore, qualitative research utilises participants' subjective experiences to uncover new insights and develop new theories (Taherdoost, 2022). This is achieved by collecting primary data and using non-statistical methods to analyse it (Bell et al., 2022). Qualitative research, therefore, follows an inductive approach.

While qualitative research is suitable for obtaining in-depth information and addressing complex issues, analysing and interpreting the collected data can be time-consuming and challenging (Taherdoost, 2022).

3.3.2.2 Quantitative Research Method

A quantitative research method takes a structured approach to data collection and uses statistics to analyse the data (Baran, 2022). It is suitable for studies that seek to describe or explore specific phenomena. This is achieved by measuring variables and testing underlying relationships to establish correlations or causal relationships (Leavy, 2022). Therefore, quantitative research follows a deductive approach.

Unlike qualitative research, quantitative research does not rely on people's subjective experiences. Instead, it is underpinned by values such as replicability, statistical significance, objectivity, and precision (Bell et al., 2022). Given that the results of quantitative research are representative of larger populations, they can be generalised (Taherdoost, 2022). This is unlike qualitative research which collects detailed information from a small sample.

However, the sampling process for quantitative research can be time-consuming. In addition, the results may not accurately describe social realities (Taherdoost, 2022).

3.3.2.3 Mixed Research Method

Mixed research methods combine both qualitative and quantitative research methods (Harrison, Reilly & Cresswell 2020), with each method connected to the other (Leavy, 2022). Utilising a mixed research method enables researchers to leverage the advantages of both qualitative and quantitative approaches, thereby allowing them to effectively tackle more complex study areas (Taherdoost, 2022).

3.3.2.4 Rationale for Selecting a Quantitative Research Method

This study analysed the impact of audit committees on ESG reporting using a sample of a compilation of the 100 top JSE-listed corporations over a five-year period. Given that it involved data collection, measurement, and statistical analysis, it was quantitative in nature. The adoption of a quantitative research method was also in line with the replicated study undertaken by Chariri and Januarti (2017)

3.4 Research Population

A research population is a body of data or a broader group of people from which a sample is drawn for purposes of solving a research problem (Bell et al., 2022). It sets boundaries for the scope of the study and provides the researcher with a clear focus (Casteel & Bridier, 2021)

The research population for this study comprised a varying compilation of the top 100 JSE-listed companies that received EY awards over the five-year period. These were used because the same number of companies is ranked in the EY awards, which the study used as a proxy for ESG reporting quality. In addition, the 100 companies represent around 95% of the JSE's market capitalisation and are, therefore, largely representative of ESG reporting by listed companies (Robbetze, 2023). Hence, the results of this study can be generalised for use by regulators and policymakers.

Furthermore, because large companies have greater visibility, they are more inclined to make transparent, compliant ESG reporting (Dockrat, 2022). The Companies Act and King IV also require them to appoint audit committees. As such, they were a suitable population to determine the causal impact of audit committee characteristics on ESG reporting.

Lastly, the JSE's top 100 comprise a mixture of companies from various sectors which helped to avert the research bias that comes with focusing on a particular industrial sector (Phesa, 2021).

3.5 Research Sample

A research sample is a subset of the study population (Bell et al., 2022) that is selected using probability or non-probability sampling.

3.5.1 Probability Sampling

In probability sampling, all elements in the population stand an equal chance of being selected (McDaniel & Gates, 2021). It involves selecting the sample based on known probabilities, therefore enabling determination of the likelihood that the sample accurately represents the

population (Casteel & Bridier, 2021). While probability sampling does not translate to full representation of a population, it typically develops samples at random. This ensures that the samples are as close to the target population as possible (Rahman et al., 2022). Common probability sampling methods include simple random sampling, systematic sampling, stratified random sampling and cluster sampling.

In simple random sampling, each unit in the population has an equal probability of being included (Bell et al., 2022). While this method is ideal for studies aiming to generalise the findings to the entire population, it is less suitable for populations that are heterogeneous (Rahman et al., 2022).

Systematic sampling randomly selects the initial unit of a sample and thereafter selects units based on pre-determined intervals (Casteel & Bridier, 2021). While it generates samples that closely resemble those produced by simple random sampling, it is simpler and less time-consuming. However, there is a risk that hidden patterns within the population may go unnoticed and become part of the sample (McDaniel & Gates, 2021).

In stratified random sampling, data is randomly sampled based on sub-groups based on common features including gender, race, income and age (Rahman et al., 2022). Stratified sampling offers better population coverage, thereby improving statistical efficiency (McDaniel & Gates, 2021).

Lastly, in cluster sampling a sample is selected by dividing a sampling frame into clusters, often on a geographical basis (Casteel & Bridier, 2021). It is typically used where the population is highly dispersed and in cases where there are large volumes of data. However, there is a high risk of inaccuracies (Rahman et al., 2022).

3.5.2 Non-Probability Sampling

Non-probability sampling includes all sampling methods that do not qualify as probability sampling. Frequently used non-probability sampling methods include convenience sampling, snowball sampling, purposive sampling and quota sampling.

As the name suggests, convenience sampling involves selecting a sample that is easily accessible based on factors such as geographical location, ethnicity, or socio-economic background (Casteel & Bridier, 2021). Although convenient, it may not result in a sample that is representative of the entire population.

Snowball sampling is utilised in studies where the target participants are not easily reachable (Bell et al., 2022). Representative participants are selected and asked to recruit others with similar characteristics (Casteel & Bridier, 2021). This referral process continues through successive generations of participants until data collection is finalised. While snowball sampling considerably lowers research costs, there is a risk that the researcher may not connect well with the referred participants, thereby hindering the data collection process (McDaniel & Gates, 2021).

Purposive sampling involves an intentional selection of participants based on qualities that are of interest to the researcher (McDaniel & Gates, 2021). It is commonly used where the aim of the study is to explore a specific narrative (Casteel & Bridier, 2021). As such, purposive sampling is commonly used in qualitative research.

In quota sampling, the sample chosen should reflect the population in various categories such as gender, region, and ethnicity (Bell et al., 2022). While this may seem a duplication of stratified random sampling, random sampling is not applied under quota sampling (McDaniel & Gates, 2021). Instead, a quota sample is based on the researcher's judgement.

3.5.3 Rationale for Selecting a Quota Sampling Method

Quota sampling was deemed appropriate for this study as it focuses on a sample that is representative of the entire population. It is also commonly used in commerce studies (Bell et al., 2022). The sample comprised a collection of the top 100 JSE-listed corporations extracted from the EY Excellence in Integrated Reporting Awards over a five-year timeline. This was in line with previous studies (De Laan, Buitendag & Fortuin, 2017; Mans-Kemp & Van der Lugt, 2020). The sample was predetermined and representative of JSE-listed companies and as such, quota sampling was appropriate.

Only companies that received EY Excellence in Integrated Reporting Awards were considered. However, some of those in the top 100 were omitted from the sample. This included companies for which data could not be extracted. This was attributed to various factors such as delisting, mergers or acquisitions. The number of companies in the sample for the years 2017 to 2021 was 89, 93, 91, 87, and 85 respectively.

3.6 Data Types and Sources

Research can be based on primary and secondary data. Primary data is raw data that is collected to address a specific research problem (McDaniel & Gates, 2021). It is collected directly from participants through interviews, surveys and observations. While the collection of primary data

can be time-consuming, it results in unique and relevant data as the data is exclusive to the study and is, therefore, targeted (Taherdoost, 2022). In addition, primary data collection provides in-depth insights as the data is often based on the preferences and experiences of the targeted audience (Manoharan, 2024).

Secondary data comprises data that already exists and is relevant to the research problem under study (McDaniel & Gates, 2021). However, it would not have been collected for the particular study. Secondary data sources include company reports, reports from government agencies and databases compiled by financial services companies (Pandey & Pandey, 2021). Compared to primary data, the collection of secondary data is quicker and less costly (Martins, da Cunha & Serra, 2018). However, its validity may be uncertain since the researcher had no control over its collection (McDaniel & Gates, 2021). To ensure the validity of secondary data, researchers employ statistical validation techniques. Longitudinal studies that observe data trends over extended periods also assist by reducing the chances of temporal biases (Cohen, Manion & Morrison, 2017).

Appropriate data for this study was readily available, and as such, secondary data sources were used. This saved the researcher time and resources. The EY Excellence in Integrated Reporting Awards for 2017 to 2021 were sourced from the EY official website. With regard to the independent variables, data corresponding to the financial years during which the EY awards were conferred was sourced from Bloomberg (2023).

The following section outlines the study's theoretical model.

3.7 Model Specification

3.7.1 Quantitative Research Model

The study tested three hypotheses on ESG reporting by the top 100 JSE-listed entities for the period 2017 to 2021. Both listed and unlisted companies' data were acknowledged but only data for listed companies was used. However, selection of these companies hinged on data availability and their consistent listing for a minimum of five years as this was required for longitudinal analysis. All the companies that were listed for less than five years were excluded.

The period 2017 to 2021 was chosen to enable the incorporation of recent ESG reporting trends. The use of a recent timeline made the research findings relevant and applicable to current corporate reporting practices. Furthermore, the use of a five-year period enabled the

incorporation of trends and variations which provide a deeper understanding of the influence of audit committees on ESG reporting over multiple financial years.

Two hypotheses were developed based on the research gaps identified in the literature review:

- H0: There is no causal relationship between ESG reporting quality and audit committee members' independence, meeting frequency and average age.
- H1: There is a causal relationship between ESG reporting quality and audit committee members' independence, meeting frequency and average age.

