THE QUALITY OF ENVIRONMENTAL, SOCIAL AND CORPORATE GOVERNANCE INFORMATION REPORTED BY SOUTH AFRICAN LISTED COMPANIES

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by

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Abstract

Environmental, social and governance (ESG) reporting has emerged as a crucial tool to provide stakeholders with transparent, decision-useful information about companies' environmental impacts, social practices and governance structures in South Africa's corporate sector. As stakeholder demand for comprehensive ESG disclosures intensifies, these reports have become essential instruments for investment decisions, regulatory compliance and corporate accountability.

However, the effectiveness of ESG reporting in accurately conveying corporate performance is increasingly undermined by a central tension: the competing imperatives of comprehensive disclosure and corporate image management. Companies must navigate between meeting stakeholder expectations for transparency while simultaneously managing reputational risks and competitive positioning.

This tension significantly shapes corporate reporting behaviour. Research suggests that many South African firms prioritise reputation enhancement in their ESG reports over providing a balanced and complete account of their performance. This often results in selective disclosures where unfavourable information is downplayed or omitted, creating a discrepancy between reported and actual ESG impacts. Such practices compromise stakeholders' ability to assess organisations' true ecological, societal and governance impacts, raising serious concerns about the credibility and transformative potential of ESG reporting in driving meaningful corporate reform.

Despite the growing recognition of these challenges, there remains a critical gap in methodologies used to rigorously evaluate the quality of corporate ESG disclosures. In response, this thesis develops a model to assess two core qualitative characteristics of ESG disclosures by South African listed companies: their relevance for stakeholder decision-making and their faithful representation of actual corporate ESG performance and impacts.

To develop this model, stakeholder and legitimacy theories are synthesised into an integrated theoretical framework. This framework guides the identification of key corporate disclosure practices that are hypothesised to influence the quality of corporate ESG reporting among

companies listed on the Johannesburg Stock Exchange (JSE). To measure these disclosure practices empirically, a comprehensive set of quantifiable ESG indicators is selected to operate as observable proxies.

Principal Component Analysis (PCA) examines how these theoretically derived ESG indicators cluster and vary, revealing underlying patterns and relationships. These PCA insights inform the selection of independent variables for a binary logistic regression model. In this model, low ESG reporting quality serves as the dependent variable, measured by the presence of corporate ESG controversies. The occurrence of controversies is conceptualised as an external indicator of potential deficiencies in either or both the relevance and faithful representation of corporate ESG reporting.

The final model specification, which was developed using ESG data from 2013 to 2018 and validated against 2019 data, reveals a statistically significant inverse relationship between South African listed companies' self-reported adoption of environmental and social policies and the quality of their corporate ESG reporting. Specifically, companies with higher levels of self-reported environmental and social policy adoption demonstrate lower ESG reporting quality, as evidenced by their increased involvement in ESG controversies.

These results suggest that such policy declarations may not faithfully represent actual environmental and social performance and may lack relevant information content for stakeholders. In contrast to the inverse relationship found with self-reported policy adoption, board skill diversity did not show a statistically significant relationship with corporate ESG reporting quality.

Consequently, this study finds that extensive ESG policy disclosures may function primarily as a legitimacy-seeking mechanism, with companies using policy declarations symbolically to project responsible corporate citizenship rather than demonstrating genuine commitment to implementation. This reporting behaviour reflects a prioritisation of ceremonial compliance with institutional pressures over substantive reporting of underlying operational realities.

KEYWORDS: Corporate disclosure; ESG (Environmental, Social, Governance) reporting quality; ESG reporting; Legitimacy theory; Stakeholder theory; Sustainability

Declaration

I declare that the Dissertation/Thesis entitled, the quality of the environmental, social and corporate governance information reported by South African listed companies, which I hereby submit for the degree, Doctor of Philosophy at Rhodes University, is my own work. I also declare that this thesis/dissertation has not previously been submitted by me for a degree at this or any other tertiary institution and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

Lethukuthula Ncube

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List of Acronyms

Acronym	Term
BBBEE	Broad-Based Black Economic Empowerment
CDP	Carbon Disclosure Project
CFA Institute	Chartered Financial Analyst Institute
CSR	Corporate Social Responsibility
CRISA	Code for Responsible Investing in South Africa
EEA	Employment Equity Act
ESG	Environmental, Social and Governance
FASB	Financial Accounting Standards Board
GSE	Global Sustainability Equity
GRI	Global Reporting Initiative
IASB	International Accounting Standards Board
IIRC	International Integrated Reporting Council
IIRC IR Framework	International Integrated Reporting Council Integrated Reporting Framework
IoDSA	Institute of Directors in South Africa
IRCSA	Integrated Reporting Committee of South Africa
JSE	Johannesburg Stock Exchange
SASB	Sustainability Accounting Standards Board
SDA	Skills Development Act
SED	Socio-Economic Development
SRI	Socially Responsible Investing
TCFD	Task Force on Climate-related Financial Disclosures

Indicators and Ratios

Indicator[1]	Description
BID	Board independence
BSK	Board skills
DSR	Donations to sales ratio
EINV	Environmental innovation score
EMS	Environmental emissions score
ERU	Environmental resource use score
GCSR	Governance CSR strategy score
GDIV	Gender diversity
S1GI	Scope 1 GHG emissions intensity
S2GI	Scope 2 GHG emissions intensity
SHRS	Social human rights score
SPRD	Social product responsibility score
SCS	Social community score
SWS	Social workforce score
TGI	Total GHG emissions intensity
ΔTGI	Year-on-year changes in total GHG emissions intensity
ΔS1GI	Year-on-year changes in scope 1 GHG emissions intensity
ΔS2GI	Year-on-year changes in scope 2 GHG emissions intensity

1. Detailed specifications of indicator calculation methods, and associations with corporate ESG reporting quality, are provided in Chapter 3.

Terms and Definitions

Term	Definition
Broad-based Black Economic Empowerment (BBBEE)	A South African government policy to advance the economic transformation and enhance the economic participation of all Black people, in particular women, workers, youth, people with disabilities and people living in rural areas, in South Africa's economy, initially implemented through the Broad-Based Black Economic Empowerment Act (Act 53 of 2003) (South Africa, 2003).
Carbon Disclosure Project (CDP)	CDP is an international non-profit organisation that annually collects carbon data from the world's largest listed firms through a questionnaire. This carbon emissions data is reported in a standard CDP tabular format. CDP is considered to have the richest and most comprehensive dataset on corporate environmental reporting (CDP, 2021).
Corporate Social Investment (CSI)	Corporate social investment refers to business contributions such as donations and other kinds of financial assistance that are made for altruistic purposes so as to benefit society (IoDSA, 2009).
Corporate Social Responsibility (CSR)	The responsibility of companies for their impact on society, including the integration of social, environmental, ethical and human rights concerns into their core strategy, operations and integrated performance (European Commission, 2011).
Code for Responsible Investing in South Africa (CRISA)	CRISA encourages institutional investors and service providers to integrate environmental, social and governance (ESG) issues into their investment decisions (IoDSA, 2011).
Employment Equity Act (EEA)	A South African government policy to achieve equity in the workplace by promoting equal opportunity and fair treatment through the elimination of unfair discrimination and through the implementation of affirmative action measures to advance Black people, women and people with disabilities, initially implemented through the Employment Equity Act (Act 55 of 1998) (South Africa, 1998).
Environmental, Social and Governance (ESG)	Environmental, social and governance factors that may be taken into consideration in investment analysis and decision-making and risk management (CFA Institute, 2015).
Greenhouse Gas (GHG) Protocol	The GHG Protocol is a comprehensive global standardised framework for accounting and reporting greenhouse gas (GHG) emissions. It provides guidance for governments and business leaders to understand, quantify and manage their GHG emissions (GHG Protocol, 2024).
Global Reporting Initiative (GRI)	GRI is an independent, international organisation that assists companies and other organisations take responsibility for their impacts by providing them with sustainability reporting guidelines and standards that enable them to report their economic, environmental, social and governance performance (GRI, 2024).

International Integrated Reporting Council (IIRC)[1]	The IIRC is a global coalition of regulators, investors, companies, standard setters, accounting professionals, academia and non-governmental organisations (NGOs) that developed the International Integrated Reporting (IR) Framework to promote more comprehensive corporate reporting that demonstrates value creation across multiple capitals (IFRS Foundation, 2025).
International Integrated Reporting Council (IIRC) Integrated Reporting (IR) Framework	The objective of the IIRC IR framework is to improve the quality of information available to providers of financial capital by promoting the global adoption of integrated reporting and by establishing guiding principles and content elements that govern the overall content of an integrated report, and to explain the fundamental concepts that underpin them (IIRC, 2021).
Sustainability Accounting Standards Board (SASB)	The SASB is a non-profit organisation that provides reporting standards that guide the disclosure of financially material environmental, social and governance information by companies to their investors (SASB, 2022).
Socially responsible investing (SRI)	An investment process that integrates ethical values, environmental protection, social concerns and good governance into traditional investment decision-making (Sciarelli, Cosimato, Landi & Iandolo, 2021).

[1] The IIRC was consolidated into the IFRS Foundation in June 2022 (IFRS Foundation, 2025). Notwithstanding this transition, this thesis continues to refer to both the IIRC and the IIRC's IR Framework to reflect their historical development and to distinguish this specific framework from other IFRS Foundation initiatives.

CHAPTER 1
Introduction and project overview

1.1 Introduction and background

1.1.1 Rationale and motives for corporate ESG reporting

In corporate financial management, it is widely accepted that for-profit firms have the principal economic duty of executing their business affairs in a manner that supports shareholder wealth creation (Ross, Westerfield & Jordan, 2010). This notion of shareholder primacy, articulated famously by the early influential contributions of Friedman (1970), Jensen (2001) and Rappaport (1986) holds that shareholder satisfaction (through profit maximisation) is an entity's sole purpose. However, as Davis (1960), Freeman (1984) and McGuire (1963) observe, organisations also need to pay attention to their dynamic coexistence with other interest groups (beyond the shareholders) as the actions of a firm have direct and indirect consequences (both harmful and good) on wider society. Following Freeman (1984), these societal consequences are generally considered within the framework of stakeholder theory. While not repudiating the legitimacy of the purely financial claims on a firm of its shareholders and bondholders, stakeholder theory is based on the assumption that the effectiveness of an organisation is measured by its ability to satisfy not only the shareholders, but also other parties (such as customers, suppliers, employees, local and national communities, government, and others) who can affect or may be affected by the achievement of the organisation's objectives.

Following a shareholder frame of reference, corporate communication has a long tradition of prioritising the information needs of capital providers over other stakeholders through the publication of financial reports. This narrow focus on shareholder supremacy is vulnerable to the criticism that it promotes short-term thinking in corporate strategy and decision-making. As observed by Gonzalez and André (2014), management desire for short-term financial results with insufficient regard to long-term strategy that considers various societal concerns may expose a firm to damaging reputational, ethical and environmental crises.

To address the shortcomings associated with the conventional financial reporting models, stakeholder theory proposes that corporate reporting should address the concerns and demands of all material stakeholder groups to create value and achieve long-term survival (Freeman,

Harrison, Wicks, Parmar & De Colle, 2010; Post, Preston & Sauter-Sachs, 2002). This stakeholder-oriented approach to corporate reporting draws support from both ethical and strategic perspectives within stakeholder theory. The ethical dimension represents the moral foundation of stakeholder theory. It establishes an ethical obligation for corporations to disclose information about business decisions and actions that affect stakeholder interests (Gray, Owen & Maunders, 1991). This moral imperative is grounded in the view that all stakeholders (those who affect and are affected by the firm) have inherent rights to transparency and accountability concerning corporate conduct that impacts their well-being, irrespective of their direct financial stake in the enterprise (as argued by Freeman, 1984, Gibson, 2000 and O'Dwyer, 2005). Consequently, under the ethical perspective, stakeholders expect comprehensive corporate reporting that conveys accountability to all affected parties and society at large as this reflects the firm's perceived moral obligation to respect the intrinsic dignity and rights of all stakeholders.

In contrast to its normative ethical foundations, the strategic lens within stakeholder theory holds that corporate communication is driven by business utility rather than moral obligation. Under this utility-based approach, Donaldson and Preston (1995) explain that managers identify relevant stakeholders primarily as those groups with the capacity to advance or undermine organisational performance. Here, stakeholder attention is earned through demonstrated relevance to corporate success rather than claimed as an inherent right. Following this logic, companies tend to prioritise stakeholders with the greatest strategic value, as documented by Mitchell, Agle and Wood (1997) and Woodward and Woodward (2001).

To prioritise effectively, however, managers need to understand what these influential actors expect and value from the organisation. In this regard, a substantial body of research substantiates the changing nature of these expectations, consistently showing that key stakeholders increasingly demand corporate reporting that extends beyond traditional financial metrics. Specifically, they seek corporate disclosure that encompasses broader environmental, social and governance factors to facilitate a better assessment of how firms manage related risks and opportunities affecting long-term value creation (as shown in Amel-Zadeh & Serafeim, 2018, Eccles, Serafeim & Krzus, 2011, Esty & Cort, 2021 and Qian, Tilt, Dissanayake & Kuruppu, 2020). As a result, from a strategic standpoint, influential stakeholders consider expanded corporate disclosure as instrumental in evaluating whether firms deserve their continued support.

Thus, both ethical and strategic dimensions within stakeholder theory converge on a core expectation: the need for corporate reporting that extends beyond conventional financial disclosure to address broader stakeholder interests. Whether stakeholders demand this transparency based on their perceived inherent rights to corporate accountability or influential groups require it to make informed decisions, both perspectives ultimately call for expanded corporate disclosure practices.

While stakeholder theory effectively identifies these reporting demands, the question remains as to what motivates firms to actually respond to them. O'Donovan (2002) contends that companies are inclined to respond to stakeholder expectations (those emerging from ethical considerations, strategic pressures, or both) because they seek to gain support and approval from society at large. Moreover, this inclination may be driven by the recognition that when companies are perceived as effectively managing and responding to stakeholder expectations, they can access valuable benefits such as an improved corporate reputation, brand image and overall success. This desire for organisations to convince various stakeholders that their activities are acceptable and contribute to societal value in order to secure their operational effectiveness and long-term survival, aligns with the fundamental premise of legitimacy theory, as noted by Shocker and Sethi (1973).

According to Suchman (1995), legitimacy theory submits that organisations seek to align the social values signalled by their activities with the broader societal norms of acceptable behaviour in the context of the systems in which they operate. In line with legitimacy theory, Meyer and Rowan (1977) propose that establishing and maintaining a condition of legitimacy becomes a pivotal and strategic resource upon which an organisation relies for its continued existence. Hence, given the increasing significance of sustainability issues in determining corporate success, De Silva Lokuwaduge and De Silva (2022) argue that businesses strive to present themselves as legitimate and responsible corporate entities by addressing stakeholder concerns and providing relevant disclosures regarding their efforts to mitigate negative social and environmental impacts.

This pursuit of legitimacy may help explain why, in practice, an increasing number of firms around the world are expanding beyond the original scope of their financial reporting to incorporate supplementary information on matters of potential relevance to the stakeholder

community (see, for example, Khemir, Baccouche & Ayadi, 2019, and KPMG, 2024 and PwC, 2021).

Although a variety of labels has been historically placed on the reporting of such information, including corporate social responsibility reporting, environmental reporting, triple bottom line reporting and sustainability reporting, amongst others, recent academic research (e.g. Chopra, Senadheera, Dissanayake, Withana, Chib, Rhee & Ok, 2024, Pollman, 2024 and Rouen, Sachdeva & Yoon, 2022) documents the emergence of an increasingly accepted nomenclature: environmental, social and governance (ESG) reporting. The CFA Institute (2015) and KPMG (2022) argue that the ESG descriptor is both more neutral and more accurately inclusive of the main categories of issues that affect stakeholders, and this research follows suit.

Internationally, the reporting of ESG information has traditionally been a matter of purely voluntary corporate managerial behaviour. South Africa represents a notable early departure from this norm in at least two respects. Firstly, in 2010, South Africa became the first country in the world where its main securities exchange, the Johannesburg Stock Exchange (JSE) adopted integrated reporting on an ‘apply or explain' basis, through the implementation of the third King Code for Corporate Governance (King III). Under this framework, listed companies were formally required to either produce integrated reports (which embed ESG information alongside traditional financial metrics) or explain why they had not done so. Secondly, the Code for Responsible Investing in South Africa (CRISA) was published in 2011 by the IoDSA, with the purpose of encouraging institutional investors to integrate ESG-related information into their investment decisions (IoDSA, 2011). Serafeim (2015) notes that these circumstances have resulted in a situation in which the apparent strength of South African ESG reporting continues to attract considerable international practitioner and academic attention.

1.1.2 Defining quality in the context of corporate ESG reporting

International accounting rule-making is dominated by two organisations: the International Accounting Standards Board (IASB; applied by more than 140 countries, excluding the United States (US)), and the Financial Accounting Standards Board (FASB; applied in the US). The two standard-setters have an identical conceptual foundation (FASB, 2010 and IASB, 2010), which is that financial reporting must be useful to investors and lenders. Furthermore, such usefulness is characterised by the underlying fundamental dimensions of relevance (the ability

to make a difference in decisions) and representational faithfulness (the information is neutral, complete, and error-free). It appears reasonable, as Khemir (2018) and Rankin, Stanton, McGowan, Ferlauto and Tilling (2012) argue, to apply the same benchmark of decision-usefulness to ESG-related disclosures. Using these qualitative benchmarks, stakeholder theory and legitimacy theory provide valuable insights into how companies may produce either high or low quality ESG disclosures.

Proponents of stakeholder theory, such as Dubbink, Graafland and Van Liedekerke (2008), suggest that organisations producing corporate ESG reports within the framework of stakeholder theory are firmly committed to providing relevant, transparent and high-quality information concerning the impacts of their actions to their various stakeholders. This commitment operates through both the ethical and strategic lenses of stakeholder theory. The ethical perspective maintains that organisations should assign primacy to their stakeholders owing to the moral obligations that they bear towards this constituency (Freeman & McVea, 2005). Under this ethical approach, companies functioning within a stakeholder theory framework are expected to provide relevant, comprehensive and transparent ESG information as they have a fundamental moral duty to demonstrate accountability to stakeholders who are directly affected by corporate decisions.

In the strategic dimension, however, attention shifts to prioritising stakeholder groups that can materially influence organisational outcomes. Nonetheless, even companies operating under this strategic approach recognise the necessity of providing decision-useful ESG information to influential stakeholders whose support is vital for long-term organisational performance (Zarzycka & Krasodomska, 2021). Regardless of the underlying rationale, both perspectives demand authentic stakeholder engagement and genuine responsiveness to stakeholder concerns. Thus, under stakeholder theory (whether underpinned by normative obligations or strategic considerations), the provision of relevant, high-quality ESG information serves as a means to proactively communicate with stakeholders and address their multifaceted needs, ultimately enhancing their decision-making.

Legitimacy theory provides an alternative theoretical lens for understanding corporate ESG reporting quality, one that does not assume consistently high-quality outcomes. Rather than identifying stakeholder groups and engaging genuinely with their needs and concerns, legitimacy theory focuses on managing how stakeholders perceive the organisation, with the

goal of securing and maintaining societal approval for continued business operations (Brown & Deegan, 1998; Deegan, 2002; Deegan & Gordon, 1996). This distinction is crucial for understanding why ESG reporting quality varies across organisations. Within this theoretical framework, corporate ESG reports function primarily as legitimacy-seeking instruments, tools through which organisations attempt to demonstrate conformity with societal expectations and thereby preserve their social licence to operate (Moerman & Van der Laan, 2005).

However, because these corporate ESG reports are prepared mainly with the intention of gaining societal legitimacy, the quality of such reports can have substantial disparities, ranging from high to low quality. Cho, Freedman and Patten (2012) and Michelon, Pilonato and Ricceri (2015) explain that this variability in corporate ESG reporting quality is contingent on the approach companies adopt, whether substantive or symbolic, to ensure that they are publicly perceived as conforming to stakeholder expectations. For example, De Silva Lokuwaduge and De Silva (2022) note that a legitimation strategy grounded in substantive actions promotes the disclosure of high-quality ESG information by corporations. This is because substantive corporate reporting strives to align organisational strategies and processes with societal expectations in an authentic manner. Alternatively, Laufer (2003) points out that symbolic reporting practices inherently lead to lower-quality corporate ESG reporting. This is because symbolic approaches to corporate disclosure primarily focus on crafting an impression that a corporation is socially responsible, but they may not necessarily reflect the company's actual ESG performance.

Consistent with the tenets of both stakeholder theory and legitimacy theory, this thesis defines high-quality corporate ESG reporters as those who prioritise and address relevant stakeholder concerns, aligning their actions with their corporate ESG disclosures. On the other hand, low-quality corporate ESG reporters are characterised by their disclosure of ESG information that lacks stakeholder relevance and emphasises superficial appearances over substantive content. In summary, therefore, in this thesis, high quality ESG reports are those which provide relevant information to stakeholders, as well as being a faithful representation of an underlying socio-economic and environmental reality. In contrast, low quality ESG reports fail to meet either or both of these criteria.

1.1.3 Evaluating the quality of corporate ESG reporting in South Africa

In their examination of the extent and quality of integrated reporting practice in South Africa, several researchers find that corporate ESG reporting by JSE-listed entities functions as a symbolic tool for establishing legitimacy. In this environment, the practice of corporate ESG reporting is characterised more by ceremony than substance, generally appearing to be produced with the intention of portraying corporate performance in the best possible light (see, for instance, Haji & Anifowose, 2016, Haji & Hossain, 2016, Malola & Maroun, 2019 and Setia, Abhayawansa, Joshi & Huynh, 2015).

Similarly, in her research investigating the perceptions of senior executives on the implementation of integrated reporting amongst South African listed companies, Steyn (2014) uncovers a parallel theme. In particular, Steyn (2014) finds that senior executives in these business entities predominantly perceive the primary benefit and motive behind the creation of corporate ESG reports as the enhancement of corporate reputation and legitimacy. Consequently, researchers such as Solomon and Maroun (2012a) conclude that the adoption of stakeholder-centric corporate reporting practices in South Africa is mainly driven by considerations other than organisational accountability, notably prioritising the achievement of symbolic corporate legitimacy.

Critics, including De Villiers and Alexander (2014), further argue that South African companies frequently employ ESG reporting as a legitimacy tool to placate institutional pressures while resisting meaningful transformation of their core business practices. . Atkins and Maroun (2015) concur with this perspective, noting that many South African entities treat corporate ESG reporting as a mere box-ticking exercise. Moreover, McNally, Dannielle and Warren (2017) observe that integrated reporting has failed in its fundamental task of stimulating innovation in business communication, instead being unimaginatively compliance-oriented, while managers remain under the usual pressure to deliver short-term returns for market participants. In this conflicted environment, reporting expedience tends to dominate real stakeholder engagement.

Thus, the findings discussed above strongly substantiate that ESG reports are frequently used as instruments to shape stakeholder perceptions of a company's image, rather than facilitating substantive improvements in the stakeholder accountability process. This disconcerting

observation gains further support from the research of Haji and Hossain (2016) and Varachia and Yasseen (2020). Their studies document that some JSE-listed companies resort to strategic reporting methods to create the impression of alignment with societal expectations. These methods involve tactics such as omitting and obscuring negative ESG impacts while accentuating the positive aspects of their corporate ESG performance.

As a result, researchers such as De Villiers and Van Staden (2006), Haji and Anifowose (2016) and Setia et al. (2015) raise doubts about the decision-usefulness of corporate ESG reporting in South Africa. Their major contention is that when companies mainly adopt ESG disclosures for legitimacy rather than for stakeholder transparency, it undermines the relevance and representational faithfulness of these reports. This, in consequence, hinders the progression of corporate ESG reporting into a tool that authentically fosters stakeholder accountability.

The problem of low-quality corporate ESG disclosures that are used to legitimise a firm's operations and activities without actual improvements in its underlying ESG performance, can be further illustrated by a company's inclusion in the FTSE/JSE Responsible Investment Index (formerly known as the FTSE/JSE Socially Responsible Investment (SRI) Index). The FTSE/JSE Responsible Investment Index is intended to provide investors with a method of identifying listed companies with strong ESG policies and practices (JSE, 2021). Accordingly, Sonnenberg and Hamann (2006) suggest that companies included in the Index gain access to a structured framework that empowers them to legitimise their activities, thereby enhancing their reputation among various stakeholders.

ESG reports constitute a critical component of the eligibility criteria that is applied in the selection process of publicly listed South African companies for inclusion into the FTSE/JSE Responsible Investment Index (Du Toit & Lekoloane, 2018). In light of these rigorous entry prerequisites, it becomes reasonable to infer that companies featured in the FTSE/JSE Responsible Investment Index would uphold ESG reports of exceptional quality that demonstrate both relevance and representational faithfulness, so as to enhance investor confidence.

However, Herringer, Firer and Viviers (2009:19) find that stakeholders on both the demand and supply side of the socially responsible investment (SRI) sector in South Africa perceive the ESG information provided by companies as "sugar-coated compliance documents". As a

result, a company's mere inclusion in the FTSE/JSE Responsible Investment Index may not be an accurate reflection of its actual ESG performance. Moreover, companies listed on this index are not necessarily immune to ESG controversies.

As an illustration of this, Lonmin's 2011 Sustainable Development Report draws prominent attention to the company's several sustainability credentials including at that time, its listing on the JSE SRI and the FTSE4Good indices (Lonmin, 2011). In spite of this, in 2012, Lonmin was embroiled in an infamous wage dispute between its mineworkers and company management, which resulted in the deaths of more than 40 people at Lonmin's mine in Marikana, South Africa.

South African bank and financial services group, Standard Bank, provides a different example of the conceivably problematic interpretation of being included in the FTSE/JSE Responsible Investment Index. In their 2020 annual integrated report, Standard Bank (2020: 55) positions itself as Africa's foremost commercial advocate for green finance, highlighting their achievements in this field, including receiving the Global Finance award for "Best Global Investment Bank for Sustainable Finance". However, non-profit shareholder activism organisation, Just Share (2020) laments Standard Bank's hypocrisy in their continued financing of major climate-destructive fossil fuel projects in Africa, which have adverse environmental impacts. Nevertheless, despite these relevant stakeholder concerns, the financial conglomerate maintains its long-standing presence as a constituent of the FTSE/JSE Responsible Investment Index.

The conflicted outcomes discussed above imply that corporate ESG reports may, to a large extent, be products of managerial discretion, incentivised by an intense focus on matters that paint the most favourable possible portrait of the company in its wider goal of acquiring corporate legitimacy. Notwithstanding the reporting quality deficiencies discussed above, South Africa continues to enjoy international recognition for its pioneering leadership in establishing progressive corporate governance frameworks (the King series) that advocate a corporate reporting paradigm (integrated reporting) which ostensibly advances stakeholder accountability (Eccles, Krzus & Solano, 2019; Solomon & Maroun, 2012b). However, this widespread acclaim has the potential to create a misleading impression that all JSE-listed entities that produce integrated reports are genuinely committed to disclosing ESG information that is decision-useful to stakeholders, often without adequate scrutiny of the underlying

motives, relevance and representational faithfulness of such disclosures (for an example of typically uncritical South African enthusiasm for corporate ESG reporting, see Brand South Africa, 2011).

While several studies have challenged the fundamental construct of corporate ESG reporting, primarily focusing on identifying descriptive shortcomings in its practical implementation, fewer studies have sought to evaluate the quality of the specific ESG information reported by companies. For instance, describing the ESG quantification problem, critics such as Solomon (2013) and Windolph (2011) point out that ESG issues are notoriously difficult for managers to measure and for auditors to verify, a vulnerability that provides an opportunity for corporate managers to distort their reported ESG information.

Additionally, the well-documented challenge posed by the absence of common regulatory reporting standards has also been linked to the issue of low-quality corporate ESG disclosures. This is due to the resulting lack of comparability among these disclosures. Although the King IV Report endorses the International Integrated Reporting Council (IIRC) Integrated Reporting (IR) Framework as the preferred reporting framework for the preparation of integrated reports by JSE-listed companies, firms essentially have the flexibility to adopt any of the other widely accepted international ESG reporting frameworks (IoDSA, 2016). Siew (2015) elaborates on this matter, drawing attention to the issue that South African listed entities have freedom of choice between a variety of ESG reporting frameworks (such as the Carbon Disclosure Project (CDP), Global Reporting Initiative (GRI), IIRC IR Framework and the Sustainability Accounting Standards Board (SASB)), each with different scoring metrics and reporting methods. This lack of uniformity makes it challenging to consistently compare ESG performance across firms.

Notably, these practical vulnerabilities may create opportunities for corporate managers to strategically employ ESG communication as a means to attain organisational legitimacy through symbolic actions. However, with the exception of some studies within the environmental domain, there exists a relatively limited body of research that attempts to measure the actual quality of ESG information disclosed by companies (e.g., Clarkson, Li, Richardson & Vasvari, 2008; Kaspereit & Lopatta, 2018; Lyon & Maxwell, 2011). Furthermore, those examining the quality of corporate ESG disclosure have mostly relied on conventional technocratic, compliance-based assessments to evaluate ESG reporting quality

(Barth, Cahan, Chen & Venter, 2017; Hammond & Miles, 2004; Lokuwaduge & Heenetigala, 2017). Therefore, the absence from the literature of an ESG reporting quality model (where quality is defined in terms of the fundamental characteristics of relevance and faithful representation) represents an interesting and important research opportunity, which is confirmed by Hahn and Kühnen (2013). Hence, this thesis seeks to develop a model to measure the relevance and representational faithfulness of the ESG disclosures of South African listed companies.

1.2 Overview of the literature on corporate ESG reporting quality within a framework of stakeholder and legitimacy theories

1.2.1 Theoretical interactions between stakeholder theory and legitimacy theory

While previous research has traditionally explained corporate ESG reporting solely through the lenses of either stakeholder theory (e.g., Sarkar, Sarkar & Sen, 2008 and Siueia, Wang & Deladem, 2019) or legitimacy theory (e.g., Killian & O'Regan, 2016 and Van Zijl, Maroun & Wöstmann, 2017), it is widely acknowledged (as supported by research from Fuhrmann (2019), Gray, Kouhy and Lavers (1995) and Omran and El-Galfy (2014)) that relying on a single theoretical framework is inadequate for comprehensively understanding corporate ESG reporting due to its inherent complexity. Campbell, Craven and Shrives (2003) further submit that this complexity is, at least in part, a result of firms operating within intricate social systems.

Consequently, there has been a growing trend amongst researchers to adopt a multi-theoretical approach in their studies. This approach, exemplified by the contributions of researchers such as Chen and Roberts (2010), De Silva Lokuwaduge and De Silva (2022), Lokuwaduge and Heenetigala (2017), Romero, Ruiz and Fernandez-Feijoo (2019) and Soobaroyen and Ntim (2013), combines both the stakeholder and legitimacy theoretical frameworks to provide a more comprehensive and holistic understanding of the intricate phenomenon surrounding the intention and the quality of corporate ESG reporting.

Derived from the broader perspective of political economy theory, Gray, Owen and Adams (1996) note that both stakeholder theory and legitimacy theory regard organisations as integral components of, and simultaneously influential actors within, the societal and environmental

contexts in which they operate. As a result, Deegan (2002) argues that there are significant overlaps between the stakeholder and legitimacy theoretical frameworks, as they both emphasise the link between a corporation and its operational milieu. Furthermore, Deegan (2019) observes that within political economic theory, each of the two theoretical paradigms perceive corporate ESG reports as multifaceted documents that comprise social, political and economic dimensions. From this viewpoint, these reports are meticulously crafted by managers with the main intent of influencing their external interactions with a diverse array of entities, including other enterprises, individuals and various stakeholder groups.

Nevertheless, while both stakeholder theory and legitimacy theory analyse organisations within societal structures, De Silva Lokuwaduge and De Silva (2022) discern distinct (yet complementary) themes in their approaches to conceptualising corporate ESG reporting. For example, following Friedman and Miles (2006), stakeholder theory's approach primarily focuses on identifying stakeholder groups and analysing the multifaceted relationships between firms and these groups (encompassing not only the financial claimants, but also other groups such as employees, customers, communities, government, and others). Drawing on both ethical and strategic perspectives, stakeholder theory postulates that businesses can fulfil corporate responsibilities to stakeholders and enable them to make well-informed decisions through the provision of comprehensive ESG information (Dubbink et al., 2008).

In contrast, legitimacy theory focuses on leveraging stakeholder perceptions, acknowledging their pivotal role in influencing a firm's long-term survival. Accordingly, as noted by Deegan and Blomquist (2006), legitimacy theory argues that business institutions are constantly striving to align their actions with socially constructed norms, recognising the importance of securing societal approval for their continued operations. Thus, at its core, legitimacy theory's approach is predominantly concerned with understanding stakeholder perceptions and the processes involved in redefining or maintaining these perceptions (Moerman & Van der Laan, 2005). As a result, legitimacy theory proposes that companies should produce corporate ESG reports with the aim of demonstrating their commitment to accountability and responsible corporate conduct. Furthermore, such reporting should prioritise ESG information that contributes to the preservation of a company's societal legitimacy.

Thus, in essence, both the stakeholder and legitimacy theories converge in their recognition that an entity's legitimacy depends on its effective engagement with stakeholders regarding

ESG issues, including investors, customers, regulators and civil society. Nevertheless, they diverge in their approaches to corporate ESG disclosure. Stakeholder theory prioritises meeting diverse stakeholder expectations, emphasising that strong stakeholder relationships enhance long-term value creation. In contrast, legitimacy theory views ESG disclosure as a means to advance the company's vision and strategy, focusing primarily on enhancing the firm's public image and reputation.

1.2.2 Stakeholder and legitimacy theoretical frameworks for assessing the quality of corporate ESG reporting

In their evaluation of the quality of corporate ESG reporting, De Silva Lokuwaduge and De Silva (2022) examine the degree of alignment between the stakeholder demand for ESG information and the supply of such information as provided by corporations. As argued by De Silva Lokuwaduge and De Silva (2022), stakeholder theory is the appropriate framework for understanding this demand as it recognises that firms face both ethical pressures to meet stakeholders' informational needs and strategic incentives to maintain salient stakeholder relationships through quality disclosure. This dual rationale suggests that companies should ensure that their ESG disclosures not only remain relevant but also serve as accurate representations of their actual operational processes and practices. Thus, in line with Romero et al. (2019), the demand for ESG information, underpinned by both ethical and strategic considerations, necessitates high-quality corporate ESG disclosures that comprehensively address stakeholders' needs and expectations.

Nonetheless, despite these stakeholder expectations and principles, documented instances of low-quality corporate ESG reporting, such as those in studies conducted by De Villiers and Van Staden (2006), Setia et al. (2015) and Wild and van Staden (2013), indicate that corporate responses to stakeholder demands for corporate ESG accountability have often fallen substantially short of anticipated standards. De Silva Lokuwaduge and De Silva (2022) propose that the problem of ESG information that fails to meet the requirements of organisational stakeholders is best examined through an analysis of the supply perspective of ESG reporting.

Applying a legitimacy theory frame of reference, Bebbington, Larrinaga and Moneva (2008) and Benoit (1995) identify two primary reasons for why the supply of ESG information by companies may be considered substandard. Firstly, companies frequently employ ESG

reporting as a form of discourse that is aimed at shaping public perception through symbolic compliance rather than substantive action. Secondly, ESG reports are often regarded as tools for managing and repairing an entity's reputation, especially when confronted with perceived threats to their legitimacy. As a result, instead of serving as instruments of accountability that enable stakeholders to genuinely evaluate a company's actual ESG performance, these reports are often crafted to mitigate reputational damage and maintain legitimacy in the eyes of the public.

Corroborating these findings, Michelon et al. (2015) concur that companies tend to engage in superficial ESG gesturing as a means of swaying public opinion. They strategically adopt symbolic management narratives and exhibit ceremonial conformity to reinforce a firm's ostensible legitimacy among influential stakeholders. Symbolic management narratives, as conceptualised by Dowling and Pfeffer (1975), are purposefully crafted communication tactics that are applied by companies to generate specific, often favourable, impressions that resonate with the firm's goals, reputation, and external expectations. Additionally, Meyer and Rowan (1977) define ceremonial conformity as a corporate practice characterised by surface-level adherence to established standards, norms, or requirements.

Generally, these ritualistic corporate ESG gestures encourage managers to exert significant control over the content and presentation of ESG information. Their main objective is to influence, manage, or even manipulate stakeholders' perceptions regarding a firm's actual ESG performance (Michelon et al., 2015). Consequently, in line with Ashforth and Gibbs (1990), Boiral (2013) and Merkl-Davies, Brennan and McLeay (2011), these communication techniques may result in the publication of corporate ESG information that is imbued with falsehoods that prioritise image management over authentic representation of tangible actions or principles.

The other factor that may contribute to the supply of low-quality corporate ESG reporting pertains to corporate ESG disclosures made predominantly in response to legitimacy threats, as proposed by Bebbington et al. (2008). According to Dowling and Pfeffer (1975), a legitimacy threat arises when there is a discordance between a company's behaviour and societal expectations. Furthermore, Davis (1973) notes that, in such situations, the long-term survival of the firm may be jeopardised. As a result, Suchman (1995) argues that firms often

seek to bridge the gap between their actual practices and their perceived legitimacy to avert the adverse consequences of threatened organisational legitimacy.

Deegan (2002) observes that one of the ways in which a firm may attempt to restore their legitimacy in the event of a perceived threat to, or disparity in organisational legitimacy is through the corporate disclosure of ESG information. Supporting this observation, Van der Laan (2009:22) reasons that "disclosure would not be required unless a section of society or 'relevant' public is questioning the appropriateness of the company's output, methods or goals". Thus, corporate ESG disclosures may be used as a means to close the gap between how society perceives the firm and how the firm aspires to be perceived.

Nonetheless, in accordance with the findings of De Villiers and Van Staden (2006) and Maroun (2015), there is a notable risk that companies facing a threat to their legitimacy may attempt to regain control by strategically managing the ESG information that is available to stakeholders. This concept is reaffirmed by Cho et al. (2012) and Deegan (2010), who find that firms seeking to restore their legitimacy often resort to symbolic reporting practices that lack genuine changes in business operations or ethical values, resulting in the production of low-quality corporate ESG reports.

For instance, as articulated by Hummel and Schlick (2016: 459), companies with poor ESG performance (thus confronting a potential legitimacy threat) may prefer to disclose "information that is superficial, incomplete, not easily subject to comparison or ambiguous" to conceal negative ESG-related incidents while simultaneously preserving their legitimacy through the creation of a façade of authenticity. Thus, corporate ESG disclosures that are generated mainly in response to a legitimacy deficit may result in low-quality ESG reports that do not adequately equip stakeholders with the necessary information to assess a company's true ESG performance.

In summary, therefore, as argued by De Silva Lokuwaduge and De Silva (2022) and Michelon et al. (2015), there is a striking dichotomy between the demands of stakeholders for enhanced corporate ESG accountability and the often legitimacy-driven supply of ESG information provided by companies. This disconnect fosters an environment that is conducive to the proliferation of low-quality corporate ESG disclosures, further emphasising the necessity for a model to evaluate the quality of corporate ESG reporting.

1.2.3 The necessity for a model to evaluate the quality of corporate ESG reporting

Such a reporting quality model is becoming more important in an emerging market context such as South Africa, which is a country especially plagued by unemployment, poverty and inequality, in addition to other ESG issues. To address some of these pressing challenges, Visser (2005a) observes that several key stakeholder groups, including consumers, employees, government bodies and local communities view South Africa's private sector as being well-positioned to make meaningful contributions to the nation's economy and society. These contributions encompass capital investment, job creation, knowledge transfer and corporate social investment (CSI).

Furthermore, recognising the private sector's potential to positively impact South Africa's socio-economic landscape, the South African government has introduced regulatory measures such as the Broad-Based Black Economic Empowerment (BBBEE) Act (2003), the Employment Equity Act (EEA) (1998) and the Skills Development Act (SDA) (1998). According to IoDSA (2002), these regulatory measures have been designed to actively encourage the private sector's participation in achieving specific national socio-economic objectives. Hence, South African entities are under significant pressure from various stakeholders to assume their assigned supplementary roles as stewards of society and the environment, amongst other responsibilities.

The significance of influential stakeholder demands becomes even more pronounced when considering the insights of Viviers and Els (2017). They affirm that stakeholder-driven initiatives such as the Code for Responsible Investing in South Africa (CRISA), stakeholder-inclusive regulatory reforms and corporate integrated reporting requirements have led to a substantial increase in the volume of ESG information published by South African listed companies. Following Solomon and Maroun (2012b), these corporate ESG developments continue to reinforce South Africa's international reputation as a global leader in advancing corporate reporting that champions stakeholder accountability and corporate governance.