In addition, the study controlled for three variables established in earlier research as determinants of integrated reporting quality: audit committee size, board diversity and the presence of a CSR/sustainability committee.

The following panel regression model was used to assess the correlation between audit committee attributes and ESG reporting quality:

$$ESGQ_{it} = \alpha_{it} + \beta_1 ESGQ_{it} + \beta_2 ACI_{it} + \beta_3 ACM_{it} + \beta_4 ACA_{it} + \beta_5 Size_{it} + \beta_6 BoardDiv_{it} + \beta_7 CSRC_{it} + \varepsilon_{it}$$

Where:

- $ESGQ_{it}$ is the ESG reporting quality measured using an ESG reporting index developed using EY's awards.
- ACI_{it} is the proportion of independent members on the audit committee relative to the total number of audit committee members in JSE-listed companies.
- ACM_{it} is the number of meetings held by audit committees of companies listed on the JSE per year.
- ACA_{it} is the average age of members of the audit committees appointed by JSE-listed companies.
- $Size_{it}$ is the total number of members appointed on the audit committees of JSE-listed companies.
- $BoardDiv_{it}$ is the percentage of females appointed as board members by JSE-listed companies.
- $CSRC_{it}$ is the presence of a CSR or sustainability committee in the JSE-listed companies.

The following section describes the variables in more detail, including how they were measured.

3.8 Justification of Variables

ESG reporting (ESGQ) was the dependent variable, while the independent variables consisted of audit committee independence (ACI), frequency of audit committee members' meetings (ACM) and the average age of members of the audit committee (ACA) (Chariri & Januarti, 2017). In order to avoid research bias, this study added control variables, namely audit committee size (Size), board diversity (BDIV) and the CSR/sustainability committee (CSRC). The variables were measured as follows:

3.8.1 Dependent Variable

ESGQ: ESG reporting quality was measured using an ESG reporting index created in accordance with the ranking in EY's Excellence in Integrated Reporting Awards. Using an IIRC framework-based mark plan, EY rank integrated reports for the top 100 corporations into five categories, namely 'Top 10', 'Excellent', 'Good', 'Average' and 'Progress to be made'. In line with Wang et al. (2020), ESGQ was coded from 1 to 5.

3.8.2 Independent Variables

The independent variables were measured as follows:

- ACI: Audit committee independence was quantified as the proportion of independent members to the total number of audit committee members.
- ACM: Audit committee meeting frequency was measured by the number of meetings held by the audit committee during a financial period.
- ACA: As data on the average age of audit committee members was not available, this was measured using the average age of board members.

3.8.3 Control Variables

Previous research confirmed that audit committee size and voluntary disclosures are positively correlated to the quality of integrated reporting (Madi et al., 2014; Raimo et al., 2021). In line with Raimo et al. (2021), board diversity and the CSR/sustainability committee, a dummy variable, were added as control variables. This is supported by the findings of earlier studies, which established that quality integrated reports were positively associated with gender-diverse boards (Katmon et al., 2019; Marrone, 2020; Vitolla et al., 2020). Furthermore, CSR/sustainability committees are often tasked with oversight of specific facets of non-financial reporting (Prinsloo & Maroun, 2021). As such, these committees are relevant to integrated reporting. Previous research established that the existence of a CSR/sustainability

committee enhances the quality of integrated reports (Haji & Anifowose, 2016; Chouaibi, 2022). The control variables were measured as follows:

- **ACSize:** Audit committee size was measured as the number of board members serving on the audit committee.
- **BDIV:** Board diversity was measured as the percentage of board members who are women.
- **CSRC:** A score of 1 was assigned if there was a CSR/sustainability committee, and 0 if otherwise.

3.9 Data Collection Methods and Instruments

Data was collected using secondary data from the EY Excellence in Integrated Reporting Awards and the Bloomberg database.

3.9.1 Developing ESG Reporting Quality Scores

Reporting quality scores for the dependent variable, ESGQ were developed using the list of awardees extracted from the official EY website. The list of awarded companies was copied to an Excel document and organised according to their rankings in the awards: top 10, excellent, good, average, and progress to be made. These EY categories were scored on a scale of 1 to 5 as follows:

- Score 1: Progress to be made
- Score 2: Average
- Score 3: Good
- Score 4: Excellent
- Score 5: Top 10

3.9.2 Audit Committee Characteristics

In order to determine the causal effect between ESG reporting quality and audit committee characteristics, data was obtained for each characteristic, namely, audit committee independence, meeting frequency and average age. The data for the independent and control variables was obtained using the financial analysis (FA) function in Bloomberg. This was performed for the individual companies in the EY awards for the financial years 2017 to 2021. Only 100 companies chosen based on market capitalisation are considered for the awards. The integrated reports of these companies are then judged and awarded marks for reporting in line with the IIRC's fundamental principles, including value creation, governance, stakeholder relationships and the external environment, among other principles (Ernst & Young, 2022).

Once displayed, the results for ESG data - specifically the governance section - were filtered to display the dependent and control variables discussed earlier in this chapter. These results were then exported to an Excel worksheet. Only companies that received EY Excellence in Integrated Reporting Awards were considered. The data was kept in electronic format on the researcher's laptop and on a separate hard drive to conform to the University of KwaZulu-Natal's ethical requirements.

3.10 Data Validity and Reliability

In research, validity refers to the extent to which the data accurately reflects the researcher's intended measure (Bell et al., 2022). In other words, it indicates the degree to which the research instrument and procedures are free from systematic and random errors (McDaniel & Gates, 2021). The validity of this study was established through the formulation of hypotheses grounded in a multi-theoretical framework relevant to ESG reporting quality. For example, based on the agency theory, the study posited a positive correlation between audit committee independence and ESG reporting quality. This causal relationship was examined using regression analysis.

Reliability is the degree to which research measures yield consistent findings (McDaniel & Gates, 2021). It is achieved if a similar test conducted using the same instruments and data produces identical outcomes (Nyagope et al., 2023). Put simply, data is reliable if it is consistent and can be replicated (Sürücü & Maslakçı 2020). At the same time, validity and reliability are inseparable because in order for data to be reliable, it must be valid. The data for this study was deemed reliable since it was obtained from the Bloomberg database. Furthermore, the lists of awarded companies were obtained from the official EY website.

3.11 Data Presentation and Analysis Procedure

The data was analysed using descriptive analysis and regression analysis.

3.11.1 Descriptive Analysis

Descriptive statistics are measures used to summarise the key characteristics of a dataset (McDaniel & Gates, 2021). Statistical Package for the Social Sciences (SPSS) statistical software was used to calculate the descriptive statistics. The results were presented in table format. These included measures of central tendency and measures of dispersion.

3.11.1.1 Mean, Median and Mode

The mean, median and mode are descriptive statistics that measure the central tendency of a dataset. They all use a single value to describe an entire dataset (Kaur, Stoltzfus & Yellapu, 2018). In other words, central tendency depicts the distribution of values in a dataset.

The mean is the arithmetic average of the data set. It is commonly used as it is easier to interpret (Mukeredzi, 2019). However, the mean is easily affected by outliers (Kaur et al., 2018). Hence its application is limited to normally distributed data.

The median is the middle value of a data set when it is ordered in ascending or descending order. Put simply, it is the value below which 50% of the observations in a data set fall. Unlike the mean, the median is not affected by outliers and is suitable for all data types except for nominal data (McDaniel & Gates, 2021).

The mode is the most frequently occurring value in a dataset. Although it can be applied to quantitative and qualitative data, it may not always accurately reflect the centre of the distribution (Kaur et al., 2018).

This study used SPSS statistical software to calculate the mean and median of the variables under study. The results of these tests are discussed in Chapter 4.

3.11.1.2 Standard Deviation and Range

While the mean, mode and median summarise a dataset, they do not reflect its variability. The standard deviation and range fill this gap by measuring dispersion within a dataset.

Standard deviation measures the proximity of the observed values to the mean of the dataset (McDaniel & Gates, 2021). Range measures the dispersion of a dataset, as indicated by the minimum and maximum values (Kaur et al., 2018). The standard deviation and range for all variables in the study are presented and analysed in the following chapter.

3.11.2 Multicollinearity Tests

Regression models typically assume a linear relationship between the dependent and independent variables. However, incorrect specification of models may result in collinearity of independent variables (Kyriazos & Poga, 2023). Multicollinearity occurs when one or more independent variables in a multiple regression model are significantly correlated (Bayman & Dexter, 2021). It raises the standard errors of the coefficients in the model, thereby altering the regression analysis results (Shrestha, 2020). Consequently, some variables that would otherwise be significant will appear statistically insignificant. It is, therefore, important to

conduct tests to determine whether the multicollinearity problem is present. These must be carried out before the regression analysis to ensure the reliability of the results. This study tested multicollinearity using Pearson's correlation coefficient and the variance inflation factor (VIF).

The Pearson correlation test was run on SPSS software to establish the correlation between the independent variables. High correlation coefficient values indicate the presence of collinearity (Shrestha, 2020). In addition, the VIF was measured to evaluate how much the variance of the anticipated regression coefficient was inflated due to multicollinearity (Kyriazos & Poga, 2023). Generally, a VIF of more than 10 indicates high multicollinearity (Dockrat, 2022). Although the VIF does not establish the specific independent variables causing multicollinearity, it assists in determining its presence (Kim, 2019). The tabulated results of the multicollinearity tests are presented and analysed in the following chapter.

3.11.3 Regression Analysis

3.11.3.1 Panel Data

Panel data contains time series and cross-sectional elements (Millo, 2021). Time series data is collected over several periods, while cross-sectional data is collected at a single point in time (Wang & Cheng, 2020). Therefore, panel data allows for observation of the variables over different time periods.

While panel data requires that more data be collected, it allows for sample variability and enables the researcher to draw more accurate results (Hsiao, 2022). More data points also lower the multicollinearity of the independent variables (Dockrat, 2022). However, careful planning of data collection is essential to ensure that relevant data is gathered.

In addition, panel data allows the researcher to address questions that could not otherwise be addressed using only time series or cross-sectional data (Wang & Cheng, 2020). It also allows for the control of omitted variables, helping researchers to address econometric issues caused by excluding these variables (Hsiao, 2022). Most importantly, panel data allows the researcher to better determine the direction of causal influences (Bell et al., 2022). It is commonly used in quantitative research within the fields of business and economics (Labra Lillo & Torrecillas, 2018).

This study used an unbalanced panel data design. An unbalanced panel comprises data from different time periods in each cross-sectional unit (Mans-Kemp & Van der Lugt, 2020). The dataset for this study was unbalanced because the annual top 100 companies in the research

sample varied due to changes in market capitalisation. Furthermore, the data was collected over a period of five years. Panel data was appropriate for this study because the hypotheses aimed to determine the causal relationship between ESG reporting quality and audit committee characteristics.

3.11.3.2 Panel Data Regression Models

The common statistical models for analysing panel data are pooled, random effects and fixed effects regression models (Hsiao, 2022). The study employed fixed effects and random effects, which were considered in the regression model.

The fixed effects regression model assumes that cross-sectional differences can be accommodated using different intercepts (Breuer & deHaan, 2023). It therefore controls for time-invariant characteristics by allowing each entity or unit its own intercept (Collischon & Eberl, 2020). As such, it is suitable where there is correlation between individual-specific effects and the independent variables. The fixed effects model is generally estimated using ordinary least squares (OLS) (Zulfikar & STp, 2018). While it can result in inaccurate standard errors, its omission of time-invariant variables helps to eliminate bias (Breuer & deHaan, 2023).

Unlike the fixed effects model, the random effects model assumes that time or cross-sectional differences are attributed to error variances rather than intercepts (Hsiao, 2022). As such, it assumes constant intercepts and slopes. The random effects model estimates panel data using generalised least squares (GLS) (Hsiao, 2022). Its major advantage is that it helps to mitigate heteroscedasticity (Zulfikar & STp, 2018).

3.11.3.3 Selecting a Regression Model

The fixed effects regression model is more suitable for short panels where strong assumptions of distribution of entity-specific effects are not necessary (Hamaker & Muthén, 2020). It is commonly used in accounting research (Mukeredzi, 2019). The random effects model is more appropriate for long panels where the number of periods is large compared to the number of entities (Hsiao, 2022).

The choice of a regression model depends on several factors. These include the size of the dataset, the degree of variation between the independent and dependent variables, and the level of correlation between the effects on the individual and other regressors (Mukeredzi, 2019).

Statistical tests can be used to choose between the fixed and random effects models. The Hausman test was used in this study. The null hypothesis in this test is that both the fixed effects and random effects models are appropriate and produce similar coefficient estimates (Abonazel & Shalaby, 2021). If the null hypothesis is retained ($p > 0.05$), the random effects model is considered appropriate (Zulfikar & STp, 2018). Rejection of the null hypothesis ($p < 0.05$) indicates that the fixed effects model is preferred.

The results of the Hausman test are presented and discussed in the following chapter.

3.12 Ethical Considerations

Researchers must ensure that their study conforms to fundamental ethical considerations. This is achieved by ensuring that the research does not harm participants, invade their privacy, deceive them or disregard informed consent (Bell et al., 2022). These ethical considerations mainly apply to research requiring human participation. The ethical requirements of other relevant institutional ethical frameworks must also be considered. These include those of research councils and professional bodies.

This study used secondary data; therefore, ethical issues relating to human participation were irrelevant. Data was gathered from official websites, where consent was unnecessary, as the information is publicly accessible. In line with the University of KwaZulu-Natal's requirements, ethical clearance was obtained before the study commenced (see Appendix A). This ensured that the research conformed to ethical considerations such as confidentiality, informed consent, protection of privacy against harm and identity theft (Dudovskiy, 2016). Ethical clearance also helped to warrant data validity and reliability.

3.13 Chapter Summary

Positivist epistemology asserts that reality is objective, observable, and measurable, making it ideal for this study, which seeks to establish a cause-and-effect relationship between ESG reporting and audit committees. This research paradigm supports the deductive approach, where the hypotheses are tested using specific data. Suitably, a quantitative research method is adopted to objectively analyse relationships between the variables under study.

A key statistical model in quantitative research is regression analysis, which helps to understand how audit committee characteristics (the independent variables), influence ESG reporting (a dependent variable), allowing for predictions and hypothesis testing. Furthermore, sampling ensures that a representative subset of the population is selected, ensuring that conclusions can be generalised to the broader population.

In terms of data presentation and analysis, descriptive statistics such as mean, median, and standard deviation summarise the data, while multicollinearity tests ensure that variables are not too closely related. The findings of this study are then interpreted through regression analysis, revealing the relationships between ESG reporting and audit committee characteristics. Validity and reliability guarantee that the findings are credible and replicable. Furthermore, ethical considerations, such as confidentiality and accuracy, ensure the integrity of the research.

The following chapter presents the study's findings.

CHAPTER 4: DATA PRESENTATION AND ANALYSIS

4.1 Introduction

The previous chapter presented the research methodology, including the sample and methods for collecting and analysing the data. As already mentioned, this study aims to establish whether audit committee independence, meeting frequency, and average age influence ESG reporting. In this chapter, the findings of the study are presented and analysed. The descriptive statistics are presented first, followed by multicollinearity and regression results. These were undertaken using panel data from the top 100 JSE-listed companies from 2017 to 2021. In addition, the findings are analysed in line with the research objectives and prior literature.

4.2 Results Presentation and Analysis

The descriptive test results for all the variables are presented first, followed by the multicollinearity results and lastly, a discussion and analysis of the outcome of the regression model.

4.2.1 Descriptive Statistics

Table 2 presents the descriptive statistics for the dependent variable and all the independent variables under study.

Table 2: Descriptive statistics

Variable	Number of observations	Mean	Std. Dev.	Min	Max
ESGQ	445	2.6179	1.3381	0	5
ACI	445	0.9448	0.2111	0	1
ACM	438	4.7214	2.3307	0	14
ACA	419	54.5866	12.7397	0	67.67
ACsize	445	3.8044	1.2247	0	7
Board diversity	445	0.2640	0.1276	0	0.6667
CSRC	445	0.8943	0.3076	0	1

Except for ACM and ACA, a maximum of 445 observations were recorded for all variables under study over the five-year period. ACM had 438 observations and ACI had 419 due to missing data for these variables over the years. Overall, the results indicate that the quality of the JSE-listed companies' ESG reporting is of a relatively high standard. A maximum of 5

depicts top-quality ESG reporting, while the average of 3 falls under the ‘good’ category of the EY Excellence in Integrated Reporting Awards. Standard deviation of 1 suggests that the ESG reporting by most of the companies is of good quality. This is in line with the literature that describes ESG reporting by JSE-listed companies as exemplary (Wang et al., 2020). The following sub-section analyses the descriptive test results for the independent variables.

4.2.1.1 Audit Committee Independence

With regard to audit committee independence, on average, 94% of audit committee members are independent. At a maximum, the audit committees are wholly independent at 100%. This is consistent with previous studies that established that the audit committees at JSE-listed companies were mostly independent (Haji & Anifowose, 2016). In addition, the relatively low standard deviation of 0.21 indicates that relative to the mean, most companies listed on the JSE consistently appoint largely independent audit committees. Such findings suggest compliance with the King IV recommendation for companies to have fully independent audit committees for the purposes of providing impartial oversight of ESG reporting.

4.2.1.2 Audit Committee Meeting Frequency

For the most part, audit committees meet five times per year. At the same time, the standard deviation of 2 suggests fairly significant variability in meeting frequency. The maximum number of audit committee meetings is considerably high at 14 per year. Similar to the study by Chariri and Januarti (2017), these findings signify that the JSE-listed companies hold few meetings per year. However, the frequency of meetings held by JSE-listed companies is not mandated by law. King IV merely advises that audit committees allocate sufficient time and effort in preparation for their meetings (King IV, 2016).

4.2.1.3 Average Age of Audit Committee Members

The descriptive statistics reveal that audit committee members have an average age of 55 years, and a maximum of 68. Both are significantly different from Sultana et al. (2019), who established an average and maximum age of 45 and 79 years, respectively. These differences could be due to the studies having been undertaken in dissimilar reporting jurisdictions as the latter study sampled entities listed on the Australian Securities Exchange (ASX). In addition, there is great variability in the age of audit committee members as shown by the standard deviation of 13. This can be attributed to age diversity. In South Africa, there is currently no legislation on the age of board members.