However, despite the notable increase in the number of South African companies publishing ESG information, it remains imperative to conduct a comprehensive examination of the motivations and impacts behind such disclosures. This evaluation is essential for distinguishing between companies genuinely committed to providing high-quality ESG information and those

generating corporate ESG disclosures of varying quality. This perspective is shared by many critics, including De Villiers and Van Staden (2006) and Wild and van Staden (2013), who contend that the sheer growth in the quantity of ESG reports does not necessarily translate into the provision of relevant information to stakeholders. Consequently, there is a need for the development of an ESG reporting quality model that defines quality based on the fundamental characteristics of relevance and faithful representation.

The importance of developing a model to evaluate the quality of corporate ESG disclosures is further supported by the research findings of Haji and Anifowose (2016), Setia et al. (2015) and Solomon and Maroun (2012a). These studies collectively depict the state of corporate ESG reporting in South Africa as predominantly functioning as a symbolic instrument for establishing legitimacy, rather than a substantive vehicle for improving stakeholder decision-making. The quest for corporate legitimacy through the disclosure of ESG information subtly emerges in the messaging conveyed by select South African corporations that perceive stakeholder engagement as a strategy to safeguard their medium to long-term economic interests (Babarinde, 2009). For example, Sasol (2020: 26) proclaims that "sustainability is a strategic imperative for Sasol" and Nedbank (2020: 2) asserts, "our long-term sustainability and success are contingent on the degree to which we deliver value to society".

While it may not be inherently malicious for these corporations to regard corporate ESG endeavours, including ESG reporting, as instruments to propel their corporate vision, strategic objectives, and economic standing, concerns arise when some firms turn to specific strategies, often indicative of low-quality corporate ESG reporting, to enhance their reputation as they seek to attain legitimacy. Critics shed light on the more deceptive methods employed by South African companies to achieve legitimacy through symbolic actions.

These critics identify several problematic strategies commonly used. For instance, companies may expand ESG disclosure quantity or scope, creating an illusion of transparency while potentially obscuring poor ESG performance (Atkins & Maroun, 2015; Setia et al., 2015; Solomon & Maroun, 2012a). Another tactic involves presenting generic, ambiguous ESG information, appearing committed without specific, measurable actions (Haji & Anifowose, 2016; Wild & van Staden, 2013). Firms also use impression management techniques like selective disclosures to portray favourable operations while deflecting attention from ESG shortcomings (Haji & Hossain, 2016; Setia et al., 2015). Furthermore, De Villiers and

Alexander (2014) and McNally et al. (2017) find that some companies construct narratives that are filled with stakeholder accountability rhetoric to legitimise themselves, only to revert to business-as-usual practices, revealing a significant fissure between their public pronouncements and actions.

It is clear that such disclosure practices hinder the effectiveness of corporate ESG reporting in realising its full potential as a mechanism that connects with stakeholders' expectations to drive real environmental and societal change. This concern is particularly troubling given that South Africa continues to combat deteriorating conditions of climate change, socio-economic development and ethical business leadership. For this reason, there is a need for a model that measures the extent to which corporate ESG disclosures from South African listed entities are a relevant and faithful representation of underlying ESG realities.

1.3 Problem statement

A critical examination of corporate ESG reporting in South Africa indicates a fundamental discord between the intended purpose of ESG disclosure and how it materialises in practice. This incongruity creates conditions conducive to the dissemination of low-quality corporate ESG reporting.

Within the stakeholder-theoretic context, corporate ESG reporting is positioned as a dynamic accountability mechanism with dual functions. It acts simultaneously as an ethical imperative for demonstrating corporate responsibility to the broader community and a strategic framework for managing relationships with influential stakeholders. Whether driven by ethical motivations, strategic pressures, or a combination of both, ESG reporting aims to comprehensively address the concerns and expectations of a diverse array of stakeholders, with the overarching goal of enriching the quality of their decision-making.

In practice, however, many South African companies adopt ESG reporting primarily as a strategic tool for acquiring or maintaining societal legitimacy. In this legitimacy-seeking milieu, the paramount objective of corporate managers appears to be the curation of ESG reports tailored more towards perception management rather than the facilitation of stakeholder decision-usefulness. Moreover, under this paradigm, corporate executives demonstrate a

preference for accentuating overly optimistic and favourable ESG data, often at the expense of downplaying or even omitting any adverse ESG impacts.

This dichotomy in the perceived purpose of corporate ESG reporting may result in potential problems of low-quality ESG information, which is defined as lacking in relevance (and is therefore not useful in making a difference in decisions) or representational faithfulness (and is therefore not neutral, complete, and error-free). Therefore, in this setting, there is arguably a need for an instrument which can measure the quality of corporate ESG disclosures.

1.4 Research objectives

1.4.1 Primary research objective

The primary research objective of this thesis is to contribute to the academic literature on evaluating the quality of corporate ESG reporting, by developing a model to measure the relevance and representational faithfulness of the ESG disclosures of South African listed companies.

1.4.2 Secondary research objectives

The primary research objective will be directed and supported by the following specific secondary research objectives:

- To apply a framework of stakeholder and legitimacy theories in order to identify a set of plausible candidate indicators for the measurement of corporate ESG reporting quality.

- To conduct principal component analysis (PCA) to identify a condensed set of potential indicators for evaluating the quality of corporate ESG reporting and to establish the fundamental dimensions or underlying factors closely associated with these indicators.

- Using the PCA-refined candidate indicators as independent variables and corporate ESG-related controversies as the dependent variable, to develop a model for the measurement of the quality of the ESG disclosures of South African listed companies.

1.5 Research motivation and contribution

Following the articulation of research objectives in Section 1.4, this section provides justification for these objectives and explicates their theoretical, methodological and practical contributions, as well as their broader significance for ESG reporting and practice.

1.5.1 Motivation and contribution of primary research objective

Extensive research has documented the deficient quality of corporate ESG reporting and its limited contribution to sustainable development (e.g. Cho, Laine, Roberts & Rodrigue, 2015, Gray, 2010, Michelon et al., 2015, Milne, Kearins & Walton, 2006 and Moneva, Archel & Correa, 2006). Nevertheless, despite widespread recognition of these quality issues, methodologies for assessing disclosure quality remain underdeveloped. The primary research objective outlined in Section 1.4.1 (to develop a model to measure the relevance and representational faithfulness of ESG disclosures amongst South African listed companies) directly addresses this important gap in the ESG reporting quality literature.

Most studies that attempt to investigate ESG reporting quality exhibit a problematic reliance on content analysis methods, evaluating primarily the adoption, nature and volume of disclosed information (see, for example, Haji & Anifowose, 2016, Lee & Yeo, 2016, Marrone & Oliva, 2020 and Zhou, Simnett & Green, 2017). This approach, as argued by Beretta and Bozzolan (2008), conflates quantity with reporting substance, inappropriately using volume measures as proxies for disclosure quality, leaving the actual quality of corporate ESG reporting largely underexplored (Arvidsson & Dumay, 2022; Hahn & Kühnen, 2013).

This study's proposed model represents a fundamental departure from existing approaches by shifting analytical focus from disclosure presence to disclosure quality. Rather than cataloguing what companies report, this research seeks to evaluate whether ESG information possesses the qualitative characteristics (specifically relevance and representational faithfulness) that render it material and decision-useful to stakeholders. This approach transcends the predominantly descriptive, normative checklist methods that have characterised prior South African research (e.g. Barth et al., 2017, Bernardi & Stark, 2018, Buitendag, Fortuin, & De Laan, 2017, Horn, De Klerk & De Villiers, 2018 and Malola & Maroun, 2019), offering instead a theoretically grounded and empirically validated framework for ESG reporting quality assessment.

The South African context amplifies the urgency of this research objective. The country has gained international recognition as a pioneer in ESG reporting through the introduction of integrated reporting requirements from 2010 onwards and the progressive strengthening of governance frameworks from King III's 'apply or explain' to King IV's 'apply and explain' principles (Eccles et al., 2019; Solomon & Maroun, 2012b). However, recent high-profile ESG controversies present a troubling paradox. Cases such as the Tiger Brands listeriosis litigation and Tongaat Hulett's fraud reveal a stark disconnect between sophisticated reporting requirements and actual ESG performance among JSE-listed companies. These cases reinforce the need for evaluation tools that assess the quality and authenticity of corporate ESG disclosures.

1.5.2 Motivation and contribution of secondary research objectives

Applying stakeholder and legitimacy theories to identify ESG reporting quality indicators

The first secondary objective applies stakeholder and legitimacy theories to identify a set of plausible candidate ESG reporting quality indicators, making a theoretical contribution by extending these theoretical frameworks to indicator development. While the financial reporting quality literature has established a strong precedent for theory-driven indicator development (e.g. Beneish, 1999, Dechow & Dichev, 2002 and Stubben, 2010), ESG reporting quality studies predominantly derive indicators from established ESG reporting frameworks and guidelines such as GRI standards, SASB and the IIRC IR Framework (e.g. Hammond &Miles, 2004, Luo & Tang, 2023 and Pitrakkos & Maroun, 2020). This study leverages this gap by identifying plausible indicators for ESG reporting quality measurement that are grounded in stakeholder and legitimacy theoretical frameworks.

The integration of stakeholder and legitimacy theories captures the fundamental tension between authentic stakeholder information provision and legitimacy management objectives, a tension that potentially determines whether such disclosures prioritise decision-usefulness or perception management. Consequently, indicators derived from this theoretical fusion can better distinguish between substantive, decision-useful information and superficial legitimacy-seeking communications. Single-theory or atheoretical approaches may fail to capture this underlying dynamic that drives reporting quality variation across firms and contexts. Yet ESG

researchers have increasingly adopted stakeholder-legitimacy theoretical combinations primarily to explain ESG reporting behaviour rather than develop quality measurement tools (see, for example, Chen & Roberts, 2010, De Silva Lokuwaduge & De Silva, 2022 and Soobaroyen & Ntim, 2013). Thus, building on this theoretical foundation, this research uses a comprehensive stakeholder-legitimacy theoretical lens to systematically identify indicators for empirically measuring ESG reporting quality, a contribution that distinguishes it from prior work focused on explanatory applications.

Using principal component analysis (PCA) to operationalise and refine ESG reporting quality indicators

PCA aims to transform the stakeholder-legitimacy theory grounded indicators identified in the first secondary objective into an empirically robust measurement framework. This methodological approach addresses two critical limitations in current ESG reporting quality literature. First, studies have traditionally relied on arbitrary weighting schemes when constructing composite ESG quality measures (e.g., Brammer & Pavelin, 2008, Dilling & Caykoylu, 2019, Hackston & Milne, 1996 and Wiseman, 1982). PCA generates data-driven component loadings that replace subjective weighting with empirical rigor, offering a methodologically sound alternative to pre-constructed ESG indices. Second, PCA can help reveal the underlying dimensional structure of corporate ESG reporting quality indicators, providing empirical insights into whether reporting quality may function as a single unified construct or consists of multiple distinct dimensions. This dimensional analysis has potential value because ESG reporting's complex, multifaceted nature often creates overlapping indicators that can obscure the core factors driving reporting quality assessment. The application of PCA therefore serves as the analytical instrument that transforms the stakeholder-legitimacy theory derived indicators into practical, empirically informed measurement tools for assessing ESG reporting quality.

Developing and validating an ESG reporting quality measurement model against corporate ESG controversies

This final research objective represents the culmination of the study by developing and validating an ESG reporting quality measurement model for South African listed companies. The model uses PCA-refined ESG indicators as independent variables and ESG controversies

as the dependent variable. This method seeks to fulfil a critical gap in ESG reporting quality research: the absence of externally validated metrics that assess reporting quality using real-world negative outcomes as validation criteria. Unlike financial reporting quality research, which has long used external events such as accounting restatements and enforcement actions as validation criteria for poor reporting quality (see, for example, Beneish, 1999 and Dechow, Ge & Schrand 2010), ESG research lacks analogous validation measures that verify theoretical quality indicators against adverse corporate events.

To overcome this validation challenge, this study treats ESG controversies as external indicators that reveal pre-existing deficiencies in ESG reporting quality. Corporate ESG controversies are negative events related to a firm's environmental, social or governance practices that generate public criticism and stakeholder concern (Utz, 2019). These incidents such as corporate-induced environmental disasters, labour violations or governance misconduct, typically emerge through external media coverage or public exposure, unveiling corporate misconduct that can damage relationships with employees, communities, investors and other stakeholders (Aouadi & Marsat, 2018).

For the purposes of this study, corporate ESG controversies are defined as observable manifestations of underlying ESG reporting inadequacies. When controversies arise, they signal that stakeholders were insufficiently informed about potential ESG risks through the company's prior reporting, indicating deficiencies in either relevance (failure to disclose material ESG information) or representational faithfulness (failure to accurately represent ESG practices and performance).

The selection of corporate ESG controversies as the dependent variable reflects the study's binary conceptualisation of ESG reporting quality. Companies involved in ESG-related controversies are classified as low-quality ESG reporters, as the emergence of controversies reveals that their reporting lacks sufficient relevance or fails to faithfully represent actual ESG practices and performance. Conversely, the absence of ESG-related controversies suggests high-quality ESG reporting that provides relevant information and accurately reflects the company's underlying ESG reality.

By examining whether companies embroiled in ESG controversies exhibit distinctive reporting quality patterns, this investigation establishes crucial empirical validation of theory-derived

quality measures through observable market outcomes. This validation framework represents a significant methodological advancement in ESG reporting quality research through three fundamental contributions: first, it establishes rigorous external validation criteria that mirror the sophistication of financial reporting quality assessment; second, it provides empirical evidence validating theoretical quality indicators against real-world ESG performance failures; and third, it offers practitioners and researchers a validated instrument for assessing ESG disclosure quality within an emerging market context where such tools are critically needed.

1.5.3 Practical contributions and broader implications

The implications of this study extend beyond academic contribution, offering significant practical value to key stakeholders within South Africa's capital markets ecosystem. For institutional investors, the proposed model provides systematic tools to distinguish substantive corporate ESG performance from superficial reporting, enhancing capital allocation decisions in an increasingly ESG-conscious investment landscape. The audit profession benefits from verification resources that enhance assurance processes, addressing growing demand for credible ESG verification services. The model's practical relevance is further amplified by South Africa's evolving governance landscape. With King V's anticipated release in September 2025 emphasising comprehensive and truthful company information from 2026, this research provides timely tools for assessing JSE-listed companies under the forthcoming framework. Additionally, policymakers gain empirical insights into the effectiveness of existing stakeholder-oriented policies including BBBEE, the Employment Equity Act, and Skills Development Act which encourage meaningful stakeholder engagement and inclusive business practices. These insights can inform future policy refinements and strengthen South Africa's position as a leader in progressive corporate governance and ESG reporting standards.

Beyond its domestic significance, this research emerges at a critical juncture in global ESG reporting evolution, offering contributions beyond South Africa's borders. The convergence of multiple international regulatory developments such as the European Union's Corporate Sustainability Reporting Directive (CSRD) mandating comprehensive ESG disclosures for large companies from 2024, the International Sustainability Standards Board's global baseline sustainability disclosure standards (IFRS S1 and S2), the SEC's climate disclosure rules in the US and the UK's sustainability reporting requirements, creates unprecedented worldwide demand for robust methodologies that assess disclosure quality beyond mere compliance.

Against this backdrop, this study's findings from South Africa's relatively mature integrated reporting framework could provide valuable insights for international ESG scholarship by demonstrating how quality assessment methodologies can be developed and validated in practice, offering lessons for jurisdictions transitioning from voluntary to mandatory ESG reporting frameworks.

1.6 Overview of the methodological approach

This study adopts a quantitative research design underpinned by a post-positivist research philosophy. According to Ryan (2006), post-positivism recognises the complexity of social phenomena while maintaining a commitment to empirical evidence and systematic inquiry in the development of generalisable laws and principles. This philosophical stance aligns with previous ESG reporting studies in South Africa, such as Manyike (2023) and Oberholzer, Botha and Middelberg (2023), making it well-suited to the proposed research.

The central null hypothesis of this thesis is that there is no relationship between corporate ESG reporting quality (as measured by the study's candidate indicators) and corporate ESG controversies. This overarching null hypothesis is operationalised through a series of specific hypotheses that test individual ESG reporting quality indicators. Each specific hypothesis examines whether particular disclosure characteristics predicted by stakeholder and legitimacy theories are associated with ESG controversy outcomes. The collective results of these specific tests will determine whether the central null hypothesis can be rejected.

Corporate ESG reporting quality is operationalised through specific disclosure characteristics identified through stakeholder and legitimacy theories. Corporate ESG controversies serve as an independent validation measure, where the presence of controversies indicates low-quality ESG reporting that lacks relevance and fails to faithfully represent actual ESG practices, while the absence of controversies suggests high-quality reporting that provides relevant, decision-useful information and accurately reflects underlying ESG performance.

To identify candidate indicators for measuring ESG reporting quality, the research commences with the application of a framework of stakeholder and legitimacy theories within the context of the Refinitiv thematic structure. This theoretical framework identifies plausible ESG reporting quality candidate indicators by distinguishing between disclosure characteristics that

may represent symbolic reporting designed to manage stakeholder perceptions without operational change, and those that may indicate authentic commitment where reporting reflects actual ESG performance. These candidate indicators are developed across environmental (see Section 3.3), social (Section 3.4) and governance (Section 3.5) dimensions and validated against controversy outcomes.

An example of such a candidate indicator from the environmental domain to be tested is firms' self-reported adoption of environmental policies. While stakeholder theory explains why firms focus on disclosing environmental policies that matter to key stakeholders, legitimacy theory suggests that firms may respond to these stakeholder expectations through symbolic policy reporting rather than substantive implementation. Specifically, some firms may engage in ceremonial actions like reporting on a wide range of environmental policies in order to create an illusion of being a benevolent, environmentally conscious actor (Marquis, Toffel & Zhou, 2016). Such strategic reporting garners reputational benefits while avoiding the costs of substantive operational reforms (Bromley & Powell, 2012). By creating an impression of ESG commitment, firms can temporarily satisfy stakeholders and preserve their social license to operate without facing scrutiny of their actual practices (Ashforth & Gibbs, 1990). Consequently, this theoretical reasoning predicts that environmental policy declarations may undermine the production of relevant and decision-useful information for stakeholders, as firms prioritise disclosure over authentic implementation. This leads to the formulation of the following pair of hypotheses:

H_{01}: There is no statistically significant relationship between South African firms' self-reported adoption of environmental policies and the quality of their corporate ESG reporting.

H_{a1}: There is a statistically significant inverse relationship between South African firms' self-reported adoption of environmental policies and the quality of their corporate ESG reporting.

Refinitiv publishes 186 ESG indicators for each of a substantial number of listed South African companies, in most cases for at least six years. The Refinitiv data points are categorised into ten themes, such as resource use and emissions (within the environmental dimension), human rights and product responsibility (social dimension), and management and corporate strategy (governance). Internal validity for this research is derived from the comprehensive quality

control measures applied by Refinitiv in its ESG data collection processes, including logical error checking, algorithmic screens, independent audits and system validation.

Having identified the candidate set of ESG reporting quality indicators, the principal component analysis (PCA) method is applied in this study to achieve two main goals. Firstly, PCA is used to identify a smaller set of indicators for assessing corporate ESG reporting quality by effectively capturing the most important patterns and variations within the dataset. Secondly, PCA is employed to determine the fundamental dimensions or underlying factors closely associated with these indicators, providing insight into the core dimensions that significantly influence the quality of corporate ESG reporting.

Following PCA, the central hypothesis is tested using binary logistic regression. The PCA-refined indicators of ESG reporting quality serve as independent variables while the presence or absence of corporate ESG controversies functions as the dependent variable. Both sets of data are sourced from the Refinitiv dataset. The selection of corporate ESG controversies as the dependent variable reflects the study's conceptualisation of ESG reporting quality, which is categorised as either low or high. To operationalise this concept within the binary logistic regression model, the dependent variable (ESG controversies) is coded as a binary measure, where a value of 1 denotes the presence of one or more ESG-related controversies for a given company, and a value of 0 signifies the absence of any such controversies. The independent variables, representing ESG reporting quality indicators, are measured as ratio variables on a numeric scale.

A statistically significant relationship between one or more of the independent variables (ESG reporting quality indicators) and the dependent variable (corporate ESG controversies) will be interpreted as evidence supporting the model's ability to evaluate corporate ESG reporting quality. In other words, should the binary logistic regression analysis reveal that certain ESG reporting quality indicators are significantly associated with the likelihood of a company being involved in ESG-related controversies, it would signal that these indicators are useful predictors of ESG reporting quality.

The population for this research comprises all companies listed on the JSE for at least one full financial year between 2013 and 2019. This timeframe was carefully selected for three main reasons. First, 2013 marks the earliest year of comprehensive ESG data coverage by Refinitiv

for JSE-listed companies. Second, the period captures a significant transition in corporate governance frameworks when King III was replaced by King IV (published in 2016, effective 2017), providing insights into companies' responses to evolving governance requirements. Finally, by concluding before the COVID-19 pandemic in 2020, the study ensures data reliability under relatively normal market conditions.

This thesis is considered to have external validity on the basis that South Africa's principles-based ESG disclosure framework, anchored by the King IV Code's 'apply and explain' approach and JSE listing requirements, provides an appropriate frame of reference for the evaluation of similar corporate reporting practices in the many other countries where the disclosure of such information remains merely voluntary. Moreover, ESG data for the study is available on Refinitiv and will be obtained from that source.

While this methodological approach provides a robust framework for investigating corporate ESG reporting quality, it is important to acknowledge the boundaries and contextual factors that define the research scope. The study's geographic focus on South African JSE-listed companies, while ensuring comprehensive data availability through established ESG disclosure requirements, limits the direct generalisability of findings to jurisdictions with different regulatory frameworks or voluntary reporting regimes. The reliance on Refinitiv data, though benefiting from the provider's quality control measures, introduces potential constraints related to data completeness and measurement consistency inherent to any single data source.

The binary classification of ESG reporting quality based on controversy presence or absence provides empirical clarity and objectivity, though this approach necessarily focuses on observable outcomes rather than capturing the full spectrum of reporting practice variations. Additionally, although the study establishes statistical associations between ESG reporting indicators and controversy outcomes, it cannot determine causal relationships between these variables. Furthermore, the temporal delimitation to 2013-2019 ensures data consistency under pre-pandemic market conditions but potentially excludes insights into more recent ESG reporting developments. These methodological considerations and acknowledged limitations provide the foundation for the detailed research methods presented in Chapter 4.

1.7 Thesis structure

This thesis has been structured into six chapters, which are outlined below:

Chapter 1: Introduction and project overview

A striking paradox exists in South African corporate ESG reporting. While the JSE requirements effectively necessitate ESG reporting through the integrated reporting framework for listed entities, an approach that has garnered international praise for advancing corporate accountability, emerging evidence reveals a concerning pattern: reports appear to be selectively curated by management teams. This selective approach typically emphasises positive achievements while downplaying or omitting adverse impacts. Rather than delivering the balanced, comprehensive ESG information necessary for informed stakeholder decision-making, companies seem to prioritise favourable self-presentation in pursuit of corporate legitimacy. To address this misalignment between reporting intent and practice, this study's primary objective is to develop a model for evaluating the quality of ESG disclosures by South African listed companies, specifically focusing on assessing the relevance and representational faithfulness of these disclosures.

Chapter 2: Exploring the South African ESG reporting landscape: Drivers, practices and challenges

Chapter 2 investigates the complex interplay of factors driving ESG reporting among South African corporations. It situates stakeholder demands for corporate ESG disclosure within the country's unique socio-political landscape. Furthermore, it analyses how these expectations have shaped key initiatives and frameworks promoting corporate ESG reporting in South Africa. Additionally, the chapter examines how JSE-listed firms respond to these demands, exploring both the motivations behind their corporate ESG disclosure practices and how these factors may influence the quality of the reports produced.

Chapter 3: Theoretical framework and hypotheses development

This chapter applies a multi-theoretical approach that integrates stakeholder and legitimacy theories to conceptualise corporate ESG reporting quality in South Africa. Building on this theoretical framework, the chapter critically identifies and evaluates specific ESG disclosure practices. It then develops hypotheses regarding the influence of these practices on both the

relevance and representational faithfulness of ESG reporting among JSE-listed entities. To facilitate empirical testing, the chapter concludes by selecting measurable ESG indicators that operationalise these hypothesised relationships.

Chapter 4: Research methodology

Chapter 4 outlines the methodological framework that underpins this thesis, establishing a systematic approach to investigating the quality of ESG disclosures among South African listed companies. It covers the philosophical paradigm, research design, data collection procedures and data analysis methods used in the study. Moreover, the chapter discusses ethical considerations and the limitations of the chosen methodologies.

Chapter 5: Empirical results and discussion

This chapter presents the empirical outcomes from developing a corporate ESG reporting quality model for South African listed companies. The analysis discusses results from two key phases. First, it explores findings from the Principal Component Analysis (PCA), which is conducted to reduce dimensionality and uncover underlying relationships among ESG indicators. Second, it investigates results from binary logistic regression modelling used to construct and validate the ESG reporting quality model. The chapter then evaluates the research hypotheses against these empirical findings. Finally, the chapter synthesises the key findings by reflecting on how the main research objective of measuring the quality of ESG reporting by JSE-listed firms has been achieved and interpreting the broader implications of these results.

Chapter 6: Conclusions

Chapter 6 is the final chapter of this thesis. It discusses both theoretical and practical implications, highlighting the study's contributions to the existing literature on ESG reporting. The chapter also provides actionable insights for policymakers and practitioners to improve ESG disclosure practices. Additionally, it addresses the study's limitations and suggests future research directions to advance the quality, transparency and accountability of corporate ESG reporting.

CHAPTER 2
Exploring the South African ESG reporting landscape: Drivers, practices and challenges

2.1 Introduction

Scrutinising the ESG reporting practices of South African corporations frequently unveils a glaring inconsistency between the self-reported ESG performance of many companies and their actual corporate behaviour. An illustration of this troubling phenomenon is the case of Tiger Brands, a JSE-listed packaged goods company that manufactures and distributes a diverse portfolio of food, home and personal care products across the African continent.

Tiger Brands' 2016 integrated report, ranked as "Good" quality by the EY Excellence in Integrated Reporting survey, paints a picture of a company that meets several ESG criteria. The report highlights that independent assurance providers regularly audit the company's food safety practices at all facilities and that Tiger Brands strictly adheres to generally accepted food manufacturing standards. Furthermore, the report emphasises Tiger Brands' position as a top 30 performer on the FTSE4Good sustainability index, which evaluates companies with robust ESG practices (Tiger Brands, 2016). Given these high standards of ESG compliance, Tiger Brands seemingly presented itself as a shining example of responsible corporate citizenship.

However, this illusion was shattered in March 2018 when Dr. Aaron Motsoaledi, the former Minister of Health, announced that the source of a deadly listeriosis outbreak had been traced back to a processed meat plant owned by Tiger Brands (Food Safety News, 2018). Listeriosis is a serious invasive foodborne disease caused by the bacterium *Listeria monocytogenes*, which can contaminate various foods. It can cause severe symptoms and may be life-threatening, particularly for vulnerable groups such as pregnant women, infants and adults with weakened immune systems (Swaminathan & Gerner-Smidt, 2007). The World Health Organization (WHO) reports that this outbreak is the largest recorded listeriosis outbreak globally, resulting in over 200 confirmed deaths between January 2017 and June 2018 (WHO, 2018).

The stark contrast between Tiger Brands' reported ESG performance and the devastating consequences of its actions raises significant concerns about the accuracy and reliability of the

firm's ESG disclosures. Furthermore, the Tiger Brands listeriosis scandal underscores the necessity for a thorough examination of the drivers and true motives behind ESG reporting practices among South African companies. It prompts an investigation into the actual quality and integrity of these disclosures to better understand why they often fall short in fulfilling their intended purpose as an effective mechanism for promoting responsible corporate conduct and sustainable value creation.

This chapter takes up that challenge, exploring the complex web of factors that shape ESG reporting in South Africa. Starting with Section 2.2, the discourse surrounding stakeholder demands for corporate ESG reporting is situated within the country's unique historical socio-political context. Building on this foundation, Section 2.3 analyses how these stakeholder expectations have been translated into a variety of initiatives, both market-driven and legally mandated efforts, that outline recommendations and requirements for JSE-listed firms to publicly disclose their ESG information.

To comprehend how companies respond to these stakeholder demands, Section 2.4 probes into the core motivations driving JSE-listed companies to produce corporate ESG reports. This discussion centres on why corporations, in their pursuit and preservation of corporate legitimacy among influential stakeholders, may prioritise reporting practices that become detached from actions that call for greater corporate transparency. Regrettably, this decoupling often leads to the generation of low-quality corporate ESG reports. Finally, Section 2.5 synthesises the chapter's findings, offering a comprehensive summary and drawing key conclusions from the analysis presented throughout the chapter.

2.2 The socio-political context underpinning stakeholder expectations for corporate ESG reporting in South Africa

2.2.1 Introduction

Corporate ESG reporting has gained significant attention in recent years, driven by the growing demands of stakeholders who seek to expand the scope of business communication beyond traditional financial metrics. This shift in focus stems from the recognition that a company's impact is not limited to its financial performance but permeates its influence on the

environment, society and the broader corporate governance ecosystem (Freeman et al., 2010; Post et al., 2002). Consequently, stakeholders increasingly expect businesses to incorporate ESG concerns into their reporting frameworks, providing a more comprehensive and transparent account of their activities and the resulting implications.

The importance of corporate ESG reporting is especially pronounced in South Africa, a country with a multifaceted history that has profoundly shaped its business environment. To understand the factors influencing stakeholder expectations for corporate ESG reporting in this context, it is necessary to examine the nation's distinct socio-political setting. As Busacca (2013) observes, South Africa's infamous legacy of apartheid has had a substantial impact on its contemporary corporate landscape, creating a complex set of challenges and opportunities for corporate ESG reporting.

The sections that follow explore how South Africa's socio-political milieu has catalysed stakeholder demands for corporate ESG disclosures from two interconnected perspectives. The first, encapsulated in Section 2.3.2, mainly emanates from domestic stakeholders who frame ESG reporting as a moral imperative for businesses to rectify the injustices of the apartheid era. The second stance, outlined in Section 2.3.3, underscores how international investors, influenced by the growing global focus on robust corporate governance practices, further amplified the demand for ESG disclosures as South Africa re-entered global markets after the end of apartheid. Together, these perspectives illustrate how both domestic and international pressures have collectively moulded the demand for corporate ESG reporting in South Africa.

2.2.2 Rectifying the past: Stakeholder demands for ESG reporting as a moral imperative

Numerous researchers, including Crush and Tshitereke (2001), Skinner and Mersham (2008) and Wolpe (1972), have extensively scrutinised the controversial role of the private sector during apartheid. These researchers argue that South African corporations were not merely passive bystanders but active participants in and beneficiaries of a regime that systematically oppressed and marginalised the Black population. Legassick (1974) and Wolpe (1972) further demonstrate how these entities profited financially from the exploitation of Black labour and unjust land expropriation, actions that caused significant harm to the Black community.

As a result of these past injustices, De Villiers and Van Staden (2006) note that the social and economic inequality perpetuated under apartheid raised critical questions amongst various social actors about the centrality of capitalism and the need for a broader system of governance and accountability that addressed both social and economic performance. As South Africa transitioned to democracy in 1994, a wide range of stakeholders, such as government bodies, institutional investors, political groups, shareholder activists and civil society representatives progressively called upon South African business organisations to account for their non-financial performance, specifically by reporting on the ESG impacts of their operations (De Villiers, Rinaldi & Unerman, 2014).

According to Ponte, Roberts and Van Sittert (2007), these stakeholders recognised that addressing the legacy of apartheid necessitated not only political and social reforms but also a fundamental transformation in corporate behaviour and reporting practices. This change was particularly important given the pervasive belief among several stakeholders that many South African entities had both contributed to and benefited from the apartheid system (Nattrass & Seekings, 2010).

Consequently, a significant number of these stakeholders maintain that South African corporations have an obligation to leverage their substantial resources and extensive spheres of influence to actively participate in the nation's socio-economic advancement (Patel & Mushonga, 2014; Visser, 2005b). This viewpoint is further reinforced by Babarinde (2009: 359), who underscores the prevailing sentiment, notably endorsed by the South African government, that the corporate sector should "be expected, or even summoned, to assist in righting the wrongs of the past".

From this perspective, West (2006) substantiates the notion that stakeholders articulate and justify their demand for corporate ESG reporting as a means for South African enterprises to rectify their alleged complicity in the nation's history of institutionalised discrimination. By engaging in such disclosure practices, companies can show their dedication to helping address the entrenched inequities and structural disparities stemming from the country’s apartheid past.

2.2.3 Reintegrating into global markets: Stakeholder demands for ESG reporting as a corporate governance imperative

In addition to domestic pressures, the impetus for corporate ESG reporting in South Africa can also be attributed to the influence of international financial markets. As South Africa sought to reintegrate into global markets and re-establish ties with the international investment community following the end of its economic isolation and the lifting of capital controls in the post-apartheid era, the country faced significant criticism from foreign investors (Isaacs, 2018).

These investors, some of whom returned to South African markets shortly after the country's transition to democracy in 1994, expressed concerns about the corporate structures and governance of many South African firms. They were particularly troubled by the lack of stakeholder accountability and the absence of corporate ethics integration, which they viewed as essential components of sound business practices, alongside corporate financial performance (Malherbe & Segal, 2001).

To respond to these criticisms, attract foreign investment, and rebuild their international reputation, it became imperative for South African firms to adopt mechanisms that would hold company directors accountable for corporate ESG performance (Vaughn & Ryan, 2006). This approach was in line with the growing global trend, among foreign institutional investors, who increasingly emphasised the salience of good corporate governance practices and stakeholder inclusivity in their investment decision-making processes (Rossouw, Van der Watt & Rossouw, 2002).

This global push for improved corporate governance was catalysed by several high-profile international accounting scandals and subsequent corporate failures, which brought attention to critical deficiencies in the corporate governance systems of prominent large corporations (Brennan & Solomon, 2008). These events prompted various stakeholders, including international organisations, governments and investor groups, to advocate for improved corporate governance mechanisms that promote wider stakeholder accountability (Gill, 2008). A prime example of this shift in global corporate governance is the publication of the OECD Principles of Corporate Governance in 1999, which featured provisions for protecting stakeholders' rights of participation and access to information (OECD, 1999).

Thus, from this standpoint, the demand for corporate ESG disclosures by South African firms can be seen as a strategic response to the pressures and expectations associated with the country's reintegration into global financial markets. By providing both internal and external stakeholders with the information necessary to monitor managerial behaviour and assess the firm's overall ESG performance, these disclosures serve as a crucial risk management tool (Clark & Hebb, 2005).

In conclusion, South Africa's unique socio-political backdrop has given rise to two interconnected perspectives that have collectively underpinned stakeholder demands for ESG disclosures from corporations. From a domestic standpoint, a diverse range of stakeholders view corporate ESG reporting as a moral imperative. They argue that such disclosures offer a mechanism for companies to address their historical involvement in the institutionalised injustices of the apartheid era while showcasing their dedication to ameliorating long-standing societal inequalities.

Concurrently, international pressures have also played a pivotal role in driving the demand for corporate ESG reporting in South Africa. As the country reintegrated into global markets following the end of apartheid, foreign investors, guided by the growing international focus on robust corporate governance practices, sought evidence of local firms' commitment to stakeholder accountability, ethical conduct and improved governance. These investors viewed the incorporation of non-financial considerations into corporate operations and business communication as essential for monitoring a company's long-term sustainability, risk management capabilities and alignment with emerging international expectations.

In summary, therefore, stakeholder expectations for corporate ESG reporting in South Africa have been shaped by the desire to address the country's apartheid legacy as well as the need to meet international investor demands for enhanced transparency and accountability as part of re-integrating into global markets.

The ensuing section examines how these expectations, rooted in the moral and corporate governance imperatives, have manifested through an array of legal mandates and voluntary initiatives, both compelling and incentivising South African enterprises to report their ESG information.

2.3 Key initiatives promoting corporate ESG reporting in South Africa

2.3.1 Introduction

In South Africa, the growing stakeholder demands for corporate ESG disclosures are addressed through a combination of regulatory measures and market-driven initiatives. The regulatory landscape plays a critical role in shaping corporate behaviour and decision-making, particularly in the context of ESG reporting. The South African government has been instrumental in creating this regulatory environment by promulgating a comprehensive legislative and socio-economic reform framework that imposes ESG obligations on companies, including reporting requirements (Babarinde, 2009; Johnson et al., 2019).

The central components of the South African regulatory framework that impact corporate ESG disclosures include:

- The Broad-Based Black Economic Empowerment (BBBEE) Act (No. 53 of 2003) and the Employment Equity Act (EEA) (No. 55 of 1998).
- The Companies Act (No. 71 of 2008).
- Sector-specific regulations such as the Mineral and Petroleum Resources Development Act (No. 28 of 2002).
- The revised Regulation 28 of the Pension Funds Act (2011).

As Reddy (2016) observes, many of these policies and statutes are deeply rooted in the country's efforts to redress historical injustices and ensure that companies actively contribute to the realisation of social justice and the equitable socioeconomic advancement of all South Africans, a subject that is explored in Section 2.3.2 above.

Complementing these regulatory measures, market-driven initiatives have emerged as influential factors in championing sustainable practices and ESG reporting among South African entities. These initiatives, often spearheaded by investors, stock exchanges, and industry associations, resonate with the capital market expectations for ESG reporting discussed earlier in Section 2.3.3, emphasising the importance of ESG factors in assessing corporate performance, risk and governance. The market-driven measures and practises that

influence South African firms to embrace ESG reporting and align their operations with sustainability objectives and responsible conduct in South Africa include:

- The JSE Listings Requirements and the King series of reports on corporate governance.
- The Integrated Reporting Committee of South Africa (IRCSA).
- The International Integrated Reporting Framework.
- The FTSE JSE Responsible Investment Index Series.
- Code for Responsible Investing in South Africa (CRISA).

In the subsequent sections, the initiatives that collectively form the legal framework and the market-driven influences on corporate ESG reporting in South Africa are examined in greater detail. This analysis elucidates how each of these factors exerts substantial pressure on companies to address and disclose specific aspects of their ESG performance, thereby contributing to the continuous evolution of corporate reporting practices in the country.

2.3.2 Broad-Based Black Economic Empowerment and the Employment Equity Acts

The Broad-Based Black Economic Empowerment (BBBEE) Act (No. 53 of 2003) and the Employment Equity Act (EEA) (No. 55 of 1998) are regulatory mechanisms through which the South African government strategically harnesses the resources and extensive influence of the business community to address entrenched social and economic inequalities. Specifically, the BBBEE Act is designed to facilitate economic transformation and inclusion for all Black South Africans (South Africa, 2003). The EEA, on the other hand, focuses on eliminating discriminatory practices and fostering equitable opportunities in the workplace, especially benefiting previously disadvantaged groups such as Black individuals, women and people with disabilities (South Africa, 1998).

With respect to disclosure requirements, the amended BBBEE Act (2013) in conjunction with JSE Listings Requirements, mandates that JSE-listed companies submit an annual compliance report to the BBBEE Commission within 90 days of their financial year-end. This report must adhere to a prescribed format and detail the company's initiatives and outcomes across five codes of good practice: skills development, enterprise and supplier development, socio-

economic development, management control and ownership (Department of Trade and Industry, 2016; JSE, 2019). The report should reflect the company's performance on each element of its BBBEE scorecard, ensuring a comprehensive disclosure of its adherence to BBBEE principles.

Similarly, Section 22 of the EEA (1998) requires these firms to include a summary of their employment equity statistics in their annual reports, encompassing workforce demographics such as race, gender and disability along with their progress in attaining employment equity targets.

As a result, the integration of BBBEE and employment equity disclosures into South African legislation significantly shapes the social disclosures featured in the ESG reports of publicly listed South African firms. Moreover, the disclosure of BBBEE and employment equity information enables stakeholders, such as employees and civil society organisations to assess and monitor the companies' progress in achieving the broader goals of economic empowerment and workplace equality in South Africa.

2.3.3 The Companies Act

The Companies Act (No. 71 of 2008) is the core legislation governing the formation, operation, and management of all companies incorporated and registered in South Africa. Although the Companies Act and its subsequent amendments, the Companies Amendment Act (No. 3 of 2011) and the Companies Regulations (2011) do not explicitly mandate corporate ESG reporting, the Act indirectly fosters corporate ESG reporting through several provisions.

Firstly, it broadens stakeholder engagement and enhances the regulation of corporate practices, particularly in the realms of accountability and transparency (Ramlall, 2012). Secondly, the Companies Act requires certain companies, such as state-owned entities and publicly-listed firms, to establish a social and ethics committee to manage corporate social responsibility endeavours and stakeholder issues in a more responsible manner. Lastly, it specifies that annual financial statements and directors' reports may incorporate information about the firm's ESG impact, and companies must consider stakeholders' interests when making crucial business decisions (South Africa, 2008).- These provisions, amongst others, indirectly incentivise ESG-

related disclosures, as companies seek to demonstrate their commitment to responsible business conduct, stakeholder engagement and socio-economic development.

2.3.4 Sector-specific regulations

The South African government has enacted sector-specific regulations to foster corporate social responsibility among firms operating in certain industries. Notable legislation includes the Mineral and Petroleum Resources Development Act (MPRDA) (No. 28 of 2002), the National Forests Act (No. 84 of 1998) and the Conservation of Agricultural Resources Act (No. 43 of 1983).

The MPRDA illustrates how sector-specific legislation can drive ESG reporting. The primary objective of the MPRDA is to ensure orderly and ecologically sustainable exploration and exploitation of mineral and petroleum resources while supporting social and economic empowerment (South Africa, 2002). Although the MPRDA does not explicitly mandate specific ESG reports or standardised disclosure formats, it has indirectly encouraged the adoption of corporate ESG reporting practices in the mining and petroleum sector through its various provisions (Kloppers & du Plessis, 2008).

One key provision of the MPRDA is Section 23, which requires firms to submit a social and labour plan when applying for mining rights (South Africa, 2002). This plan must outline the company's strategies to advance local and rural development and the social upliftment of communities affected by mining activities. By mandating the submission of social and labour plans, the MPRDA motivates businesses to consider and report on their social impact and community development initiatives.

Furthermore, Section 39 of the MPRDA requires companies to submit environmental management plans and programmes when applying for mining rights (South Africa, 2002). These programmes must include the company's environmental impact assessment and strategies to mitigate and manage environmental impacts. Through these requirements, the MPRDA seeks to facilitate transparency and accountability with respect to a company's environmental performance and management.

While the MPRDA focuses on the extractive sector, similar principles are applied in other industries. For instance, the National Forests Act (No. 84 of 1998) employs comparable strategies in the forestry sector. It advocates for sustainable forest management and community involvement, mandating licensing for various activities and sustainable practices. This approach indirectly encourages reporting on environmental and social impacts within the forestry industry (South Africa, 1998).

In the agricultural domain, the Conservation of Agricultural Resources Act (No. 43 of 1983) follows a similar pattern. It requires agricultural practices that preserve soil, water sources and vegetation, indirectly stimulating environmental reporting by requiring farmers to implement conservation measures and control invasive species (South Africa, 1983). Thus, sector-specific legislation such as the MPRDA, the National Forests Act and the Conservation of Agricultural Resources Act serve as catalysts, motivating firms within particular industries to disclose information on their ESG performance and impact, despite the absence of explicit ESG reporting requirements.

2.3.5 Regulation 28 of the Pension Funds Act

The revised Regulation 28 of the Pension Funds Act (2011) in South Africa stipulates that institutional investors, including pension funds, should consider and integrate all elements that could materially affect the long-term performance of retirement savings, "including factors of an environmental, social and governance character" (South Africa, 2011: 5). This regulatory framework aims to protect retirement fund members' savings by imposing limits on exposure to riskier asset classes and ensuring that investment decisions are made judiciously, taking into account all relevant risks and opportunities (South Africa, 2011).

Institutional investors, particularly pension fund trustees, bear a fiduciary responsibility to invest prudently and in the best long-term interests of fund members (Viviers & Eccles, 2012). Failure to adequately consider material ESG risks could be construed as a breach of this fiduciary duty, potentially resulting in financial losses for members. Consequently, trustees significantly rely on corporate ESG disclosures to evaluate investment risks and opportunities related to ESG factors (Sonnenberg & Hamann, 2006). Without comprehensive disclosure on such issues, investors cannot properly assess these factors and make informed decisions.

As a result, by mandating that ESG factors be factored into investment decisions affecting the long-term performance of retirement funds, Regulation 28 of the Pension Funds Act (2011) may exert significant pressure on firms to address and disclose specific aspects of their ESG performance. This pressure arises primarily because firms need to align with the expectations of institutional investors and comply with the regulatory requirements set forth in Regulation 28.

2.3.6 The JSE Listings Requirements and the King series of reports on corporate governance

In addition to government regulations, market-driven measures have played a pivotal role in transforming the landscape of corporate ESG reporting in South Africa. Two essential influencers in this regard are the Johannesburg Stock Exchange (JSE) Listings Requirements and the King series of reports on corporate governance. The JSE has the authority to set the rules and procedures for companies trading on the exchange, including requirements related to ESG disclosure, while the King reports provide guidelines for effective corporate governance in South Africa.

Developed and issued by the King Committee on Corporate Governance, a non-governmental organisation, the King Reports on Corporate Governance outline principles, best practices and recommendations for ethical and sustainable business conduct, inclusive stakeholder engagement and robust risk management protocols in both operations and corporate communication (IoDSA, 2016). The King series of reports has progressively evolved over time to place increasing focus on ESG considerations in corporate reporting.

The journey began with the first King Report on Corporate Governance (King I) in 1994, which advocated for a stakeholder-inclusive approach to governance. It recommended that firms publish directors' reports addressing matters of concern and interest to all stakeholders, not just financial capital providers (IoDSA, 1994). Building upon this foundation, King II, released in 2002, proposed that companies should adopt an integrated sustainability philosophy in their communication to stakeholders, which involves reporting on the triple-bottom-line impact of the firm. The triple-bottom-line encompasses three key aspects: economic performance, social responsibility and environmental stewardship (IoDSA, 2002).

King III, the third edition of the King Reports, was issued in 2009, bringing notable changes to corporate reporting practices while reinforcing the themes of integration and stakeholder inclusivity emphasised by its predecessors. King III formally established the concept of integrated reporting, defining it as "a holistic and integrated representation of the company's performance in terms of both its finances and its sustainability" (IoDSA, 2009: 108). This marked a shift towards a more comprehensive approach to corporate reporting. King III also adopted an "apply or explain" approach, requiring companies to either apply its recommended principles or provide justifications for non-adherence (IoDSA, 2009).

The impact of King III on corporate reporting was greatly amplified when the JSE amended its Listings Requirements in 2010, requiring all listed companies to follow King III on an "apply or explain" basis (JSE, 2010). Consequently, JSE-listed entities were expected to issue an integrated report for financial years starting on or after 1 March 2010, in accordance with this framework (IoDSA, 2009).

The most recent iteration, King IV, released in 2016, introduces two significant changes that impact corporate reporting in South Africa. First, it implements an "apply and explain" principle rather than King III's "apply or explain" approach, meaning companies must demonstrate how they implement each principle rather than simply providing reasons for non-compliance (Esser & Delport, 2017; JSE, 2019; Natesan, 2020). Second, while permitting other widely accepted reporting frameworks, King IV specifically recommends the IIRC's IR Framework for integrated report preparation by JSE-listed companies (IoDSA, 2016). The JSE subsequently embraced these updated principles, formalising the changes in 2017 by updating its listing requirements to replace King III with King IV as part of the eligibility criteria (JSE, 2019). Consequently, King IV has strengthened the requirement for integrated reporting amongst JSE-listed companies through its more rigorous disclosure expectations.

In summary, the evolution of the King Reports from stakeholder-focused governance recommendations to formalised integrated reporting requirements, coupled with their formal adoption by the JSE as listing criteria, has fundamentally transformed South Africa's corporate ESG reporting landscape. While the King Reports operate as governance guidelines rather than legally binding mandates, their integration into JSE listing requirements has created substantial market pressure for compliance among publicly traded companies. As Mokabane and Du Toit (2022) observe, this framework has achieved such significant impact that integrated reporting

has become accepted as a *de facto* mandatory requirement, with most JSE-listed companies now publishing integrated reports containing ESG information.

2.3.7 The Integrated Reporting Committee of South Africa (IRCSA)

When King III introduced integrated reporting and the JSE subsequently incorporated these principles into its listing requirements, companies faced significant implementation challenges. While listed entities were required to produce integrated reports or provide explanations for non-compliance, King III offered limited practical guidance on critical aspects such as content selection, appropriate levels of detail and decisions regarding information structure, whether to organise content in discrete sections or through holistic integration (Roberts, van Zijl & Cerbone, 2020).

In response to these shortcomings, the Integrated Reporting Committee of South Africa (IRCSA) was established in May 2010. The organisation emerged as a collaborative platform bringing together diverse stakeholders from the corporate reporting ecosystem including accounting professionals, company secretaries, internal auditors, board directors, institutional investors, the JSE and various companies (Clayton, Rogerson & Rampedi, 2015). Functioning as a voluntary, multi-organisational national body, IRCSA's primary mission focuses on advancing integrated reporting practices and promoting integrated thinking across South Africa through technical guidance documents, educational conferences and related support initiatives (IRCSA, 2017).

Translating this mission into action, a significant milestone came in January 2011 when IRCSA published the globally pioneering "Framework for Integrated Reporting and the Integrated Report: Discussion Paper" (SAICA, 2012). This guiding document introduces a principles-based approach to integrated reporting and the integrated report. Widely recognised for its impact on integrated reporting practice, this document became a key source of influence for the International Integrated Reporting Council (IIRC) in developing its own International Integrated Reporting (IR) Framework. Released in December 2013 and formally endorsed by IRCSA in March 2014, the IIRC's IR Framework was later incorporated into King IV as the recommended benchmark for integrated report preparation among JSE-listed companies (Roberts, 2017; IoDSA, 2016).

Through these foundational contributions and ongoing activities, IRCSA has played an instrumental role in driving the increasing demand for corporate ESG disclosure in South Africa via three key mechanisms. First, it has worked to reduce initial practical barriers to ESG reporting by providing companies with technical guidance and educational support. Second, IRCSA's multi-stakeholder membership structure comprising the Association for Savings and Investment South Africa (ASISA) representing institutional investors, the JSE, the Institute of Directors in South Africa (IoDSA) and the South African Institute of Chartered Accountants (SAICA) provides a platform for influential market participants to collectively shape reporting norms through ongoing dialogue. Third, IRCSA's involvement in global standard-setting through its pioneering 2011 framework has enhanced the profile of South African ESG disclosure practices, elevating them from a local requirement to alignment with global reporting frameworks and providing additional motivation for companies to publish their ESG outcomes.

2.3.8 The International Integrated Reporting Framework

The International Integrated Reporting (IR) Framework, developed by the International Integrated Reporting Council (IIRC), has exerted significant influence on ESG reporting practices among South African listed companies. Although numerous ESG reporting frameworks such as CDP, GRI, and SASB have shaped the broader reporting landscape, the IR Framework holds distinctive prominence in South Africa due to its formal endorsement by the IRCSA and its inclusion in King IV as the recommended approach for preparing integrated reports.

Identifying providers of financial capital as the primary users of integrated reports, the IR Framework, first released in 2013 and revised in 2021, reimagines traditional corporate reporting by shifting emphasis from narrow financial disclosure to comprehensive multidimensional value creation. To operationalise this conceptual shift, the IR Framework introduces a set of guiding principles and content elements that link an organisation’s strategy, governance, performance and future outlook to its external environment and its capacity for long-term value creation (IIRC, 2021).

Central to the IR Framework is its six-capitals model: financial, manufactured, intellectual, human, social and relationship, and natural capitals. These capitals reflect the diverse resources

and relationships that organisations draw upon to generate value. While organisations retain flexibility to adapt these capitals to their respective contexts, the model promotes holistic engagement across them, discouraging siloed reporting practices. The concept of integrated thinking anchors this methodology. It calls for alignment between strategic direction, operational decision-making and stakeholder concerns, urging organisations to recognise the interdependencies between their internal processes and external relationships. In principle, this approach is intended to foster more coherent, forward-looking ESG disclosures and support the IR Framework's ambition of embedding accountability into corporate decision-making (IIRC, 2021).

Despite its emphasis on holistic value creation and integrated thinking, the IR Framework has been subject to rigorous academic critique. In particular, critics have questioned whether the framework delivers on its promise of broad accountability, arguing that it maintains a pronounced orientation towards financial capital providers, who are identified as the main users of integrated reports (De Villiers et al., 2014; O'Dwyer, Humphrey & Rowbottom, 2024; Gray, 2012; Thomson, 2015). This investor-centric bias has prompted concerns that sustainability is framed through a business-case lens, where environmental and social responsibility is advocated primarily when economically advantageous. Flower (2015:16) encapsulates this critique, suggesting that the IIRC remains "business and investor friendly" while avoiding disclosures that might alienate dominant capital providers. De Villiers et al. (2014) further contend that integrated reporting's transformative potential is constrained if its foundation remains rooted in financial value creation. Such criticisms raise fundamental questions about the framework's capacity to support broader corporate accountability regarding ESG impacts.

Notwithstanding these concerns, it is important to recognise that the IR Framework has catalysed significant progress in South African corporate ESG disclosure. Its institutionalisation through King IV and related governance reforms has incorporated ESG considerations within formal reporting structures. Looking ahead, however, the future trajectory of the IR Framework remains unclear. Since 2022, the IIRC has been consolidated into the IFRS Foundation, creating uncertainty about the continued relevance and application of the IR Framework. As O'Dwyer et al. (2024) point out, this institutional shift may impact the framework's longevity as a standalone reporting tool and its capacity to maintain influence amidst evolving global reporting architectures.

2.3.9 The FTSE JSE Responsible Investment Index Series

The introduction of sustainability indices in South African capital markets has significantly driven the growing focus on ESG reporting among JSE-listed entities. In 2004, the JSE launched the Socially Responsible Investment (SRI) Index, the first of its kind in an emerging market (JSE, 2014). This pioneering initiative aimed to identify and recognise South African firms demonstrating strong ESG practices, raising awareness about corporate citizenship and responsible investing (Sonnenberg & Hamann, 2006).

The SRI Index was subsequently replaced by the FTSE JSE Responsible Investment Index Series in 2015, a collaboration between the JSE and global index provider FTSE Russell (JSE, 2023). This series of indices tracks the performance of South African entities that meet specific ESG criteria, enabling investors to make informed decisions based on firms' adherence to robust ESG policies and practices.

The FTSE JSE Responsible Investment Index Series serves as a powerful incentive for enhanced ESG reporting practices among listed companies, as it directly links a company's inclusion in the indices to its ESG performance and disclosure (Esterhuyse, 2019; Herringer et al., 2009). Institutional investors and asset managers who employ these indices as benchmarks for their responsible investment strategies base their investment decisions on a company's inclusion or exclusion from the index.

Firms that fail to meet the ESG criteria or provide comprehensive ESG reporting risk exclusion from the indices, potentially limiting their access to capital markets and investments from ESG-conscious investors (Heese, 2005). Conversely, companies that provide detailed and transparent information about their ESG practices and initiatives can improve their prospects of being incorporated in the indices. This inclusion can lead to increased investment and improved access to capital markets for these firms (Maubane, Prinsloo & Van Rooyen, 2014).

This dynamic creates a compelling impetus for JSE-listed companies to prioritise ESG reporting and performance, as it directly influences their capacity to attract investment from institutional investors and asset managers who rely on these sustainability indices to inform their investment decisions.

2.3.10 Code for Responsible Investing in South Africa (CRISA)

The Code for Responsible Investing in South Africa (CRISA), a voluntary code launched in 2011, provides a framework for institutional investors and their service providers to incorporate ESG factors into their investment decisions and ownership practices (IoDSA, 2011). By advocating for the inclusion of ESG considerations in investment decision-making processes, CRISA has contributed to a growing demand for more detailed and transparent ESG reporting from companies (Giamporcaro & Pretorius, 2012).

As a result of CRISA's guidance, institutional investors are increasingly seeking information on the sustainability performance of their investee companies. In response to this demand, many South African entities have taken measures to address ESG issues in their reporting practices (Deloitte, 2012). The heightened investor focus on ESG matters, driven in part by the adoption of CRISA, has been a pivotal factor in this shift towards more holistic corporate reporting in South Africa. Furthermore, the research conducted by Atkins and Maroun (2015) corroborates CRISA's significant role in promoting the ESG reporting agenda in South Africa. The increasing uptake of ESG reporting practices by South African firms can be viewed as a response to the rising investor demand for ESG information, which has been catalysed by the implementation of CRISA.

In summary, the introduction of CRISA has impacted the demand for corporate ESG reporting in South Africa. By establishing a framework for institutional investors to incorporate ESG factors into their investment decisions and ownership practices, CRISA has been instrumental in fostering a growing emphasis on sustainable and responsible investing. Consequently, this has motivated companies to review and adapt their ESG disclosures and reporting practices in an effort to meet the evolving expectations of investors.

Therefore, the development and embrace of corporate ESG reporting practices in South Africa have been influenced by a combination of regulatory measures and market-driven factors. The South African regulatory landscape, designed to engage the private sector in addressing socio-economic challenges, includes pieces of legislation such as the BBBEE Act, Employment Equity Act, Companies Act, sector-specific regulations and revised Regulation 28 of the Pension Funds Act.

Alongside these regulations, market-driven initiatives like the JSE Listings Requirements, King reports on corporate governance, the IRCSA, IIRC's IR Framework, FTSE JSE Responsible Investment Index Series and CRISA have spearheaded the rise of corporate ESG reporting practices in South Africa. The emergence of these capital market initiatives can be attributed to the growing recognition among stakeholders, particularly within the financial community, of the importance of ESG factors in assessing risk exposure, governance structures and corporate sustainability when making investment decisions.

In the next section, the study embarks on a comprehensive exploration of the literature to critically evaluate the extent to which corporate reporting practices in South Africa have successfully aligned with and fulfilled diverse stakeholder expectations for decision-useful ESG information.

2.4 Examining the motivations behind the ESG disclosure practices of JSE-listed entities: A critical analysis of corporate responses to stakeholder demands

2.4.1 Introduction

Many studies have investigated the underlying motivations for ESG disclosure practices among JSE-listed companies. While proponents of a normative approach to stakeholder management (e.g., Cooper & Owen, 2007, Freeman, 1984 and Reed, 2002) submit that firms should engage in ESG reporting due to a company's sense of moral obligation or an authentic ethical commitment to sustainability, empirical evidence from South African studies suggests a more complex reality. In particular, research conducted by Haji and Anifowose (2016), Loate, Padia and Maroun (2015), Steyn (2014) and Van Zijl et al. (2017) consistently finds that the primary impetus for JSE-listed entities to prepare and publish ESG disclosures is the pursuit and preservation of corporate legitimacy.

Although Suchman (1995) points out that the quest for corporate legitimacy does not inherently depart from the imperative of genuine stakeholder accountability, especially when firms engage in substantive actions that align with societal expectations, a closer inspection of the South African corporate ESG reporting landscape unveils a different picture. This landscape is

frequently characterised by a prevalence of superficial reporting practices that often prioritise corporate self-interest and image management over sincere moral behaviour.

To better understand this phenomenon, researchers identify two main strategies employed by some JSE-listed companies that illustrate the concept of symbolic legitimacy-seeking, as described by Ashforth and Gibbs (1990), Bebbington et al. (2008) and Benoit (1995). The first strategy involves publishing corporate ESG disclosures as a means of ceremonial conformance, allowing firms to create the appearance of adhering to societal norms and values while continuing to prioritise the profit motive (De Villiers & Alexander, 2014; Setia et al., 2015; West, 2006). The second strategy entails reporting ESG information to shape public sentiments in efforts to mitigate legitimacy threats (Buitendag et al.2017; De Villiers & Van Staden, 2011; Loate et al., 2015).

These two strategies are discussed in more detail in Sections 2.4.2 and 2.4.3 respectively. They demonstrate how corporate ESG disclosures can be used as tools for perfunctory conformance, to influence stakeholder perceptions, or a combination of both approaches. However, when companies prioritise these symbolic legitimacy-seeking strategies over substantive efforts to improve their ESG performance, the quality and decision-usefulness of their ESG reports may be compromised.

2.4.2 Corporate ESG reporting as a ceremonial response to external institutional pressures

South Africa has emerged as a global frontrunner in corporate ESG reporting, largely due to the efforts of influential institutions within the country (Eccles et al., 2019). As detailed in Section 2.3, these organisations have championed the development of a comprehensive suite of regulatory measures and market-driven initiatives to foster corporate ESG reporting practices among JSE-listed entities. The outcomes of these endeavours are supported by the findings of Du Toit (2017), KPMG (2020) and Rensburg and Botha (2014) who observe a notable increase in the volume of ESG disclosures provided by public corporations following the introduction of these interventions. As a result of these institutional initiatives, South Africa has witnessed an expanded scope in corporate reporting, most notably through the JSE's adoption of King Code integrated reporting requirements, which has garnered the nation international recognition for its perceived proactive stance on ESG reporting.

Nonetheless, although South Africa's institutional setting has played a significant role in increasing the quantity of ESG disclosures published by JSE-listed entities, some researchers question whether initiatives to promote corporate ESG reporting in the country have effectively led to the disclosure of decision-useful ESG information to stakeholders that enhances corporate accountability and transparency (see, for example, Haji & Hossain, 2016, Setia et al., 2015 and Solomon and Maroun, 2012a). Hinson and Ndhlovu (2011) and Morkel (2019) are among the critical researchers casting a spotlight on this issue, finding that despite regulatory and market-based initiatives propelling ESG activities and reporting among prominent South African enterprises, the intended benefits for society and the environment are rarely realised.

Numerous researchers, including Hamann and Acutt (2003) and Steyn (2014), propose that the apparent discrepancy between the widespread adoption of ESG reporting by South African corporations and the limited tangible benefits for society and the environment can be attributed to the predominance of legitimacy-seeking motives over authentic stakeholder accountability considerations. These researchers maintain that JSE-listed firms primarily disclose their ESG data to align themselves with prevailing societal norms, values and beliefs. In doing so, they signal their responsiveness to the interests and demands of influential external stakeholders who exert pressure on firms to embrace ESG reporting (Scott, 1995; Suchman, 1995). Thus, by strategically adapting to the expectations of key stakeholders, such as government, regulatory bodies and investors, South African companies aim to maintain a positive public image and secure a social license to operate successfully (Fourie & Eloff, 2005).

The pursuit of legitimacy through ESG reporting, however, may have implications for the quality of the disclosed information. Specifically, as Michelon et al. (2015) point out, when corporate ESG reports are used mainly as a tool to acquire institutional legitimacy, the decision-usefulness of the information contained in such reports may be compromised. Bromley and Powell (2012) further emphasise that this risk is especially high in environments where companies face coercive pressures to conform to socially entrenched norms and values, increasing the likelihood of ceremonial conformance. Dowling and Pfeffer (1975) and Meyer and Rowan (1977) describe ceremonial conformance as a situation where firms superficially adhere to institutional requirements for ESG reporting to meet external expectations. In such cases, these firms may not fully integrate or internalise these reporting practices into their core operations and decision-making processes.

Several studies indicate the prevalence of ceremonial conformance in South African corporate ESG reporting. Research conducted by Atkins and Maroun (2015), Carels, Maroun and Padia (2013) and Setia et al. (2015) corroborates the finding that JSE requirements for listed companies to publish integrated reports containing ESG disclosures have prompted many firms to pursue legitimacy through demonstrable acts of compliance with institutional requirements. Consequently, this has resulted in symbolic ESG gesturing rather than genuine engagement and transparency.

Similarly, De Villiers and Alexander (2014) and De Villiers, Venter and Hsiao (2017) find that requirements for JSE-listed firms to include ESG information in their integrated reports have inadvertently encouraged a compliance-oriented approach among companies. As a result, these firms tend to prioritise the structure, form and presentation of their reports over the quality and depth of the disclosed information. This superficial emphasis on fulfilling minimum requirements undermines the substantive purpose of enhancing accountability for a company's actual ESG performance.

Complementing these findings, research by Haji and Hossain (2016) and Solomon and Maroun (2012a) shows that some South African firms engage in sustainability rhetoric without specifying how such rhetoric translates into practice or improved organisational efficiency. This decoupling of discourse from action appears to be motivated by legitimacy-seeking behaviour, wherein firms focus on the synthetic appeal of disclosures, including carefully crafted language and catchphrases designed to project conformance with stakeholder expectations, rather than substantive transparency.

Exacerbating this issue, Cerbone and Maroun (2020) and Haji and Anifowose (2016) observe a concerning trend among ESG reporters: a disproportionate emphasis on highlighting their adherence to disclosure recommendations outlined in frameworks and guidelines such as the King reports, Global Reporting Initiative (GRI) and the International Integrated Reporting Council (IIRC). While such declarations of compliance may appear to demonstrate a commitment to transparency, a more critical examination suggests that these actions are often deliberately employed to manage stakeholder perceptions, failing to cultivate genuine stakeholder engagement and accountability.

Taken together, these findings provide a compelling explanation for Atkins and Maroun's (2015) argument that many South African entities have reduced corporate ESG reporting to a perfunctory box-ticking exercise, neglecting to sincerely communicate their real sustainability practices and performance with pertinent stakeholders. This disconnect between the appearance of compliance and the actual implementation of sustainability practices poses a serious threat to the credibility of ESG reporting and erodes its potential to promote responsible business conduct.

The pervasiveness of ceremonial conformance in South African corporate ESG reporting may create a false sense of security among stakeholders, who may believe that companies are actively addressing sustainability concerns when, in reality, minimal genuine reforms are being enacted. This idea is supported by Boxenbaum and Jonsson (2008) and Meyer and Rowan (1977), who convincingly argue that when a company is perceived as legitimate and accepted as part of society, it progressively becomes insulated from immediate sanctions for variations in its technical performance. As a result, external stakeholders may initially be less inclined to rigorously examine an organisation's actual practices or performance, assuming that the organisation is meeting societal standards based on its apparent compliance.

Carson (2003) argues that this limited scrutiny may create opportunities for self-serving managers to incorporate institutionalised elements, such as corporate ESG reporting, as a form of window-dressing without necessarily implementing the associated practices. This enables managers to continue prioritising firm profitability while appearing to address ESG concerns. Flower (2015) and Levitt (1958) further elaborate on this concept, maintaining that firms may present a façade of adopting altruistic motives by focusing on ESG issues in response to external pressures, while remaining fundamentally driven by narrow, profit-seeking motives. Thus, business-as-usual activities may take precedence over enacting genuine concern for society and the environment, despite the firms' professed ESG commitments.

In conclusion, therefore, the quest for institutional legitimacy in South African corporate ESG reporting may contribute to the decoupling of ESG disclosure from substantive sustainability efforts. While these disclosures seemingly align with institutional requirements, the disclosed ESG information can often be a ceremonial response that is disjointed from the company's core operations and actual strategic choices. This compromises the relevance and reliability of ESG reporting and falls short in accurately representing the company's true ESG performance.

Ultimately, this leads to low-quality corporate ESG reporting, which hinders informed stakeholder decision-making and impedes meaningful progress in corporate sustainability.

2.4.3 Corporate ESG reporting as a strategic response to address legitimacy threats

Berrone, Gelabert and Fosfuri (2009) argue that companies that treat corporate ESG reporting as a mere checkbox exercise in response to external institutional pressures (as discussed in Section 2.4.2) only temporarily placate stakeholders. Initially, these stakeholders may assume that an organisation's practices align with prevailing societal norms, values and beliefs based solely on its production of corporate ESG reports (Boxenbaum & Jonsson, 2008; Meyer & Rowan, 1977). However, this mirage of responsible corporate conduct may quickly dissipate when negative ESG events occur. Such incidents can unveil inconsistencies between the company's reported ESG practices and its actual behaviour, exposing the insincerity of their ESG commitment and leaving the company vulnerable to legitimacy threats.

Expanding on this idea, Lautjärvi (2015) observes that the limitations of a ceremonial approach to corporate ESG reporting, one driven primarily by institutional pressures rather than intrinsic corporate values, become increasingly apparent over time. As stakeholders gain more information about ESG issues within these companies through various channels, including mainstream media reports, they intensify their scrutiny of corporate practices. This increased scrutiny raises expectations for genuine corporate transparency and accountability, leading to a demand for more meaningful corporate reporting (Christensen, Morsing & Thyssen, 2013).

Consequently, the legitimacy a company initially accrues through a superficial conformance approach may be short-lived. As stakeholders become more cognisant of the gap between an organisation's claims and its real-life practices, particularly following public revelations of ESG failures, the veneer of legitimacy diminishes (Massey, 2001). This decline can result in significant reputational damage and a loss of stakeholder trust, potentially nullifying any positive perceptions previously held about the company (Cho et al.2015).

Suchman's (1995) framing of legitimacy as a dynamic construct rather than a static attribute reinforces this argument. He characterises legitimacy as an ongoing negotiation between organisations and society, emphasising that firms must continuously adapt their activities to

reflect evolving societal norms in order to preserve their social license to operate (Deegan, 2019). This theoretical perspective sheds light on why firms face the risk of losing legitimacy when stakeholders perceive a divergence between their professed ESG values and actual practices.

The subsequent deterioration of a firm's legitimacy may have severe negative repercussions, including strained stakeholder relationships (Ashforth & Gibbs, 1990), limited access to critical resources (Maaloul, 2018) and amplified regulatory scrutiny (Choi & Luo, 2021). Collectively, these challenges can significantly hinder the firm's ability to function optimally within its social, economic and environmental milieu, jeopardising its long-term sustainability.

To counter such legitimacy threats and rebuild their societal standing, firms often turn to communication strategies. A crucial aspect of this communication involves the corporate disclosure of ESG information (Dowling & Pfeffer, 1975). As Cho et al. (2015) and Deegan (2002) suggest, in the event of a perceived threat to, or gaps in organisational legitimacy, firms can use ESG reporting as a vital tool to demonstrate their dedication to accountability and transparency to stakeholders.

However, the effectiveness of corporate ESG reporting in authentically addressing stakeholder concerns is largely contingent on the quality of the information provided (Cooper & Owen, 2007; Deegan & Blomquist, 2006; Khemir et al., 2019). To be impactful, corporate ESG disclosures must present stakeholders with decision-useful information, distinguished by its relevance and faithful representation of substantive organisational changes (Michelon et al., 2015). This entails providing detailed accounts of significant transformations in corporate goals, structures, methodologies and institutionalised practices implemented to resolve the underlying causes of legitimacy rifts (Ashforth & Gibbs, 1990).

Nevertheless, while sustained legitimacy demands fundamental corporate reform, many researchers investigating ESG disclosures made in response to corporate violations of social norms and values offer a more critical assessment. Studies by Beelitz and Merkl-Davies (2012), Benoit (1997), Elsbach (1994) and Hahn and Lülfs (2014) find that some firms strategically curate ESG information using specific reporting tactics to protect corporate interests, thereby subverting the opportunity to re-establish organisational legitimacy through transparent and substantive disclosure.

As a result, these researchers postulate that corporate ESG disclosures, when issued in response to legitimacy threats, frequently function as sophisticated instruments for impression management. Rather than acting as catalysts for authentic change, such disclosures often aim to reconcile the incongruence between how society perceives the firm and the image the company wishes to project, ultimately undermining the potential for real corporate accountability.

Extending this critical lens to the South African landscape, a substantial body of empirical research uncovers similar strategic disclosure techniques employed by corporations confronting legitimacy threats. These reporting tactics, often indicative of subpar ESG reporting quality, can be classified into three main categories: selective disclosure, defensive strategies and image enhancement.

The first strategy, selective disclosure, has been documented by several researchers (see, for example, De Villiers & Van Staden, 2006, Maddock, 2020 and Wild & van Staden, 2013). Their studies indicate that when faced with legitimacy threats, some JSE-listed firms deliberately manage ESG information provided to stakeholders. This is often achieved by prioritising generic, non-specific disclosures whilst downplaying or omitting detailed, potentially unfavourable information. By adopting this approach, these firms create an illusion of transparency while avoiding truly comprehensive disclosure that may expose problematic practises or vulnerabilities, which could likely result in reputational, legal or financial repercussions.

The second approach involves defensive positioning. Research by Ackers and Eccles (2015), Alves and Branco (2020), Dube and Maroun (2017) and Soobaroyen and Ntim (2013) finds that certain South African companies apply reporting tactics to dissociate themselves from adverse ESG events. These tactics may include deflecting culpability or categorically refuting allegations, particularly when the reputational damage is severe or when companies believe they can successfully challenge the claims made against them.

The third tactic revolves around image enhancement techniques. Numerous studies, such as those by Du Toit (2017), Haji and Hossain (2016), Loate et al. (2015), Van Zyl (2013) and Varachia and Yasseen (2020) discern firms' propensity to present their activities in an overly optimistic manner when grappling with negative publicity or suboptimal performance in ESG

domains. This strategy seeks to redirect attention from current controversies or inadequate ESG performance, thereby bolstering corporate standing and casting public perceptions in a flattering light.

Altogether, these strategic disclosure tactics, encompassing selective information dissemination, defensive posturing and image enhancement techniques, represent a concerted effort by some South African firms to navigate and ameliorate legitimacy challenges. While intended to safeguard corporate reputation and mitigate detrimental effects, these approaches often compromise the integrity and decision-usefulness of the disclosed information (O'Donovan, 2002).

A notable example that illustrates how these strategic responses can undermine the quality of corporate ESG reporting is provided by Lonmin's disclosures following the Marikana Massacre in 2012. This tragic incident occurred at Lonmin's South African platinum mine during a protracted industrial action over wages and living conditions. The strike escalated into violent clashes involving striking miners, mine security personnel and South African police forces. The conflict culminated in the deaths of 34 striking miners, an event that directly implicated Lonmin in a severe labour and human rights controversy. This tragedy subjected the company's practices to intense public scrutiny and raised serious questions about its role both in the lead-up to and management of the strike (Sinwell, 2013).

In the aftermath of the Marikana Massacre, Lonmin's corporate disclosures, such as public statements and its 2012 ESG report, unveil a multifaceted strategy aimed at rehabilitating the company's reputation and alleviating various risks, including legal and financial. Alves and Branco (2020) and Dube and Maroun (2017) collectively identify several strategic disclosure tactics employed by Lonmin in these communications.

As observed by Alves and Branco (2020) and Dube (2015), Lonmin employs selective disclosure as a key reporting tactic. The company deliberately portrays the Marikana strike predominantly as a membership dispute between trade unions, thereby sidestepping discussions about its own role in the underlying pay disparity issues. This careful manipulation of narrative allows Lonmin to shield itself from further negative press while evading direct accountability. This selective disclosure approach is used in conjunction with defensive posturing. Specifically, Lonmin distances itself from the situation, rejecting full responsibility

for the workers' grievances and shifting blame onto external stakeholders like labour unions and government authorities.

Additionally, Alves and Branco (2020) identify another method in Lonmin's reporting strategy, which centres on image enhancement through ingratiation. Here, Lonmin attempts to improve its public profile by highlighting its positive actions and contributions to the affected communities. The company emphasises its increased investments in education and health programmes, constructing an account that portrays Lonmin as a vital player in the social and economic development of the region. This tactic serves to redirect focus from the core issues surrounding the Marikana controversy, instead presenting Lonmin as a benevolent corporate citizen.

Lonmin's calculated crisis management approach demonstrates how some South African entities, under pressure to regain control over the discourse surrounding their practices, resort to strategic reporting tactics to bridge perceived legitimacy deficits. These strategies go beyond mere communication. They actively mould societal perceptions by sculpting a more acceptable image of the company's ESG performance (Deegan & Rankin, 1996; O'Donovan, 2002).

Nonetheless, Bebbington et al. (2008) and Boiral (2013) maintain that corporate ESG reports prioritising favourable depictions may lack relevance and fail to address critical matters raised by stakeholders. Supporting this view, Cho et al. (2015) submit that legitimacy-repairing disclosure tactics can inadvertently strengthen the corporate veil. Although companies may appear transparent and responsive when providing explanations, a closer examination of these disclosures often reveals reactive responses relying on selective reporting, defensive posturing and reputation enhancement. These strategic tactics are designed to shift focus away from the severity of adverse incidents and shape public interpretations of corporate ESG performance.

Building on this perspective, Hopwood (2009) argues that corporate ESG reports, when strategically crafted in response to legitimacy threats, effectively conceal an organisation’s true internal workings. As a result, these reports may present a meticulously selected, more polished corporate exterior to the public, allowing some companies to continue engaging in questionable ESG practices while projecting an outward appearance of accountability and transparency.

The South African corporate sector provides an interesting case study of how strategic ESG disclosure practices can significantly impact corporate image, even amidst ongoing ESG controversies. Keightley (2011) highlights a striking paradox: numerous JSE-listed firms are lauded for their seemingly high-quality ESG reporting, a reputation bolstered by the country's robust legal and corporate governance frameworks that promote corporate ESG disclosure. Nevertheless, many of these same companies frequently find themselves under media scrutiny due to their continued involvement in controversial ESG incidents. This disconnect underscores the potential of strategic disclosure tactics to perpetuate a positive public image while obscuring underlying corporate misconduct.

Therefore, drawing from these observations, a disconcerting reality comes into focus: South African corporate ESG reporting, especially when used to mitigate legitimacy threats, may fall short in authentically addressing stakeholder concerns, raising doubts about its credibility in such situations. By employing sophisticated communication strategies, such as selective disclosure of favourable data, defensive positioning to mitigate criticism and image enhancement techniques, some companies may create an idealised version of their ESG track record.

However, this preoccupation with perception management can overshadow substantive accountability. Consequently, corporate ESG reports prepared in response to legitimacy challenges may offer an overly sanitised portrayal that may not fully capture the organisation’s actual ESG performance, risks and impacts. Perhaps most alarming, these strategic disclosure tactics may allow companies involved in contentious ESG practices to operate under the guise of sustainability and social responsibility, even when their day-to-day business activities do not reflect these values. Thus, the need to regain legitimacy can lead to even more superficial ESG reporting, eroding the trust and integrity that these disclosures are intended to foster.

2.5 Chapter summary

Corporate ESG reporting in South Africa has been largely shaped by two interconnected perspectives that reflect both local historical context and international business demands. The first perspective stems from the country's apartheid legacy and positions ESG reporting as a form of moral responsibility, requiring companies to demonstrate their contribution to redressing historical socioeconomic, political and structural inequalities.

The second perspective aligns with global corporate governance trends, characterising ESG reporting as a monitoring mechanism to appease international investors by enhancing transparency and accountability. These dual imperatives, moral redress and investor accountability have catalysed the development of various initiatives, both legally mandated and market-driven, that compel and incentivise South African enterprises to report their ESG information.

Nonetheless, research uncovers a significant disconnect between these stakeholder expectations and corporate motivations. Despite stakeholder demands for meaningful ESG disclosures that address both moral accountability and corporate governance imperatives, evidence suggests that JSE-listed entities view ESG reporting primarily as an exercise in corporate legitimacy management. In this context, companies often treat ESG reporting as a perfunctory compliance mechanism and a tool for managing public perception, particularly when confronted with legitimacy threats. This superficial approach undermines the fundamental purpose of ESG reporting which is to bolster corporate accountability and transparency through substantive disclosure of ESG performance.

The following chapter further examines this misalignment by integrating stakeholder and legitimacy theoretical frameworks. This integration provides a structured approach to analyse how the decoupling between stakeholder expectations and corporate motivations results in low-quality ESG reports that fail to provide faithful representations of firms' ESG performance and fall short of meeting stakeholders' informational needs.

CHAPTER 3
Theoretical framework and hypotheses development

3.1 Introduction

This chapter integrates the stakeholder and legitimacy theoretical paradigms on corporate ESG reporting, synthesising them into a comprehensive multi-theoretical framework. The central objective of this theoretical fusion is to establish a critical foundation for understanding the rationale behind corporate ESG disclosures and identifying key ESG indicators that may influence the quality spectrum of such reporting.

Section 3.2 commences by exploring this multi-theoretical framework, focusing on the points of convergence between stakeholder and legitimacy theories in their respective interpretations of why companies engage with broader environmental, societal and governance considerations alongside traditional shareholder interests. This analysis sets the stage for examining how corporate ESG reporting is framed within these overarching theoretical perspectives. Drawing on insights from stakeholder and legitimacy theory approaches to corporate ESG reporting, the section then conceptualises high and low-quality corporate ESG reporting within this multi-theoretical context.

Having defined the characteristics of high-quality and low-quality corporate ESG reporting, the multi-theoretical framework is then applied to scrutinise specific disclosure practices within each ESG domain: Section 3.3 investigates particular disclosure practices within the environmental pillar, Section 3.4 explores disclosure practices relevant to the social dimension and Section 3.5 discusses disclosure practices related to the corporate governance sphere.

Within each of these sections, an analysis is undertaken on how these disclosure practices may potentially impact the relevance and representational faithfulness of ESG reporting among JSE-listed entities. Consequently, hypotheses are formulated to express the anticipated associations between the selected ESG disclosure factors and the quality of corporate ESG reporting, clarifying their proposed relationship with firms' ESG reporting quality.

Following the development of the hypotheses, Section 3.6 identifies measurable ESG candidate indicators. These indicators are used to operationalise the ESG disclosure practices that are hypothesised in the preceding sections to influence the quality of corporate ESG reporting. Finally, Section 3.7 concludes the chapter by summarising the theoretical framework, hypotheses and proposed measurement indicators.

3.2 A multi-theoretical framework: Integrating stakeholder and legitimacy theories to analyse the rationale and quality of corporate ESG reporting

3.2.1 A broad overview of corporate ESG reporting within the stakeholder and legitimacy explanatory models

As discussed earlier in Chapter 1, this thesis applies a multi-theoretical approach that synthesises the stakeholder and legitimacy theoretical frameworks. Building on the contributions of researchers such as Chen and Roberts (2010), Lokuwaduge and Heenetigala (2017), Romero et al. (2019) and Soobaroyen and Ntim (2013), this integrated approach seeks to provide a more comprehensive and nuanced understanding of the intricate dynamics that influence both the rationale and quality of corporate ESG reporting.