4.2.1.4 Control Variables

Concerning the control variables, the average size of an audit committee is four, with a maximum of seven. While there are variations in the size of audit committees appointed by the companies listed on the JSE, most are close to the average size as indicated by a standard deviation of 1. This is consistent with the finding that JSE-listed companies maintain an adequate audit committee as per King IV's recommended practice (Haji & Anifowose, 2016). The results for board diversity show that, on average, 26% of board members of the JSE-listed companies are female. Compared to the mean, a standard deviation of 0.12 suggests that the proportion of females on most boards of JSE-listed companies is slightly higher or lower than the average of 26%. This resonates with several other studies, which established low female board membership (Sultana et al., 2019; Raimo et al., 2021; Chouaibi, 2022). Lastly, 90% to 100% of the companies in the sample have a CSR/sustainability committee, an indication of their commitment to sustainability and corporate responsibility. The standard deviation is also significantly low, indicating less variability in relation to CSR/sustainability committees.

4.2.2 Multicollinearity Results

Diagnostic tests were undertaken prior to the regression analysis to establish the correlation between the variables under study. The results are shown in Table 3.

Table 3: Diagnostic test results

	ESGQ1	ACI	ACM	ACA	ACsize	Board diversity	CSRC	Statistics VIF
ESGQ1	1.0000							1.2970
ACI	0.3350***	1.0000						10.8160
ACM	0.2205***	0.4090***	1.0000					1.3900
ACA	0.3454***	0.9371***	0.4627***	1.0000				9.6400
ACsize	0.3400***	0.6284***	0.4726***	0.6806***	1.0000			2.1140
Board diversity	0.3606***	0.4390***	0.2398***	0.4020***	0.3814***	1.0000		1.4190
CSRC	0.3786***	0.6582***	0.2082***	0.6589***	0.3933***	0.3862***	1.0000	2.5850

Note: *** = significance at 0.01; ** = significance at 0.05; * = significance at 0.1

Source: Author's computation

A Pearson correlation matrix was used to explore the correlation between audit committees' attributes and ESG reporting quality. As shown in Table 3, the correlation is strongest at 0.937 and is found to exist between audit committee independence and audit committee members' average age. Multicollinearity is unacceptable if the correlation coefficient ranges between ± 8 and ± 9 (Chan et al., 2022). Therefore, the results do not indicate the presence of an intolerable level of multicollinearity.

Additionally, a VIF analysis was used to assess possible multicollinearity among the variables under study. The impact of multicollinearity is deemed insignificant if each of the VIFs falls below 10 (Chouaibi, 2022). At the same time, omitting a variable solely because of its high VIF can lead to biased coefficient estimates and falsely significant results. (Mukeredzi, 2019; Lindner, Puck & Verbeke, 2020). As such, audit committee independence was not dropped from the regression despite having a VIF of over 10. Regarding the strongly positive correlation between audit committee independence and members' average age, the VIF results were below 10, suggesting that they posed no significant multicollinearity issue. Furthermore, the inclusion of these variables was justified based on the parsimony theory as they contribute valuable information without adding unnecessary complexity (Baker, 2022).

4.2.3 Regression Model Results

Regression analysis was carried out in order to establish whether causal relationships exist between ESG reporting quality and audit committee characteristics. The outcome of the regression model is indicated in Table 4. The validity of quantitative research may be restricted by endogeneity concerns, whereby the overall correlation will not display the causal effect assumed in the study (Velte, 2018). As such, in line with prior studies, the Hausman test was performed to select between the random effects and fixed effects models (Velte, 2018; Omran et al., 2021; Chouaibi, 2022). The null hypothesis was rejected as indicated by a p-value of less than 0.05. As a result, the random effects model was discarded in favour of the fixed effects model.

Overall, the regression model for this study is a good fit to explain the observed variables. The R^2 value indicates that approximately 82.74% of the variability in the dependent variable can be explained by the variability in the independent variables. As such, the regression model was suitable for predicting the impact of audit committee characteristics on ESG reporting quality. The following sub-sections analyse the regression results (as shown in Table 4) in order of the variables presented earlier in the research objectives.

Table 4: Regression model results

ESGQ	Coef.	Std. Err.	z P>z	Coef.	Std. Err.	z P>z
	Random Effects			Fixed Effects		
ESGQ1	0.8932	0.01602	0.0000	-0.2666	0.0444	0.0000
ACI	0.6103	0.2722	0.0250	0.6188	0.1779	0.0000
ACM	-0.0058	0.0094	0.5370	-0.0074	0.0059	0.2130
ACA	-0.0010	0.0044	0.8160	0.0003	0.0029	0.9230
ACsize	0.0261	0.0209	0.2120	0.0424	0.0135	0.0020
Board diversity	-0.1157	0.1659	0.4860	-0.0705	0.1030	0.4940
CSRC	0.3024	0.1024	0.0030	0.1298	0.0641	0.0440
_cons	-0.5727	0.0841	0.0000	2.5095	0.1519	0.0000
R ²	0.9857			0.8274		
Adjusted R ²	0.9286			0.5485		
F-Stats	11.3000			11.3000		
Prob. of F-Stat	0.0000			0.0000		
Prob. of Hausman Test	0.0000			0.0000		

4.2.3.1 Audit Committee Independence

The p-value is less than 0.05, which suggests the existence of a statistically significant relationship between audit committee independence and ESG reporting quality. In addition, the coefficient of 0.6188 indicates that the relationship is positive. These results, therefore, suggest that independent audit committees result in a higher standard of ESG reporting. This is inconsistent with previous studies which found no significant association between the independence of audit committee members and integrated reporting intellectual capital and ESG reporting (Raimo et al., 2021).

At the same time, the result echoes previous studies which found that audit committee independence is positively correlated with ESG reporting (Bamahros et al., 2022), voluntary disclosures (Madi et al., 2014), CSR disclosures (Appuhami & Tashakor, 2017) and integrated reporting quality (Raimo et al., 2021). All the aforementioned results support the agency theory, which presents independent audit committees as objective and more effective in providing oversight of ESG reporting (Ghafran et al., 2022). As such, having independent

members on the audit committee allows for impartial monitoring of reporting processes, which ultimately results in high-quality ESG reporting.

Hypothesis 1 was therefore supported.

4.2.3.2 Audit Committee Meeting Frequency

The p-value is 0.2130. As it is > 0.05 , there is no significant relationship between audit committee meeting frequency and the quality of ESG reporting. This result is supported by a low standard error of 0.0059. Overall, the results indicate that the frequency of audit committee meetings is insignificant in relation to ESG reporting quality. An earlier study established similar results, albeit with respect to audit committees' meeting frequency and voluntary CSR disclosures (Madi et al., 2014). However, several previous studies have associated frequent audit committee meetings with enhanced ESG reporting (Arif et al., 2021), sustainability disclosures (Buallay and Al-Dhaen, 2018), CSR disclosures (Appuhami & Tashakor, 2017; Pozzoli et al., 2022) enhanced readability of integrated reports (Velte, 2018) and high-quality integrated reporting (Raimo et al., 2021). Such findings are supportive of the agency theory which associates meeting frequency with increased monitoring of corporate reporting processes.

As the study's findings did not establish a causal relationship between the frequency of audit committee meetings and ESG reporting quality, hypothesis 2 was rejected.

4.2.3.3 Average Age of Audit Committee Members

No significant association was found between the standard of ESG reporting and the average age of audit committee members as the p-value of 0.92 is greater than 0.05. The relatively low standard error of 0.002 confirms that there is no significant association. These findings are contrary to those of Buallay and Al-Ajmi (2020), who found that the age of audit committee members was positively associated with sustainability reporting by financial institutions.

At the same time, this finding resonates with prior findings, which suggest that the age of board members is insignificant to the quality of integrated reporting (Marrone, 2020). Hence, hypothesis 3 was rejected.

4.2.3.4 Control Variables

Concerning control variables, the outcome of the regression analysis indicates a significant positive association between ESG reporting quality and audit committee size as well as the existence of a CSR/sustainability committee with p-values equal to 0.020 and 0.0440,

respectively. This aligns with previous studies, which established that larger audit committees resulted in a corresponding increase in the quality of integrated reporting (Raimo et al., 2021). Similarly, the literature indicates that entities that appoint CSR/sustainability committees present higher quality integrated reports (Chouaibi, 2022). Both findings are supportive of the agency theory.

However, the relationship between ESG reporting quality and board diversity is not significant as $p > 0.05$. This result resonates with previous findings, which argued that appointing females to the board is usually a compliance exercise which does not translate to any significant participation in decision-making (Omran et al., 2021; Songini et al., 2021).

4.3 Chapter Summary

The results of the study indicate that independent committees contribute positively to the quality of ESG reporting. This confirms the agency role played by independent audit committees. In addition, this finding supports the regulatory requirements in both the Companies Act and King IV, which require companies listed on the JSE to appoint independent audit committees. Notably, most (94%) of the top 100 JSE-listed companies are compliant in appointing independent audit committee members. However, this compliance can also be attributed to the pursuit of legitimacy by the JSE-listed companies.

Furthermore, the results confirm that having bigger audit committees increases the quality of ESG reporting. Notably, most JSE-listed companies appoint four audit committee members, which aligns with King IV's recommendation for an adequately sized audit committee.

Additionally, the findings portray that audit committee meeting frequency does not contribute to the quality of ESG reporting. The same applies to the average age of audit committee members, which has an insignificant bearing on the standard of ESG reporting.

Overall, the results show variability in the relationship between ESG reporting quality and audit committee characteristics, providing insights that add value to academic research and corporate governance. The following chapter concludes the study by summarising the findings and presenting conclusions and recommendations.

CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This study aimed to establish a causal relationship between ESG reporting and audit committee attributes, namely independence, meeting frequency and average age. In addition, the study was controlled for audit committee size, board gender diversity and the presence of a CSR/sustainability committee. To meet the research objectives, an ESG reporting quality index was developed based on the EY awards. Data on the independent and control variables was obtained from the Bloomberg database. The data was then subjected to descriptive and multicollinearity tests. Regression analysis was also applied to establish the association between ESG reporting quality and the independent variables. The results of these tests were presented and analysed in Chapter 4.

This chapter summarises the key findings from the previous chapter and draws conclusions based on the research objectives and the study's results. This is followed by recommendations and suggestions for further research.

5.2 Summary and Conclusions

5.2.1 Summary

The first chapter presented the background for this study, the research problem, and the research objectives. Notably, the study is set against the backdrop of increasing stakeholder demand for credible ESG reporting, reflecting a global shift toward more sustainable and socially responsible business practices. The quality of ESG reporting has gained importance as stakeholders, including investors, regulators, and the public, now seek transparency on a company's social, environmental, and governance impacts. High-quality ESG reporting is critical not only for maintaining corporate legitimacy but also for reducing information asymmetry, lowering capital costs, and improving long-term corporate sustainability. This growing focus on ESG has heightened the need for robust corporate governance mechanisms, especially audit committees, to ensure the reliability and credibility of such disclosures. This study investigated whether the independence, meeting frequency and average age of audit committee members significantly impact the quality of ESG reporting.

Using a mixed theoretical framework, the literature review uses the agency theory to suggest that audit committees help mitigate conflicts of interest between management and stakeholders by enhancing transparency in ESG reporting. On the other hand, the legitimacy theory argues

that corporations aim to align their actions, including ESG reporting, with societal expectations to maintain their legitimacy. A review of empirical literature highlighted gaps, particularly the need for more focused research on audit committee characteristics in influencing ESG reporting quality. Additionally, it emphasised the significance of reliable ESG reporting in South Africa, where the JSE mandates integrated reporting, including ESG aspects, in line with global standards.

To address the research objectives, a quantitative research method was used. The research sample was identified through quota sampling. The sample comprised companies for which data for the independent variables were available on a yearly basis from 2017 to 2021. As such, an unbalanced panel data design was used. The study, therefore, employed panel data regression models to examine the relationships between the independent variables (audit committee characteristics) and the dependent variable (ESG reporting quality). Diagnostic and multicollinearity tests validated the models.

The results revealed that audit committee independence significantly positively impacts ESG reporting quality, indicating that independent members play a crucial role in ensuring credible and thorough ESG reporting. However, no significant relationship was found between ESG reporting quality and audit committee meeting frequency or the average age of its members. These findings underline the importance of fostering independence within audit committees to enhance ESG reporting, with broader implications for policymakers looking to improve corporate governance and promote higher-quality ESG reporting in line with global sustainability goals. Next, conclusions are made based on the research findings.

5.2.2 Establish whether a Causal Relationship Exists between ESG Reporting Quality and Audit Committee Characteristics of JSE-listed Corporations

The results show a causal relationship between ESG reporting quality and audit committee independence, thereby suggesting that companies with independent audit committee members are likely to produce higher quality ESG reporting than those that lack independent committee members. As indicated by the descriptive results, most of the JSE-listed companies in the sample had independent audit committee members.

However, the results indicated an insignificant relationship between ESG reporting quality and the other audit committee characteristics that were the focus of this study, namely, meeting frequency and average age. This suggests that the quality of ESG reporting is neither affected

by the frequency of audit committee meetings nor the average age of members of the audit committee.

The following table summarises the results in relation to the research hypotheses.

Table 5: Summary of the hypotheses results

Hypotheses	Results
H0: There is no causal relationship between ESG reporting quality and audit committee members' independence, meeting frequency and average age.	Accepted for audit committee members' meeting frequency and average age.
H1: There is a causal relationship between ESG reporting quality and audit committee members' independence, meeting frequency and average age.	Accepted for audit committee members' independence.

Source: Own compilation

5.2.3 Suggest Recommendations Based on the Causal Linkages between Audit Committee Characteristics and ESG Reporting Quality of JSE-listed Corporations

The finding that ESG reporting quality is positively related to audit committee independence supports the agency theory, which presents audit committees as objective overseers of corporate reporting processes. This confirms the need to appoint independent audit committee members as a crucial step towards achieving effective corporate governance as emphasised by both King IV and the Companies Act. In light of these results, the appointment of independent audit committee members should not be seen as a mere legitimisation exercise but rather, as a means of achieving quality ESG disclosures.

The result regarding audit committee meeting frequency raises questions about the effectiveness of meeting frequency as a measure of governance. Additionally, there was no significant correlation between the average age of audit committee members and the quality of ESG reporting. This suggests that age, while relevant to other corporate governance factors, may not influence the quality of ESG reporting directly. Lastly, given that no causal relationship was established between ESG reporting quality and the average age of audit committee members, there may be no impact if younger or older members are appointed.

5.3 Recommendations

Based on the research findings, it is recommended that companies listed on the JSE continue to prioritise the appointment of independent audit committees to enhance the standard of ESG reporting. Furthermore, given the insignificant impact of the frequency of audit committee

meetings on ESG reporting quality, it is recommended that companies shift their focus to qualitative factors such as participation and engagement, as well as the quality of discussions and decision-making in the meetings. Lastly, rather than focusing on the age of audit committee members, entities should emphasise qualities such as their experience, specifically in relation to corporate governance expertise and industry background.

5.4 Suggestions for Future Research

As noted earlier, a limitation of this study is that it only included the top 100 JSE-listed companies. Future studies could undertake comparative research involving ESG reporting by companies from varying regulatory environments.

In addition, given that this study focused on the quantitative aspect of audit committee meetings, future research could explore whether qualitative attributes, such as meeting effectiveness, contribute to ESG reporting quality.

Future studies could also examine the impact of other audit committee characteristics, such as corporate governance and sustainability expertise, on the quality of ESG reporting.

REFERENCES

- Abdelkader, M. G., Gao, Y., & Elamer, A. A. (2024). Board gender diversity and ESG performance: The mediating role of temporal orientation in South Africa context. *Journal of Cleaner Production*, 440, 140728.
- Abdul Rahman, R., & Alsayegh, M. F. (2021). Determinants of corporate environment, social and governance (ESG) reporting among Asian firms. *Journal of Risk and Financial Management*, 14(4), 167.
- Abela, M. (2022). A new direction? The “mainstreaming” of sustainability reporting. *Sustainability accounting, management and policy journal*, 13(6), 1261-1283.
- Abonazel, M. R., & Shalaby, O. H. O. O. D. (2021). On labor productivity in OECD countries: panel data modeling. *WSEAS Trans. Bus. Econ*, 18(2), 1474-1488.
- Alhossini, M. A., Ntim, C. G., & Zalata, A. M. (2021). Corporate board committees and corporate outcomes: An international systematic literature review and agenda for future research. *The International Journal of Accounting*, 56(01), 2150001.
- Aluchna, M., Roszkowska-Menkes, M., & Kamiński, B. (2022). From talk to action: the effects of the non-financial reporting directive on ESG performance. *Meditari Accountancy Research*, 31(7), 1-25.
- Appiagyei, K., Djajadikerta, H. G., & Mat Roni, S. (2023). The impact of corporate governance on integrated reporting (IR) quality and sustainability performance: evidence from listed companies in South Africa. *Meditari Accountancy Research*, 31(4), 1068-1092.
- Appuhami, R., & Tashakor, S. (2017). The impact of audit committee characteristics on CSR disclosure: An analysis of Australian firms. *Australian Accounting Review*, 27(4), 400-420.
- Arayssi, M., Jizi, M., & Tabaja, H. H. (2020). The impact of board composition on the level of ESG disclosures in GCC countries. *Sustainability Accounting, Management and Policy Journal*, 11(1), 137-161.
- Arif, M., Sajjad, A., Farooq, S., Abrar, M., & Joyo, A. S. (2021). The impact of audit committee attributes on the quality and quantity of environmental, social and governance (ESG) disclosures. *Corporate Governance: The International Journal of Business in Society*, 21(3), 497-514.
- Arvidsson, S., & Dumay, J. (2022). Corporate ESG reporting quantity, quality and performance: Where to now for environmental policy and practice? *Business Strategy and the Environment*, 31(3), 1091-1110.
- Baker, A. (2022). Simplicity. *Stanford Encyclopedia of Philosophy*.
- Bamahros, H. M., Alquhaif, A., Qasem, A., Wan-Hussin, W. N., Thomran, M., Al-Duais, S. D., & Khojally, H. M. (2022). Corporate governance mechanisms and ESG reporting: Evidence from the Saudi Stock Market. *Sustainability*, 14(10), 6202.
- Baran, M. L. (2022). Mixed methods research design. In *Research Anthology on Innovative Research Methodologies and Utilization Across Multiple Disciplines* (pp. 312-333). IGI Global.
- Bayman, E. O., & Dexter, F. (2021). Multicollinearity in logistic regression models. *Anesthesia & Analgesia*, 133(2), 362-365.