In accordance with the insights of De Silva Lokuwaduge and De Silva (2022), investigating the motivations behind corporate ESG reporting provides an essential backdrop for evaluating the reliability and credibility of the reported ESG information. Hence, this study's assessment of the quality of corporate ESG reporting is anchored in the perspectives of stakeholder theory and legitimacy theory, which illuminate the underlying incentives for such corporate disclosures.

Drawing attention to the congruence between stakeholder theory and legitimacy theory, Deegan (2002) underscores the prevailing consensus that these two theoretical frameworks inherently complement one another. Furthermore, in their exploration of the intersections between stakeholder theory and legitimacy theory, researchers often identify political economy theory as the overarching conceptual framework for examining the linkages between these two paradigms (as demonstrated in studies by Deegan, 2019, Gray et al.,1996 and Guthrie & Parker, 1990).

Political economy theory, as explained by Gray et al. (1996), places substantial emphasis on the interplay amongst society, politics and economics, recognising them as closely interwoven elements. This viewpoint conveys that economic activities cannot be analysed in isolation from their social and political dimensions (Deegan & Blomquist, 2006). In line with Gray et al. (1996), this intrinsic interdependence of society, politics and economics is embedded in the core propositions of both stakeholder theory and legitimacy theory. Donaldson and Preston (1995), Merkl-Davies and Brennan (2007) and Weber (2014) support this perspective, affirming that the stakeholder and legitimacy theoretical frameworks converge on a common foundational principle: a firm's long-term success depends on its ability to align with the societal values and expectations of its operational milieu.

To illustrate how stakeholder theory and legitimacy theory both underscore the interactions between organisations and society, consider how these frameworks reinforce each other. Freeman's (1984) stakeholder theory contends that companies achieve long-term sustainability by effectively managing relationships with their diverse stakeholders. Later research (see, for example, Donaldson & Preston, 1995, Freeman, Martin & Parmar, 2007 and Freeman, Wicks & Parmar, 2004) has developed this theory to emphasise prioritising powerful stakeholders, those who can influence organisational outcomes and control access to critical resources, since neglecting these relationships threatens operational capacity and long-term viability. Legitimacy theory explains why these stakeholder relationships (whether with diverse stakeholder groups or specifically with powerful stakeholders) are fundamentally necessary: firms owe their existence to society and possess no inherent right to access resources without society's explicit approval (Deegan, 2002, 2019; Dumay, De Villiers, Guthrie & Hsiao, 2018).

This may potentially clarify why Guthrie and Parker (1990) as well as Lehman (2001) regard stakeholder theory and legitimacy theory as explanatory models for conceptualising corporate social and environmental accountability. Furthermore, within these theoretical frameworks, engagements with society are rationalised as instruments for constructing, preserving and legitimising economic and political systems, institutions and ideological narratives that coincide with the corporation’s interests.

Nonetheless, despite their mutual focus on the relationship between business entities and society, Chen and Roberts (2010) identify variations in the underlying motivations that drive corporate engagement with environmental, societal and governance issues within these

theoretical paradigms. To demonstrate, within the framework of stakeholder theory, corporate ESG accountability serves dual purposes that reflect both the ethical and strategic dimensions of stakeholder relationships.

From an ethical perspective, Herremans, Nazari and Mahmoudian (2016) interpret corporate ESG accountability as a means of demonstrating a firm's moral commitment to its stakeholders. This interpretation corresponds with the foundational construct of stakeholder theory, which appeals to managers' moral intuition and advocates for their attention to be directed towards all legitimate stakeholder relationships (Evan & Freeman, 1988). Laplume, Sonpar and Litz (2008) support this notion, proposing that stakeholder theory essentially endorses a management approach that considers the interests of a broader group of constituents, extending beyond the traditional economic claimants.

However, stakeholder theory's strategic dimension recognises that effective stakeholder management can also advance instrumental objectives that ultimately benefit firm performance and competitive advantage. From this perspective, Duran and Rodrigo (2018) point out that corporate leaders seek to identify and effectively address stakeholder concerns not merely as a moral imperative, but as a strategic necessity for securing access to essential resources and mitigating operational risks. This strategic orientation acknowledges that stakeholder relationships, particularly with those stakeholders who possess the power to influence organisational outcomes, constitute critical relational capital that can determine a firm's ability to operate effectively and achieve long-term sustainability (Mitchell et al., 1997).

The practical application of these ethical and strategic dimensions manifests in corporate ESG reporting that extends beyond traditional financial disclosure. From an ethical standpoint, this expanded reporting enables corporations to demonstrate fulfilment of the social, environmental and governance responsibilities expected by their stakeholders (Gray, Owen & Maunders, 1988). From a strategic perspective, it facilitates proactive engagement with influential stakeholders by providing them with relevant ESG information to support their decision-making processes (Woodward & Woodward, 2001). Consequently, stakeholder theory positions corporate ESG reporting as a relationship management tool that performs dual functions: demonstrating accountability to the broader stakeholder community while strategically prioritising information that addresses the concerns of influential stakeholder groups

In contrast, legitimacy theory focuses on how corporations must conform to broadly accepted societal norms and expectations rather than managing specific stakeholder relationships (Deegan, 2002). Suchman (1995: 574) further clarifies that a firm acquires a condition or state of corporate legitimacy at the point where there is a general societal perception that the actions of a company are deemed to be "desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions". This legitimacy perspective characterises the relationship between corporations and society as governed by an evolving social contract that reflects collective societal values rather than negotiated agreements with identifiable parties (Deegan, 2019). Within this idea of a social contract, businesses (as social institutions) pledge to honour the implicit and explicit terms of various socially desirable actions to avoid potential sanctions being imposed upon them by society (Shocker & Sethi, 1973).

Deegan and Rankin (1996) caution that if a business entity is considered to breach the social contract within the society it operates, it may encounter a legitimacy gap. This legitimacy gap, as described by Dowling and Pfeffer (1975), represents a deficit in corporate legitimacy arising from the perception that a firm has departed from the values implicit in the social contract it maintains with its stakeholders. An illustrative example of a corporate legitimacy gap is a company initially regarded by investors as financially stable and well-managed but is later revealed to have engaged in accounting fraud or other financial misconduct. This discrepancy between the company's perceived legitimacy (as a financially sound business) and its actual legitimacy (as a company involved in unethical or illegal financial practices) can lead to a divergence in legitimacy. In such cases, as noted by Davis (1973), the respective community may revoke its endorsement for the entity to continue its operations.

To mitigate the risk of a legitimacy divide, Van der Laan (2009) convincingly argues that firms will use corporate ESG disclosures as a tool to bridge any potential disparities that may emerge between their actual operational practices and the public's perception of their legitimacy. This view finds additional support from researchers such as Brown and Deegan (1998), Deegan (2002), Deegan and Gordon (1996) and O'Donovan (2002). They propose that the corporate disclosure of ESG information is one of the key mechanisms through which a business institution can satisfy the implicit social contract between itself and its stakeholders to either acquire, sustain or restore its legitimacy. As a result, following Cormier and Gordon (2001), if

a firm seeks to legitimise its activities and operations, it typically produces corporate ESG disclosures as a means to showcase its dedication, whether real or merely performative, to accountability and responsible conduct.

Thus, in light of the preceding discussion, it can be seen that the core nexus between stakeholder theory and legitimacy theory lies in their mutual recognition of the necessity for companies to legitimise their place in society, as supported by Romero et al. (2019). This entails a broader concept that encompasses meeting the expectations, values and demands of a diverse array of stakeholders. Additionally, as noted by Deegan (2002), both theoretical frameworks reiterate the significance of corporate ESG reporting as a vital instrument for addressing their legitimacy requirements within their respective social and political environments. This is achieved through active engagement with various stakeholder groups to meet their informational needs.

3.2.2 Establishing a multi-theoretical framework for defining high and low-quality corporate ESG reporting

Despite their similarities, an analysis of the disparities between stakeholder theory and legitimacy theory unveils contrasting motivations for disclosing ESG information, which may influence the quality of the reported data.

For instance, stakeholder theory encompasses both ethical and strategic motivations for corporate ESG reporting, both of which emphasise the importance of high-quality disclosure practices. From an ethical perspective, as articulated by Cooper and Owen (2007), stakeholder theory is firmly grounded in the belief that corporate ESG reporting is primarily driven by moral obligations to stakeholders, underpinned by principles of equity and social justice. Proponents of this ethical approach including Dubbink et al. (2008) and Freeman and McVea (2005) hold that firms regard corporate ESG reporting as a fundamental responsibility to demonstrate accountability to a broad spectrum of stakeholders, such as employees, customers, communities and investors.

The strategic dimension of stakeholder theory offers a complementary perspective, emphasising the instrumental value of ESG reporting in managing relationships with stakeholders who possess the capacity to materially influence organisational outcomes. Under

this approach, firms strategically prioritise disclosure to stakeholders whose support is critical for long-term performance and competitive advantage (Zarzycka & Krasodomska, 2021). Regardless of the underlying rationale, both the ethical and strategic perspectives demand authentic stakeholder engagement and genuine responsiveness to stakeholder concerns. Thus, stakeholder theory's conceptualisation of corporate ESG reporting (whether driven by moral imperatives or strategic considerations) can culminate in the production of comprehensive and transparent ESG reports that address the multifaceted decision-making needs of stakeholder groups.

However, within the realm of legitimacy theory, the disclosure of corporate ESG information distinctly revolves around the strategic management of stakeholder sentiment, with the ultimate purpose of garnering societal endorsement for a company's operations (Moerman & Van der Laan, 2005; O'Donovan, 2002). Consequently, as suggested by Cho et al. (2012) and Michelon et al. (2015), the quality of such disclosures is highly variable, contingent upon the extent to which managers are willing to go to attain or maintain organisational legitimacy. To be more specific, under legitimacy theory, the spectrum of quality in corporate ESG disclosures spans a range from those that authentically manifest a commitment to sustainability, substantiated by tangible actions (Brammer & Pavelin, 2008; Helfaya & Moussa, 2017), to less detailed or selective reporting aimed at projecting an image of social and environmental responsibility, often without substantial real-world implementation (Gray et al., 1996; Laufer, 2003).

Notably, Ashforth and Gibbs (1990), Li, Haque and Chapple (2023) and Van der Laan (2009) contend that during periods of crisis, especially in the presence of a legitimacy gap, the quality of corporate ESG reports may further deteriorate. This decline occurs as corporations may resort to crafting ESG reports in a reactive and incomplete fashion, with the central goal of reinstating legitimacy, rather than delivering a thorough and impartial depiction of their ESG performance. This approach often falls short of meeting stakeholders' demands for relevant and decision-useful information.

Thus, while both stakeholder and legitimacy theories posit that corporate ESG disclosures often stem from concerns about stakeholder accountability and the search for societal legitimacy, these perspectives lay the foundation for two distinct tiers of ESG reporting quality. When viewed through a multi-theoretical lens, high-quality ESG reporting is characterised by a dedicated commitment to addressing salient stakeholder interests and aligning disclosures with

concrete, substantive actions. As a result, high-quality ESG reporting enables stakeholders and other societal actors to make well-informed assessments of the company's ESG performance. Conversely, both theories concede that low-quality corporate ESG disclosures may lack relevance to stakeholders, instead concentrating on the disclosure of perfunctory and selective information. As a consequence, low-quality ESG reporting has limited usefulness to stakeholders.

Considering that the thesis has established the definition of high and low-quality ESG reporting within a multi-theoretical framework that integrates the perspectives of stakeholder and legitimacy theories, the appropriate next step is to identify the corporate disclosure practices within the environmental, social and corporate governance domains that may correspond to these definitions. Hence, the forthcoming section focuses on developing hypotheses regarding particular ESG disclosure practices that are expected to impact the quality of corporate ESG reporting. These hypotheses will elucidate how particular disclosure practices relate to aspects of ESG reporting quality, providing a foundation for deriving candidate indicators to measure ESG reporting quality for subsequent empirical analysis.

3.3 Hypothesis development: Environmental disclosure practices influencing ESG reporting quality

South African firms, particularly those involved in sectors such as mining, petrochemical production and agriculture, have come under intense scrutiny for their detrimental impacts on the environment and society. These companies have been associated with a myriad of issues, including pollution, resource depletion, biodiversity loss and acute health risks for surrounding communities (Fig, 2005; Hamann, 2004).

Faced with these pressing challenges, a diverse group of stakeholders, encompassing local communities, industry associations and non-governmental organisations (NGOs) are exerting increasing pressure on corporations to disclose more information about their environmental impacts (De Villiers & Van Staden, 2006). By demanding supplementary information on environmental matters, these stakeholders aim to hold corporations accountable and encourage responsible stewardship of natural resources (Dube & Maroun, 2017; Murombo, 2013).

In response to these mounting demands, many JSE-listed entities publish separate environmental reports or include dedicated sections on environmental indicators and initiatives within their ESG reports. Nonetheless, critics such as De Villiers and Van Staden (2006), Hamann and Kapelus (2004) and Winn and Angell (2000) question the underlying motives behind such disclosures. They submit that these disclosures are often strategic, primarily intended to boost legitimacy and reputation among stakeholders, rather than to drive tangible improvements in corporate environmental performance.

Corroborating this critical lens, Dowling and Pfeffer (1975), Elsbach and Sutton (1992), Lindblom (1994) and Pfeffer (1982) similarly infer that environmental disclosures are a key component in a firm's legitimacy management process. Expanding on this idea, O'Donovan (2000) offers further insights into corporate environmental disclosure strategies. He submits that the type of environmental disclosure a company chooses can be influenced by the purpose of the organisational response. In other words, companies may tailor their environmental disclosures based on whether they aim to gain, maintain or repair their legitimacy among various stakeholders.

The following sections present two sets of hypotheses regarding the disclosure strategies companies may use during different phases of legitimacy. Section 3.3.1 draws on the concept of ceremonial conformance, suggesting that companies seeking to gain or maintain legitimacy may rely on environmental disclosure strategies that superficially align with societal norms and expectations. This perspective implies a proactive approach, where companies tactically use certain disclosures to project an image of environmental responsibility and responsiveness to stakeholder concerns.

In comparison, Section 3.3.2 focuses on companies in legitimacy repair mode. It proposes that when a company's legitimacy is threatened, particularly due to public revelations of poor environmental performance, these companies may adopt reactive and selective reporting tactics to mitigate reputational damage and restore their social standing. This defensive posture involves using targeted disclosures to counter negative perceptions and navigate specific legitimacy challenges. Together, these two approaches provide a nuanced understanding of corporate environmental disclosure methods. They critically reflect how companies may strategically adapt their disclosures over time in response to evolving stakeholder awareness and pressures.

3.3.1 Environmental policy adoption disclosures and the quality of corporate ESG reporting

To establish and maintain a state of legitimacy, a firm may engage in symbolic actions that mirror socially constructed norms, values, beliefs and definitions, while potentially leaving its core operations largely unchanged (Meyer & Rowan, 1977). In this regard, a firm may, for example, strategically respond to societal values and expectations by publicly affirming its commitment to adopting environmental policies in its corporate ESG reports.

By disclosing information on the adoption of policies addressing critical challenges such as water management, renewable energy use, waste reduction and initiatives to curb greenhouse gas (GHG) emissions, organisations may outwardly appear to champion socially laudable objectives. However, Marquis, Toffel and Zhou (2016) caution that public pronouncements of policy adoption do not necessarily translate into the integration of these policies into a company's operations and decision-making processes. Furthermore, as noted by Christmann and Taylor (2006), corporate disclosures on environmental policy adoption can function as a perfunctory tactic, particularly when managers neglect to communicate mechanisms for ensuring consistent monitoring and adherence to these policies.

Consequently, the reported adoption of environmental policies may serve as a superficial gesture designed to appease stakeholders while sidestepping tangible actions or meaningful changes in corporate behaviour. This issue is also evident in South Africa, where such corporate reporting practices are well-documented. A growing body of research, including studies by De Villiers and Alexander (2014), De Villiers and Lubbe (2001), De Villiers and Van Staden (2006), Dube and Maroun (2017) and Negash and Lemma (2020) identifies reporting on environmental policy adoption as a legitimation tactic employed by some JSE-listed firms to justify their organisational structures, often in cases where their actual environmental performance is subpar.

Antonites and De Villiers (2003) and Vos and Reddy (2014) compellingly demonstrate how some South African entities embed environmental policy adoption in their reporting practices to gain or maintain symbolic legitimacy. These researchers find that companies with weak underlying environmental performance frequently articulate their reported environmental policies through broad mission and vision statements about sustainability. Instead of disclosing

specific, measurable and actionable information, these firms prefer neutral and generic disclosures of their environmental policies and pledges. As a result, by leveraging vague and rhetorical language, firms may create an illusion of commitment to environmental sustainability while avoiding accountability for their actual ecological outcomes.

Thus, although reporting on environmental policy adoption is intended to improve corporate responsibility and accountability, it can inadvertently become a tool for companies to shape their perceived legitimacy without making meaningful operational changes. This phenomenon may occur for several reasons, two of which are especially salient.

First, by using well-crafted and socially palatable language in their policy expressions, companies can garner reputational benefits while avoiding significant financial costs or operational hurdles associated with implementing more substantive reforms. Bromley and Powell (2012) support this view, observing that corporate disclosures on environmental policy adoption can help companies cultivate a façade of environmental consciousness without divulging details that would expose their actual performance deficiencies.

Second, the reported adoption of environmental policies can temporarily satisfy an organisation's stakeholders, preserving its social licence to operate and securing continued endorsement, even in the face of persistent suboptimal environmental practices (Boiral, 2013; Cho et al., 2015). Ashforth and Gibbs (1990) explain that when corporations appear to adhere to social standards, it can attenuate stakeholder scrutiny for some time. This relaxed oversight occurs because stakeholders perceive the reported adoption of environmental policies as a sign of the firm’s commitment to responsible practices. Initially, this placates stakeholders, making them less inclined to rigorously examine the firm's actual practices or performance.

Consequently, Luft Mobus (2005) holds that the strategic manoeuvre of prioritising reporting on the adoption of various environmental policies over their effective execution may serve as an expedient, low-effort symbolic gesture to acquire or maintain corporate legitimacy. This implies that some companies may deliberately emphasise policy adoption in their reporting to manage public perceptions and maintain legitimacy, rather than focusing on driving authentic improvements in their environmental performance.

In this context, these policy declarations may not faithfully represent real-life business operations and may lack relevant information for stakeholders. Such disclosures may be characterised by vague, rhetorical language or a lack of specific, actionable information. The central purpose of these reports may be to convince stakeholders that the company is a benevolent actor, purportedly doing more good than harm, but without a sincere dedication to enacting these policies.

Based on this premise, the study proposes the following pair of hypotheses:

H_{01}: There is no statistically significant relationship between South African firms' self-reported adoption of environmental policies and the quality of their corporate ESG reporting.

H_{a1}: There is a statistically significant inverse relationship between South African firms' self-reported adoption of environmental policies and the quality of their corporate ESG reporting.

3.3.2 Environmental performance and the quality of corporate ESG reporting

When a firm's legitimacy is under serious threat, such as when mainstream media exposes a substantial discrepancy between its declared environmental policies and actual practices, the legitimation techniques predominantly used to establish and maintain legitimacy may fall short in restoring compromised stakeholder trust and regaining their acceptance (Cho et al., 2015). Under these circumstances, merely disclosing the existence of corporate environmental policies, which can initially help acquire or preserve legitimacy (as discussed in Section 3.3.1), may not suffice as a strategy to repair organisational legitimacy after it has been lost.

Once stakeholders become aware of the company's deliberate engagement in ecologically destructive practices and poor underlying environmental performance, they may no longer be convinced of the organisation's genuine dedication to environmental responsibility and stewardship as claimed in their policies (Aouadi & Marsat, 2018). In such scenarios, where a company confronts a legitimacy crisis and experiences a dramatic shift in stakeholder perceptions, rebuilding the firm's credibility may require a different organisational response (Guthrie & Parker, 1989; Patten, 1992).

Legitimacy theory offers a useful framework for understanding the dynamic nature of stakeholder perceptions and organisational responses. According to this theory, a discordance between a company's tangible actions and prevailing societal norms can trigger stakeholder discontent (Suchman, 1995). For instance, allegations of corporate environmental misconduct may lead to heightened stakeholder scepticism and a more thorough examination of the company's actual environmental practices. If this investigation reveals that the company's real environmental performance does not live up to stakeholder expectations, it may erode the company's reputation and undermine its position as a credible member of society (Deegan & Unerman, 2011).

Such a breach in presumed legitimacy can have profound negative ramifications for a firm's long-term success (Deegan, 2002). When key constituencies such as customers, employees, investors, regulators and the general public begin to question whether a company is acting in accordance with ethical standards and values, they may challenge the company's right to continue operating (Hess & Dunfee, 2007). As a result, these stakeholders may withdraw their support, which can jeopardise the company's future prospects (Ashforth & Gibbs, 1990; Choi & Luo, 2021; Maaloul, 2018).

Considering the severe implications of a legitimacy crisis, Suchman (1995) contends that corporations facing such a predicament will likely employ various strategies to rebuild their diminished social standing. This perspective is substantiated by Guthrie and Parker (1989), who observe that the higher the risk of adverse shifts in how society views a corporation's behaviour, the greater the desirability on the part of the corporation to attempt to manage these changes in public opinion. Consequently, firms may resort to disclosure strategies that are specifically designed to repair their damaged legitimacy in an effort to mitigate the potential pernicious impact on their long-term viability.

Ideally, firms undergoing the legitimacy repair process would use high-quality ESG reporting to authentically convey the substantive measures they have implemented to harmonise their organisational practices with the dominant expectations and values of their constituents (Ashforth & Gibbs, 1990). However, numerous studies consistently demonstrate that, in practice, companies responding to allegations of ecological harm often employ selective and sometimes defensive ESG disclosures to repair their legitimacy (see, for example, Aerts &

Cormier, 2009, Busch, Johnson & Pioch, 2022, Hooghiemstra, 2000, Hummel & Schlick, 2016, O'Donovan, 2002, Patten, 1992 and Talbot & Boiral, 2018).

For example, O'Donovan (2000) and Samkin and Schneider (2010) identify two common legitimation tactics used by firms seeking to restore their legitimacy following adverse publicity about their environmental impacts: restructuring and image enhancement. Restructuring involves reporting on actions that promise to fix specific issues and prevent future occurrences. In this approach, companies may subtly acknowledge fault and express some regret without directly apologising to affected stakeholders. By focusing on forward-looking solutions, companies aim to project control over the situation. This balance allows them to seem responsive without fully admitting culpability or inviting further scrutiny.

Image enhancement is a strategic response prepared by organisations to portray their activities in an exceptionally favourable light (Du Toit, 2017; Haji & Hossain, 2016). The main objective of this strategy is to shift the current unfavourable sentiment towards the company through various means. These may include avoiding direct references to the problematic issue or event, diverting attention away from ongoing controversies or subpar environmental performance, or emphasising the positive aspects of the company's past, present or future accomplishments.

To illustrate how organisations perceived to breach environmental norms may respond to legitimacy threats by deploying these tactics, consider the example of Sasol, a JSE-listed integrated energy and chemical company. As the second-largest producer of greenhouse gas (GHG) emissions in South Africa, surpassed only by Eskom Holdings, Sasol has attracted considerable criticism from various stakeholders due to the release of toxic gases from its coal-fired facilities, which pose serious risks to both human health and the environment (Centre for Environmental Rights, 2020).

Despite having a suite of policies addressing GHG reduction, air pollution mitigation, water targets, waste management and renewable energy transition, Sasol has faced several highly publicised controversies. These include persistent non-compliance with air pollution standards set by the Department of Forestry, Fisheries and the Environment, as well as sluggish efforts to curb its GHG emissions (Greenpeace, 2021). Consequently, Sasol's reputation has been marred, leading to escalating legitimacy threats such as legal challenges, exclusion from

socially responsible investment indices and a surge in protests against its environmentally destructive practices.

In response to these increasing pressures on its legitimacy, a review of Sasol's 2023 ESG report suggests that the company may be using restructuring and image enhancement tactics to rehabilitate its reputation. With respect to restructuring, Sasol outlines a transformation program aimed at overhauling its business operations, which was first announced in September 2021. This program sets new targets for GHG emissions reductions, promising a 30% cut by 2030 and achieving net-zero emissions[2] by 2050 (Sasol, 2023).

While these targets may seem impressive, Sasol's plan has been widely denounced as lacking credibility and accountability. Many critics view it as an attempt to salvage public trust rather than a sincere effort to tackle urgent environmental challenges. The Centre for Environmental Rights (2021) draws attention to significant concerns, notably, the absence of clearly defined short- and medium-term milestones, comprehensive action plans and measures to ensure accountability for attaining Sasol's stated goals. These deficiencies in transparency hinder stakeholders' ability to assess the feasibility of Sasol's ambitions or hold the company accountable for its commitments. Adding to this scepticism is Sasol's poor track record of repeatedly missing its past GHG emissions reduction targets, casting doubt on the company's capacity to meet its new decarbonisation goals.

Greenpeace (2021) further observes that setting long-term targets for 2030 and 2050 effectively diminishes the current management's obligation to deliver tangible results, as they are unlikely to retain their positions by these targeted timelines. This critical perspective is echoed by Fossil Free SA (2021), which interprets Sasol's restructuring plan as a cynical response, giving the appearance of addressing the problems while, in reality, deferring responsibility for corporate misbehaviour to future management teams. Such a strategy not only shifts culpability at the executive level but also potentially exacerbates the detrimental ecological effects on coming generations by delaying meaningful action on pressing environmental and social issues.

[2] Net-zero emissions generally refers to achieving an overall balance between GHG emissions produced and GHG emissions taken out of the atmosphere, effectively resulting in zero overall emissions (Climate Council, 2023).

Beyond restructuring, Sasol engages in image enhancement tactics by showcasing select positive achievements in its communications. For instance, the company prominently features its first green hydrogen production and purported advancements in water recycling and waste management (Sasol, 2023). However, this carefully curated narrative conspicuously omits crucial information about the criminal charges Sasol faces related to its Secunda operations.

These serious allegations, brought forth by an internal whistleblower, include unlawfully disposing of waste and negligently discharging contaminated water containing hazardous chemicals into the Vaal River (Mail & Guardian, 2022). This selective disclosure points to a deliberate attempt to shape public perception while avoiding transparency about significant environmental violations. Such reporting practices raise important questions about Sasol's integrity and its willingness to provide full and honest disclosure about its environmental impact.

The Sasol example demonstrates how companies grappling with a legitimacy crisis can turn to strategic reporting techniques such as restructuring and image enhancement in a bid to restore their damaged reputations. Yet, upon closer examination, these manoeuvres frequently fail to adequately address underlying environmental issues or drive meaningful transformation in corporate practices (Boiral, 2013; Hrasky, 2012). Instead of dealing with core challenges, these methods typically focus on rebuilding short-term legitimacy by generating alluring narratives that gloss over the company’s less savoury attributes.

This observation aligns with Hopwood's (2009) findings that companies with poor environmental track records are particularly prone to deploying reporting strategies that present an overly optimistic corporate image. In essence, these tactics serve to soften the perceived severity of the company's involvement in controversial environmental events, rather than addressing the root causes of the problems.

Drawing from these findings, this thesis postulates that companies with suboptimal environmental performance are more inclined to embrace corporate reporting strategies as a means to salvage their legitimacy. These tactics may focus on moulding public perceptions and enhancing reputation, portraying the organisation’s performance in the most advantageous light possible. Such approaches are likely to undermine the production of relevant and decision-

useful information for stakeholders, which is vital for holding companies accountable for their environmental performance. Considering these factors, the following hypotheses are proposed:

H_{02}: There is no statistically significant relationship between South African companies' actual environmental performance and the quality of their corporate ESG reporting.

H_{a2}: There is a statistically significant inverse relationship between South African companies' actual environmental performance and the quality of their corporate ESG reporting.

3.4 Hypothesis development: Social disclosure practices influencing ESG reporting quality

3.4.1 Social policy adoption disclosures and the quality of corporate ESG reporting

Sampong, Boahene and Kweitsu (2018) argue that the imperative for South African firms to disclose their adopted social policies stems from two interconnected perspectives: moral and legal. The moral dimension, rooted in the country's apartheid history, posits that firms have an ethical duty to contribute to the alleviation of South Africa's persistent societal inequalities and structural disparities (Babarinde, 2009). This perspective also suggests that firms, some of which may have profited from human rights violations during apartheid, have a responsibility to play a role in South Africa's socio-economic transformation as a means of reconciling the troubling legacies of the past (see Section 2.2.2 for a more detailed discussion).

The legal dimension, on the other hand, is grounded in the post-apartheid legislative framework that seeks to redress historical injustices and promote inclusive growth. In this regard, key pieces of legislation, such as the Broad-Based Black Economic Empowerment (BBBEE) Act (2003) and the Employment Equity Act (EEA) (1998), require firms to implement and report on initiatives aimed at fostering equity, workplace diversity and socio-economic empowerment (Ntim & Soobaroyen, 2013).

While the EEA applies broadly to all employers meeting certain criteria, compliance with the BBBEE Act is not universally mandatory for all companies. However, the JSE Listings

Requirements stipulate that JSE-listed companies must comply with the BBBEE Act and its codes of good practice and publish an annual compliance report on their BBBEE status (JSE, 2019). Furthermore, BBBEE compliance significantly influences a company's competitiveness and ability to secure government contracts. As a result, many companies, including those not listed on the JSE, choose to comply with BBBEE requirements to maintain their competitive edge and access a wider range of business opportunities (Arya & Bassi, 2011).

Thus, various stakeholders view the adoption and disclosure of corporate social policies in South Africa as both a moral and legal obligation. They expect firms to actively participate in remedying apartheid-era injustices and demonstrate their commitment to the country's broader transformation agenda.

Consequently, South African corporations of various sectors and sizes are actively engaging in the adoption and disclosure of social policies, but the underlying intentions behind these actions have been met with scepticism from researchers such as Fig (2005), Hamann and Acutt (2003), Makgoba (2019) and Rajak (2011). Fig (2005) strongly refutes the idea that companies reporting their adopted social policies are guided by a moral compass. Instead, he compellingly demonstrates that many of these South African enterprises vehemently reject ethical responsibility for society and persistently fail to acknowledge or rectify the social injustices perpetrated by corporations during the apartheid era, irrespective of their ostensible commitment to disclosing social policies.

The perceived departure of corporate social efforts from ethical considerations is further reinforced by Hinson and Ndhlovu's (2011) observation that South African companies often disclose their social policies and practices mainly to comply with government recommendations and regulations, rather than out of an altruistic commitment or innate sense of moral obligation to contribute to society. Drawing from legitimacy theory, Dube and Maroun (2017) argue that by embracing policies that highlight their social activism, these entities seek to gain acceptance among influential stakeholders, thereby mitigating risks and managing potential opposition.

However, the mere adoption of social policies in response to regulatory pressures does not necessarily ensure their effective integration into organisational processes. As Bromley and Powell (2012) and Hamann (2003) caution, when companies strive to establish legitimacy

primarily by aligning with coercive and regulatory demands, it is imperative to carefully consider the extent to which these requirements are effectively incorporated and embedded into firms' day-to-day operations.

While some companies may legitimise their actions by genuinely embracing social policies that lead to meaningful changes in their corporate conduct, others may engage in ceremonial conformance. In instances involving the latter, businesses develop policies that are seemingly consistent with societal expectations to display an optical dedication and adherence to these standards. By projecting an outward appearance of compliance with such policies, firms can shield themselves from the need to actually fulfil the stated policy objectives. This surface-level conformance allows them to derive a degree of legitimacy without substantively altering their practices or achieving the intended societal outcomes (Meyer & Rowan, 1977).

A growing body of research in South Africa suggests that despite the purported adoption of social policies and practices by numerous companies, these initiatives tend to have a limited impact on core business decisions. In reality, these decisions remain inextricably tied to the overriding pursuit of maximising firm profitability, allowing firms to claim legitimate conduct through rhetoric rather than enacting meaningful transformations in organisational behaviour (Flower, 2015; Hamann & Kapelus, 2004; Solomon & Maroun, 2012a).

Soobaroyen and Ntim's (2013) study on corporate responses to the HIV/AIDS crisis in South Africa provides a striking illustration of this discrepancy. Their research findings indicate a glaring disconnect between companies' stated policy commitments to addressing social concerns and their actual prioritisation of financial objectives in practice. This misalignment persists even in the face of legislative efforts by the South African government, such as the Employment Equity Act (EEA) of 1998 and the Occupational Health and Safety Act of 1993. These laws mandate employers to develop comprehensive strategies and implement targeted programs aimed at effectively managing the impact of HIV/AIDS in the workplace. Nevertheless, firms often fall short of sincere stakeholder engagement on this critical social issue, neglecting to translate their policy commitments into substantive action.

Notably, Soobaroyen and Ntim (2013) find that when the HIV/AIDS pandemic does not pose an immediate threat to a firm's productivity or profitability, companies frequently resort to perfunctory and superficial social policy statements related to the issue. These statements serve

primarily as a means to tentatively appease influential stakeholders, such as government and trade unions, rather than providing genuine accounts of how their implemented policies and programs prioritise the well-being and ongoing productivity of affected employees.

Although these stakeholders (government bodies and trade unions) wield significant influence in South Africa, the study results show that their interests are ultimately subordinated to the company's overarching goal of achieving economic success. Consequently, companies engage in a form of gesturing, creating an illusion of social consciousness to maintain legitimacy. They sidestep authentic endeavours to tackle pressing societal concerns, ensuring that their sustainability efforts do not materially affect or undermine their financial performance metrics.

The gap between corporate rhetoric and reality is not limited to the disclosure of HIV/AIDS policy statements. Makgoba (2019), Ntim and Soobaroyen (2013) and Rajak (2011) conduct extensive research that sheds light on the sophisticated strategies employed by numerous South African mining firms to recontextualise and reconstruct the narrative surrounding their adoption of the BBBEE policy. These strategies are designed to divert attention from their lack of commitment to socio-economic transformation and to insulate them from scrutiny regarding their meagre societal contributions.

Specifically, the sampled mining corporations skilfully deploy a range of discursive and rhetorical techniques to reframe the BBBEE discourse within the paradigm of managerial capitalism in their corporate communications. To achieve this, they strategically manipulate their disclosures on BBBEE policy adoption, stripping the policy of its socio-political origins, which emphasise justice and racial equity, and repackage it as an apolitical marketing tool focused on branding, advertising and image-building. This calculated manoeuvre empowers these companies to evade critical questions about their sluggish pace of socio-economic transformation and the detrimental consequences of their practices on society while maintaining a semblance of compliance with the BBBEE policy.

These examples underscore the predominance of financial considerations in shaping corporate decision-making, even when confronted with urgent social issues that demand authentic engagement and proactive measures. This phenomenon becomes particularly evident when firms' primary impetus for disclosing their social policies appears to be driven by legal requirements rather than a genuine moral motive. Consequently, the legal mandate for firms to

disclose social policies in South Africa may lead to ceremonial conformance, whereby companies disclose their social policies as a means to quell societal pressures and maintain a positive image for their own self-preservation, rather than out of a sincere commitment to social responsibility.

Furthermore, when firms' actual societal impact is questionable and their value system is incongruent with the larger social system of which they are a part, legal reporting requirements can be co-opted as a tool to create the perception of a more socially responsible firm. By portraying themselves as proponents of prevailing societal norms and expectations, corporations can advance their own economic goals while appearing to address societal concerns.

In this context, South African firms' disclosures on social policy adoption may represent a form of superficial conformance aimed at creating a simulacrum of addressing societal concerns. However, these disclosures may not provide a relevant and faithful representation of the firms' actual contributions to society, implying that disclosures on the adoption of social policies can be a strategy employed by low-quality corporate ESG reporters. This idea is articulated in the following hypotheses:

H_{03}: There is no statistically significant relationship between South African firms' self-reported adoption of social policies and the quality of their corporate ESG reporting.

H_{a3}: There is a statistically significant inverse relationship between South African firms' self-reported adoption of social policies and the quality of their corporate ESG reporting.

3.4.2 Corporate philanthropy disclosures and the quality of ESG reporting

The foundational concept of stakeholder theory portrays a corporation's philanthropic contributions to society as an unconditional devotion to its community, underpinned by a strong moral imperative (Carroll, 1991; Freeman, 1984; Post et al., 2002). According to this theory, corporations engage in philanthropy because they acknowledge their responsibility to address the needs and interests of various constituencies including shareholders, employees, local communities and future generations (Freeman, 1984).

However, legitimacy theory offers a different perspective on corporate philanthropy. It proposes that corporate charitable giving can function as a strategic tool employed by corporations to project themselves as responsible societal participants. Researchers such as Chen, Patten and Roberts (2008), Gautier and Pache (2015) and Williams and Barrett (2000) endorse this viewpoint, arguing that within the legitimacy theory paradigm, corporate giving transcends mere altruism. Instead, they maintain that the primary purpose of corporate philanthropy is to legitimise a firm's operations in the eyes of its stakeholders and society at large.

Morkel's (2019) investigation into the incentives behind the implementation of corporate philanthropy in South Africa provides additional support for this strategic perspective on corporate giving. His findings indicate that South African firms mainly pursue charitable activities to advance their own strategic interests, rather than solely out of moral obligation. These companies use philanthropy as a calculated manoeuvre aimed at cultivating goodwill and maintaining legitimacy among influential stakeholders, instead of undertaking sincere efforts to make meaningful contributions to social welfare.

To understand why certain South African firms use corporate giving as a legitimising mechanism, it is important to recognise that corporate philanthropy is deeply ingrained in the country’s social fabric and endorsed by several major national institutions. As Hamann (2004) points out, these social expectations and institutional support significantly influence firms' motivations to participate in philanthropic activities.

In the South African context, key stakeholders such as the government and professional associations embrace a collective aspiration for substantive corporate involvement in addressing the nation’s critical socio-economic challenges (Sampong et al., 2018). This involvement entails allocating discretionary corporate resources to support a diverse range of social causes, spanning education, social and community development and healthcare (Trialogue, 2018; Visser, 2005a).

Although corporate charitable giving remains a voluntary initiative in South Africa, it is firmly entrenched and actively promoted through various means including, government policies and corporate governance frameworks. A prime example of such policies is the Broad-Based Black Economic Empowerment (BBBEE) Act, a legislative measure designed to uplift previously

disadvantaged groups (South Africa, 2003). As part of its overarching economic transformation agenda, the BBBEE Act encourages corporate social investment by providing incentives for companies to contribute to socio-economic development (SED) programmes.

Under the BBBEE framework, participating companies are required to meet and report on specific targets across various elements, including SED contributions that benefit Black individuals or communities (South Africa, 2003). While BBBEE compliance is not mandatory for all companies, JSE-listed firms are required to report on their BBBEE status and publish their BBBEE compliance report (JSE, 2019). BBBEE compliance also becomes crucial for companies seeking to secure business opportunities with government entities, bid on public tenders or obtain certain licenses and concessions.

The SED element of BBBEE does not strictly mandate traditional corporate philanthropy. Instead, it encourages initiatives that promote sustainable economic participation for Black South Africans. Companies have flexibility in how they address this element, which may include sustainable development projects, skills development initiatives, enterprise support or more traditional philanthropic activities.

Companies that effectively address the SED element within the BBBEE structure are more likely to achieve a higher and more favourable BBBEE rating, thus potentially enhancing their chances of obtaining government contracts and tenders (Arya & Bassi, 2011). As a result, while not mandating corporate philanthropy per se, the BBBEE Act has become a significant driver of SED initiatives in South Africa, some of which may take the form of strategic corporate giving.

In addition to the BBBEE policy, the King Reports on Corporate Governance, widely adopted by South African companies, also endorse corporate philanthropy as one manifestation of corporate social responsibility. These codes, particularly King III and King IV, locate corporate giving within a broader framework of corporate responsibilities that extends beyond traditional philanthropic activities to encompass core business operations (IoDSA, 2009;2016).

However, while corporate philanthropy constitutes one part of broader corporate social responsibility, there is a risk that the encouragement of charitable giving within South African regulatory and governance frameworks could inadvertently distort companies' motives for such

giving. Some companies may leverage charitable initiatives primarily to improve their public image and gain societal approval, rather than being genuinely motivated by altruism and a sincere commitment to contribute to society (Masaka, 2008).

DiMaggio and Powell (1983), Suchman (1995) and Zheng, Luo and Maksimov (2015) echo this critical perspective. They argue that when the main impetus for corporate charitable giving is the need to respond to institutional or regulatory pressures, businesses may treat philanthropic initiatives as strategic tools to bolster their legitimacy among prominent players such as government agencies and industry organisations. At the same time, companies may also use philanthropy as a mechanism to safeguard their reputation against potential hazards or negative publicity.

To illustrate how the concerns regarding legitimacy-driven philanthropic practices may manifest in the South African context, consider a scenario where a JSE-listed mining company faces community resistance due to its high environmental footprint and unsafe labour practices. In response, rather than addressing these core operational issues, the company launches a highly publicised corporate philanthropy programme, investing heavily in education and healthcare projects in the affected communities.

While these initiatives provide some benefits to the local communities, the company's foremost motivation is to improve its public profile, appease stakeholders and maintain its social license to operate. By reporting on these benevolent endeavours, the company may aim to elevate its BBBEE score and attract socially conscious investors, boosting its market position. Nevertheless, the company's core business practices remain unchanged, questioning the overall impact on society and the environment.

This scenario is not merely hypothetical but reflects documented practices in the South African corporate landscape. Specifically, Friedman, Hudson and Mackay (2008) confirm that certain South African entities deliberately use their charitable donations to claim social legitimacy without making fundamental changes to their business practices. Moreover, Hamann and Bezuidenhout (2003) find that sampled JSE-listed firms highlight their community involvement as a defensive tactic when criticised for subpar performance in ESG areas. These findings are consistent with the observations of Fig (2005), who notes that some South African firms channel significant financial resources to social causes. This strategy serves a dual

purpose: to deflect attention from their unsustainable business practices and to rehabilitate their compromised legitimacy.

In summation, the emerging pattern in these studies suggests that philanthropic initiatives undertaken by South African corporations are often principally underpinned by the imperative of gaining legitimacy, rather than an earnest desire to contribute to the greater good. This legitimacy-seeking behaviour aligns with Babarinde's (2009: 359) characterisation of corporate giving in South Africa as frequently amounting to little more than a "public relations stunt" that fails to address pressing social concerns.

When corporate philanthropy prioritises legitimacy-seeking over authentic social responsibility, it can significantly compromise the quality of ESG reporting. In these cases, corporate philanthropy may be used to craft an image of a socially conscious firm rather than addressing material issues, misrepresenting the company's true impact on the communities it claims to support (Boiral, 2013; Cho et al., 2015). Firms may selectively disclose information, emphasising short-term, visible philanthropic activities whilst obscuring the broader negative effects of their business practices. This approach can result in incomplete or biased ESG reporting that detracts from operational ESG concerns (Michelon et al., 2015).

Therefore, based on these observations, the subsequent pair of hypotheses is developed based on the premise that corporate philanthropic disclosures may be used as a marketing ploy, potentially masking questionable business practices:

H_{04}: There is no statistically significant relationship between South African firms' self-reported corporate philanthropy and the quality of their ESG reporting.

H_{a4}: There is a statistically significant inverse relationship between South African firms' self-reported corporate philanthropy and the quality of their ESG reporting.

3.5 Hypothesis development: Governance disclosure practices influencing ESG reporting quality

3.5.1 Sustainability-oriented governance policy adoption disclosures and the quality of corporate ESG reporting

Numerous high-profile corporate failures and scandals in South Africa, such as those involving Bosasa Group, Steinhoff International Holdings and Tongaat-Hulett Limited, have been largely attributed to significant corporate governance deficiencies and inadequate oversight during financial reporting processes (Tshipa, 2017). These governance shortcomings have underscored the pressing need for more robust and effective mechanisms to ensure the integrity, transparency and reliability of corporate disclosures, encompassing both financial and non-financial information.

To address these challenges and restore investor confidence, the JSE (as discussed in Section 2.3.6) has played a vital role in promoting good corporate governance by making compliance with the King IV report, on an apply and explain basis, a listing requirement for all South African companies trading on the exchange. The comprehensive set of guidelines outlined in the King IV report emphasise an integrated approach to corporate governance that considers both traditional governance measures and sustainability-oriented governance mechanisms (IoDSA, 2016).

While traditional governance structures, such as shareholder voting rights, independent audit committees and executive compensation policies, are essential for protecting shareholder interests and promoting the integrity of corporate financial disclosures, the King IV report recognises the importance of extending governance beyond the conventional shareholder-centric view (IoDSA, 2016). Embracing stakeholder theory's perspective, the King IV report advocates for businesses to govern their operations in a manner that also considers the needs and expectations of non-shareholder constituencies, such as employees, customers and society at large (Amel-Zadeh & Serafeim, 2018; Dorobantu, Gupte & Li, 2022; Freeman et al., 2010).

Reflecting this integrated approach, Ntim, Opong and Danbolt (2012) observe that many South African corporations are complementing their traditional governance mechanisms by adopting

a range of sustainability-oriented governance policies tied to ESG metrics. These policies take various forms, often including the incorporation of ESG factors into executive compensation to incentivise management to prioritise sustainability alongside financial objectives (Matemane, Moloi, Adelowotan, & Biswas, 2023). Furthermore, South African firms are increasingly claiming that their governance structures are aligned with internationally recognised sustainability goals and principles set by organisations like the United Nations (UN) and the Global Reporting Initiative (GRI).

According to Rezaee (2016), firms that adopt such stakeholder-inclusive governance models as part of their policy frameworks are better equipped to ensure that ESG matters receive adequate oversight and attention from senior management. Moreover, this heightened focus on ESG within governance structures can potentially enhance the accuracy, transparency and credibility of non-financial disclosures, leading to more reliable and informative ESG reporting.

However, drawing upon legitimacy theory, critical researchers question the fundamental motives behind companies' adoption of sustainability-oriented governance policies (see, for example, Boiral, 2013, Mahoney & Mahoney, 2021, Milne & Gray, 2013, Soederberg, 2007 and Van der Waal & Thijssens, 2020). They argue that firms may exploit sustainability governance policies to shape stakeholder perceptions and bolster their reputation, rather than genuinely enhancing stewardship and accountability for corporate ESG performance. In essence, these researchers express doubt about the ability of such governance mechanisms, particularly the reported adoption of policies, to drive substantive improvements in ESG management and performance in practice.

Reinforcing this scepticism, studies by Cho et al. (2015), Hahn and Lülfs (2014) and Michelon et al. (2015) point to a potential discrepancy between companies' rhetorical commitment to sustainability in their governance policies and their real-world outcomes. Building on the insights of Meyer and Rowan (1977) and Oliver (1991), these researchers view sustainability-related corporate governance policies as a strategic manoeuvre. They contend that such practices may be used to produce the illusion of formal compliance with prevailing institutional expectations and norms while, in reality, allowing firms to maintain significant discretion in their day-to-day operations.

The dichotomy between espoused sustainability principles and actual corporate practices is evident in South Africa's corporate landscape. Although Andreasson (2011) and Vaughn and Ryan (2006) describe the country's corporate governance framework (the King IV report) as robust and progressive, a closer examination of the report itself reveals a notable absence of concrete guidance. Specifically, Van Vuuren (2020) points out that the King IV report fails to provide clear instructions on how businesses can effectively translate sustainability-oriented governance policies into tangible, actionable measures. This ambiguity, further compounded by insufficient enforcement measures and consequences for non-compliance, may inadvertently create opportunities for companies to deviate from their stated sustainability commitments.

Of particular concern in the realm of sustainability-oriented corporate governance policies is the tendency for companies to publicly proclaim their alignment with various voluntary international codes of conduct, such as the United Nations Global Compact (UNGC) and the United Nations Sustainable Development Goals (SDGs). While some JSE-listed firms may reap reputational and legitimacy rewards by affiliating themselves with such global initiatives, there is a troubling possibility that such reported adherence could act as a smokescreen, concealing the perpetuation of controversial business practices.

Substantiating this criticism, Deva (2006), Nolan (2005) and Sethi and Schepers (2014) caution that the UNGC's ten sustainability principles, covering human rights, labour, environment and anti-corruption are articulated vaguely. This ambiguity allows insincere corporations to easily circumvent or pay lip service without demonstrating tangible progress in meeting these principles. Similarly undermining accountability, Van der Waal and Thijssens (2020) find that companies often treat the 17 SDGs targeting poverty, inequality and environmental degradation as a non-binding exercise ripe for impression management rather than substantive action.

In summary, sustainability-oriented corporate governance mechanisms are designed to elevate oversight and transparency of corporate ESG disclosures. Nevertheless, in their current form, many of such policies are vaguely expressed and challenging to monitor, granting companies considerable discretionary power in their application.

Through the lens of legitimacy theory, this thesis posits that firms perceived as underperforming in ESG domains may exploit this ambiguity to their advantage. Facing intense

stakeholder scrutiny and pressure to maintain legitimacy, these companies may tactically leverage reporting on sustainability-oriented governance policies as a public display of conformity. By doing so, they signal adherence to the recommendations outlined in King IV, without necessarily reflecting real changes in their actual ESG practices.

Consequently, some firms may attempt to strengthen their reputation by amplifying disclosures on the adoption of sustainability-oriented governance policies, crafting an image of compliance with institutional expectations. However, this cosmetic approach may not translate into meaningful improvements in their ESG performance, ultimately failing to augment the decision-usefulness of corporate ESG reporting for stakeholders. This proposed dynamic leads to the formulation of the following hypotheses:

H_{05}: There is no statistically significant relationship between South African firms' self-reported adoption of sustainability-oriented corporate governance policies and the quality of their corporate ESG reporting.

H_{a5}: There is a statistically significant inverse relationship between South African firms' self-reported adoption of sustainability-oriented corporate governance policies and the quality of their corporate ESG reporting.

3.5.2 Board independence and the quality of ESG reporting

Among various mechanisms proposed to enhance corporate governance and respond to evolving investor expectations, the inclusion of independent board members has gained particular significance. Independent directors are separate from the company's executive management and are therefore expected to bring an objective perspective to the boardroom. In this capacity, independent directors provide critical oversight that serves both corporate and shareholder interests, in accordance with their fiduciary duties to the company (Fama & Jensen, 1983a; Roberts, McNulty, & Stiles, 2005).

As many shareholders now view ESG factors as material to long-term financial performance, they look to these independent directors to play a vital role in aligning corporate decision-making with these expanded interests. Ingley, Mueller and Cocks (2011) echo this sentiment, arguing that independent directors' detachment from daily management operations uniquely

positions them to better advocate for shareholder interests, which increasingly encompass environmental and social considerations alongside traditional financial metrics. For example, independent directors can evaluate whether corporate practices, policies and decisions address stakeholder-related risks and market pressures that could impact shareholder value creation (Fama & Jensen, 1983b). Independent directors may also use their platform to assess management performance across both financial results and ESG outcomes (Chouaibi, Chouaibi & Zouari, 2021).

However, the effectiveness of this independent supervision depends significantly on how these directors navigate the practical realities of board dynamics and interpersonal relationships. Johnson, Schnatterly and Hill (2013) acknowledge that directors inevitably develop professional networks and relationships that may influence board interactions. While some researchers caution that overly close ties with management may create potential conflicts of interest and influence director judgment (Ackert, Khayati & Tompkins, 2023; Nicholson, Pugliese & Bezemer, 2017), a more constructive view recognises that professional relationships, when properly managed, can strengthen board functioning rather than compromise independence. Such relationships may build the open dialogue and trust necessary for rigorous oversight.

This oversight function extends to corporate disclosure practices, where independent directors have both the capacity and incentive to exercise their supervisory role in a manner that promotes transparency. Ibrahim and Angelidis (1995) support this view, suggesting that independent directors, by virtue of their presumed impartiality, are more inclined to push for high-quality ESG disclosures that meet investor information requirements. Two complementary reasons explain this improved disclosure quality.

First, reputational incentives may drive better disclosure practices. Amran, Lee and Devi (2014) suggest that independent directors' concerns about maintaining their professional reputations may influence their approach to disclosure oversight. This reputational consideration could enhance transparency in corporate reporting, as directors work to reduce information asymmetries between management and investors by actively overseeing disclosure processes, scrutinising management decisions and challenging inadequate reporting.

Second, structural separation may provide systematic protection against disclosure manipulation. Fama and Jensen (1983b) propose that the separation of decision management and decision control, facilitated by the presence of independent directors, can curb opportunistic behaviour by management. In the context of corporate ESG reporting, this structural separation means that independent directors can act as a system of checks and balances by taking concrete actions to secure the integrity of corporate disclosures.

Together, these factors enable independent directors to effectively monitor and evaluate ESG disclosure practices. Such oversight may include critically assessing ESG reports and questioning any attempts at misrepresentation or selective reporting that could prioritise short-term management preferences over transparent communication that advances the corporation's long-term interests. Consequently, independent directors may help elevate reporting quality by ensuring that disclosed ESG information accurately reflects genuine sustainability efforts, rather than functioning merely as a public relations tool (Pucheta-Martínez & García-Meca, 2014).

Numerous studies, including those by Arif, Sajjad, Farooq, Abrar and Joyo (2021), Htay, Aung, Rashid and Adnan (2012), Mangena and Pike (2005), Pucheta-Martínez and De Fuentes (2007) consistently demonstrate a positive association between a higher proportion of independent directors on corporate boards and improved credibility and transparency in ESG reporting. This empirical evidence can be attributed to the oversight function provided by these non-executive board members, whose independence potentially facilitates enhanced reliability of a company's sustainability disclosures.

Drawing from these findings, this thesis posits that independent directors, through their autonomous monitoring role, may augment the relevance and faithful representation of a company's sustainability performance in ESG reports. Thus, the following hypotheses are formulated with respect to the influence of board independence on the quality of ESG reporting:

H_{06}: There is no statistically significant relationship between the proportion of independent directors on South African companies' boards and the quality of their ESG reporting.

H_{a6}: There is a statistically significant direct relationship between the proportion of independent directors on South African companies' boards and the quality of their ESG reporting.

3.5.3 Board skill diversity and the quality of ESG reporting

While board independence remains integral, incorporating directors with diverse expertise can further bolster a board's effectiveness. By including individuals with wide-ranging educational qualifications, professional backgrounds and industry-specific knowledge, a company board can substantially enhance its capacity to navigate complex business challenges that affect long-term value creation (Hillman, Keim & Luce, 2001). This standpoint is endorsed by Ngu and Amran (2019), who suggest that boards comprising members with a range of expertise are more likely to contribute distinct viewpoints and insights to the decision-making processes and the overall governance of an organisation.

A company board with comprehensive competencies can be particularly valuable when addressing one of the most pressing challenges facing corporations today: integrating ESG factors into strategy, practices and reporting. Eccles and Klimenko (2019) argue that this complex task necessitates a broad spectrum of skills and expertise at the board level. Expanding on this, Cucari, Esposito De Falco and Orlando (2018) observe that ESG-related matters involve multifaceted stakeholder dynamics, with each stakeholder group having its own unique interests and concerns. Given that stakeholder expectations now fundamentally shape business sustainability, risk management and value creation, boards require a sophisticated and nuanced understanding of these divergent stakeholder perspectives to properly execute their fiduciary obligation to maximise long-term shareholder value.

Handajani, Subroto, Sutrisno and Saraswati (2014) hold that directors with varied specialisations and extensive board experience are more attuned to investors' evolving demands for sustainable and responsible business practices. This heightened awareness, coupled with broad technical competencies, enables such directors to more skilfully guide organisational strategy towards meaningful ESG integration. Building on this foundation, Wan, Hong, Liu and Cui (2023) argue that heterogeneity in thought and experience leads to more effective supervision of key stakeholder relationships that affect business outcomes, fostering improved engagement processes. Similarly, Katmon, Mohamad, Norwani and Farooque (2019)

demonstrate that directors with specialised expertise can leverage their specific knowledge for robust ESG monitoring and integration.

While this diversity of expertise may strengthen ESG governance and integration, such heterogeneity is not without its challenges. Even boards with varied technical and professional expertise face inherent complexities when balancing diverse perspectives on value creation and risk management, as these differences can create strategic tension (Collevecchio, Temperini, Barba-Sanchez & Meseguer-Martinez, 2025). For example, when boards include directors from an assortment of professional backgrounds such as environmental, financial, legal and operational expertise, each may interpret the implications for long-term shareholder value differently and advocate for varying approaches to ESG strategy and reporting.

Consider, for instance, a board deliberating over carbon reduction targets. An environmental scientist director might advocate for aggressive emissions cuts to mitigate long-term climate risks to the business, while a finance director focuses on immediate implementation costs and short-term earnings impacts and a legal expert emphasises regulatory compliance to avoid penalties and litigation risks that could affect shareholder returns. Each perspective is valid, yet reconciling these viewpoints into a unified strategy requires careful coordination.

Such tensions between professional orientations, while providing the multidisciplinary insights necessary for comprehensive ESG integration, can complicate the consensus-building processes that sound ESG governance requires. Varied stakeholder groups often have competing interests and expectations that can create business risks and opportunities, and directors' contrasting professional lenses may amplify disagreements about how to manage these implications for shareholder returns (Morais, Kakabadse & Kakabadse, 2019). Crucke and Knockaert (2016) observe that, in practice, such conflicts between individual board members can slow decision-making processes, especially in uncertain and resource-constrained business environments.

The critical question, therefore, becomes how boards can harness the benefits of diverse expertise while mitigating these inherent tensions. As Edlin (2007) suggests, the success of board skill diversity in ESG integration is, to a large extent, dependent on the board's capacity to synthesise competing professional orientations regarding stakeholder management into a coherent, actionable ESG strategy that supports business resilience and competitive advantage.

When boards successfully achieve this synthesis, the results can be transformative for both ESG performance and business outcomes.

Empirical evidence increasingly supports this proposition, demonstrating that when boards effectively leverage their diverse expertise, the outcomes can be considerable. A growing body of research substantiates the significant positive impact of advanced and multidisciplinary board expertise on corporate ESG integration and firm performance. For instance, Homroy and Slechten (2019) find that firms with environmentally savvy directors achieve economically significant reductions in corporate carbon emissions and long-term operational costs through strategic investments in eco-friendly technologies. In a similar vein, Ramón-Llorens, García-Meca and Pucheta-Martínez (2019) indicate that directors with specialised backgrounds in technical fields such as insurance, law and technology improve corporate decision-making and risk management. These directors enrich the board's capacity to harmonise corporate strategies with stakeholder needs, thereby improving both ESG performance and business resilience.

Given these findings, this thesis argues that the presence of directors with diverse technical knowledge and experience may contribute meaningfully to elevating the quality of reported ESG data. Following the observations of Cucari et al. (2018) and Helfaya and Moussa (2017), directors with specialised expertise are potentially well-positioned to guide and oversee corporate ESG reporting processes. Their distinctive skills and perspectives could facilitate the identification and disclosure of relevant and material information that mitigates business risks and supports informed decision-making.

Reverte (2009) reinforces this argument, proposing that directors with diverse proficiencies and experiences may be more familiar with material ESG risks and opportunities across different business areas. As a result, their multifaceted expertise may enable them to develop ESG reporting practices that provide relevant stakeholders with transparent information that facilitates long-term value creation.

This proposition finds empirical support in recent studies by Wan et al. (2023) and Wang, Zhou and Wang (2020) which show a positive association between board skill diversity and the quality of ESG reporting. Expanding on these findings, the following hypotheses are formed based on the rationale that directors with varied skill sets and perspectives are better positioned to appreciate the importance of ESG factors for long-term business performance, allowing them

to apply their knowledge and experiences to establish robust disclosure practices that promote informed decision-making.

H_{07}: There is no statistically significant relationship between the degree of board skill diversity in South African firms and the quality of their ESG reporting.

H_{a7}: There is a statistically significant direct relationship between the degree of board skill diversity in South African firms and the quality of their ESG reporting.

3.5.4 Board gender diversity and the quality of ESG reporting

Good corporate governance, as conceptualised by Fama and Jensen (1983a) and Tricker (2015), relies on boards that not only ensure adherence to ethical standards but also cultivate a corporate culture that fosters long-term value creation for relevant stakeholders. Central to achieving these governance objectives is the composition of the board itself. In this context, numerous researchers, including Adams and Ferreira (2009) and Terjesen, Sealy and Singh (2009), have advanced the case for increased female representation on corporate boards, arguing that gender diversity can significantly enrich board discussions and outcomes.

Proponents of this view substantiate their position by highlighting the distinctive attributes and inherent traits more prevalent among female directors. Studies indicate that female executives typically display a stronger commitment to ethical principles (Borkowski & Ugras, 1998) and tend to adopt more cautious and risk-averse decision-making strategies (Lane, 1995). Additionally, research by Vähämaa (2017) suggests that women in leadership roles often exhibit greater financial conservatism compared to their male counterparts. These characteristics are particularly relevant to the core responsibilities of corporate boards, as they complement critical board functions such as stakeholder oversight, managing risk and engaging with influential stakeholders.

These attributes of female directors significantly influence various aspects of corporate governance. For example, in the realm of corporate social responsibility, Adams (2015) reports that female directors demonstrate higher levels of ethical behaviour and are more likely to consider the interests of various stakeholders when making decisions, recognising that sustainable stakeholder relationships are fundamental to long-term value creation and

competitive advantage. This stakeholder-oriented approach, rooted in their heightened sensitivity to social and ethical issues, can lead to tangible improvements in corporate sustainability practices that ultimately enhance the company's reputation, reduce regulatory risks and secure its social licence to operate. Research by Hillman, Cannella and Harris (2002) supports this notion, finding that women directors are more inclined to endorse community development initiatives and encourage management to engage in sustainable practices and socially responsible projects. Such initiatives can improve corporate social standing and stakeholder trust, thereby contributing positively to enterprise value.

Beyond their focus on corporate social responsibility, female directors can also substantially shape an organisation's approach to risk management. Srinidhi, Gul and Tsui (2011) find that female directors, being more averse to litigation and reputational damage, are more likely to champion ethical practices and responsible corporate conduct. This inclination to mitigate perceived risks is further supported by Adams and Ferreira (2009) and Carter, Simkins and Simpson (2003), who show that female directors are more proactive in identifying and addressing potential vulnerabilities.

Furthermore, female directors often excel in stakeholder engagement, outperforming their male counterparts in building and maintaining relationships with diverse stakeholder groups. This aptitude fosters trust and credibility across various constituencies (Bear, Rahman & Post, 2010; Galbreath, 2011). Consequently, boards with female directors often implement more comprehensive and effective stakeholder engagement strategies. These strategies typically focus on reducing information asymmetry through open communication, transparency and collaboration (Arfken, Bellar & Helms, 2004; Nielsen & Huse, 2010).

Collectively, these findings indicate that female directors tend to exhibit desirable interpersonal and leadership traits including ethical discernment, stakeholder-centric orientation, risk intelligence and relational acumen. These qualities enhance various aspects of corporate governance, contributing to improved ESG performance. This thesis proposes that these attributes may predispose female directors to advocate for more relevant and transparent ESG reporting practices.

Multiple studies support this proposition, revealing a positive association between female board representation and improved ESG reporting practices (see, for instance, Ben-Amar,

Chang & McIlkenny, 2017, Bravo & Reguera-Alvarado, 2019, Cooray, Gunarathne & Senaratne, 2020, Fernandez-Feijoo, Romero & Ruiz-Blanco, 2014, Manita, Bruna, Dang & Houanti, 2018 and Wasiuzzaman & Wan Mohammad, 2020).

The positive influence of female directors on the quality of corporate ESG reporting may stem from several factors. First, their strong ethical judgment and commitment to corporate social responsibility may lead them to use corporate ESG reporting as a crucial mechanism for advancing accountability rather than mere compliance. This notion is reinforced by Rao and Tilt's (2016) findings, which suggest that female directors' emphasis on ethics and their consideration of stakeholder interests can result in more comprehensive and informative ESG disclosures that drive sustainable value creation.

Second, their proactive approach to risk management may drive them to insist on accurate and comprehensive ESG reporting from management. As noted by Christensen, Hail and Leuz (2021), incomplete or misleading disclosures can expose companies to various risks, including regulatory scrutiny and potential legal action. As a result, by demanding high-quality ESG reporting, female directors may seek to mitigate these risks, protect the company's long-term interests and maintain its credibility with key stakeholders.

Third, female directors' relational competencies, often characterised by greater empathy and inclusivity, may strengthen their engagement with diverse stakeholder groups, generating valuable business insights about emerging ESG concerns and expectations (Eagly & Wood, 2016; Fernandez-Feijoo et al., 2014; Rosener, 1995). This improved stakeholder understanding could prompt female directors to prioritise more comprehensive and relevant ESG disclosures that address the most material issues affecting the business. In light of these arguments, this thesis presents the following hypotheses regarding board gender diversity and the quality of corporate ESG reporting:

H_{08}: There is no statistically significant relationship between board gender diversity in South African firms and the quality of their ESG reporting.

H_{a8}: There is a statistically significant direct relationship between board gender diversity in South African firms and the quality of their ESG reporting.

3.6 Development of indicator set for measuring corporate ESG reporting quality

3.6.1 Introduction

This section introduces 18 candidate indicators to investigate the determinants of corporate ESG reporting quality among selected JSE-listed entities. These 18 indicators are systematically selected from Refinitiv's comprehensive database of 186 ESG metrics using stakeholder and legitimacy theories as the guiding framework. This theoretically anchored approach prioritises variables most capable of distinguishing high-quality from low-quality ESG reporting, fulfilling the study's first stated secondary research objective.

Each indicator, quantified as a ratio variable on a continuous scale, represents an ESG disclosure practice hypothesised to influence the relevance and representational faithfulness of a company's ESG disclosures. Drawing from the eight hypotheses developed in Sections 3.3 to 3.5, these disclosure practices primarily relate to self-reported policy adoption within the environmental, social and governance pillars. For these policy adoption indicators, composite construction is employed, incorporating multiple underlying Refinitiv data points to enhance analytical robustness. The detailed methodology for these composite measures is presented in Section 4.6.2. The remaining indicators encompass actual environmental performance, self-reported corporate philanthropy and board characteristics such as independence, skills and gender diversity.

The environmental domain is represented by nine indicators: three assessing firms' self-reported adoption of environmental policies (H_1) and six gauging companies' actual environmental performance (H_2).These indicators collectively provide insight into the extent and depth of a company's environmental disclosures, disclosure factors hypothesised to affect the quality of its ESG reporting.

The social pillar consists of five indicators: four evaluating companies' self-reported adoption of social policies (H_3) and one measuring self-reported corporate philanthropy (H_4). These indicators offer information about a company's disclosed social policies and philanthropic activities, factors proposed to influence the quality of its ESG reporting.

The corporate governance dimension is examined using four indicators: one measuring companies' self-reported adoption of sustainability governance policies (H_5), while three separate indicators gauge board characteristics: independence (H_6), skills (H_7) and gender diversity (H_8). These four indicators shed light on a company's disclosed governance policies and board attributes, practices also hypothesised to shape the quality of its ESG reporting.

In the subsequent sections, organised by ESG pillar, each of the proposed 18 indicators is discussed in detail, presenting the rationale for its selection as a potential determinant of corporate ESG reporting quality.

3.6.2 Candidate indicators for measuring corporate ESG reporting quality: Environmental disclosure practices

Within the environmental dimension, Section 3.3 presents two disclosure practices hypothesised to influence the quality of corporate ESG reporting. The first, articulated in H_{a1}, proposes a statistically significant inverse relationship between South African firms' self-reported adoption of environmental policies and the quality of their ESG reporting. As argued in Section 3.3.1, policy pledges are susceptible to non-committal use by firms with suboptimal ESG performance. Such firms may strategically report on adopting a variety of environmental policies to divert attention from their lacklustre ESG track record. This tactic creates an illusion of dedication to corporate sustainability while allowing subpar ESG practices to persist.

To test this first hypothesis (H_{a1}), three indicators from the Refinitiv (2022) database are used to measure a firm's reported adoption of environmental policies: the resource use score (ERU), the environmental emissions score (EMS) and the environmental innovation score (EINV). The resource use score (ERU) evaluates the extent to which a particular firm reports on having policies related to its use of resources, such as materials, energy and water. This score considers factors like the firm's policies on energy and water efficiency, sustainable packaging, environmental supply chain management and its adherence to environmental management systems (Refinitiv, 2022).

The environmental emissions score (EMS) gauges a company's dedication to reducing its environmental footprint by considering several key elements. These include the firm's policies on emissions reduction, waste management, involvement in environmental restoration projects,

recycling efforts and strategies to minimise the environmental impact of transportation (Refinitiv, 2022). Lastly, the environmental innovation score (EINV) measures an entity's focus on developing innovative solutions that mitigate ecological harm and promote sustainable development. According to Refinitiv (2022), EINV considers aspects such as a firm's adoption of eco-efficient products and services, investments in pioneering green projects and the use of state-of-the-art technologies for natural resource management.

Based on H_1, Table 3.1 outlines the three indicators proposed to assess the corporate adoption of environmental policies. These indicators are accompanied by their respective descriptions and hypothesised relationships with corporate ESG reporting quality (ESGRQ).

Table 3.1 Indicators measuring corporate adoption of environmental policies

Hypothesis number[1]	**Indicator name**	**Description**	**Hypothesised relationship with ESGRQ[3]**
H_1: Disclosures on the adoption of environmental policies	Environmental resource use score (ERU)	The sum of scores achieved for initiatives and policies designed to reduce material, energy and water usage, and improve supply chain eco-efficiency, divided by the total possible score[2].	Inverse
	Environmental emissions score (EMS)	The sum of scores attained for initiatives and policies aimed at reducing environmental emissions, divided by the total possible score.	Inverse
	Environmental innovation score (EINV)	The sum of scores achieved for the capacity to alleviate environmental costs and burdens for customers, divided by the total possible score.	Inverse

1. Each hypothesis number (e.g., H_1, H_2) represents a pair of null (H_0) and alternative (H_a) hypotheses. For instance, H_1 comprises H_{01} (null) and H_{a1} (alternative), while H_2 consists of H_{02} (null) and H_{a2} (alternative). This numbering convention is consistently applied throughout all the tables listed in Chapter 3.
2. The specific components that contribute to the total possible score for each respective indicator are listed in Appendix A.
3. Indicates the hypothesised relationship between the respective indicator and ESG reporting quality (ESGRQ) based on the corresponding alternative hypothesis.

The second hypothesis (H_{a2}), focusing on disclosure practices in the environmental pillar, postulates a statistically significant inverse relationship between South African companies' actual environmental performance and the quality of their corporate ESG reporting. The rationale for this hypothesis is rooted in the discussion presented in Section 3.3.2. Companies with subpar environmental performance face serious threats to their legitimacy due to the perceived discrepancy between their actual practises and their professed commitment to ecological responsibility. This gap can result in a loss of stakeholder trust and support.

In response to these legitimacy threats, firms with poor environmental performance may attempt to manage the situation by deploying more deflective and defensive reporting strategies, such as emphasising positive aspects whilst downplaying negative ones or providing vague and incomplete information. These strategies are primarily aimed at maintaining or repairing legitimacy rather than promoting genuine accountability and transparency.

To investigate H_{a2}, a firm's actual environmental performance is measured using the total GHG emissions intensity (TGI) metric. As defined by Refinitiv (2022), TGI represents the ratio of a company's total GHG emissions, expressed in metric tonnes, to its sales or revenue, expressed in US dollars. By using sales as the denominator, TGI effectively normalises for differences in firm size, enabling fair comparisons across companies of varying scales. This approach to evaluating environmental performance has been employed in several studies, including those by Cho and Patten (2007), Clarkson, Li, Richardson and Vasvari (2011) and Patten (2002), who have used similar measures to proxy for a firm's environmental performance.

The total GHG emissions, which constitute the numerator in the TGI calculation, can be disaggregated into three distinct categories as delineated by the GHG Protocol (2022): Scope 1, scope 2 and scope 3 emissions. Scope 1 emissions are direct GHG releases from company-owned or controlled sources, such as on-site fuel combustion and chemical processing. Scope 2 emissions, on the other hand, are indirect GHG emissions associated with the purchase of electricity, steam, heat or cooling. Scope 3 emissions, the broadest category, relate to all other indirect emissions that occur in a company's value chain, including both upstream and downstream activities. These can include emissions from the production of purchased goods, employee commuting, use of sold products and waste disposal, among others.

In order to provide a comprehensive assessment of a firm's environmental performance, this study examines their total GHG emissions intensity (TGI) and further breaks it down into two components: Scope 1 GHG emissions intensity (S1GI) and scope 2 GHG emissions intensity (S2GI), offering a more detailed understanding of a company’s environmental footprint. All these intensity measures use total sales or revenue (in US dollars) as the denominator, allowing for consistent comparison across different aspects of emissions. However, scope 3 emissions are excluded from this analysis due to several limitations, including inconsistent reporting

practices across firms, lack of uniform calculation methods and scarcity of reliable data, which could introduce bias and substantially reduce the sample size.

Consequently, in this study, TGI serves as the primary indicator of a firm's overall environmental performance, while S1GI and S2GI act as supplementary measures, providing a nuanced view of a firm's emissions profile. For each of these GHG intensity indicators (TGI, S1G1 and S2GI), a higher intensity value signals poorer environmental performance, while a lower intensity signifies better performance.

To add further depth to the analysis of a firm's actual environmental impact, this study incorporates measures that capture year-on-year changes in emissions intensities. Specifically, this research assesses the annual variations in firms' reported total GHG emissions intensity (ΔTGI), scope 1 GHG emissions intensity (ΔS1GI) and scope 2 GHG emissions intensity (ΔS2GI), aligning with the methodologies used by Qian and Schaltegger (2017) and Talbot and Boiral (2018). These metrics enable stakeholders to track a company's progress in reducing emissions over time and identify potential risks, such as irregularities and anomalies in their reported environmental performance.

Erratic or unexplained fluctuations in these metrics may signal issues with data quality, measurement practices or reporting procedures, raising concerns about the reliability and transparency of corporate ESG disclosures (Talbot & Boiral, 2018). This concern is particularly relevant for firms operating in environmentally sensitive industries. According to Kaspereit and Lopatta (2018), these companies often struggle with accurately measuring and reporting their GHG emissions due to their reliance on estimates. The use of estimates renders their reported GHG emissions figures susceptible to inconsistencies and possible manipulation. To address this, it is necessary to include year-on-year change metrics as additional indicators to help assess the credibility of a company's reported environmental performance.

To quantify these year-on-year changes and facilitate the detection of such anomalies, this study uses a straightforward formula, presented in Equation 3.1. The formula calculates the percentage change in emissions intensity from one year to the next, allowing for a standardised comparison across different companies and time periods. For a given company *i*, the year-on-year change in GHG emissions intensity (total, scope 1 or scope 2) is calculated by comparing the intensity of the current year (*t*) to that of the previous year (*t-1*) as follows:

Equation 3.1 Formula for year-on-year changes in respective GHG emissions intensities

$$\Delta X_{i,t} = (X_{i,t} / X_{i,t-1}) - 1$$

Where:

- $\Delta X_{i,t}$ is the year-on-year change in the respective GHG emissions intensity (total, scope 1 or scope 2) for company *i* in year *t.*
- $X_{i,t}$ is the respective GHG emissions intensity (total, scope 1 or scope 2) for company *i* in the current year *t.*
- $X_{i,t-1}$ is the respective GHG emissions intensity (total, scope 1 or scope 2) for company *i* in the previous year *t-1*.

Thus, to calculate the year-on-year changes in total, scope 1 and scope 2 emissions intensities (ΔTGI, ΔS1GI and ΔS2GI), the variable X in Equation 3.1 is replaced with the respective emissions intensity variables: TGI, S1GI and S2GI, respectively. The result is expressed as a decimal or percentage change, providing an indication of the magnitude and direction of the change in GHG emissions intensity over time.

Table 3.2 provides a summary of the six candidate indicators that align with H_2 and function as proxies for measuring a company's actual environmental performance. These indicators consist of the three GHG emissions intensity measures (TGI, S1GI and S2GI) as well as their respective year-on-year change metrics (ΔTGI, ΔS1GI and ΔS2GI).

Table 3.2 Indicators measuring corporate environmental performance

Hypothesis number	Indicator name	Description	Hypothesised relationship with ESGRQ
H_2: Actual corporate environmental performance	Total GHG emissions intensity (TGI)	Total greenhouse gas (GHG) emissions in metric tonnes of CO_2 equivalent (tCO_2e) divided by net sales or revenue in US dollars.	Inverse
	Scope 1 GHG emissions intensity (S1GI)	Total scope 1 GHG emissions in metric tonnes of CO_2 equivalent (tCO_2e) divided by net sales or revenue in US dollars.	Inverse

	Scope 2 GHG emissions intensity (S2GI)	Total scope 2 GHG emissions in metric tonnes of CO_2 equivalent (tCO_2e) divided by net sales or revenue in US dollars.	Inverse
	Year-on-year changes in total GHG emissions intensity (ΔTGI)	Year-on-year % changes in total GHG emissions in metric tonnes of CO_2 equivalent (tCO_2e) divided by net sales or revenue in US dollars.	Inverse
	Year-on-year changes in scope 1 GHG emissions intensity (ΔS1GI)	Year-on-year % changes in scope 1 GHG emissions in metric tonnes of CO_2 equivalent (tCO_2e) divided by net sales or revenue in US dollars.	Inverse
	Year-on-year changes in scope 2 GHG emissions intensity (ΔS2GI)	Year-on-year % changes in scope 2 GHG emissions in metric tonnes of CO_2 equivalent (tCO_2e) divided by net sales or revenue in US dollars.	Inverse

Thus, this study proposes a total of nine candidate indicators representing disclosure practices within the environmental domain. Table 3.1 outlines three indicators (ERU, EMS and EINV), that serve as proxies for firms' self-reported environmental policy adoption, corresponding to hypothesis H_{a1}. Table 3.2 presents six indicators (TGI, S1GI, S2GI, ΔTGI, ΔS1GI and ΔS2GI), that measure various aspects of actual corporate environmental performance, addressing hypothesis H_{a2}. All nine indicators are hypothesised to have a statistically significant inverse relationship with corporate ESG reporting quality.

3.6.3 Candidate indicators for measuring corporate ESG reporting quality: Social disclosure practices

This study examines two disclosure practices in the social dimension that may potentially impact the quality of corporate ESG reporting among selected South African firms: the self-reported adoption of social policies (H_{a3}) and self-reported corporate philanthropic activities (H_{a4}). The third hypothesis (H_{a3}) suggests that extensive reporting on the adoption of various social policies may have a statistically significant inverse relationship with the quality of corporate ESG reporting. In other words, companies that extensively report on their social policies may actually have lower quality ESG reporting overall.

To substantiate this hypothesis, Section 3.4.1 argues that South Africa's distinctive regulatory landscape, characterised by numerous legally mandated social policies, may inadvertently foster conditions conducive to the prevalence of low-quality corporate ESG reporting. In this

context, corporations may perceive these legal requirements to disclose their adopted social policies as perfunctory obligations rather than as catalysts for meaningful stakeholder engagement. As a result, some firms may ostensibly report on their adoption of a comprehensive array of social policies without substantively integrating these principles into their operational fabric, potentially leading to a disconnect between reported policies and actual ESG performance.

To analyse this hypothesis (H_{a3}), this research considers four candidate indicators selected from Refinitiv (2022) that represent a corporation's commitment to embracing social policies. First, the social workforce score (SWS) evaluates the adoption of policies addressing health and safety, training and development, diversity, HIV-AIDS programs and equal opportunity initiatives. Second, the social community score (SCS) focuses on a company's role as a responsible corporate citizen, assessing its policies on themes such as bribery and corruption, community involvement and whistle-blower protection.

Third, the human rights score (SHRS) measures a company's compliance with fundamental human rights conventions, including policies on child labour and freedom of association. Finally, the product responsibility score (SPRD) assesses a company's dedication to providing quality goods and services while ensuring integrity, customer health and safety and data privacy. SPRD includes policies related to customer health and safety, responsible marketing and quality management systems. These four indicators are further summarised in Table 3.3.

Table 3.3 Indicators measuring corporate adoption of social policies

Hypothesis number	**Indicator name**	**Description**	**Hypothesised relationship with ESGRQ**
H_3: Disclosures on the adoption of social policies	Social workforce score (SWS)	The sum of scores obtained for initiatives and policies fostering job satisfaction, diversity, equal opportunities and development, divided by the maximum achievable score.	Inverse
	Social community score (SCS)	The sum of scores obtained for initiatives and policies aimed at protecting public health and respecting business ethics, divided by the maximum achievable score.	Inverse
	Social human rights score (SHRS)	The sum of scores attained for initiatives and policies promoting respect for fundamental human rights, divided by the maximum achievable score.	Inverse

	Social product responsibility score (SPRD)	The sum of scores achieved for the capacity to produce quality goods and services, divided by the maximum achievable score.	Inverse

In addition to social policy adoption, corporate philanthropy, as reported by some JSE-listed entities, constitutes another potential disclosure practice that may influence ESG reporting quality within the social pillar. Hypothesis H_{a4} posits a statistically significant inverse relationship between South African firms' self-reported corporate philanthropy and the quality of their ESG reporting.

This hypothesis (H_{a4}) is based on the premise that South African corporations often engage in philanthropic initiatives primarily to gain institutional legitimacy, rather than from a genuine desire to contribute to society. Consequently, publicly disclosed charitable efforts may prioritise legitimacy-seeking over authentic social responsibility. These endeavours may craft an image of a socially conscious firm, possibly misrepresenting the company's actual impact on the communities it claims to support. Some corporations may even use charitable giving to obscure unsustainable business practices or to repair damaged corporate legitimacy. Given these considerations, the true societal impact of such philanthropic efforts may be limited.