- Beasley, M. S., Carcello, J. V., Hermanson, D. R., & Neal, T. L. (2009). The audit committee oversight process. *Contemporary Accounting Research*, 26(1), 65-122.
- Bell, E., Bryman, A., & Harley, B. (2022). *Business research methods*. Oxford University Press.
- Ben Fatma, H., & Chouaibi, J. (2021). Corporate governance and CSR disclosure: Evidence from European financial institutions. *International Journal of Disclosure and Governance*, 18(4), 346-361.
- Beretta, V., Demartini, M. C., & Trucco, S. (2020). Tone at top in integrated reporting: The role of non-financial performance. In *Non-financial disclosure and integrated reporting: practices and critical issues* (pp. 147-174). Emerald Publishing Limited.
- Bittle, C. M. (2022). *The Domain of Being: Ontology*. BoD—Books on Demand.
- Bloomberg, LP. 2023. *Research domain. Software and database*. New York, NY.
- Bouchrika, I. (2021). *How to Write Research Methodology: Overview, Tips, and Techniques*. Retrieved October 8, 2024, from <https://www.guide2research.com/research/how-to-write-research-methodology>
- Bose, S. (2020). Evolution of ESG reporting frameworks. *Values at work: Sustainable investing and ESG reporting*, 13-33.
- Breuer, M., & deHaan, E. (2023). *Using and interpreting fixed effects models*. Available at SSRN.
- Buallay, A. M., & AlDhaen, E. S. (2018). The relationship between audit committee characteristics and the level of sustainability report disclosure. In *Challenges and Opportunities in the Digital Era: 17th IFIP WG 6.11 Conference on e-Business, e-Services, and e-Society, I3E 2018, Kuwait City, Kuwait, October 30–November 1, 2018, Proceedings 17* (pp. 492-503). Springer International Publishing.
- Buallay, A., & Al-Ajmi, J. (2020). The role of audit committee attributes in corporate sustainability reporting: Evidence from banks in the Gulf Cooperation Council. *Journal of Applied Accounting Research*, 21(2), 249-264.
- Carter, J. A., & Littlejohn, C. (2021). *This is epistemology: An introduction*. John Wiley & Sons.
- Casteel, A., & Bridier, N. L. (2021). Describing populations and samples in doctoral student research. *International Journal of Doctoral Studies*, 16(1).
- Chan, J. Y. L., Leow, S. M. H., Bea, K. T., Cheng, W. K., Phoong, S. W., Hong, Z. W., & Chen, Y. L. (2022). Mitigating the multicollinearity problem and its machine learning approach: a review. *Mathematics*, 10(8), 1283.
- Chariri, A., & Januarti, I. (2017). Audit committee characteristics and integrated reporting: Empirical study of companies listed on the Johannesburg stock exchange. *European Research Studies Journal*, 20, 305-318.
- Chouaibi, J. (2022). Do audit committee attributes improve integrated reporting quality? Evidence from European Companies listed on STOXX EUROPE 600 INDEX. <https://doi.org/10.21203/rs.3.rs-1309211/v1>

- Cohen, L., Manion, L., & Morrison, K. (2017). Surveys, longitudinal, cross-sectional and trend studies. In *Research methods in education* (pp. 334-360). Routledge.
- Collischon, M., & Eberl, A. (2020). Let's talk about fixed effects: Let's talk about all the good things and the bad things. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 72(2), 289-299.
- Dauda, U. (2019, June). Positivism in Accounting Research: A Paradigm Shift in Methodological Approach. In *5th Annual International Academic Conference Proceedings, 2019* (p. 21).
- Davies, P. A., Dudek, P. M., & Wyatt, K. S. (2020). Recent developments in ESG reporting. *Values at work: Sustainable investing and ESG reporting*, 161-179.
- De Laan, A., Buitendag, N., & Fortuin, G. S. (2017). Firm characteristics and excellence in integrated reporting. *South African Journal of Economic and Management Sciences*, 20(1), 1-8.
- DeSimone, S., D'Onza, G., & Sarens, G. (2021). Correlates of internal audit function involvement in sustainability audits. *Journal of Management and Governance*, 25(2), 561-591.
- Diwan, H., & Amarayil Sreeraman, B. (2023). From financial reporting to ESG reporting: a bibliometric analysis of the evolution in corporate sustainability disclosures. *Environment, Development and Sustainability*, 1-37.
- Donkor, A., Djajadikerta, H. G., & Mat Roni, S. (2021). Impacts of combined assurance on integrated, sustainability and financial reporting qualities: Evidence from listed companies in South Africa. *International Journal of Auditing*, 25(2), 475-507.
- Dockrat, R. (2022). *Women in the boardroom and financial performance: an analysis of JSE listed companies* (Doctoral dissertation, University of KwaZulu Natal (South Africa)).
- Dorfleitner, G., Kreuzer, C., & Sparrer, C. (2022). To sin in secret is no sin at all: On the linkage of policy, society, culture, and firm characteristics with corporate scandals. *Journal of Economic Behavior & Organization*, 202, 762-784.
- Dudovskiy, J. (2016). *Ethical considerations*. Retrieved October 8, 2024, from <http://research-methodology.net/research-methodology/ethical-considerations/>
- Eisenhardt, K.M. (1989), Agency theory: An assessment and review. *Academy of management review*, 14(1), 57-74.
- Eloff, A. M., & Steenkamp, S. (2022). Integrated report quality and earnings management-Evidence from South Africa. *South African Journal of Economic and Management Sciences*, 25(1), 1-10.
- Ernst & Young (2022). 'Excellence in Integrated Reporting 2022'. Retrieved October 8, 2024, from https://assets.ey.com/content/dam/ey-sites/ey-com/en_za/topics/assurance/ey-com-2022-ey-excellence-in-integrated-reporting-report.pdf
- Fasan, M., & Mio, C. (2017). Fostering stakeholder engagement: The role of materiality disclosure in integrated reporting. *Business Strategy and the Environment*, 26(3), 288-305
- Fuhrmann, S. (2019). A multi-theoretical approach on drivers of integrated reporting—uniting firm-level and country-level associations. *Meditari Accountancy Research*, 28(1), 168-205.

- Gerwanski, J., Velte, P., & Mechtel, M. (2022). Do nonprofessional investors value the assurance of integrated reports? Exploratory evidence. *European Management Journal*, 40(1), 103-126.
- Ghafran, C., O'Sullivan, N., & Yasmin, S. (2022). When does audit committee busyness influence earnings management in the UK? Evidence on the role of the financial crisis and company size. *Journal of International Accounting, Auditing and Taxation*, 47, 100467.
- Girella, L., Rossi, P., & Zambon, S. (2019). Exploring the firm and country determinants of the voluntary adoption of integrated reporting. *Business Strategy and the Environment*, 28(7), 1323-1340.
- Grassmann, M. (2021). The relationship between corporate social responsibility expenditures and firm value: The moderating role of integrated reporting. *Journal of Cleaner Production*, 285, 124840.
- Greenstone Plus (2023). 'ESG reporting in South Africa – preparing for regulation'. Retrieved from <https://www.greenstoneplus.com/blog/esg-reporting-in-south-africa-preparing-for-regulation>
- Gwalani, H., & Mazumdar, S. (2022). ESG Reporting –“Genesis and Significance. *The Management Accountant Journal*, 57(3), 53-57.
- Haji, A.A. & Anifowose, M. (2016). Audit committee and integrated reporting practice: does internal assurance matter? *Managerial Auditing Journal*, 31(8/9), 915-948.
- Hamaker, E. L., & Muthén, B. (2020). The fixed versus random effects debate and how it relates to centering in multilevel modeling. *Psychological methods*, 25(3), 365.
- Harrison, R. L., Reilly, T. M., & Creswell, J. W. (2020). Methodological rigor in mixed methods: An application in management studies. *Journal of mixed methods research*, 14(4), 473-495.
- Helfaya, A., Morris, R., & Aboud, A. (2023). Investigating the factors that determine the ESG disclosure practices in Europe. *Sustainability*, 15(6), 5508.
- Hsiao, C. (2022). *Analysis of panel data* (No. 64). Cambridge University Press.
- Hossain, A., Bose, S., & Shamsuddin, A. (2023). Diffusion of integrated reporting, insights and potential avenues for future research. *Accounting & Finance*, 63(2), 2503-2555.
- IIRC, (2021). *International <IR> Framework*. Retrieved October 8, 2024, from <https://integratedreporting.org/wpcontent/uploads/2021/01/InternationalIntegratedReportingFramework.pdf>
- Ismail, A. M., & Latiff, I. H. M. (2019). Board diversity and corporate sustainability practices: Evidence on environmental, social and governance (ESG) reporting. *International Journal of Financial Research*, 10(3), 31-50.
- Janang, J. S., Joseph, C., & Said, R. (2020). Corporate governance and corporate social responsibility society disclosure: The application of legitimacy theory. *International Journal of Business & Society*, 21(2).
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, 3(4), 305-360.