To quantify corporate philanthropic activities, this study uses the donations to sales ratio (DSR) indicator from Refinitiv (2022). As shown in Table 3.4, DSR measures a company's charitable contributions as a percentage of its net sales or revenue, with both figures denominated in US dollars.

Table 3.4 Indicator measuring corporate philanthropy

Hypothesis number	**Indicator name**	**Description**	**Hypothesised relationship with ESGRQ**
H_4: Corporate philanthropy	Donations to sales ratio (DSR)	Total amount of all donations in US dollars divided by net sales or revenue in US dollars.	Inverse

In summary, this thesis proposes five indicators to measure social disclosure practices, namely, SWS, SCS, SHRS, SPRD (Table 3.3) and DSR (Table 3.4). The first four indicators represent firms' self-reported adoption of social policies, while DSR quantifies companies' self-reported

philanthropy. Interestingly, the study hypothesises that all five indicators, despite their seemingly positive nature, could be inversely related to ESG reporting quality.

3.6.4 Candidate indicators for measuring corporate ESG reporting quality: Governance disclosure practices

In the realm of corporate governance, four key disclosure factors have been identified as potential determinants of a firm's ESG reporting quality: the self-reported adoption of sustainability-oriented corporate governance policies (H_{a5}) and board composition characteristics of independence (H_{a6}), skills (H_{a7}) and gender diversity (H_{a8}).

To evaluate companies' self-reported adoption of sustainability-oriented corporate governance policies, this study uses the governance CSR strategy score (GCSR) indicator from Refinitiv (2022) for each company and year under review. GCSR assesses the integration of financial, social and environmental aspects into a firm's governance strategy. It considers elements such as being a signatory to the UNGC, applying the SDGs in the company's operations, adhering to the GRI guidelines in preparing the company's ESG reports and using external audits for ESG practices.

Nonetheless, as articulated in H_{a5}, sustainability-oriented governance policy statements (as measured by GCSR) alone may not indicate genuine actions towards authentic ESG accountability. There is a risk that companies may leverage such governance policy declarations to enhance their legitimacy, while their actual practices may fall short of the standards set forth by these initiatives.

Hence, this thesis argues that such governance policy statements may serve as a disclosure tactic employed by low-quality ESG reporters to convey an impression of sustainability commitment without undertaking tangible efforts to support these assertions. Table 3.5 summarises the indicator used to represent the self-reported adoption of sustainability-oriented corporate governance policies.

Table 3.5 Indicator measuring corporate adoption of sustainability-oriented corporate governance policies

Hypothesis number	Indicator name	Description	Hypothesised relationship with ESGRQ
H_5: Disclosures on the adoption of sustainability-oriented corporate governance policies	Governance CSR strategy score (GCSR)	The sum of scores obtained for integrating a firm's financial, social and environmental considerations into its governance strategy, divided by the maximum possible score.	Inverse

Unlike sustainability-oriented governance policies, which are expected to exhibit an inverse relationship with corporate ESG reporting quality, this study takes a different view on board composition characteristics. Specifically, it postulates that board independence, skills and gender diversity may positively influence corporate ESG performance and reporting quality among South African companies.

Following the findings of Cucari et al. (2018), this research proposes that a diverse board composition, which includes independent directors (expressed in H_{a6}) as well as members with varied educational, technical and professional expertise (H_{a7}) and gender representation (H_{a8}), may be better equipped to prioritise meaningful and genuine engagement with stakeholders. As a result, this heterogeneous board composition has the potential to lead to more relevant and transparent ESG reporting practices within the company.

To capture board composition characteristics, this study uses three indicators from the Refinitiv (2022) database, as demonstrated in Table 3.6. Board independence (BID), is used to test hypothesis H_6. BID is calculated as the ratio of independent directors to the total number of directors, providing a measure of the board's autonomy from management influence. Board skills (BSK), is used to evaluate hypothesis H_7. BSK gauges the proportion of directors who possess either industry-specific expertise or a strong financial background, reflecting the collective skill set of the board. Gender diversity (GDIV) is used to investigate hypothesis H_8. GDIV is determined by calculating the percentage of female directors on the board, which serves as a proxy for the board's implementation of inclusivity and diversity practices.

Table 3.6 Indicators measuring board composition characteristics

Hypothesis number	Indicator name	Description	Hypothesised relationship with ESGRQ
H_6: Board independence	Board independence (BID)	Percentage of independent board members as reported by the company.	Direct
H_7: Board skills diversity	Board skills (BSK)	Percentage of board members who have either an industry specific background or a strong financial background.	Direct
H_8: Gender diversity	Gender diversity (GDIV)	Percentage of female directors on the board.	Direct

Therefore, under the corporate governance pillar, this study identifies four candidate indicators that could influence the quality of a company's ESG disclosures. These indicators comprise GCSR, presented in Table 3.5, and three board composition measures: BID, BSK and GDIV, detailed in Table 3.6.

3.7 Chapter summary

The preceding chapter presents two foundational theoretical frameworks that underpin corporate ESG reporting practices: stakeholder theory and legitimacy theory. These paradigms offer distinct yet complementary perspectives on the motivations behind ESG reporting and help predict its resultant quality.

Stakeholder theory positions corporate ESG reporting as both an ethical and strategic imperative, proposing that organisations need to deliver comprehensive information to stakeholder constituencies. This imperative may stem from moral obligations to demonstrate accountability or from strategic recognition that meeting influential stakeholders' information needs is crucial for long-term organisational performance. Regardless of the underlying motivation, both perspectives demand authentic stakeholder engagement and genuine responsiveness to stakeholder concerns. Consequently, stakeholder theory predicts that companies will produce detailed, balanced disclosures to meet stakeholder expectations. Legitimacy theory, on the other hand, conceptualises ESG reporting as a tool for managing organisational reputation and securing societal approval to operate. This reputational focus can

lead to varying levels of reporting quality, depending on how organisations interpret and apply legitimacy-seeking behaviours.

Based on these theoretical frameworks, this study defines two distinct tiers of ESG reporting quality. The first tier, which this study characterises as high-quality ESG reporting, emerges when organisations embrace stakeholder theory's ethical and strategic imperatives while adopting a broad interpretation of legitimacy theory that emphasises authentic engagement with societal expectations. This approach results in disclosures that address salient stakeholder interests and align with substantive actions, enabling an informed assessment of a company's ESG performance.

The second tier, defined in this study as low-quality corporate ESG reporting, typically arises when corporate disclosures lack stakeholder relevance, focusing instead on perfunctory and selective information. Such reporting aligns with a narrow interpretation of legitimacy theory, where organisations adjust their reporting practices opportunistically to achieve specific legitimacy objectives, potentially at the expense of comprehensive disclosure.

Consequently, ESG reporting quality may vary significantly across organisations. High-quality reporting offers valuable information that stakeholders can use for decision-making, while low-quality reporting has limited utility and may fail to provide meaningful information to stakeholders.

Synthesising these theoretical insights, the chapter identifies and articulates eight corporate disclosure practices within the ESG domain. These practices are hypothesised to significantly influence the relevance and representational faithfulness of ESG reporting among JSE-listed entities. Specific propositions are developed regarding the relationship between each practice and overall reporting quality.

To operationalise the measurement of these eight disclosure factors, the chapter outlines 18 ESG indicators: nine for environmental practices, five under the social dimension and four for corporate governance aspects. Each indicator is justified as a potential determinant of ESG reporting quality. The subsequent chapter elaborates on the research methodology designed to empirically validate the proposed relationships between disclosure practices and reporting quality.

CHAPTER 4
Research methodology

4.1 Introduction

This chapter presents the research methods used in this thesis to establish a rigorous framework for systematic inquiry. Section 4.2 explains why a post-positivist research paradigm is well-suited as a philosophical foundation for developing a model to measure the quality of ESG disclosures made by South African listed companies.

The post-positivist paradigm provides an appropriate lens for examining corporate disclosure practices, emphasising systematic empirical enquiry while acknowledging the complexity and fallible nature of socio-economic phenomena. This paradigm recognises that although objective reality exists, knowledge remains provisional and subject to empirical revision. Consistent with this paradigm, Section 4.3 outlines the quantitative research design adopted in this study, which aligns with post-positivism's commitment to rigorous empirical methods yet maintains a critical awareness of the limitations and contextual factors that may influence findings.

Section 4.4 embarks on a critical evaluation of potential indicators for measuring the dependent variable: low ESG reporting quality. Through a comparative analysis of various methodologies, the presence or absence of corporate ESG controversies emerges as the most fitting proxy, where the presence of controversies indicates low quality reporting in the context of this study.

The characteristics of the study population are delineated in Section 4.5, while Section 4.6 describes the data collection processes and the techniques used for data processing. Sections 4.7 and 4.8 introduce the data analysis methods applied in this study: principal component analysis (PCA) and binary logistic regression, respectively.

Section 4.9 addresses the ethical considerations that underpin this research including data handling and adherence to academic integrity standards. Section 4.10 evaluates the limitations

of the methodologies applied. Finally, Section 4.11 summarises these methodologies, setting the stage for the empirical analysis detailed in Chapter 5.

4.2 Research paradigm and philosophical foundations

This study adopts a post-positivist paradigm to develop a model for measuring the quality of ESG disclosures by South African listed companies. Post-positivism recognises that while an objective reality exists independently of human perception, knowledge of that reality is necessarily fallible, provisional and shaped by the theoretical frameworks and methodological choices employed by researchers (Mat Roni, Merga & Morris, 2020). Rather than claiming to discover absolute truth, post-positivists acknowledge that all knowledge is theory-laden and seek to approximate reality as closely as possible through rigorous, systematic inquiry while maintaining critical awareness of inherent limitations.

Post-positivism is particularly well-suited to this research context because ESG disclosure practices exist at the intersection of objectively observable corporate behaviours and socially constructed concepts of environmental responsibility, social impact and governance quality. This paradigm allows researchers to apply systematic empirical methods to study measurable disclosure practices while acknowledging that the very definitions and measurements of ESG quality are influenced by evolving social, regulatory and theoretical underpinnings.

To better understand this post-positivist perspective, a review of its ontological and epistemological foundations is necessary. Ontology pertains to the nature and structure of reality (Wand & Weber, 1993). The post-positivist ontological stance is characterised by a belief in an objective, external reality that exists independently of human perception, though as Phillips and Burbules (2000) note, knowledge of that reality is necessarily mediated by the theories used and the methods chosen to study it. For ESG research, this ontological position has important implications. While ESG concepts themselves are subjective and socially influenced, companies' actual disclosure practices can be objectively observed and measured. Nevertheless, how researchers choose to evaluate disclosure quality depends on their underlying assumptions about what makes reporting relevant and decision-useful.

Epistemology investigates the nature of knowledge and how it is acquired (Crotty, 1998). Post-positivist epistemology holds that systematic observation, measurement and analysis remain

the best available means of generating reliable knowledge yet, emphasises that such knowledge is always tentative and open to revision. This epistemological stance requires critical scrutiny of methods, triangulation of findings and transparent acknowledgment of methodological limitations and potential sources of bias.

The development of this study's ESG reporting quality model reflects these post-positivist principles in practice. The research employs structured analysis of publicly available ESG disclosures as empirical data, applying inferential statistical techniques to test hypothesised relationships between quantifiable variables. However, consistent with post-positivist epistemology, the study recognises that theoretically grounded variable selection, measurement frameworks and analytical choices introduce elements of researcher interpretation that may influence findings. This approach maintains critical awareness of the model's boundaries, assumptions and limitations while generating systematic insights about corporate ESG reporting quality.

The post-positivist paradigm is therefore deemed appropriate for this study because it provides the systematic analytical framework necessary for developing a robust, empirically grounded ESG reporting quality model. This paradigm also recognises that ESG concepts are partially socially constructed and that any measurement approach involves theoretical choices with inherent limitations. It enables the generation of meaningful empirical insights about ESG disclosure quality without overstating their certainty or scope, presenting findings as provisional contributions to an evolving body of knowledge that warrants further investigation and refinement.

4.3 Research design

The post-positivist paradigm guiding this study calls for a quantitative research design. Post-positivism recognises that objective reality exists and can be studied through systematic enquiry, though it emphasises the importance of rigorous empirical methods and critical reflection to enhance the reliability of knowledge claims (Fox, 2008). Quantitative methods align with post-positivist principles by providing systematic tools to collect and analyse numerical data with methodological transparency and academic rigour. This study aims to test hypotheses and identify probable relationships between variables, drawing evidence-based conclusions from statistical analysis. The findings will represent well-supported

approximations of reality derived through careful empirical investigation, making a quantitative design particularly appropriate for this post-positivist approach.

Deductive reasoning is a key feature of quantitative research (Simon, 1996). It involves drawing conclusions from a logical chain of reasoning, progressing from general ideas to specific conclusions. In quantitative studies, researchers use deductive reasoning to formulate hypotheses based on existing theories and then test these hypotheses using empirical data and statistical analysis (Antwi & Hamza, 2015). This approach allows researchers to make inferences about the study population based on sample data (Creswell & Creswell, 2017).

The current study applies this quantitative, deductive system of inquiry to investigate the quality of corporate ESG reporting practices among selected JSE-listed entities. A quantitative design contributes to the development of the ESG reporting quality model at several critical stages of the research process.

First, to operationalise the ESG reporting quality model, theory-based hypotheses are translated into measurable indicators using a quantitative framework. Next, the quantitative methodology facilitates the collection of empirical data on these indicators from the sampled companies, providing the necessary inputs for the model. Finally, statistical techniques such as principal component analysis (PCA) and binary logistic regression are employed to analyse the collected data and refine the ESG reporting quality model, further demonstrating the application of the quantitative approach.

Thus, a quantitative research design enhances the proposed ESG reporting quality model by facilitating the systematic and objective collection, analysis and interpretation of numerical ESG data. This method allows for rigorous hypothesis testing and identification of relationships between variables, enabling statistical validation and confirmation of the model's components and relationships as postulated by theory-based hypotheses. By using a quantitative system of inquiry, the study can draw inferences from the sample to the broader population of JSE-listed entities, contributing to the understanding and assessment of corporate ESG reporting quality practices in the South African context.

Therefore, building on previous studies in the field of corporate ESG reporting (e.g., Giannarakis, Andronikidis & Sariannidis, 2020, Kaspereit & Lopatta, 2018 and Odriozola &

Baraibar-Diez, 2017), this study applies a quantitative research design to achieve its central objective of developing a model for assessing the quality of corporate ESG disclosures among selected South African listed companies.

4.4 Selecting an appropriate measure for the dependent variable

4.4.1 The challenge of identifying indicators that measure the quality of corporate ESG disclosures

Using the information provided in a company's own financial statements, accounting researchers have made significant progress in developing models, procedures and proxies to assess the quality of a firm's underlying financial position and economic performance. This progress has prompted extensive exploration in the literature, examining various indicators aimed at evaluating different dimensions of financial statement characteristics. These indicators provide insights into the reliability and accuracy of the disclosed financial data. Examples of such indicators encompass accrual-based models (Healy, 1985 and Jones, 1991), accounting conservatism (Ruch & Taylor, 2015) and metrics for evaluating earnings management (Ewert & Wagenhofer, 2012).

Nevertheless, despite the implementation of measures designed to scrutinise the quality of reported financial information, identifying corporations genuinely committed to sustainable business practices remains a multifaceted challenge within the corporate ESG reporting landscape. Various researchers, including Helfaya, Whittington and Alawattage (2019), Michelon et al. (2015) and Windolph (2011) argue that the difficulty in discerning the relevance and faithful representation of corporate ESG disclosures largely emanates from the absence of robust, reliable and replicable quality assessment techniques within the corporate ESG reporting literature.

Notably, foremost among the traditional methodologies embraced by researchers for appraising the credibility of the ESG information in corporate ESG reports is content analysis (Helfaya & Whittington, 2019). Following Milne and Adler (1999: 237), content analysis stands out as a research method "most commonly used to assess organisations' social and environmental disclosures". Numerous studies, such as those by Lee and Yeo (2016), Marcia, Maroun and

Callaghan (2015) and Zhou, Simnett and Hoang (2019) widely employ content analysis to inspect the material disclosed in corporate ESG reports. These content analysis studies typically focus on three fundamental aspects, namely the adoption, nature and volume of disclosed ESG information, as a basis for grading the quality of corporate ESG reporting.

With respect to the first aspect, the adoption of corporate ESG reporting, content analysis is generally applied to identify key characteristics (such as size, industry sector, ownership and profitability) of firms that voluntarily adopt and disclose ESG information. In this context, researchers often interpret the issuance of an ESG report as a signal of a company's sincere commitment to addressing sustainability concerns (e.g., Archel, Fernández & Larrinaga, 2008, Hahn & Kühnen, 2013, Moneva et al.,2006, Orazalin & Mahmood, 2020 and Wang, 2017).

As a result, the primary objective in many of these studies is to pinpoint the essential traits associated with the perceived commendable corporate behaviour of adopting corporate ESG reporting. This perspective is corroborated by Michelon et al. (2015), who contend that content analysis studies commonly presuppose an inherent connection between a company's disclosure of ESG information and the quality of that disclosure. Consequently, operating under the assumption that publishing an ESG report reflects a company's intrinsic prioritisation of ESG matters, researchers assert that specific corporate attributes may be indicative of high-quality ESG reporting.

However, critics, among them Chapman and Milne (2004), Gray and Milne (2004), Milne and Gray (2013) and Sinclair and Walton (2003) cast reasonable doubts about this proposition. In particular, they challenge the idea that the production of a corporate ESG report can genuinely influence corporate conduct, either in terms of fostering a substantial focus on managing, measuring and reporting an organisation's real-world ESG impacts or aligning with a sustainability agenda. Further supporting their argument is the observation that, despite the increasing global adoption of ESG reporting by companies, the quality of ESG reporting has not shown improvement. Instead, corporate ESG reporting appears to perpetuate a continuous obscuration of reality, demonstrating little to no earnest environmental and social accountability. Hence, the mere adoption of corporate ESG reporting does not inherently signify meritorious ESG accountability or high-quality reporting.

A similar critique can be extended to the second dimension of content analysis studies, where researchers use the nature of information embedded within corporate ESG reports as a proxy for evaluating the quality of ESG reporting. In this scenario, researchers move beyond simply acknowledging the existence of an ESG report to scrutinise specific features of reports, including content, scope, background, form and visual design as a means of evaluating the quality of corporate ESG reporting (e.g., Arvidsson & Dumay, 2022, Chaka, 2018 and Thomas, van Zijl & Maroun, 2017). Roberts (1991) argues that this approach presumes that the spectrum of issues covered in ESG reports correlates with the quality of corporate ESG reporting.

Nevertheless, as Ioannou and Serafeim (2012) point out, corporate managers wield significant flexibility and discretion in shaping both the content and presentation of ESG information within these reports. This managerial autonomy introduces a layer of complexity, making it difficult to detect the veracity of corporate claims, especially when the information is expressed in qualitative terms. Kotsantonis and Serafeim (2019) find that this complexity is further exacerbated by the paucity of available external verification in corporate ESG reporting. Moreover, the absence of standardised criteria for specifying the composition of ESG disclosure items that constitute either high or low reporting quality adds an additional layer of intricacy when determining the reporting quality tier to which a firm's ESG disclosures belong. As a result, appraising the quality by scrutinising the nature of corporate ESG disclosures may demand a significant level of subjectivity on the part of the researcher, rendering it an unreliable indicator of the quality of corporate ESG reporting, a concern validated by Milne and Adler (1999).

The third and final reporting facet entails not only an examination of the nature of corporate ESG disclosures but also a quantitative assessment of selected ESG disclosure items. By employing content analysis as a tool to explore both the breadth and depth of sampled corporate ESG disclosures, numerous researchers have developed ESG disclosure checklists to grade the quality of corporate ESG reporting (e.g., Brammer & Pavelin, 2008, Cormier, Magnan, & Velthoven, 2005, Hackston & Milne, 1996 and Wiseman, 1982).

To demonstrate this methodology, consider the approaches of researchers such as Hammond and Miles (2004), Luo and Tang (2023), Pistoni, Songini and Bavagnoli (2018) and Pitrakkos and Maroun (2020). They review the type and extent of corporate ESG disclosures against predefined reporting elements recommended in prominent corporate ESG reporting guidelines

such as the GRI, SASB and the IIRC IR framework. These researchers use internally constructed scoreboards that assign scores based on the presence of particular ESG disclosure items (e.g., counts of specific words, sentences or the number of report pages). Additional marks are granted for increased levels of scope, breadth and depth in reporting.

While frequently touted as reliable evaluative approaches for gauging the quality of corporate ESG reporting by researchers such as Lee and Yeo (2016), Marcia et al. (2015) and Zhou et al., (2019), these normative disclosure checklist techniques face scepticism from Michelon et al. (2015). They caution against the fallacy that disclosure quantity, or even more disconcerting, the mere presence of an ESG report, can be deemed a robust proxy for disclosure quality.

Echoing this critical perspective, Atkins and Maroun (2015) and Beretta and Bozzolan (2008) similarly hold that the range and quantity of ESG issues reported may not necessarily reflect the authenticity and transparency of corporate ESG disclosures. This argument is substantiated by findings from Deegan (2002) and Maroun (2015), which show that corporate managers often strategically adjust the scope of their ESG disclosures primarily to convey a favourable image, without genuinely embracing sustainable practices.

Nonetheless, in line with the observations of Abbott and Monsen (1979), Marston and Shrives (1991) and Vourvachis and Woodward (2015), the reliance on a tick-box compliance method, deeply rooted in content analysis, may fall short in uncovering discrepancies between reported ESG practices and actual corporate conduct. This limitation arises because a compliance-focused approach may categorise a firm with an elevated proportion of ESG-themed disclosure items as a credible, high-quality reporter merely by meeting the disclosure requirements of a specific ESG reporting framework. Nevertheless, it may overlook the actual impact of corporate activities on ESG matters. Furthermore, it may not capture the effectiveness of initiatives or the real-world outcomes of reported practices, which are essential for understanding corporate commitment to sustainability.

Given these limitations, this study submits that this deficiency in the evaluation process, where a company can have comprehensive ESG disclosure but no improvement in corporate ESG performance, heightens the risk of ESG metrics succumbing to misreporting and the presentation of unwarranted, inflated positive narratives. Hopwood (2009) supports this standpoint, explaining that, without a valid and dependable measure, ESG reports can function

as a corporate veil, a tool used by the firm to maintain a glowing reputation while shielding the internal operations of the organisation from external scrutiny. Consequently, as noted by Helfaya and Whittington (2019), there is a need for a better metric to weigh the relevance, reliability and impact of reported corporate ESG performance.

4.4.2 External metrics as alternative indicators for the dependent variable

To mitigate some of the challenges related to evaluating the relevance and representational faithfulness of self-reported corporate ESG disclosures, one potential remedy is to integrate external indicators into the measurement of corporate ESG reporting quality. According to Dechow et al. (2010), external indicators comprise information sources outside a company, such as ex-post events or conditions, that reveal its overall performance, reporting transparency and compliance with relevant standards or regulations. As a result, these external indicators may be used as an alternative method for gauging the quality of a firm's ESG disclosures.

A review of the literature on corporate financial reporting quality demonstrates that, alongside internal benchmarks measuring earnings characteristics (such as volatility and discretionary or abnormal accruals), external metrics are widely used to assess the quality of reported accounting numbers in traditional annual financial statements. These external indicators include shareholder class actions, earnings restatements and accounting enforcement actions by the US Securities and Exchange Commission (SEC). Such measures serve as critical signals, pointing to potential inaccuracies or reliability issues in reported financial data.

For instance, firms embroiled in shareholder class actions are often perceived as exhibiting discernible signs of suboptimal earnings quality. As observed by Ecker, Francis, Kim, Olsson and Schipper (2006), these shareholder lawsuits, typically instigated by dissatisfied investors, frequently allege misrepresentation or nondisclosure, raising significant concerns about the integrity of the reported financial information. Furthermore, as corroborated by Blankley, Hurtt and MacGregor (2012) and Wang and Wu (2011), events involving earnings restatements indicate the presence of errors or inaccuracies in the initial financial statements, thereby undermining confidence in the company's financial reporting.

Similarly, accounting enforcement actions by the US SEC suggest that regulatory bodies have identified potential violations of accounting rules or securities laws, implying lapses in

adherence to reporting standards (Beneish, 1999; Dechow et al., 2010). Hence, as argued by Romanus (2019), external indicators (involving an array of occurrences beyond the ambit of disclosures reported in a firm's financial statements) may function as vital markers denoting compromised earnings quality and manipulative practices within corporate financial reporting.

Although external indicators have shown promising efficacy in evaluating the quality of reported corporate earnings and detecting instances of earnings manipulation, their application in the corporate ESG reporting domain remains largely underexplored. This limited inquiry may be attributed to the various obstacles associated with using external metrics to gather evidence of deliberate misreporting within the realm of ESG considerations. Bailey, Glaeser, Omartian and Raghunandan (2022) corroborate this perspective by emphasising the constrained availability of reliable external sources capable of actively monitoring and detecting ESG misreporting, as well as the lack of enforcement mechanisms for consequences when such misreporting is identified.

An analysis of various attempts by ESG researchers to incorporate external indicators into their methodologies indicates that many proposed metrics are ill-suited for appraising the relevance and representational faithfulness of reported corporate ESG information. Notably, researchers frequently adopt external measures such as corporate ESG scores provided by third-party agencies such as Sustainalytics and MSCI ESG Ratings (Friede, Busch & Bassen, 2015; Landi & Sciarelli, 2018). Moreover, they often utilise corporate listings on ESG indices such as the Dow Jones Sustainability Index and the FTSE/JSE Responsible Investment Index (Aureli, Gigli, Medei & Supino, 2020; López, Garcia & Rodriguez, 2007).

Nonetheless, it is important to recognise that these specific metrics are designed to quantify corporate ESG performance rather than to evaluate the intrinsic quality of the ESG information reported by a company. Drempetic, Klein and Zwergel (2020) endorse this view, concurring that users of corporate ESG reports do not consider metrics such as corporate ESG scores and a company's presence in an ESG index to be strong indicators of the credibility of corporate ESG disclosures.

Given the current gaps in understanding how to integrate external metrics into ESG factors, it is essential to investigate alternative indicators that may better measure the reliability and accuracy of corporate ESG disclosures. To identify the most suitable metric for assessing the

quality of corporate ESG reporting, the following sections evaluate the potential viability of two external benchmarks: the Ernst & Young (EY) integrated reporting quality rankings (Section 4.4.3) and corporate ESG-related controversies (Section 4.4.4).

4.4.3 External metrics: EY reporting quality rankings

The Ernst & Young (EY) integrated reporting quality rankings act as an external measure of corporate ESG reporting quality. These rankings are compiled by EY based on independent evaluations conducted by academic adjudicators from the University of Cape Town's College of Accounting (EY, 2024). Several South African studies, including those by Cosma, Soana and Venturelli (2018), Mans-Kemp and Van der Lugt (2020) and Mokabane and Du Toit (2022), have used these EY rankings as an indicator of corporate ESG reporting quality.

The rankings are published in the Excellence in Integrated Reporting survey, an annual report produced by EY South Africa since 2011. For this survey, EY collaborates with the academic adjudicators to evaluate ESG reports from the top 100 JSE-listed corporations, selected based on market capitalisation. Based on these evaluations, EY categorises the reports into five quality tiers: "Top 10," "Excellent," "Good," "Average" and "Progress to be made."

Nevertheless, this thesis proposes that these rankings are not specifically tailored to gauge the relevance and representational faithfulness of corporate ESG disclosures. Instead, their assessment of ESG reporting quality seems to follow a checkbox measurement paradigm, prioritising the verification of the alignment of corporate ESG reports with the guidelines of particular ESG reporting frameworks.

To substantiate the argument that EY reporting quality rankings adopt a descriptive rating methodology grounded in compliance, it is salient to point out that EY (2024) characterises its own evaluation process as a marking plan. This plan quantifies the degree to which firms adhere to the guiding principles (rated on a scale of ten) and content elements (also rated on a scale of ten) set out in the IIRC IR framework during the preparation of their ESG reports. Furthermore, EY's marking plan assesses sampled corporate ESG reports based on their integration of the fundamental aspects of the IIRC's IR Framework. This includes evaluating how effectively a company demonstrates its value creation process, with particular reference to the concept of

six 'capitals' from the IIRC's IR Framework where relevant. For a detailed breakdown of EY's marking plan, please refer to Appendix B.

While this approach provides a structured scoring framework, it has notable limitations. Compliance-driven methodologies like EY's marking plan primarily focus on measuring self-reported content within corporate ESG reports, often neglecting the intrinsic substance of the information. Moreover, this checklist method frequently fails to detect nuanced instances of misreporting, where firms may portray their ESG contributions in an overly optimistic light without substantial evidence to support their claims.

Du Toit's (2017) study empirically supports this observation. Specifically, Du Toit (2017) identifies a paradox: JSE-listed corporations with less readable ESG reports, which reduce the value stakeholders can extract from the information, are more likely to receive higher EY reporting quality rankings. As a result, Du Toit (2017) surmises that the EY reporting quality rankings appear to reward companies for using specific reporting strategies (such as using complex language to appease stakeholders) that create a favourable corporate image, bolster reputation or manage perceptions, irrespective of the accuracy of this representation in reflecting their authentic ESG performance.

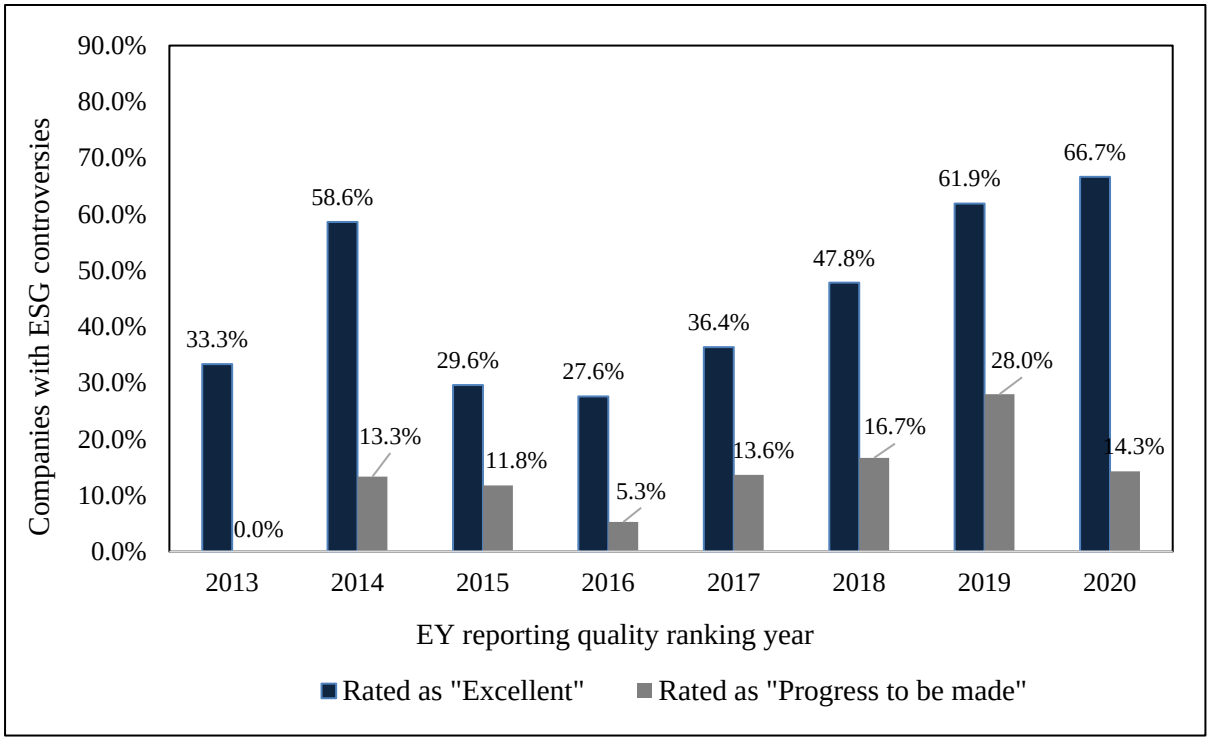
This situation raises concerns as it introduces a perplexing contradiction within the EY reporting quality rankings. Despite receiving recognition for superior ESG reporting quality, some companies may, ironically, be implicated in worsening environmental and social degradation (Chapman & Milne, 2004; Gray & Milne, 2004; Milne & Gray, 2013; Sinclair & Walton, 2003).

Figure 4.1 illustrates this contradictory dynamic between EY's perceived ESG reporting quality rankings and firms' actual ESG performance. Figure 4.1 compares the proportion of companies implicated in various ESG controversies (media exposure uncovering a firm's involvement in or connection to events or actions associated with adverse ESG corporate conduct), categorising them based on EY's "Excellent" and "Progress to be made" quality rankings from 2013 to 2020.

As depicted in Figure 4.1, companies rated by EY as having "Excellent" quality in ESG reporting consistently show a higher rate of ESG controversies compared to those rated as “Progress to be made” for each year under observation.

The misalignment between the perceived quality of reported information and the actual conduct of companies in ESG matters raises questions about the extent to which, if at all, EY considers firms' true ESG practices. The increasing involvement of companies rated as exceptional quality ESG reporters in various ESG controversies may also indicate potential limitations in EY's criteria for assessing the quality of ESG reporting.

Figure 4.1 Proportion of companies implicated in ESG controversies – EY rankings “Excellent” vs. “Progress to be made" (2013-2020)



Note. Data sourced from EY Excellence in Integrated Reporting (2013-2020) and Refinitiv ESG database (2013-2020).

An illustrative example of possible shortcomings in EY's evaluation process is Lonmin's reporting quality ranking. Notwithstanding the platinum mining firm's implication in a major labour dispute, culminating in a tragic incident known as the Marikana massacre in August 2012, EY consistently classifies Lonmin as an "Excellent" quality reporter in the year preceding (2011), during (2012), and following the incident (2013 and 2014).

The Marikana Commission (2015) holds Lonmin responsible for the 2012 labour scandal, attributing it to the mining company fostering an unhealthy and unsafe work environment, that led to escalating tensions and fatal clashes with its labour force. Nonetheless, Lonmin's 2012 ESG report, while acknowledging the controversy, lacks transparent information addressing issues related to labour relations, workers' rights and social and economic inequalities (Lonmin, 2012).

More troubling is that researchers analysing Lonmin's ESG disclosures after the incident (see, for example, Alexander, 2013, Alves & Branco, 2020 and Dube & Maroun, 2017) find that Lonmin's 2012 ESG report embraces a defensive position, denying full accountability and shifting blame by dissociating itself from responsibility towards other stakeholders, such as the government and the industry. Additionally, Lonmin's 2012 ESG report applies an ingratiation strategy by redirecting public attention to more positive information.

Hence, this thesis contends that EY's "Excellent" ranking for Lonmin in 2012 is misleading. It is not reasonable for a company to receive a top rating for ESG report quality while simultaneously adopting reporting practices that disclaim responsibility to key stakeholders and construct positive ESG narratives to shape social perceptions. Consequently, EY's reporting quality rankings may not be a suitable measure of corporate ESG reporting quality, as they seem to overlook the decision-usefulness of disclosed information. Furthermore, these rankings appear to endorse controversial entities, potentially leading investors astray and influencing their decisions to invest in companies based on biased, incomplete information and undisclosed ESG risks.

4.4.4 External metrics: Corporate ESG controversies

ESG-related controversies are adverse events or situations linked to a company’s ESG practices that attract public attention and criticism (Utz, 2019). These controversies often involve incidents such as environmental disasters (e.g., oil spills), social issues (e.g., labour rights violations) or corporate governance scandals (e.g., financial fraud). ESG controversies typically come to light through public revelations or negative press coverage, exposing inadequate, unethical or irresponsible corporate behaviour. Such events can provoke public

outrage, concern or scrutiny, affecting a wide range of stakeholders including employees, communities and investors (Aouadi & Marsat, 2018).

Corporate ESG controversies can function as a reliable indicator of low ESG reporting quality because they represent independent, external identification of material ESG issues that companies failed to adequately disclose in their reporting. The emergence of ESG controversies suggests that stakeholders were previously unaware of ESG-related problems, which may indicate that prior reporting was insufficient in terms of either relevance and/or faithful representation. As argued in this thesis, high-quality ESG reporting is characterised by the underlying characteristics of relevance and faithful representation. This suggests that effective reporting should identify and disclose material ESG risks and issues before they escalate into crises (Lokuwaduge & De Silva, 2022). When controversies occur, they may signal that the underlying ESG reporting did not adequately inform stakeholders about material risks and issues that subsequently materialised.

The potential utility of controversies as a measure of reporting quality stems from their function as external validation mechanisms. When external stakeholders (particularly independent media) bring to light ESG issues that were previously unknown to stakeholders, it may indicate that companies' materiality assessments and disclosure practices were inadequate. This external identification can reveal discrepancies between what companies disclosed and what external analysis determined to be material ESG risks, providing an independent assessment of possible reporting deficiencies that may not be apparent from examining the reports themselves.

The concept of using ESG controversies as an external validation mechanism finds concrete support in high-profile cases such as the 2015 Volkswagen Dieselgate emissions cheating scandal. Fracarolli Nunes and Lee Park (2016) show how the scandal revealed discrepancies and potential fabrications in ESG data, demonstrating gaps between reported and actual ESG performance. This case illustrates how external investigation can uncover failures in either or both reporting relevance (material emissions risks were inadequately disclosed) and faithful representation (emissions data was systematically manipulated through defeat devices). The scandal's exposure of these pre-existing deficiencies validates the approach of using controversies as independent benchmarks for assessing ESG reporting quality.

This external validation is particularly reliable because controversies are often exposed by independent external stakeholders, with the news media playing a predominant role. While this proxy may not capture all instances of poor ESG reporting, the independent nature of media investigation provides valuable scrutiny of real ESG practices and insights that differ from companies' self-reported information, which tends to be more biased and positive (Jeong & Chung, 2023).

Furthermore, many media outlets maintain a degree of independence from the companies they cover, making them less susceptible to the symbolic intentions often associated with corporate ESG disclosures presented on companies' own communication platforms (Haji & Anifowose, 2016; Haji & Hossain, 2016; Laufer, 2003; Malola & Maroun, 2019; Setia et al., 2015). As a result, corporate ESG controversies reported by the media can provide a reliable and objective alternative source for disseminating information about a company's ESG performance, counterbalancing potential biases in corporate self-reporting. This external scrutiny provided by the media underscores the importance of considering corporate ESG controversies as a valuable indicator for assessing the quality and reliability of corporate ESG reporting practices. The combination of independent investigation and objective reporting creates a mechanism that can reveal material ESG issues that companies may have failed to adequately disclose, thereby supporting the use of controversies as an indicator of reporting quality deficiencies.

4.5 Companies included in the analysis

The population for this research comprises all companies listed on the JSE for at least one full financial year between 2013 and 2019. More specifically, these entities are those featured on the Main Board of the JSE and are constituents of at least one of the eight JSE indices over the seven-year period. These indices, integral components of the JSE headline series, include the JSE All Share (J203), JSE Top 40 (J200), JSE Large & Mid Cap Index (J206), JSE Large Cap Index (J205), JSE Mid-Cap Index (J201), JSE Small Cap Index (J202), JSE Fledgling Index (J204) and the JSE Alt-X (J233).

The study's focus on companies that maintained JSE listing for at least one full financial year and achieved index constituent status reflects both data availability and research design considerations. While this approach may introduce survivorship bias through the exclusion of

delisted entities, several factors justify this methodology and substantially mitigate bias concerns for this specific research context.

Survivorship bias is a recognised concern in studies examining performance outcomes, where the exclusion of delisted or failed companies may result in artificially inflated success metrics (Chang, 2024). However, this study's primary objective differs fundamentally from performance analysis. Rather than evaluating financial outcomes, the research develops an ESG reporting quality model using controversy occurrence as a dependent variable. Since the analysis focuses on disclosure characteristics rather than financial performance, the systematic distortion typically associated with survivorship bias is not theoretically applicable to this research design.

Beyond theoretical considerations, practical factors further justify this methodological approach. Concentrating on active, as opposed to delisted, market participants aligns with the objective of developing a predictive model relevant to ongoing market entities. Additionally, the Refinitiv database has limited ESG data coverage for delisted firms, which would compromise the reliability and consistency of the analysis due to incomplete data. The comprehensive scope across eight JSE indices ensures broad representativeness by capturing a diverse range of company sizes and characteristics, extending from large-cap entities to smaller, emerging firms through inclusion of the Small Cap and Fledgling indices, thereby mitigating concerns about sample restriction effects.

Refinitiv (2022), the primary data source for this thesis, provides a comprehensive dataset comprising 186 ESG indicators for numerous JSE-listed South African firms. In most cases, this dataset contains relevant ESG data for each company over a span of at least six years. To form the study population, all available ESG data for companies listed on the JSE during the specified period from 2013 to 2019 was extracted from Refinitiv. The selection of this seven-year period was guided by several methodological and practical considerations.

The year 2013 represents a natural starting point as it marks the earliest year for which Refinitiv provides comprehensive ESG data coverage for a sufficient sample of South African listed companies. This ensures robust data quality and minimises potential selection bias that could arise from sparse data availability in earlier periods. The terminal year of 2019 was chosen to ensure data completeness and reliability, as the data collection phase was conducted in 2020.

This approach avoids potential data inconsistencies or reporting delays that could affect more recent periods, whilst still maintaining the relevance of the findings. The seven-year observation window provides sufficient temporal depth to identify meaningful patterns and trends in ESG practices among South African listed companies.

Furthermore, this timeframe offers a stable period of analysis that precedes the global market disruptions caused by the COVID-19 pandemic in 2020, thereby allowing for the examination of ESG practices under relatively normal market conditions. This enhances the generalisability of the findings and their applicability to understanding fundamental relationships between ESG factors and corporate outcomes.

The final dataset extracted from Refinitiv comprises 1,081 companies with ESG data available for some or all of the 186 indicators during the study period, as detailed in Table 4.1 below.

Table 4.1 Number of JSE-listed firms included in Refinitiv database (2013 - 2019)

Year	2013	2014	2015	2016	2017	2018	2019	Total
No. of companies	154	157	156	156	155	155	148	1,081

4.6 Data collection

As mentioned earlier, Refinitiv is the primary source of corporate ESG data for each company included in this study. Refinitiv offers an extensive ESG dataset that is essential for measuring both the dependent and independent variables analysed in this research. Given that Refinitiv had already compiled the data collected for this thesis prior to the study, the information falls under the category of secondary data (Oakshott, 2020).

Secondary data, as explained by Johnson and Sylvia (2018), refers to pre-existing information collected for purposes other than the immediate focus of the current research project. Researchers often gravitate towards secondary data collection due to reasons such as its cost-effectiveness, time efficiency and the availability of comprehensive datasets, as noted by Sørensen, Sabroe and Olsen (1996). In this study, access to the Refinitiv database is granted through the Rhodes University Refinitiv user license, incurring no additional financial cost.

While secondary data offers various advantages, it also has several drawbacks, as pointed out by Johnston (2017). One issue is that researchers using secondary data may have a limited understanding of how the data was originally collected. Another potential problem is that the data may not be entirely suitable for addressing the research questions of the current study. This mismatch can occur because the data collection process may have been designed to address specific research inquiries that were unique to the original study and may not align with the objectives of the current research.

Notwithstanding these limitations, the use of the Refinitiv database as a secondary data source in this thesis is supported by two compelling reasons. Firstly, Refinitiv (2022) has one of the most extensive ESG databases globally, covering over 10,000 global companies across 67 countries, including South Africa. This breadth of coverage allows Refinitiv to provide comprehensive company-specific ESG data. Secondly, Refinitiv is esteemed as a reliable source of corporate ESG information, catering to the informational needs of both academic researchers and commercial practitioners, which is affirmed by Habermann and Fischer (2021), Nel, Wesson and Steenkamp (2021) and Orazalin and Mahmood (2021).

Despite these compelling reasons for using Refinitiv as a data source, it is important to acknowledge potential biases in their data collection methodology. As a UK-based research entity affiliated with the London Stock Exchange, Refinitiv's ESG framework may reflect priorities and perspectives that are more aligned with developed financial markets and investor interests rather than local stakeholder concerns in emerging markets like South Africa. These potential biases could manifest in three key ways: firstly, the weighting and categorisation of ESG factors may emphasise metrics that are particularly relevant to international investors and fund managers, potentially underrepresenting locally significant social and environmental issues. Secondly, Refinitiv's commercial focus on serving institutional investors means their ESG scoring methodology may prioritise financially material ESG factors rather than broader stakeholder impacts that might be emphasised by local communities, environmental groups or social justice organisations. Finally, Refinitiv's database is limited to publicly listed companies, thereby excluding the ESG performance and impacts of private companies and government parastatals, which may represent significant portions of economic activity and environmental or social influence in the South African context. While these potential biases do not invalidate the use of Refinitiv data for this research, they underscore the importance of interpreting results

through a critical lens that acknowledges the database's limitations and institutional perspective.

4.6.1 Dependent variable coding

The dependent variable in this study is low ESG reporting quality, which is measured through a company's involvement in ESG-related controversies, as discussed in Section 4.4. Companies experiencing ESG controversies are classified as having low-quality ESG reporting, while those without controversies are considered high-quality ESG reporters.

To gather data on corporate ESG controversies, this study uses Refinitiv's ESG database. Refinitiv compiles and consolidates information on ESG controversies across 23 distinct themes for various JSE-listed companies. For a complete list of the controversy themes covered by Refinitiv, please refer to Appendix C. The database identifies ESG controversies through continuous monitoring of global media sources, capturing news events as they occur and are reported. Once identified, events are categorised according to 23 predefined ESG controversy themes spanning environmental, social and governance issues.

Refinitiv's methodology addresses several important considerations. The approach mitigates market capitalisation bias by systematically capturing ESG controversies affecting smaller-cap companies from available media sources, despite these companies typically receiving less overall media coverage than their large-cap counterparts. Additionally, Refinitiv tracks controversies as they evolve over time, capturing all new media materials as controversies progress. The impact of controversy events may extend beyond the initial year if new developments arise, such as ongoing lawsuits, legislative disputes, or regulatory fines, with these developments continuing to be monitored and recorded (LSEG, 2024).

JSE-listed companies are assigned binary codes based on their controversy involvement. A code of “1” is used if they are involved in one or more ESG controversies during any year within the examined period, from 2013 to 2019, corresponding to any of Refinitiv's 23 specified themes. This code indicates the company's classification as a low-quality ESG reporter for that particular year. In contrast, companies that are not associated with any ESG controversies during a specific year are assigned a code of "0", designating them as high-quality ESG reporters. To illustrate this coding scheme, consider Exxaro Resource’s inferred quality of

corporate ESG reporting in 2016. During this year (2016), Exxaro Resources is classified as a high-quality ESG reporter (coded as “0”), indicating the absence of any public controversies. However, in the subsequent year, 2017, Exxaro's classification shifts to that of a low-quality ESG reporter, denoted by a code of “1”, after its entanglement in an industrial dispute resulting in lost working days.

As with any media-based data source, Refinitiv's controversy identification approach has certain limitations that should be acknowledged. Although Refinitiv comprehensively captures controversies from available media sources, the underlying media coverage itself may exhibit reporting bias, with journalists and news outlets potentially favouring certain types of events, companies, or regions in their coverage decisions. Additionally, some industries may be inherently more prone to ESG controversies due to their operational nature, while also facing higher levels of media scrutiny, which could affect both the occurrence and detection of controversies across different sectors. Furthermore, events that do not receive media attention cannot be captured by the database.

While triangulation with alternative data sources could provide additional validation, this approach was not feasible given that manually validating controversy data across multiple disparate sources for the entire sample would have been time-consuming and exceeded available research timeframes. Moreover, since Refinitiv's controversy data is already derived from publicly available media sources that report on actual events and incidents, the controversies represent verifiable occurrences rather than subjective assessments requiring independent confirmation. These considerations should be kept in mind when interpreting the study's findings.

4.6.2 Independent variable construction

The data for all 18 ESG ratio indicators identified in Chapter 3 for each of the JSE-listed firms from 2013 to 2019 are collected from Refinitiv and presented in Table 4.2 below. While seven of these indicators can be directly sourced from the Refinitiv database, including total GHG emissions intensity (TGI), Scope 1 GHG emissions intensity (S1GI), Scope 2 GHG emissions intensity (S2GI), donations to sales ratio (DSR), board independence (BID), board skills (BSK) and gender diversity (GDIV), the remaining 11 indicators require additional computations using Refinitiv data as they are not readily available.

These 11 indicators comprise the first eight indicators representing the corporate adoption of various ESG policies, such as environmental resource use (ERU), innovation (EINV), emissions (EMS), social workforce (SWS), human rights (SHRS), community (SCS), product responsibility (SPRD) and CSR strategy (GSCR). Refinitiv assesses these eight ESG data points using a nominal binary (TRUE/FALSE) scale across eight thematic areas covering environmental, social and corporate governance dimensions.

To convert these nominal responses into numeric scores, "TRUE" responses are assigned a value of "1," indicating the corporate adoption of various ESG policies. Conversely, "FALSE" or "NULL" responses are assigned a default value of "0." Each company then receives a percentage score for its ESG policy adoption. This score is calculated based on the company's performance in each ESG focus area (the numerator) relative to a predetermined total score for that focus area (the denominator). Detailed ESG components contributing to the total value of each indicator are outlined in Appendix A for these eight indicators.

The remaining three ESG indicators that require further calculation are year-on-year changes in total GHG emissions intensity (ΔTGI), year-on-year changes in scope 1 GHG emissions intensity (ΔS1GI) and year-on-year changes in scope 2 GHG emissions intensity (ΔS2GI).

To demonstrate the calculation of these indicators, consider the example of Discovery's year-on-year changes in total GHG emissions intensity (ΔTGI) for 2016. In this calculation, the numerator represents Discovery's total GHG emissions intensity (TGI) ratio for 2016 (total GHG emissions in metric tonnes of CO_2 equivalent (tCO_2e) divided by net sales or revenue in US dollars) which is approximately 13. The denominator is Discovery's total GHG emissions intensity (TGI) ratio for the previous year, 2015, which is roughly 11.8. Therefore, Discovery's year-on-year increase in total GHG emissions intensity in 2016 is calculated as $((\frac{13}{11.8}) - 1) =$ 0.102 or 10.20%.

When Refinitiv does not provide data for one or more years of a company's ESG indicators, this study addresses the missing values by either using data imputation techniques or excluding the individual cases with missing data. For a single missing year, linear interpolation is

employed, calculating the average of the available values immediately before and after the missing year to estimate the intermediate value.

However, cases with more than two consecutive years of missing data for a particular ESG indicator are excluded from the sample. The two-year threshold is established because estimating multiple consecutive missing years would require using estimated values to estimate other values, creating compounding estimation errors. Attempting to apply imputation techniques across such extended periods could lead to erroneous conclusions and exacerbate the issue of ESG information that lacks relevance and representational faithfulness. This exclusion threshold recognises that ESG disclosure patterns vary systematically across sectors and time periods. Rather than impute values where disclosure expectations may be inherently different, these cases are excluded to preserve data authenticity.

Thus, to maintain data integrity, transparency, and interpretability and to avoid unwarranted assumptions, cases with substantial missing values are excluded from the analysis. The study acknowledges that this approach may affect sample composition, with certain sectors potentially underrepresented for specific ESG dimensions, but preserves the authenticity of reported data.

Table 4.2 Summary of 18 ESG candidate independent variables

Indicator name	Description
Environmental resource use score (ERU)	The sum of scores achieved for initiatives and policies designed to reduce material, energy and water usage, and improve supply chain eco-efficiency, divided by the total possible score.
Environmental emissions score (EMS)	The sum of scores attained for initiatives and policies aimed at reducing environmental emissions, divided by the total possible score.
Environmental innovation score (EINV)	The sum of scores achieved for the capacity to alleviate environmental costs and burdens for customers, divided by the total possible score.
Social workforce score (SWS)	The sum of scores obtained for initiatives and policies fostering job satisfaction, diversity, equal opportunities and development, divided by the total possible score.
Social community score (SCS)	The sum of scores obtained for initiatives and policies aimed at protecting public health and respecting business ethics, divided by the total possible score.
Social human rights score (SHRS)	The sum of scores attained for initiatives and policies promoting respect for fundamental human rights, divided by the total possible score.

Social product responsibility score (SPRD)	The sum of scores achieved for the capacity to produce quality goods and services, divided by the total possible score.
Governance CSR strategy score (GCSR)	The sum of scores obtained for integrating a firm's financial, social and environmental considerations into its governance strategy, divided by the total possible score.
Total GHG emissions intensity (TGI)	Total greenhouse gas (GHG) emissions in metric tonnes of CO_2 equivalent (tCO_2e) divided by net sales or revenue in US dollars.
Scope 1 GHG emissions intensity (S1GI)	Total scope 1 GHG emissions in metric tonnes of CO_2 equivalent (tCO_2e) divided by net sales or revenue in US dollars.
Scope 2 GHG emissions intensity (S2GI)	Total scope 2 GHG emissions in metric tonnes of CO_2 equivalent (tCO_2e) divided by net sales or revenue in US dollars.
Year-on-year changes in total GHG emissions intensity (ΔTGI)	Year-on-year % changes in total GHG emissions in metric tonnes of CO_2 equivalent (tCO_2e) divided by net sales or revenue in US dollars.
Year-on-year changes in scope 1 GHG emissions intensity (ΔS1GI)	Year-on-year % changes in scope 1 GHG emissions in metric tonnes of CO_2 equivalent (tCO_2e) divided by net sales or revenue in US dollars.
Year-on-year changes in scope 2 GHG emissions intensity (ΔS2GI)	Year-on-year % changes in scope 2 GHG emissions in metric tonnes of CO_2 equivalent (tCO_2e) divided by net sales or revenue in US dollars.
Donations to sales ratio (DSR)	Total amount of all donations in US dollars divided by net sales or revenue in US dollars.
Board independence (BID)	Percentage of independent board members as reported by the company.
Board skills (BSK)	Percentage of board members who have either an industry specific background or a strong financial background.
Gender diversity (GDIV)	Percentage of female directors on the board.

4.7 Data analysis methods applied in this study

4.7.1 Introduction

In pursuit of evaluating the relevance and representational faithfulness of corporate ESG disclosures among selected JSE-listed companies, this study adopts two pivotal data analysis techniques: principal component analysis (PCA) and binary logistic regression.

PCA initiates the process by condensing and refining the pool of 18 ESG candidate indicators, each linked to several hypotheses articulated in Chapter 3. By identifying underlying patterns and interrelationships among these variables, PCA provides insightful perspectives into the structure of the data. Functioning as a vital data summarisation tool, PCA facilitates the

streamlining and selection of the most pertinent ESG variables for further analysis in logistic regression modelling.

Subsequent to PCA, binary logistic regression techniques are applied to construct the corporate ESG reporting quality model. This method enables a comprehensive exploration of the relationship between the PCA-derived set of ESG indicators and the binary outcome variable representing ESG reporting quality. Consequently, binary logistic regression enriches the understanding and validates the factors most influencing the construct of corporate ESG reporting quality.

Thus, in this section, the study explores the application of PCA and binary logistic regression methods, demonstrating their combined contribution to a comprehensive analysis of the data. Through the integration of these techniques, the study aims to enhance the development of a reliable model for assessing the quality of corporate ESG disclosures among South African listed companies.

4.7.2 Principal component analysis

The principal component analysis (PCA) method is applied in this study to achieve two main goals. Firstly, PCA is used to identify a smaller set of indicators for assessing corporate ESG reporting quality by effectively capturing the most important patterns and variations within the dataset. Secondly, PCA is used to determine the fundamental dimensions or underlying factors closely associated with these indicators, shedding light on the core dimensions that significantly influence the quality of corporate ESG reporting.

Refinitiv is used to source ESG data for various JSE-listed companies for the seven-year period from 2013 to 2019. The identification of suitable ESG indicators for inclusion in the PCA undergoes a two-fold process. Firstly, it draws on the conceptual underpinnings outlined in Chapter 3, guided by the stakeholder and legitimacy theories. Secondly, the focus narrows down to continuous quantitative (also known as metric) variables, particularly ESG ratios. The preference for such continuous metric variables is driven by their ease of measurement and their suitability for use in various correlation techniques (Hair, Black, Babin & Anderson, 2010).

Accordingly, an initial set of 18 ESG ratio indicators is identified from the Refinitiv data source. Each of these 18 ESG ratio indicators represents a proposed link between specific corporate ESG reporting characteristics and the distinct levels of quality in corporate ESG reporting, which can be categorised as either being low or high.

Notably, there are no attempts made to perform transformations to the data in order to make the original set of 18 ESG ratio indicators conform to a normal distribution. This choice is consistent with the perspectives of Jolliffe (2002), who observes that PCA can effectively accommodate non-normally distributed data, provided these deviations do not significantly undermine the observed correlations. Consequently, this research aligns with this approach.

The relevant PCA procedures are conducted separately for each of the seven years in the review period, spanning from 2013 to 2019. In each individual year of the PCA, the sample size adequacy is evaluated to ensure that the number of observations meets the recommended minimum threshold. According to Hair et al. (2010), the absolute minimum sample size for PCA should be at least 50 observations. In this study, the dataset for each year from 2013 to 2019 satisfies or surpasses the 50-observation minimum requirement, indicating that the sample size is sufficient to proceed with PCA.

To prepare the input data, a correlation matrix is calculated for the 18 ESG ratio indicators for each of the seven years in the review period. To evaluate the appropriateness of the data for PCA, the correlation matrix is examined using partial correlations and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. The KMO measure assesses whether there are adequate correlations both among the individual indicators and across the entire set to justify implementing PCA. An iterative process is then initiated, where each of the ESG ratio indicators (among the 18) with a KMO value falling below the minimum threshold of 0.50 is systematically removed and the correlation matrix is recalculated. This iterative procedure continues until all variables, considered individually and as a whole, attain KMO values exceeding the 0.50 benchmark. Moreover, to further validate the dataset's suitability for PCA, the Bartlett (1950) test of sphericity is employed to confirm whether the correlation structure among the variables aligns with the necessary criteria for conducting dimensionality reduction through PCA.

Once the KMO test results confirm the adequacy of the sample and Bartlett's test indicates that there are significant correlations among the variables, the PCA process is implemented to analyse the correlation matrices across all seven years of the study. Horn's (1965) parallel analysis criterion is used to identify the optimal number of components to retain for each year in the PCA. This analysis involves comparing the PCA eigenvalues of the actual data with the eigenvalues generated from random data. Components with eigenvalues greater than their corresponding values from the random data are retained for further analysis.

Subsequently, the results for each year are carefully examined to ensure that they meet the communality benchmark, as recommended by Hair et al. (2010) with a specified minimum level of 0.50. If any of the variables fall short of this benchmark, the variable with the lowest communality is systematically removed, restarting the PCA process from the beginning.

However, when all variables meet or exceed the required minimum communality level, the PCA process proceeds with an application of the orthogonal varimax rotation method based on Kaiser's (1958) approach. After rotation, the communalities of the variables are re-evaluated to confirm alignment with the minimum benchmark of 0.50. Cross-loadings, defined as items loading at 0.30 or higher on two or more factors, following the criteria established in studies such as Taherdoost, Sahibuddin and Jalaliyoon (2022) and Radtke, Terhorst and Cohen (2011), are also examined. Variables that do not meet the loading and communality criteria are systematically eliminated, one by one (lowest first), until the principal component result aligns with both benchmarks. The final rotated factor matrix is obtained, and in accordance with Hair et al. (2010), loadings with an absolute value exceeding 0.70 are considered significant and suitable for interpreting each year's factor matrix.

Following the retention of factors, a crucial step in the PCA process involves assigning labels to these factors based on their strongest associations with specific variables. This labelling procedure is integral to organising and summarising the remaining variables in a structured manner, thereby facilitating a comprehensive understanding of the fundamental dimensions that significantly influence the quality of corporate ESG reporting. A detailed explanation of the PCA results, along with the preceding methodological steps, is presented in the subsequent chapter, under Section 5.2.1.

4.7.3 Binary logistic regression modelling

A binary logistic regression model is utilised to assess the relevance and representational faithfulness of ESG disclosures among selected South African listed companies. Logistic regression is selected as the appropriate statistical method to fulfil the primary objective of this study, which is to construct an ESG reporting quality model. It functions as the analytical tool for predicting the probability of a binary outcome variable occurring based on specific corporate ESG reporting characteristics (Chatterjee & Simonoff, 2013). This relationship is expressed mathematically in Equation 4.1.

Equation 4.1: The binary logistic regression function

$$\text{logit}\,(p) = \log\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots \beta_m x_m$$

Where:

- p indicates the probability of an event (typically coded as 1) occurring.
- (1 - p) represents the probability of the event not occurring (typically coded as 0).
- $\beta_0,\ \beta_1, \ldots, \beta_m$ are the regression coefficients associated with each of the independent variables $x_1, x_2, \ldots, x_m$, respectively.

According to Ranganathan, Pramesh and Aggarwal (2017), a fundamental aspect of developing a logistic model is the meticulous selection of variables. In this study, the binary dependent variable represents the presence (indicating low ESG reporting quality) or absence of corporate ESG controversies (indicating high ESG reporting quality). The independent variables considered for model inclusion are theoretically associated with low ESG reporting quality (LRQ), drawn from a multi-theoretical framework that integrates stakeholder and legitimacy theories. Additionally, these independent variables undergo refinement through principal component analysis (PCA) to identify the optimal candidate set of ESG reporting quality indicators.

To prepare the data for logistic regression analysis, a review of distributional properties is conducted on all candidate ESG independent variables identified in the PCA solution. Analysis of skewness statistics (as shown in Table 4.3 below) reveals substantial positive skewness (skewness > 1) in four ESG variables: total GHG emissions intensity (TGI, skewness = 8.845), scope 1 GHG emissions intensity (S1GI, skewness = 8.580), scope 2 GHG emissions intensity (S2GI, skewness = 6.061) and donations to sales ratio (DSR, skewness = 26.356).

Table 4.3 Distribution of ESG variables - skewness statistics (2013 - 2019)

Independent variable		**Skewness[1]**
ERU	Environmental resource use score	0.118
EMS	Environmental emissions score	0.615
TGI	**Total GHG emissions intensity**	**8.845**
S1GI	**Scope 1 GHG emissions intensity**	**8.580**
S2GI	**Scope 2 GHG emissions intensity**	**6.061**
SWS	Social workforce score	-0.887
SHRS	Social human rights score	0.592
SCS	Social community score	-0.391
DSR	**Donations to sales ratio**	**26.356**
GCSR	Governance CSR strategy score	-1.075
BID	Board independence	-0.080
BSK	Board skills	-0.275
GDIV	Gender diversity	0.854

1. Values in bold indicate skewness > 1, suggesting substantial departure from normal distribution.

While logistic regression does not explicitly assume normality of independent variables, Taylor, West and Aiken (2006) note that severely positively skewed variables can lead to computational issues, inflated coefficient estimates and large standard errors in regression models. Consequently, a natural logarithm transformation is applied to these four variables to improve the distribution of the predictors and enhance numerical stability in the model estimation, aligning with methodologies observed in studies such as Zhou, Zhang and Li (2013). No transformations are considered necessary for the remaining ESG independent variables, as they exhibit acceptable levels of skewness (skewness < 1).

In logistic regression modelling, there is often a temptation to include as many input variables as possible in an attempt to uncover statistically significant relationships between these variables and the event of interest being modelled. However, as Ranganathan et al. (2017) caution, the inclusion of all potential explanatory variables in a saturated model can introduce several risks. These risks include the possibility of inflated standard errors and multicollinearity, resulting in wide and imprecise confidence intervals.

Furthermore, such an approach may also lead to the identification of spurious associations. As a result, when dealing with models containing a high number of variables, there is a heightened risk of overlooking genuine associations between explanatory variables and the event of interest. This is due to reduced statistical power, which diminishes the model's ability to detect relationships, ultimately diluting the significance of true associations (Sperandei, 2014).

To counteract these issues, two approaches are used in developing the logistic regression model to ensure the identification of genuine relationships between variables. Firstly, individual binary logistic regression models are estimated for each year within the six-year period from 2013 to 2018. The individual models fitted for the years 2013 to 2018 constitute the in-sample period. This in-sample period is then used to predict outcomes for the 2019 data, which is reserved as the hold-out sample to validate the modelling results.

Analysing each year independently enhances the robustness of the findings by minimising potential confounding effects or biases that could arise from pooling data across multiple years. This approach is methodologically necessary given the research objective of developing a reliable predictive model for future application. A single panel data approach would not be suitable for this study’s predictive objectives as it would pool relationships across all years, making it difficult to systematically evaluate whether predictive relationships are stable over time or driven by specific periods. The year-by-year framework reduces temporal aggregation bias by preventing the pooling process from obscuring important temporal variations in predictive relationships. When data from multiple years are combined, the resulting parameter estimates represent a composite of relationships across different time periods, potentially masking instabilities that are crucial for assessing predictive reliability.

For each year’s regression model, all variables (both dependent and independent) are measured within the same financial year. This approach differs from the common practice in capital

markets research in accounting, which often incorporates a time lag between financial statement variables and market outcomes. In such cases, time lagging is necessary because the chain of association typically follows a temporal sequence: accounting information must first be prepared in financial statements, undergo auditing and then gradually become reflected in market prices and returns.

This study employs a different analytical framework that supports concurrent measurement. Here, the dependent variable (corporate ESG controversies) functions as an external detection mechanism that reveals gaps between reported ESG activities and actual corporate behaviour (Bellucci, Acuti, Simoni & Manetti, 2021). Rather than creating new problems, controversies serve as contemporaneous signals of pre-existing reporting deficiencies that were present but not readily apparent until external scrutiny brought them to light. Unlike financial data that requires formal audit processes and time for market absorption, ESG controversies represent an external detection mechanism that operates within the same reporting period. External stakeholder monitoring through media outlets, NGOs and regulatory bodies enables ongoing scrutiny that can contemporaneously expose underlying problems during the measurement period (Dorfleitner & Zhang, 2024; Du Rietz, 2018).

When controversies emerge, they act as warning signs that reveal gaps between what companies report about their ESG performance and their actual corporate practices. This capability to detect and publicise material ESG issues within the same financial year validates this approach as methodologically sound. Nevertheless, given the dynamic nature of corporate ESG reporting, a potential reverse causality issue may exist: companies may modify their reporting practices in response to emerging controversies during the same year, possibly affecting the measurement relationship between controversies and the reporting characteristics being analysed. However, as established above, this study employs controversies as an external detection mechanism rather than testing causal relationships. The concurrent measurement framework captures reporting characteristics as they exist during the measurement period, using controversies as signals to identify reporting-reality gaps. Since the purpose is detection rather than causal inference, concerns about reverse causality do not affect the validity of using controversies as an external mechanism for assessing reporting quality characteristics.

Having established the temporal framework for the individual yearly models, the second key approach focuses on variable selection within each model. For each year's individual model, a

variable pre-screening technique is used to identify a subset of appropriate variables for inclusion in that year's multivariate model. This process involves conducting univariate logistic regression analyses to explore the hypothesised relationships between each explanatory variable and the dependent variable. This initial examination allows for the assessment of each predictor's individual impact on the outcome variable, serving as a foundational step before progressing to multivariate modelling. During this process, the statistical significance of each variable is assessed by scrutinising its respective p-value, with the significance threshold set at an alpha level of 0.05 *(*$p < .05$). Variables demonstrating a statistically significant relationship with the dependent variable are retained for inclusion in the multivariate model, while non-significant predictors (variables with p-values exceeding .05) are excluded from further consideration.

The univariate pre-screening process improves methodological consistency and reduces the risk of including spurious predictors through several mechanisms. The approach applies consistent statistical criteria ($p < .05$) across all years, standardising the variable selection process and eliminating researcher discretion in variable inclusion. The method requires empirical evidence of variable-outcome relationships before inclusion, helping to identify variables with demonstrable associations rather than those that might appear significant purely by chance. By applying this screening process independently to each year's data, the approach also allows for the identification of variables that maintain predictive relationships across different temporal contexts. This systematic method guards against the inclusion of weak or unreliable predictors that would arise from including all potential variables without appropriate screening, strengthening the validity and reliability of the resulting predictive model.

Following the univariate analysis, all statistically significant ESG independent variables are included in a preliminary multivariate logistic regression model for each year. In this preliminary model, the statistical significance of each ESG variable is reassessed within the multivariate context. Any variable that lacks statistical significance relative to the others is sequentially removed, one at a time, and the multivariate model is recalculated until all variables individually attain p-values below 0.05. Variables eliminated from the multivariate model may be reconsidered for inclusion at a later stage to improve model fit. Through this iterative process of deleting non-significant independent variables, refitting and verifying, the preliminary multivariate model is refined to include only statistically significant predictors.

Thereafter, the overall performance of each year's model is evaluated using specific goodness-of-fit measures. These metrics encompass the model's p-value, log-likelihood value, Hosmer-Lemeshow p-value, assessment for multicollinearity and the pseudo R^2 value. The model's p-value plays a pivotal role in indicating the logistic regression model's overall statistical significance. Under this metric, the null hypothesis posits that all coefficients in the model are zero, implying that independent variables hold no influence over the dependent variable (Hair et al., 2010). A model is considered to exhibit good fit if its overall p-value falls below 0.05, thus leading to the rejection of the null hypothesis.

The log-likelihood value measures the model's ability to predict the observed data accurately. It provides a means to compare different models or evaluate the improvement of a model when additional variables are incorporated. Generally, a higher log-likelihood value indicates a better fit of the model to the data (Henson, Reise & Kim, 2007). The Hosmer-Lemeshow test determines the goodness of fit by comparing observed and expected event rates within data subgroups. According to Allison (2014), the null hypothesis of this test assumes that the model adequately fits the data, indicating no significant difference between observed and expected event rates. A higher p-value, closer to one implies a better model fit, while values below 0.05 indicate a poor fit to the data.

Binary logistic regression requires little to no multicollinearity among independent variables to ensure stable coefficient estimation (Daoud, 2017). Pairwise correlation coefficients and Variance Inflation Factor (VIF) values are utilised to assess correlations among independent variables in the multivariate model. As per Fowler, Cohen and Jarvis (1998), correlation coefficient values between 0.70 and 1.0 (-0.7 and -1.0) indicate strong positive (negative) correlations. Moreover, VIF values exceeding ten indicate severe multicollinearity in the model (Shrestha, 2020). Hence, variables displaying significant multicollinearity in the fitted model are removed from further analysis.

Finally, the model's pseudo R^2 value indicates the proportion of variance explained by the model (Allison, 2013). In this study, the McFadden pseudo R^2 is used as the measure of model fit for binary logistic regression, consistent with the default setting in the Stata software package utilised for data analysis. However, Hensher and Stopher (1979) caution that the McFadden pseudo R^2 typically yields a significantly lower coefficient of determination (R^2) compared to the traditional R^2 values generated in classic ordinary least squares regression

models. Consequently, they suggest that a McFadden pseudo R^2 that ranges from 0.2 to 0.4 indicates excellent model fit. Thus, this study adopts a similar criterion, considering any pseudo R^2 value exceeding 0.20 as indicative of good predictive accuracy.

To enhance model fit following the goodness-of-fit measures, it is prudent to reconsider the inclusion of previously discarded ESG variables. Specifically, these are variables that initially showed statistical significance in the univariate analysis but lost significance in the preliminary multivariate model. Reconsidering these variables involves a systematic approach of adding one non-significant variable at a time to the multivariate model and evaluating its impact on overall fit and predictive power through repeated goodness-of-fit tests. If a particular variable's inclusion improves the model's fit, even surpassing a model comprising only statistically significant variables, it warrants retention in the model despite lacking statistical significance. Conversely, variables that fail to boost model fit remain excluded. This iterative process ensures the model captures pertinent information while maintaining parsimony and guarding against overfitting.

Once the required model adjustments are implemented, the predictive accuracy of the fitted model is examined. As emphasised by Hair et al. (2010), a robust logistic regression model should adeptly categorise observations into the correct outcome group. As a result, metrics such as the classification matrix and the receiver operating characteristic (ROC) curve are used to estimate the fitted model’s predictive capabilities to distinguish between low and high-quality corporate ESG reporting. Higher values across these metrics are preferred as they affirm the model's effectiveness in assessing corporate ESG reporting quality.

After assessing the goodness-of-fit and predictive accuracy measures, the final models for each year in the in-sample period are validated. Subsequently, the coefficients of each year's model are applied to the hold-out sample, and the performance of each model on this sample is compared using evaluation metrics such as accuracy, recall, precision and the F1 score. Accuracy gauges the overall correctness of the model's predictions. Recall measures the model's ability to correctly identify all instances of low ESG reporting quality (true positives) from the total actual positive instances. Precision focuses on the accuracy of the model's positive predictions of low ESG reporting quality. The F1 score, combines precision and recall into a single metric providing a balanced evaluation of the model's performance (Chicco & Jurman, 2020).

The selection of the optimal model for measuring the relevance and representational faithfulness of ESG disclosures among South African listed companies is based on a multi-criteria approach. This process involves evaluating competing models using metrics such as goodness-of-fit and predictive accuracy, while also considering out-of-sample validation performance and model parsimony. The chosen model must demonstrate strong explanatory power, reliable performance and generalisability alongside maintaining simplicity for practical application. This approach aims to select a reliable and interpretable model for assessing the quality of corporate ESG reporting.

4.8 Validity and reliability of the methods applied

4.8.1 Internal validity

This research maintains internal validity through the rigorous quality control measures implemented by Refinitiv in its ESG data collection procedures. These measures include logical error checks, algorithmic screens, independent audits and system validation (Refinitiv, 2022). Furthermore, to address the potential challenge of multicollinearity among the 18 ESG candidate indicators, Principal Component Analysis (PCA) is used as a data pre-processing tool before conducting binary logistic regression modelling. This approach, supported by Hair et al. (2010), may mitigate multicollinearity issues, thereby enhancing the robustness of the logistic regression model used in the study.

4.8.2 External validity and reliability

In assessing the external validity and reliability of the modelling results, Hair et al. (2010) recommend validating a binary logistic regression model through cross-validation. This entails applying the model to a separate hold-out or validation sample. As discussed earlier, in order to enhance the reliability of the ESG reporting quality model in this study, cross-validation is conducted using data from 2013 to 2018 as the in-sample period. The year 2019 is reserved as the hold-out sample, distinct from the data used to estimate the model. Additionally, individual models are developed for each year, enabling a comprehensive assessment of model performance and generalisability across different time periods. This approach has the potential to improve the model's predictive accuracy.

4.9 Research ethics

As this research does not involve any human subjects, no ethics application form is required to be submitted through the Ethical Review Application System (ERAS) for publicly available data, which is considered low-risk desktop research. However, to ensure procedural adherence, an ethics application form specifically designated for data only is submitted to the supervisor and the Departmental/Business School Ethics Representative for documentation purposes.

4.10 Limitations

The current study defines low ESG reporting quality as the presence of one or more corporate ESG controversies, while companies with no ESG controversies are deemed high-quality ESG reporters. Nevertheless, this definition may have some limitations. Firstly, the threshold for categorising a company as a low-quality reporter based on the occurrence of at least one ESG controversy may be too stringent, potentially resulting in disproportionate penalties for first-time offenders. Secondly, these criteria may lack the precision needed to differentiate between companies with varying levels of reporting quality. Thirdly, focusing solely on the presence or absence of controversies may overlook companies with consistently poor reporting practices but without documented ESG controversies, leading to an underestimation of low-quality reporting within the sample.

It may be argued that a more nuanced approach to defining low-quality ESG reporting, considering factors such as the severity and nature of controversies, as well as imposing a higher threshold for the number of controversies per company per year, could be more appropriate. Yet, increasing the threshold, such as to three or more ESG controversies, may result in sparse data, leading to imbalanced datasets with fewer instances of the event of interest ("1s") compared to non-events ("0s"), which is undesirable. Moreover, this could introduce sample selection bias, wherein larger JSE-listed firms in certain industry groups are overrepresented in the sample due to their known exposure to ESG controversies, a phenomenon supported by Cho and Patten (2007), Drempetic et al. (2020), Marrone and Oliva (2020) and Patten (1991).

4.11 Chapter summary

The preceding chapter offers a thorough overview of the research methods employed in this study. It establishes the rationale for adopting a post-positivist research paradigm, which provides a suitable foundation for developing a model to measure ESG disclosure quality amongst South African listed companies. A quantitative research design aligns with this paradigm through its focus on systematic empirical enquiry and rigorous methodological approaches that acknowledge the complexity of socio-economic phenomena while striving for reliable and valid knowledge claims.

Through a comparative analysis of various methodologies, the study identifies corporate ESG controversies as the most appropriate proxy for measuring the dependent variable, low ESG reporting quality. The chapter details the data collection procedures and data processing techniques applied to ensure robust analysis.

The primary analytical methods used in this study are principal component analysis (PCA) and binary logistic regression. The chapter explains these techniques, discussing their relevance and application to the study's research objectives. Additionally, it addresses the ethical considerations inherent in the study and acknowledges the limitations of the chosen methodologies. Looking ahead, the subsequent chapter (Chapter 5) presents and discusses the results obtained from both the PCA and logistic regression analyses, culminating in the development of an ESG reporting quality model.

CHAPTER 5
Empirical results and discussion

5.1 Introduction

This chapter presents and analyses the empirical findings from developing a corporate ESG reporting quality model that evaluates the relevance and representational faithfulness of ESG disclosures by South African listed companies. The results analysis unfolds across two major analytical phases, detailed in Sections 5.2 and 5.3.

Section 5.2 focuses on the results of the Principal Component Analysis (PCA), which is performed to uncover underlying patterns and relationships among the 18 ESG candidate indicators introduced in Section 3.6. Due to the complex nature of implementing PCA, involving multiple iterations conducted separately for each year, the chapter begins by outlining the detailed step-by-step PCA process, using data from 2013 as a practical example. This example provides a clear understanding of how PCA is applied in this study.

The chapter then expands on the PCA analysis carried out for the years 2014 to 2019, demonstrating how PCA synthesises the ESG data and identifies key indicators in the remaining six years of the review period. These indicators are categorised into thematic components relevant to the construct of corporate ESG reporting quality. The discussion of PCA results concludes by illustrating how the PCA outcomes are integrated into the subsequent stage of data analysis, binary logistic regression modelling.

Section 5.3 shifts attention to unveiling the outcomes of using logistic regression techniques to develop an ESG reporting quality model. Similar to the approach taken with PCA, this section commences by detailing the process of constructing an ESG reporting quality model using data from 2013 as a reference point.

Following this, hypothesis testing is conducted for each individual year within the in-sample period spanning from 2013 to 2018. This analysis aims to examine the statistically significant relationships between the selected ESG variables and the dependent variable, low ESG reporting quality (LRQ). The results of this hypothesis testing inform the creation of prototype

ESG reporting quality models for each of the six years in the in-sample period. The model coefficients from each year are then applied and validated on the hold-out sample in 2019, and the predictive performance of these models is compared. The best performing model is retained as the study's final ESG reporting quality model.

Section 5.4 brings together the main discussion of these analytical results, where, based on the results of developing the model, the study makes informed decisions on whether to support or reject each of the hypotheses formulated earlier in Chapter 3. Building on this analysis, Section 5.5 examines the key findings and theoretical implications, analysing how the empirical results both align with and extend existing theoretical frameworks. Finally, Section 5.6 provides a comprehensive summary and conclusion of the results presented in the chapter.

5.2 Results of principal component analysis (PCA)

5.2.1 Detailed description of 2013 PCA results

To demonstrate the Principal Component Analysis (PCA) detailed in Section 4.7.2 of the methodology chapter, a step-by-step walkthrough using data from 2013 is provided. The main purpose of this single-year example is to clarify the application of PCA within the study, aiding the reader in understanding and visualising the described techniques. While this case study focuses on 2013, the same process is applied to each subsequent year in the dataset from 2014 to 2019.

Following the outlined methodology, the correlation matrix for 2013 undergoes an iterative variable selection process before conducting PCA. Starting with 18 ESG ratios, developed in Section 3.6 of Chapter 3 as candidate indicators to measure corporate ESG reporting quality, each variable's sampling adequacy is assessed using Kaiser-Meyer-Olkin (KMO) values.

Indicators with KMO values below 0.50 are systematically removed during this process. In this instance, the following three indicators are eliminated sequentially in the first iteration of the variable selection process: Scope 2 GHG emissions intensity (S2GI), donations to sales ratio (DSR) and gender diversity (GDIV) with KMO values of 0.27, 0.21 and 0.34, respectively.

After removing these three indicators (S2GI, DSR and GDIV) with low KMO values in the first iteration, the process moves to a second iteration of variable selection. In this second iteration, the correlation matrix is recalculated using the remaining 15 ESG ratio indicators. This revised correlation matrix shows that all 15 individual indicators now have KMO values surpassing the 0.50 benchmark, including the overall matrix which exhibits a KMO value of 0.71. Moreover, Bartlett's test confirms the presence of significant correlations among some of the indicators. Following these preparations, the PCA method is applied to analyse the 2013 correlation matrix. The analysis initially extracts three factors, guided by the Horn (1965) criterion. However, a closer examination of the communalities shows that the variable, board independence (BID) has a communality level of only 0.12, which falls below the established minimum threshold of 0.50, leading to its elimination from the analysis.

Following the removal of BID, it is necessary to re-evaluate the factor structure using the remaining variables. Accordingly, the third iteration begins by recomputing the correlation matrix for the 14 variables that remain. The KMO values for individual variables and the overall matrix (0.71) exceed the threshold, reaffirming the data's continued suitability for PCA. Bartlett's test further supports this by confirming significant correlations among the variables. PCA is then applied to the matrix, resulting in a three-factor solution. Nevertheless, consistent with the communality threshold applied earlier, the board skills (BSK) variable, with a low communality of 0.19, is identified for exclusion from further consideration.