- JSE, (2022) JSE Sustainability Disclosure Guidance. Retrieved October 8, 2024, from: <chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.jse.co.za/sites/default/files/media/documents/JSE%20Sustainability%20Disclosure%20Guidance%20June%202022.pdf>
- Kannenberg, L., & Schreck, P. (2019). Integrated reporting: boon or bane? A review of empirical research on its determinants and implications. *Journal of Business Economics*, 89, 515-567.
- Kantor, B (2018). ‘Ten years after the crash: What has South Africa learnt?’. Retrieved October 8, 2024, from https://www.investec.com/en_za/focus/investing/10-years-on-the-global-financial-crisis.html
- Katmon, N., Mohamad, Z. Z., Norwani, N. M., & Farooque, O. A. (2019). Comprehensive board diversity and quality of corporate social responsibility disclosure: Evidence from an emerging market. *Journal of business ethics*, 157, 447-481.
- Kaur, P., Stoltzfus, J., & Yellapu, V. (2018). Descriptive statistics. *International Journal of Academic Medicine*, 4(1), 60-63.
- Khalid, F., Razzaq, A., Ming, J., & Razi, U. (2022). Firm characteristics, governance mechanisms, and ESG disclosure: how caring about sustainable concerns?. *Environmental Science and Pollution Research*, 29(54), 82064-82077.
- Kim, J. H. (2019). Multicollinearity and misleading statistical results. *Korean journal of anesthesiology*, 72(6), 558.
- King IV Report on Corporate Governance for South Africa (2016), Retrieved October 8, 2024, from <http://www.iodsa.co.za/?page=AboutKingIV>
- Kılıç, M., & Kuzey, C. (2018). Determinants of forward-looking disclosures in integrated reporting. *Managerial Auditing Journal*, 33(1), 115-144.
- Kothari, C. (2017). *Research methodology methods and techniques* (p. 91). New Age International (Pty) Ltd.
- Kula, E. (2024). Environmental, Social, and Governance (ESG) Reporting: Attempting to Bridge the Gap on Reporting Standards and the Need for Uniform Standards. *Penn State Journal of Law & International Affairs*, 12(1), 7.
- Kyriazos, T., & Poga, M. (2023). Dealing with multicollinearity in factor analysis: the problem, detections, and solutions. *Open Journal of Statistics*, 13(3), 404-424.
- Lakhani, L., & Herbert, S. L. (2022). Theoretical frameworks applied in integrated reporting and sustainability reporting research. *South African Journal of Economic and Management Sciences*, 25(1), 1-12.
- Leavy, P. (2022). *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches*. Guilford Publications.
- Labra Lillo, R. L., & Torrecillas, C. (2018). Estimating dynamic Panel data. A practical approach to perform long panels. *Revista Colombiana de Estadística*, 41(1), 31-52.
- Lindner, T., Puck, J., & Verbeke, A. (2020). Misconceptions about multicollinearity in international business research: Identification, consequences, and remedies. *Journal of International Business Studies*, 51, 283-298.

- Ma, Y., Ahmad, M. I., & Torelli, R. (2024). Board gender diversity and ESG disclosure: The moderating role of audit committee. *Corporate Social Responsibility and Environmental Management*.
- Madi, H. K., Ishak, Z., & Manaf, N. A. A. (2014). The impact of audit committee characteristics on corporate voluntary disclosure. *Procedia - social and behavioral sciences*, 164, 486-492.
- Malola, A., & Maroun, W. (2019). The measurement and potential drivers of integrated report quality: Evidence from a pioneer in integrated reporting. *South African Journal of Accounting Research*, 33(2), 114-144.
- Manes-Rossi, F., Nicolò, G., Tiron Tudor, A., & Zanellato, G. (2021). Drivers of integrated reporting by state-owned enterprises in Europe: a longitudinal analysis. *Meditari Accountancy Research*, 29(3), 586-616.
- Manoharan, A. (2024). Enhancing audience engagement through AI-powered social media automation. *World Journal of Advanced Engineering Technology and Sciences*, 11(2), 150-157.
- Mans-Kemp, N., & van der Lugt, C. T. (2020). Linking integrated reporting quality with sustainability performance and financial performance in South Africa. *South African Journal of Economic and Management Sciences*, 23(1), 1-11.
- Marais, J. (2024). State of SA businesses navigating the ‘Zombie Zone’. Retrieved October 08, 2024, from <https://www.deloitte.com/za/en/services/tax/perspectives/state-of-south-african-businesses-navigating-the-zombie-zone.html>
- Maroun, W. (2019). Does external assurance contribute to higher quality integrated reports? *Journal of Accounting and Public Policy*, 38(4), 106670.
- Marrone, A. (2020). Corporate governance variables and integrated reporting. *International Journal of Business and Management*, 15(5), 26-36.
- Martins, F. S., da Cunha, J. A. C., & Serra, F. A. R. (2018). Secondary data in research—uses and opportunities. *PODIUM sport, leisure and tourism review*, 7(3).
- Martiny, A., Tagliatela, J., Testa, F., & Iraldo, F. (2024). Determinants of environmental social and governance (ESG) performance: A systematic literature review. *Journal of Cleaner Production*, 456, 142213.
- Matta, Rahul & Trivedi, Sunil & Premchandran, Shalini & Mishra, Anil. (2024). Role of audit committee in ESG reporting quality: evidence from India. 40. 51-64.
- Matemane, M. R., & Wentzel, R. (2019). Integrated reporting and financial performance of South African listed banks. *Banks and Bank Systems*, 14(2), 128-139.
- McDaniel Jr, C., & Gates, R. (2021). *Marketing research*. John Wiley & Sons.
- Millo, G. (2021). Robust inference in panel data microeconometrics, using R. In *Handbook of Research Methods and Applications in Empirical Microeconomics* (pp. 564-595). Edward Elgar Publishing.
- Mohammed, A. (2023). *Mitigating greenwashing: The role of audit committees and internal audits in ESG reporting assurance* (Doctoral dissertation, Durham University).

- Mohd Ariff, A. H., Fayad, A. A., Sawandi, N., Abu Bakar, F., Md Hashim, M. F. A., & Abdul Latif, R. (2023). Audit committee and integrated reporting quality: empirical evidence from an emerging market. *Polish Journal of Management Studies*, 28.
- Mooneeapen, O., Abhayawansa, S., & Mamode Khan, N. (2022). The influence of the country governance environment on corporate environmental, social and governance (ESG) performance. *Sustainability Accounting, Management and Policy Journal*, 13(4), 953-985.
- Morais, F., De Villiers, V., Prinsloo, M., & Vawda, S. (2024). The state of ESG strategic integration in JSE listed companies. Retrieved October 8, 2024, from: <https://centaur.reading.ac.uk/115172/1/The%20State%20of%20ESG%20Integration%20in%20JSE%20REPORT%20%28FINAL%29.pdf>
- Mudimba, G. (2021). *Impact of King III: The relationship between corporate governance mechanisms and listing suspensions* (Master's thesis, Faculty of Commerce, University of Cape Town (South Africa)).
- Mukeredzi, T. C. G. (2019). *Impact of integrated reporting on financial performance* (Doctoral dissertation, University of KwaZulu Natal (South Africa)).
- Munn, Z., Peters, M. D., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC medical research methodology*, 18, 1-7.
- Musallam, S. R. (2018). The direct and indirect effect of the existence of risk management on the relationship between audit committee and corporate social responsibility disclosure. *Benchmarking: An International Journal*, 25(9), 4125-4138.
- Muzanya, S. (2022). *ESG and corporate financial performance: evidence from JSE listed firms*. (Master's thesis, Faculty of Commerce, University of Cape Town (South Africa)).
- Nahar, K., & Khurana, D. (2023). Corporate Social Responsibility. *Vidhyayana-An International Multidisciplinary Peer-Reviewed E-Journal-ISSN 2454-8596*, 8(si6), 724-732.
- Neri, S. (2021). Environmental, social and governance (ESG) and integrated reporting. *Global Challenges to CSR and Sustainable Development: Root Causes and Evidence from Case Studies*, 293-302.
- Ndung'u, D. T. (2022). Environmental, social and governance reporting (ESG) post-Covid-19: An emerging trend. *AfricaGrowth Agenda*, 19(3), 18-21.
- Nuskiya, M. N. F., Ekanayake, A., Beddewela, E., & Meftah Gerged, A. (2021). Determinants of corporate environmental disclosures in Sri Lanka: the role of corporate governance. *Journal of Accounting in Emerging Economies*, 11(3), 367-394.
- Nyagope, T. S., Rajaram, R., & Obagbuwa, O. (2023). Information Technology Risks and Governance Disclosure: Evidence from Top 40 JSE Listed Companies. *International Journal of Environmental, Sustainability, and Social Science*, 4(5), 1378-1397.
- Omran, M., Ramdhony, D., Mooneeapen, O., & Nursimloo, V. (2021). Integrated reporting and board characteristics: Evidence from top Australian listed companies. *Journal of Applied Accounting Research*, 22(4), 732-758.
- Onyabe, J.M. (2022). Audit Committee and Integrated Reporting. *European Research Studies Journal*, 25(4), 305-318.

Pandey, P., & Pandey, M. M. (2021). *Research methodology tools and techniques*. Bridge Center.

Phesa, M. (2021). *Impression management observation in chairman statements in JSE Top 40 listed companies* (Doctoral dissertation, University of KwaZulu Natal (South Africa)).

Pistoni, A., Songini, L., & Perrone, O. (2016). The how and why of a firm's approach to CSR and sustainability: A case study of a large European company. *Journal of Management & Governance*, 20, 655-685.

Pistoni, A., Songini, L., & Bavagnoli, F. (2018). Integrated reporting quality: An empirical analysis. *Corporate Social Responsibility and Environmental Management*, 25(4), 489-507.

Pollman, E. (2022). The making and meaning of ESG. *U of Penn, Inst for Law & Econ Research Paper*, (22-23).

Pozzoli, M., Pagani, A., & Paolone, F. (2022). The impact of audit committee characteristics on ESG performance in the European Union member states: Empirical evidence before and during the COVID-19 pandemic. *Journal of Cleaner Production*, 371, 133411

Prinsloo, A., & Maroun, W. (2021). An exploratory study on the components and quality of combined assurance in an integrated or a sustainability reporting setting. *Sustainability Accounting, Management and Policy Journal*, 12(1), 1-29.

Qaderi, S. A., Alhmoud, T. R., & Ghaleb, B. A. A. (2020). Audit committee features and CSR disclosure: Additional evidence from an emerging market. *International Journal of Financial Research*, 11(5), 226-237.

Qaderi, S. A., Ghaleb, B. A. A., Hashed, A. A., Chandren, S., & Abdullah, Z. (2022). Board characteristics and integrated reporting strategy: Does sustainability committee matter? *Sustainability*, 14(10), 6092.

Rahman, M. M., Tabash, M. I., Salamzadeh, A., Abduli, S., & Rahaman, M. S. (2022). Sampling techniques (probability) for quantitative social science researchers: a conceptual guidelines with examples. *Seeu Review*, 17(1), 42-51.

Raimo, N., Zito, M., & Caragnano, A. (2019). Does national culture affect integrated reporting quality? A focus on GLOBE dimensions. In *9th International Symposium on Natural Resources Management, May 31st, 2019, Zaječar, Serbia* (pp. 383-392). Belgrade: Megatrend University.

Raimo, N., Vitolla, F., Marrone, A. & Rubino, M. (2021). Do audit committee attributes influence integrated reporting quality? An agency theory viewpoint. *Business Strategy and the Environment*, 30(1), 522-534.

Robbette, N. (2023). *Developing a systematic risk model for JSE listed companies* (Doctoral dissertation, North-West University (South Africa)).

Seow, R. Y. C. (2024). Determinants of environmental, social, and governance disclosure: A systematic literature review. *Business Strategy and the Environment*, 33(3), 2314-2330.

Shaheen, M., & Pradhan, S. (2019). Sampling in qualitative research. In *Qualitative techniques for workplace data analysis* (pp. 25-51). IGI Global.

Shrestha, N. (2020). Detecting multicollinearity in regression analysis. *American Journal of Applied Mathematics and Statistics*, 8(2), 39-42.

- Songini, L., Pistoni, A., Tettamanzi, P., Fratini, F., & Minutiello, V. (2021). Integrated reporting quality and BoD characteristics: an empirical analysis. *Journal of Management and Governance*, 1-42.
- Sriani, D., & Agustia, D. (2020). Does voluntary integrated reporting reduce information asymmetry? Evidence from Europe and Asia. *Heliyon*, 6(12), e05602.
- Stocker, F., de Arruda, M. P., de Mascena, K. M., & Boaventura, J. M. (2020). Stakeholder engagement in sustainability reporting: A classification model. *Corporate Social Responsibility and Environmental Management*, 27(5), 2071-2080.
- Sultana, N., Singh, H., & Rahman, A. (2019). Experience of audit committee members and audit quality. *European Accounting Review*, 28(5), 947-975.
- Sun, Y. (2021). *Towards an integrated reporting framework for China* (Doctoral dissertation, The University of Waikato).
- Sürücü, L., & Maslakçı, A. (2020). Validity and reliability in quantitative research. *Business & Management Studies: An International Journal*, 8(3), 2694-2726.
- Taherdoost, H. (2022). What are different research approaches? Comprehensive Review of Qualitative, quantitative, and mixed method research, their applications, types, and limitations. *Journal of Management Science & Engineering Research*, 5(1), 53-63.
- Toerien, F., Breedts, C., & de Jager, P. G. (2023). Does board gender diversity improve environmental, social and governance disclosure? Evidence from South Africa. *South African Journal of Business Management*, 54(1), 3646.
- Varpio, L., Paradis, E., Uijtdehaage, S., & Young, M. (2020). The distinctions between theory, theoretical framework, and conceptual framework. *Academic Medicine*, 95(7), 989-994.
- Velte, P. (2018). Is audit committee expertise connected with increased readability of integrated reports: Evidence from EU companies. *Problems and Perspectives in Management*, 16(2), 23-41.
- Velte, P. (2022). Archival research on integrated reporting: a systematic review of main drivers and the impact of integrated reporting on firm value. *Journal of Management and Governance*, 26(3), 997-1061.
- Vitolla, F., Raimo, N., & Rubino, M. (2019). Appreciations, criticisms, determinants, and effects of integrated reporting: A systematic literature review. *Corporate Social Responsibility and Environmental Management*, 26(2), 518-528.
- Vitolla, F., Raimo, N., & Rubino, M. (2020). Board characteristics and integrated reporting quality: An agency theory perspective. *Corporate Social Responsibility and Environmental Management*, 27(2), 1152-1163.
- Wan, G., Dawod, A. Y., Chanaim, S., & Ramasamy, S. S. (2023). Hotspots and trends of environmental, social and governance (ESG) research: A bibliometric analysis. *Data Science and Management*, 6(2), 65-75.
- Wang, X., & Cheng, Z. (2020). Cross-sectional studies: strengths, weaknesses, and recommendations. *Chest*, 158(1), S65-S71.

- Wang, M. L., & Phillips-Fein, K. (2023). *Environmental, Social, and Corporate Governance: A History of ESG Standardization from 1970s to the Present*. (Undergraduate. Senior Thesis, Columbia University, New York, NY)
- Wang, R., Zhou, S., & Wang, T. (2020). Corporate governance, integrated reporting and the use of credibility-enhancing mechanisms on integrated reports. *European Accounting Review*, 29(4), 631-663.
- Yasseen, Y. (2019). *An appreciative inquiry into the current and future roles of the professional accountant in the SME sector*. (Doctoral dissertation, University of Johannesburg (South Africa)).
- Yu, E. P. Y., & Van Luu, B. (2021). International variations in ESG disclosure—do cross-listed companies care more?. *International Review of Financial Analysis*, 75, 101731.
- Zhou, S., Simnett, R., & Hoang, H. (2019). Evaluating combined assurance as a new credibility enhancement technique. *Auditing: A Journal of Practice & Theory*, 38(2), 235-259.
- Zouari, G., & Dhifi, K. (2021). The impact of board characteristics on integrated reporting: case of European companies. *International Journal of Disclosure and Governance*, 18, 83-94
- Zulfikar, R., & STp, M. M. (2018). Estimation model and selection method of panel data regression: An overview of common effect, fixed effect, and random effect model. *JEMA: Jurnal Ilmiah Bidang Akuntansi*, 9(2), 1-10.

APPENDICES

Appendix A: Ethical Clearance



17 Oct 2023

Ms Ruth Mutsa Ruziwa (218026025)
School Of Acc Economics&Fin
Westville

Dear Ms Ruth Mutsa Ruziwa,

Original application number: 00020701

Project title: Establishing a causal relationship between audit committee characteristics and environmental social and governance reporting for the top 100 Johannesburg listed corporations

Exemption from Ethics Review

In response to your application received on 10 Oct 2023, your school has indicated that the protocol has been granted **EXEMPTION FROM ETHICS REVIEW**.

Any alteration/s to the exempted research protocol, e.g., Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through an amendment/modification prior to its implementation. The original exemption number must be cited.

For any changes that could result in potential risk, an ethics application including the proposed amendments must be submitted to the relevant UKZN Research Ethics Committee. The original exemption number must be cited.

In case you have further queries, please quote the above reference number.

PLEASE NOTE:

Research data should be securely stored in the discipline/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours sincerely,



Prof Josue Mbonigaba
Academic Leader Research
School Of Acc Economics&Fin

Appendix B: Turnitin Report



Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author:	Ruth Ruziwa
Assignment title:	Master of Commerce (Accounting)
Submission title:	Draft dissertation
File name:	Dissertation_Ruth_Ruziwa_Reviewed_version_02.05.2024.docx
File size:	225.92K
Page count:	64
Word count:	20,031
Character count:	118,343
Submission date:	12-Jun-2024 12:42AM (UTC+0200)
Submission ID:	2318780171

ORIGINALITY REPORT

10%
SIMILARITY INDEX

7%
INTERNET SOURCES

6%
PUBLICATIONS

2%
STUDENT PAPERS

PRIMARY SOURCES

1 "Non-financial Disclosure and Integrated Reporting", Springer Science and Business Media LLC, 2022
Publication **1%**

2 link.springer.com
Internet Source **1%**

3 dokumen.pub
Internet Source **<1%**

4 vital.seals.ac.za:8080
Internet Source **<1%**

5 Warren Maroun, Dannielle Cerbone. "Corporate Governance in South Africa", Walter de Gruyter GmbH, 2020
Publication **<1%**

6 bursa-malaysia.s3.amazonaws.com
Internet Source **<1%**

7 Engy ElHawary. "Audit committee effectiveness and company performance: Evidence from Egypt", Journal of Governance and Regulation, 2021 **<1%**

Appendix C: Editor's Confirmation Letter

[REDACTED]
Glenwood
DURBAN 4001
Tel: [REDACTED]
Email: [REDACTED]

15 July 2024

This serves to confirm that I have edited the dissertation, "Establishing a Causal Relationship Between Audit Committee Characteristics and Environmental, Social and Governance Reporting for the Top 100 JSE-Listed Corporations", by Ruth Mutsa Ruziwa, student number 218026025.

DISCLAIMER: The editor cannot be held responsible for any errors introduced due to changes being made to the document after the editing is complete.

Yours sincerely,

[REDACTED]

(Ms) Deanne Collins (MA)