The fourth iteration, now examining 13 variables, proceeds with recalculated KMO values and Bartlett's test, both validating the data's appropriateness for PCA. Horn's parallel analysis again yields three factors, but the environmental innovation score (EINV) is omitted due to its inadequate communality value (0.23). Moving to the fifth iteration with 12 variables, the recomputed correlation matrices indicate that the year-on-year changes in scope 1 GHG emissions intensity (ΔS1GI) variable falls marginally below the acceptable KMO threshold with a value of 0.49, leading to its removal from the dataset.

For the sixth round, analysis of the remaining 11 variables generates an overall matrix KMO value of 0.73, with Horn's parallel analysis maintaining support for a three-factor solution. Based on the 0.50 communality criterion, the social product responsibility score (SPRD) variable is excluded due to its communality value of 0.34.

After the removal of SPRD, the seventh phase proceeds with similar validations, producing a combined KMO matrix value of 0.72, while Horn's parallel analysis again confirms the three-factor solution. However, the social human rights score (SHRS) variable is removed as its communality value of 0.44 falls below the 0.50 threshold.

The eighth round recomputes the correlation matrix using the nine remaining ESG indicators. The KMO values (individual and overall matrix at 0.70) and Bartlett's test confirm the data's adequacy for PCA (Kaiser, 1974). PCA with Horn's parallel analysis continues to yield a three-factor solution, with all variables now exhibiting communality values above 0.50. After applying Kaiser's (1958) orthogonal varimax rotation, inspection of the factor matrix shows that the environmental emissions score (EMS) variable loads significantly on two of the three factors (0.77 on factor 1 and 0.33 on factor 2). To maintain an interpretable factor structure, EMS is excluded from further analysis.

In the ninth iteration, the recalculated correlation matrix shows two indicators falling below the KMO threshold. Total GHG emissions intensity (TGI) has a KMO value of 0.49 and is removed. Subsequently, when the matrix is recomputed, scope 1 GHG emissions intensity (S1GI) displays a KMO value of 0.40, also necessitating its elimination.

The final iteration of the 2013 correlation matrix meets all predefined criteria. The KMO measures for the six remaining variables and the overall KMO value of 0.71 exceed the minimum threshold for sampling adequacy. Bartlett's test of sphericity confirms that the correlation matrix is appropriate for factor analysis, indicating sufficient correlations among variables. In this last round, the reapplication of PCA converges on two factors, with all communalities above 0.50 and no significant cross-loadings observed.

Consequently, the six retained variables for 2013 are: environmental resource use score (ERU), governance CSR strategy score (GCSR), social community score (SCS), social workforce score (SWS), year-on-year changes in scope 2 GHG emissions intensity (ΔS2GI), and year-on-year changes in total GHG emissions intensity (ΔTGI). To provide a comprehensive overview of these variables, Table 5.1 summarises their descriptive statistics.

Table 5.1 Descriptive statistics: ESG indicators (2013)

Variable	Mean	Median	Std dev	Min	Max
ERU	0.413	0.444	0.213	0.000	0.833
GCSR	0.222	0.231	0.051	0.038	0.308
SCS	0.462	0.462	0.166	0.077	0.769
SWS	0.542	0.550	0.146	0.000	0.900
ΔS2GI	0.087	0.065	0.479	-1.000	2.783
ΔTGI	0.126	0.072	0.352	-0.538	1.673

Table 5.2 below presents the correlation matrix for the six variables retained in the final analysis for the year 2013. An examination of the correlation matrix indicates that 7 out of the 15 correlations, approximately 47%, are statistically significant at the 1% level. This percentage is greater than the recommended minimum of 30% suggested by Hair et al. (2010), indicating that the variable set is well-suited for PCA.

Table 5.2 Correlation matrix (2013)[1]

Variable	ERU	GCSR	SCS	SWS	ΔS2GI	ΔTGI
ERU	1.000					
GCSR	**0.479****	1.000				
SCS	**0.474****	**0.439****	1.000			
SWS	**0.553****	**0.568****	**0.484****	1.000		
ΔS2GI	-0.201	-0.095	-0.251	-0.072	1.000	
ΔTGI	-0.169	-0.117	-0.181	-0.067	**0.690****	1.000

1. ** 1% significance. Pearson correlations.

The KMO measures, highlighted in bold along the diagonal of Table 5.3, all exceed the acceptable level of 0.50. Furthermore, the overall KMO value of 0.712, along with the statistically significant results of Bartlett's test as presented in Table 5.3, further confirms the suitability of these correlations for PCA.

Table 5.3 Partial correlation matrix (2013)[1,2,3]

Variable	ERU	GCSR	SCS	SWS	ΔS2GI	ΔTGI
ERU	**0.833**					
GCSR	0.187	**0.516**				
SCS	0.207	0.221	**0.513**			
SWS	0.325	0.451	0.483	**0.785**		
ΔS2GI	-0.082	0.042	-0.183	-0.036	**0.799**	
ΔTGI	-0.025	-0.073	0.004	-0.024	-0.044	**0.810**

1. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for each variable is highlighted in bold along the diagonal, while all remaining numbers represent partial correlations.
2. Overall KMO measure is 0.712.
3. Bartlett's test of sphericity has a chi-square (χ^2) value of 186.930 and *p*-value of 0.000.

The final results of Kaiser's (1958) orthogonal varimax rotation method are presented in Table 5.4 below. Following the recommended guidelines outlined by Hair et al. (2010), loadings with absolute values exceeding 0.70 are considered significant for interpreting each year's factor matrix. An examination of Table 5.4 shows that there are no significant cross-loadings, and all communalities surpass the minimum threshold of 0.50 established in this study. Furthermore, the two retained factors account for 73.4 percent of the variance among the six variables, which is considered sufficient in terms of explaining the total variance.

Table 5.4 Factor matrix (2013) [1,2,3]

Variable	Factor 1	Factor 2	Communality
ERU	**0.792**	-0.108	0.638
GCSR	**0.809**	0.103	0.664
SCS	**0.809**	-0.133	0.672
SWS	**0.844**	-0.028	0.714
ΔS2GI	-0.069	**0.926**	0.862
ΔTGI	-0.023	**0.923**	0.852

1. Kaiser (1958) orthogonal varimax rotation.
2. Loadings above 0.70 are highlighted in bold.
3. The results of this PCA solution explain 73.4% of the variance in the listed indicators.

Based on the results in Table 5.4, the 2013 PCA identifies clear factor patterns. Factor 1 demonstrates strong loadings (exceeding 0.70) across four variables: environmental resource use score (ERU), governance CSR strategy score (GCSR), social community score (SCS) and social workforce score (SWS). These substantial positive loadings indicate that Factor 1

explains a significant portion of the variation in these variables. Given that these variables collectively measure a company's disclosed adoption of various ESG policies and initiatives across environmental, social and governance dimensions, Factor 1 is labelled as "reported ESG policy adoption".

Factor 2 displays high loadings (above 0.90) for two variables: year-on-year changes in scope 2 GHG emissions intensity (ΔS2GI) and year-on-year changes in total GHG emissions intensity (ΔTGI). As these variables quantify the annual changes in firms' GHG emissions intensity, they provide a direct measure of a company's evolving environmental footprint. Consequently, Factor 2 is labelled "corporate environmental impact". Overall, from the original set of 18 variables, the 2013 PCA identifies six key indicators that form two distinct dimensions of corporate ESG reporting quality: "reported ESG policy adoption" and "corporate environmental impact ".

5.2.2 PCA results for the years 2013 to 2019

Table 5.5 presents the PCA results and factor loadings for the seven-year study period from 2013 to 2019. The analysis yields two primary components for most years, with two exceptions: 2015, which produces three factors, and 2019, which retains only one factor. Across all years, a set of ESG ratio indicators, varying between five and eleven and selected from the original set of 18, exhibit factor loadings at or above the 0.70 threshold and demonstrate positive correlations with the retained components. On average, the factor solutions account for approximately 71% of the total variance in the retained variables, with 2019 having the lowest explained variance at 62.5% and 2017 recording the highest at 76.8%.

Factor 1 is consistently characterised by substantial loadings from six key variables during the period 2013-2019, with the loadings distributed among the environmental (two variables), social (three variables) and governance (one variable) pillars. Within the environmental realm, two variables emerge as significant indicators: the environmental resource use score (ERU) and the environmental emissions score (EMS). ERU shows strong loadings throughout the entire seven-year period (ranging from 0.792 to 0.824), whilst EMS does not meet the 0.70 threshold in 2013 but maintains robust loadings in subsequent years (0.812 to 0.871). These environmental variables capture the extent to which firms disclose their adoption of

environmental policies, with ERU specifically focusing on resource management policies and EMS on emissions control measures.

Three variables form the social dimension of Factor 1 with high loadings: the social workforce score (SWS), the social human rights score (SHRS) and the social community score (SCS). SWS stands out as a consistently strong indicator, displaying high factor loadings throughout the entire period (varying between 0.722 and 0.844). SHRS does not meet the 0.70 threshold in 2013 but shows significant loadings in subsequent years (0.707 to 0.788). SCS loads significantly on Factor 1 from 2013 to 2016 (0.718 to 0.809) and in 2019 (0.747), while falling below the 0.70 threshold in 2017 and 2018. These three variables reflect a corporation's commitment to embracing a variety of social policies.

From the governance pillar, one variable, the governance CSR strategy score (GCSR), which measures a firm's reported adoption of sustainability-oriented corporate governance policies, demonstrates consistently high factor loadings from 2013 to 2018 (varying between 0.754 and 0.812) but decreases below the criterion value of 0.70 in 2019.

Table 5.5 Summary of PCA results (2013 - 2019) [1,2,3]

Factor loadings							
Factor 1							
Variables	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
ERU	0.792	0.821	0.807	0.803	0.806	0.810	0.824
EMS	-	0.824	0.816	0.812	0.871	0.845	0.821
SWS	0.844	0.831	0.812	0.749	0.722	0.792	0.793
SHRS	-	0.707	0.746	0.744	0.739	0.788	0.763
SCS	0.809	0.725	0.718	0.742	-	-	0.747
GCSR	0.809	0.789	0.754	0.785	0.808	0.812	-
Factor 2*							
Variables	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
TGI	-	0.917	0.959†	0.960	-	0.956	-
S1GI	-	-	0.961†	0.964	-	0.951	-
S2GI	-	0.918	-	-	-	-	-
ΔTGI	0.923	-	0.848	-	0.998	-	-
ΔS1GI	-	-	0.724	-	0.996	-	-
ΔS2GI	0.926	-	0.868	-	0.998	-	-

Statistical tests							
Metric	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Explained variance (%)	0.734	0.693	0.705	0.689	0.768	0.745	0.625
KMO	0.712	0.772	0.711	0.731	0.776	0.754	0.786
Bartlett χ^2	186.93	383.33	591.63	425.65	1221.79	373.51	187.58
Bartlett *df*	15	28	55	28	28	21	10
Bartlett *p*-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1. *Variables TGI and S1GI load on Factor 2 in all other years, with the exception of 2015.
2. † Variables TGI and S1GI load on Factor 3 in 2015.
3. Loadings below 0.70 are not shown.

Factor 2 comprises six variables related to environmental performance measures over the period 2013 to 2019. These variables form two distinct groups: GHG emissions intensity measures and their corresponding year-on-year changes. The first group consists of three emissions intensity measures: total GHG emissions intensity (TGI), Scope 1 GHG emissions intensity (S1GI) and Scope 2 GHG emissions intensity (S2GI).

TGI demonstrates substantial loadings on Factor 2 in the middle years of the study period, particularly during 2014 (0.917), 2015 (0.959), 2016 (0.960) and 2018 (0.956), with values below the 0.70 threshold in 2013, 2017 and 2019. S1GI displays a similar pattern with significant loadings in 2015 (0.961), 2016 (0.964) and 2018 (0.951), while remaining below 0.70 in other years. In contrast, S2GI appears less influential, exceeding the 0.70 threshold only in 2014 (0.918).

The second group represents the year-on-year changes in these emissions intensities: Changes in total GHG emissions intensity (ΔTGI), changes in Scope 1 GHG emissions intensity (ΔS1GI) and changes in Scope 2 GHG emissions intensity (ΔS2GI). These change variables load most strongly in 2017, with all three variables reaching approximately 0.998. In 2015, they demonstrate moderate to high loadings varying between 0.724 and 0.868. In 2013, only ΔTGI and ΔS2GI present substantial loadings (0.923 and 0.926 respectively), with ΔS1GI below the 0.70 threshold in this year. All three change variables remain below the 0.70 threshold in 2014, 2016, 2018 and 2019.

Taken together, the PCA results in Table 5.5 identify a relatively consistent pattern across most years from 2013 to 2019. Similar to the 2013 analysis, a two-factor solution emerges where

Factor 1 captures variables measuring companies' disclosed adoption of ESG policies and initiatives across environmental, social and governance dimensions, while Factor 2 consists of variables quantifying corporate environmental impact through GHG emissions intensity measures. Consequently, the factors maintain their labels as "reported ESG policy adoption" and "corporate environmental impact" respectively.

5.2.3 Using PCA results and theoretical considerations to guide the selection of ESG indicator variables for binary logistic regression

The selection of ESG variables for inclusion in this study's binary logistic regression is guided by a combination of statistical analysis and theoretical considerations. The statistical component relies on the results of a PCA performed on ESG ratio indicators from 2013 to 2019, which identifies two main factors. Factor 1 captures ESG policy adoption measures, while Factor 2 represents quantitative environmental impact metrics.

Based on the significant factor loadings presented in Table 5.5, 12 key variables are identified from these factors and are used as independent variables in the binary logistic regression model. From Factor 1, six policy-oriented variables are extracted: environmental resource use score (ERU), environmental emissions score (EMS), social workforce score (SWS), social human rights score (SHRS), social community score (SCS) and governance CSR strategy score (GCSR). Factor 2 yields six environmental impact variables: Total GHG emissions intensity (TGI), scope 1 GHG emissions intensity (S1GI), scope 2 GHG emissions intensity (S2GI), year-on-year changes in total GHG emissions intensity (ΔTGI), year-on-year changes in scope 1 GHG emissions intensity (ΔS1GI) and year-on-year changes in scope 2 GHG emissions intensity (ΔS2GI).

To validate the comprehensiveness of the PCA-derived variable set, a systematic evaluation of the six excluded variables is conducted. This evaluation involves examining the conceptual overlap between excluded variables and those retained through PCA, assessing their theoretical distinctiveness and evaluating their institutional significance within the South African regulatory framework. Variables showing substantial conceptual redundancy with retained measures remain excluded, while those representing theoretically unique constructs with institutional prominence are retained for inclusion in the logistic regression model.

This analysis confirms the exclusion of two variables: environmental innovation score (EINV) and social product responsibility score (SPRD), as they are adequately represented by retained variables. Specifically, EINV overlaps conceptually with the environmental resource use (ERU) and emissions scores (EMS), both of which reflect firms' environmental policy adoption. Similarly, SPRD is comprehensively covered by the retained social variables: workforce (SWS), human rights (SHRS) and community scores (SCS), all of which measure firms' social policy adoption. However, four excluded variables warrant inclusion based on their theoretical importance and contextual relevance to the South African corporate environment: donations to sales ratio (DSR), board independence (BID), board skills (BSK) and gender diversity (GDIV). These variables represent constructs not adequately captured by the PCA solution.

Donations to sales ratio (DSR) holds particular significance in the South African context due to the country's socio-economic landscape and regulatory environment. Although corporate charitable giving remains voluntary in South Africa, it is actively promoted and recognised in government policies, particularly the Broad-Based Black Economic Empowerment (BBBEE) Act, which encourages corporate social investment by incentivising companies to contribute to socio-economic development programmes that benefit previously disadvantaged groups. This regulatory framework makes philanthropic activities such as corporate donations a strategically important dimension of reported ESG performance in South Africa that extends beyond the general social policy measures captured in the PCA-retained social variables (SWS, SHRS and SCS). Consequently, DSR may offer unique insights into firms' external stakeholder engagement and societal impact orientation.

The board characteristics of independence (BID), skills (BSK), and gender diversity (GDIV) merit retention despite their exclusion from the PCA factors due to their theoretical difference from the PCA-retained governance measure, CSR strategy score (GCSR). While GCSR measures firms' self-reported adoption of sustainability-oriented corporate governance policies, these three board composition variables (BID, BSK and GDIV) represent structural governance mechanisms that influence ESG outcomes through enhanced monitoring capacity, diverse cognitive perspectives and stakeholder representation rather than through policy formulation processes.

This distinction is institutionally significant in South Africa, where King IV emphasises board composition as fundamental to effective governance, recommending that boards maintain "an appropriate balance of knowledge, skills, experience, diversity and independence" (IoDSA, 2016: 40). With King IV incorporated into JSE Listings Requirements, these board characteristics represent governance structures with institutional prominence separate from voluntary CSR strategy adoption captured by GCSR. Their retention is methodologically justified as they provide comprehensive coverage of both strategic governance orientation (through GCSR) and structural governance capacity (through board composition measures BID, BSK and GDIV), allowing the model to capture complementary governance dimensions that may influence the quality of corporate ESG disclosure practices in the South African market.

This systematic evaluation results in the retention of 16 variables for the logistic regression analysis: the 12 variables identified through PCA plus four additional variables justified by their theoretical significance and contextual relevance to the South African corporate setting. This approach seeks to balance statistical rigor in variable selection while addressing potential gaps in construct coverage, particularly in governance dimensions that are critically important in the South African regulatory and social context. Table 5.6 presents the ESG indicators considered for logistic regression analysis, derived from both PCA results and theoretical considerations. Indicators included in the subsequent analysis are shown in bold.

Table 5.6 Refined ESG indicator set: Integration of PCA-derived and theoretically significant variables for binary logistic regression

Hypothesis number	Indicator name	Relationship[1]	Included in logistic regression?	Source[2]
H_1: Disclosures on the adoption of environmental policies	**Environmental resource use score (ERU)**	**Inverse**	**Yes**	**PCA**
	Environmental emissions score (EMS)	**Inverse**	**Yes**	**PCA**
	Environmental innovation score (EINV)	Inverse	No	NS
H_2: Poor corporate environmental performance	**Total GHG emissions intensity (TGI)**	**Inverse**	**Yes**	**PCA**
	Scope 1 GHG emissions intensity (S1GI)	**Inverse**	**Yes**	**PCA**
	Scope 2 GHG emissions intensity (S2GI)	**Inverse**	**Yes**	**PCA**
	Δ Total GHG emissions intensity (ΔTGI)	**Inverse**	**Yes**	**PCA**

	Δ Scope 1 GHG emissions intensity (ΔS1GI)	**Inverse**	**Yes**	**PCA**
	Δ Scope 2 GHG emissions intensity (ΔS2GI)	**Inverse**	**Yes**	**PCA**
H_3: Disclosures on the adoption of social policies	**Social workforce score (SWS)**	**Inverse**	**Yes**	**PCA**
	Social community score (SCS)	**Inverse**	**Yes**	**PCA**
	Social human rights score (SHRS)	**Inverse**	**Yes**	**PCA**
	Social product responsibility score (SPRD)	Inverse	No	NS
H_4: Corporate philanthropy	**Donations to sales ratio (DSR)**	**Inverse**	**Yes**	**TH**
H_5: Disclosures on the adoption of governance policies	**Governance CSR strategy score (GCSR)**	**Inverse**	**Yes**	**PCA**
H_6: Board independence	**Board independence (BID)**	**Direct**	**Yes**	**TH**
H_7: Board skills diversity	**Board skills (BSK)**	**Direct**	**Yes**	**TH**
H_8: Gender diversity	**Gender diversity (GDIV)**	**Direct**	**Yes**	**TH**

1. Hypothesised relationship with corporate ESG reporting quality.
2. Source of indicator selection:

   PCA = Extracted from PCA solution.

   TH = Retained based on theoretical significance.

   NS = Not selected due to two conditions: (1) not extracted in PCA solution, and (2) theoretical construct already adequately represented by other indicators. For e.g. EINV meets both conditions: it was not extracted in PCA and its theoretical construct (H_1) is already represented by ERU and EMS.

5.3 Results of binary logistic regression modelling

5.3.1 Detailed description of 2013 binary logistic regression results

To illustrate how binary logistic regression modelling is applied to develop a model that measures the quality of corporate ESG reporting, as described in Section 4.7.3 of the methodology chapter, this section presents a detailed example using data from 2013. This step-by-step explanation serves as a representative case, demonstrating the process of building individual binary logistic regression models for each year in the in-sample period from 2013 to 2018.

The dependent variable in this analysis is Low ESG Reporting Quality (LRQ), coded as a binary outcome where "1" indicates low quality reporting and "0" indicates high quality reporting. As shown in Table 5.7, the 2013 sample comprises 90 observations, with 24.4% (22

observations) classified as low-quality ESG reporting and 75.6% (68 observations) as high-quality ESG reporting.

The model development for 2013 begins with careful variable selection. From a pool of 16 potential ESG indicators, identified through theoretical frameworks and refined through Principal Component Analysis (PCA) (see Table 5.6), each variable undergoes initial screening. The screening process employs univariate logistic regression analyses to examine the statistical significance of the association between each independent variable and the binary dependent variable of interest, LRQ. This preliminary analysis evaluates the strength and significance of these bivariate relationships before constructing the comprehensive multivariate model.

Based on these univariate analyses, variables showing statistically significant relationships with LRQ ($p < .05$) are selected for inclusion in the preliminary multivariate logistic regression model. Variables that do not meet this significance threshold are excluded from the 2013 model specification. Table 5.8 presents the results of these univariate analyses for all 16 ESG variables, documenting the statistical criteria used for variable selection in the preliminary multivariate model.

Table 5.7 Distribution of the dependent variable (2013)

Year	Low quality reporting (Coded as 1)		High quality reporting (Coded as 0)		Total	
	Percentage	**Obs.**	**Percentage**	**Obs.**	**Percentage**	**Obs.**
2013	24.4%	22	75.6%	68	100%	**90**

The results in Table 5.8 identify nine ESG variables with statistically significant relationships with LRQ. These variables form the initial specification of the multivariate model. The statistical significance of each variable's relationship with LRQ is then re-examined in this multivariate context, maintaining the same significance threshold ($p < .05$). Through an iterative process of backward elimination, variables that lose their statistical significance in the multivariate setting are removed sequentially, beginning with the variable displaying the highest non-significant p-value.

Table 5.8 Results of univariate logistic regression analyses for ESG variables (2013)[1]

Independent variable		Linked to hypothesis number	p-value	Null hypothesis[2] rejected?
ERU	**Environmental resource use score**	**H_1**	**< 0.001**	**Yes[3]**
EMS	**Environmental emissions score**	**H_1**	**< 0.001**	**Yes**
TGI	**Total GHG emissions intensity**	**H_2**	**0.003**	**Yes**
S1GI	**Scope 1 GHG emissions intensity**	**H_2**	**0.003**	**Yes**
S2GI	**Scope 2 GHG emissions intensity**	**H_2**	**0.006**	**Yes**
ΔTGI	Δ Total GHG emissions intensity	H_2	0.395	No
ΔS1GI	Δ Scope 1 GHG emissions intensity	H_2	0.760	No
ΔS2GI	Δ Scope 2 GHG emissions intensity	H_2	0.915	No
SWS	**Social workforce score**	**H_3**	**< 0.001**	**Yes**
SHRS	**Social human rights score**	**H_3**	**< 0.001**	**Yes**
SCS	**Social community score**	**H_3**	**< 0.001**	**Yes**
DSR	Donations to sales ratio	H_4	0.315	No
GCSR	Governance CSR strategy score	H_5	0.163	No
BID	Board independence	H_6	0.174	No
BSK	**Board skills**	**H_7**	**0.020**	**Yes**
GDIV	Gender diversity	H_8	0.827	No

1. Variables highlighted in bold are those with $p < .05$.
2. For each independent variable, the null hypothesis states there is no relationship ($\beta = 0$) between that variable and low ESG reporting quality (LRQ).
3. "Yes" indicates rejection of the null hypothesis at $p < .05$, signifying evidence of a statistically significant relationship between the independent variable and LRQ. Variables with significant relationships proceed to the multivariate model specification. "No" indicates insufficient evidence to reject the null hypothesis, and these variables are excluded from further analysis.

The process of eliminating non-significant variables from the preliminary model begins with total GHG emissions intensity (TGI, $p = 0.82$), which displays the highest non-significant p-value in the initial model. After recalculating the model without TGI, the social workforce score (SWS, $p = 0.65$) emerges as the next variable with the highest non-significant p-value and is excluded. This sequential process continues with the removal of board skills (BSK) and social human rights score (SHRS), both with p-values of 0.18, followed by the environmental resource use score (ERU) and social community score (SCS), both with p-values of 0.20. The final variable omitted is Scope 2 GHG emissions intensity (S2GI, $p = 0.21$). This systematic

elimination process results in a model that retains two statistically significant variables: the environmental emissions score (EMS, $p < 0.001$) and Scope 1 GHG emissions intensity (S1GI, $p = 0.031$).

This two-variable model shows good fit with the observed data, as indicated by a pseudo R^2 of 0.25 and a log-likelihood value of -39.383. However, to explore potential model improvements, each previously excluded variable is sequentially reintroduced to the model.

Testing begins with total GHG emissions intensity (TGI), the first variable which was initially excluded due to its high p-value (0.82) in the preliminary model. When TGI is integrated into the two-variable model (EMS and S1GI), the results show that while EMS maintains statistical significance ($p = 0.002$), S1GI loses its significance ($p = 0.303$) and TGI remains non-significant ($p = 0.345$). Further analysis indicates high multicollinearity between TGI and S1GI (correlation coefficient = 0.75), violating a key assumption of logistic regression. Consequently, the addition of TGI to the model is not supported.

Following the removal of TGI, the next step involves testing the reintroduction of the social workforce score (SWS) to the two-variable model. When SWS is incorporated, both original variables maintain their statistical significance, with EMS at $p = 0.016$ and S1GI at $p = 0.027$. Although the original variables remain significant, SWS fails to reach statistical significance ($p = 0.578$). Furthermore, the inclusion of SWS yields only a marginal change in model fit, demonstrated by a slight increase in log-likelihood from -39.383 to -39.221, a difference of just 0.162. Based on both the non-significance of SWS and its minimal contribution to model fit, this variable is not retained in the model.

Next, the addition of board skills (BSK) is examined. When BSK is integrated into the model, both EMS and S1GI maintain their statistical significance ($p = 0.001$ and $p = 0.031$, respectively), with coefficient magnitudes and directions remaining stable. This stability in the original variables suggests that BSK provides independent information rather than interfering with existing relationships. Moreover, the inclusion of BSK improves the model's overall fit, as indicated by an increase in pseudo R^2 from 0.247 to 0.276 and a substantial improvement in log-likelihood from -39.383 to -36.263. While BSK itself does not reach conventional levels of statistical significance ($p = 0.192$), its meaningful contribution to model fit and predictive

power, combined with the stability of existing coefficients, substantiates its inclusion in the model.

Further analysis evaluates whether the social human rights score (SHRS) could enhance the model's predictive capability. However, SHRS's inclusion into the model produces conflicting results. While S1GI's statistical significance slightly strengthens from $p = 0.031$ to $p = 0.026$, EMS loses its statistical significance, with its p-value increasing substantially from 0.001 to 0.061. Neither BSK nor SHRS reach statistical significance, with p-values of 0.130 and 0.145, respectively. Although the four-variable model shows modest improvements in fit metrics, with the pseudo R^2 rising from 0.276 to 0.297 and the log-likelihood advancing from -36.263 to -35.185, these gains do not justify the loss of statistical significance in EMS. Consequently, the analysis maintains the three-variable model comprising EMS, S1GI and BSK.

Testing the environmental resource use score (ERU) as an additional predictor in this three-variable model shows minimal improvements in model performance. The log-likelihood increases marginally from -36.263 to -36.172, while the pseudo R^2 remains virtually unchanged at 0.277. Notably, diagnostic tests indicate high multicollinearity between EMS and ERU (correlation coefficient = 0.78), suggesting these variables capture redundant information. Given these findings, ERU is excluded from the model specification.

The addition of social community score (SCS) similarly fails to strengthen the model. Although S1GI maintains significance ($p = 0.023$), EMS's statistical significance weakens (p-value increasing from 0.001 to 0.010), while both BSK and SCS remain statistically non-significant ($p = 0.239$ and $p = 0.365$, respectively). The modest improvements in fit metrics (pseudo R^2 increasing from 0.276 to 0.284; log-likelihood from -36.263 to -35.846) do not justify SCS's inclusion in the model.

The last variable that is considered for reintegration into the three-variable model consisting of EMS, S1GI and BSK is scope 2 GHG emissions intensity (S2GI). While the inclusion of S2GI leads to some gains in model fit metrics, with the pseudo R^2 increasing from 0.276 to 0.286, its p-value of 0.303 indicates it is not a statistically meaningful predictor. More critically, its presence causes S1GI to lose its explanatory power, with its p-value weakening from 0.031 to 0.093. Given these statistical limitations, S2GI is excluded from the model as its inclusion diminishes S1GI's statistical validity while offering no meaningful predictive value.

Therefore, the model reverts to the core set of three variables: environmental emissions score (EMS), Scope 1 GHG emissions intensity (S1GI) and board skills (BSK). Table 5.9 presents the descriptive statistics for the ESG variables included in the final 2013 ESG reporting quality model.

Table 5.9 Descriptive statistics: ESG indicators included in final model (2013)

Variable	Obs.	Mean	Median	Std dev	Min	Max
EMS	90	0.282	0.278	0.156	0.000	0.667
S1GI	90	171.665	31.492	635.904	0.000	5123.503
BSK	90	0.626	0.636	0.144	0.250	0.923

Table 5.10 shows the Pearson correlation coefficients among the ESG variables in the final 2013 model. The data indicate a moderate positive correlation between EMS and S1GI (0.313) and a weak negative correlation between EMS and BSK (-0.233), both significant at the 1% level. The correlation between S1GI and BSK is negligible (-0.043) and not statistically significant. The magnitude of all correlations, including the strongest at 0.313, falls well below the conventional threshold of 0.70, suggesting an absence of problematic multicollinearity.

Table 5.10 Pairwise correlation coefficients matrix for final model (2013)[1]

Variable	EMS	S1GI	BSK
EMS	1.000		
S1GI	**0.313****	1.000	
BSK	**-0.233****	-0.043	1.000

1. *** 5% significance; ** 1% significance. Pearson correlations.**

Supporting these correlation results, Table 5.11 shows the variance inflation factors (VIF). The individual VIF values for EMS (1.12), S1GI (1.08) and BSK (1.03) are substantially below the critical threshold of 10, with a mean VIF of 1.08. These results confirm the absence of multicollinearity among the ESG variables, validating their inclusion in the final 2013 model.

Table 5.11 VIF values for 2013 model

Variable	Variance inflation factor (VIF)
EMS	1.12
S1GI	1.08
BSK	1.03
Mean VIF	**1.08**

The Hosmer-Lemeshow test results in Table 5.12 support the model's goodness-of-fit for the 2013 data. With a chi-square value of 8.13 and a non-significant p-value of 0.42, the test indicates no significant differences between the observed and predicted values, indicating adequate model fit.

Table 5.12 Results of Hosmer-Lemeshow goodness-of-fit test for 2013 model

Chi-square value	Significance
8.13	0.42

Table 5.13 presents the estimation results for the 2013 ESG reporting quality model, based on 90 observations. The likelihood ratio chi-square test ($\chi^2 = 27.58$, df = 3) is highly significant ($p < 0.0001$), indicating that the model as a whole fits significantly better than an empty model. The log-likelihood value of -36.263 provides the basis for comparing nested models. Furthermore, the McFadden pseudo R^2 value of 0.2755 falls within the acceptable range of 0.20 to 0.40, indicating reasonable predictive ability. Together, these goodness-of-fit measures provide consistent evidence of the model's adequacy in explaining the variation in ESG reporting quality.

Among the three variables, two of them (EMS and S1GI) demonstrate statistically significant associations with low ESG reporting quality at the 5% level, whereas BSK does not reach statistical significance at the 5% level. Specifically, a one unit increase in EMS (measuring the corporate adoption of environmental policies) corresponds to an approximate 6.77 unit increase in the log-odds of low ESG reporting quality. Similarly, when S1GI (measuring a firm's environmental performance) increases by one unit, the log-odds of low ESG reporting quality increase by approximately 0.37 units. The negative coefficient for BSK (measuring the degree

of board skill diversity) suggests that a one unit increase in board skills is associated with a decrease of approximately 2.95 units in the log-odds of low ESG reporting quality, though this relationship is not statistically significant.

Table 5.13 ESG reporting quality model estimation and results (2013)[1]

Logistic regression					Number of observations =	90
					LR chi2 (3) =	27.58
					Prob > chi2 =	0.0000
Log likelihood = -36.262614					Pseudo R^2 =	0. 2755
LRQ	Coef.	Std. Err.	z	P > | z |	[95% Conf. Interval]	
EMS	6.774723	2.128837	3.18	0.001*	2.60228	10.94717
S1GI	.3682765	.1704651	2.16	0.031*	.034171	.7023819
BSK	-2.950099	2.261575	-1.30	0.192	-7.382705	1.482506
_cons	-2.919642	1.663704	-1.75	0.079	-6.180443	.3411589

1.* Significant at the 5% level.

Based on the coefficients provided in Table 5.12, the equation for the 2013 ESG reporting quality model can be formulated as follows, denoted by Equation 5.1:

Equation 5.1 Equation for the 2013 logistic regression model

Logit (LRQ) = -2.920 + 6.775** (EMS) + 0.368* (S1GI) – 2.950 (BSK)

Where:
LRQ = Low ESG reporting quality (binary dependent variable)
EMS = Environmental emissions score (independent variable)
S1GI = Scope 1 GHG emissions intensity (independent variable)
BSK = Board skills (independent variable)

Statistical significance: ** $p < .01$, * $p < .05$

The 2013 ESG reporting quality model shows strong predictive performance based on two key measures. First, the model's classification accuracy (Table 5.14) indicates that 78.89% of

observations are correctly classified. Second, the model's discrimination ability (Table 5.15) yields an area under the ROC curve of 0.8737, exceeding the 0.80 threshold that indicates excellent discrimination between low and high ESG reporting quality categories. The detailed classification matrix and full ROC curve are available in Appendices D and E, respectively.

Table 5.14 Model classification accuracy (2013)

Overall % correctly classified	**78.89%**

Table 5.15 Model discrimination ability (2013)

Area under the ROC curve	**0.87**

5.3.2 Binary logistic regression results: In-sample period (2013 to 2018)

This section discusses the results of the binary logistic regression models developed individually for each year from 2013 to 2018 to evaluate the quality of corporate ESG reporting. To ensure consistency in assessing and comparing the results over the six-year period, the same model development process, as described for the 2013 model, was applied to develop separate models for each year's data.

Before developing the models, it is essential to understand the distribution of the dependent variable: Low ESG Reporting Quality (LRQ). Table 5.16 presents the classification of this binary variable across the in-sample period of 814 observations, where low-quality ESG reporting is coded as 1 and high-quality ESG reporting is coded as 0.

An analysis of corporate ESG reporting quality across the sample period unveils several noteworthy patterns. From 2013 to 2015, the proportion of low-quality reporting remained relatively stable, ranging from 24.4% to 25.8%, indicating consistent reporting practices. A significant improvement emerged in 2016, with low-quality reporting decreasing to 16.7%, the lowest in the series, and high-quality reporting reaching its peak at 83.3%. However, this trend reversed in 2017, with low-quality reporting increasing to 25.8%, followed by a further deterioration to 31.6% in 2018, marking the highest proportion of low-quality reporting in the series.

Table 5.16 Distribution of the dependent variable (2013 - 2018)

Year	Low quality reporting (Coded as 1)		High quality reporting (Coded as 0)		Total	
	Percentage	**Obs.**	**Percentage**	**Obs.**	**Percentage**	**Obs.**
2013	24.4%	22	75.6%	68	100%	**90**
2014	25.8%	39	74.2%	112	100%	**151**
2015	25.5%	28	74.5%	82	100%	**110**
2016	16.7%	26	83.3%	130	100%	**156**
2017	25.8%	40	74.2%	115	100%	**155**
2018	31.6%	49	68.4%	106	100%	**155**

The sample size also shows an interesting progression over the period. From an initial sample of 90 observations in 2013, the number of observations increased and stabilised at approximately 155 from 2016 onwards, suggesting improved data availability and possibly greater corporate participation in ESG reporting.

As part of the model development process, potential independent variables are screened. Table 5.17 presents the univariate logistic regression results for the 16 ESG indicators over the six-year period from 2013 to 2018, assessing their individual associations with the binary dependent variable, low ESG reporting quality.

The univariate logistic regression results in Table 5.17 show that indicators measuring the corporate adoption of environmental (ERU and EMS) and social (SWS and SHRS) policies emerge as the strongest predictors, maintaining high statistical significance ($p < .001$) across all six years. The social community score (SCS) exhibits similar consistency, achieving significance in five years, with 2015 as the sole exception ($p = 0.153$).

Table 5.17 Results of univariate logistic regression analyses (2013-2018)[1]

Variables	Linked to hypothesis number	2013	2014	2015	2016	2017	2018
ERU	H_1	**< 0.001***	**< 0.001***	**0.002***	**0.005***	**< 0.001***	**0.003***
EMS	H_1	**< 0.001***	**< 0.001***	**< 0.001***	**< 0.001***	**< 0.001***	**< 0.001***
TGI	H_2	**0.003***	0.981	**0.037***	**0.042***	0.496	**0.032***
S1GI	H_2	**0.003***	0.341	0.140	0.105	0.683	0.089
S2GI	H_2	**0.006***	0.715	**0.034***	**0.050***	0.695	**0.030***
ΔTGI	H_2	0.395	0.458	0.877	0.309	0.740	0.383
ΔS1GI	H_2	0.760	0.579	0.741	0.245	0.629	0.608
ΔS2GI	H_2	0.915	0.703	0.913	0.312	0.641	0.502
SWS	H_3	**< 0.001***	**< 0.001***	**0.044***	**0.012***	**0.001***	**0.008***
SHRS	H_3	**< 0.001***	**< 0.001***	**0.001***	**0.001***	**< 0.001***	**0.008***
SCS	H_3	**< 0.001***	**< 0.001***	0.153	**0.003***	**0.014***	**0.033***
DSR	H_4	0.315	0.855	0.616	0.521	0.764	0.077
GCSR	H_5	0.163	**0.006***	0.373	**0.008***	**0.027***	0.120
BID	H_6	0.174	0.196	0.146	**0.032***	0.318	0.276
BSK	H_7	**0.020***	**0.037***	0.808	0.466	0.276	0.714
GDIV	H_8	0.827	0.562	0.437	0.277	0.594	0.737

1. *** Significant at the 5% level.**

The corporate environmental performance indicators yield mixed statistical results. Both total GHG emissions intensity (TGI) and scope 2 GHG emissions intensity (S2GI) are statistically significant ($p < .05$) in four years (2013, 2015, 2016 and 2018). In contrast, scope 1 GHG emissions intensity (S1GI) reaches statistical significance only in 2013 ($p = 0.003$). In the governance category, the CSR strategy score (GCSR) shows intermittent statistical significance, particularly in 2014 ($p = 0.006$), 2016 ($p = 0.008$) and 2017 ($p = 0.027$). Board composition measures show weak predictive power: board independence (BID) is significant only in 2016 ($p = 0.032$), while board skills diversity (BSK) reaches significance only in 2013 ($p = 0.020$) and 2014 ($p = 0.037$).

Furthermore, the analysis identifies many indicators that maintain no statistically significant relationship with corporate ESG reporting quality across the study period. These include all environmental performance change metrics (ΔTGI, ΔS1GI and ΔS2GI), donations to sales ratio (DSR) and gender diversity (GDIV).

These univariate findings inform the development of multivariate models for each year from 2013 to 2018. Variables demonstrating statistical significance ($p < .05$) in the univariate analysis are selected as candidates for each year's preliminary multivariate model. For instance, in 2017, five variables achieved statistical significance: ERU, EMS, SWS, SHRS and GCSR.

These initially selected variables undergo further testing within the multivariate context, adhering to the $p < .05$ significance threshold. Through backward elimination, variables that lose their statistical significance in the multivariate setting are sequentially removed, starting with those showing the highest non-significant p-values. This iterative process continues until all remaining variables in the final model retain statistical significance.

Next, variables that were previously excluded (i.e., non-significant variables among those selected as candidates for each year's preliminary multivariate model) are individually reassessed for potential reintroduction in the final model. This is done to evaluate whether they can contribute to the model's fit when combined with the statistically significant variables.

If these previously excluded variables improve the model's fit, surpassing the performance of a model comprising only statistically significant independent variables, they are retained in the model despite lacking individual statistical significance. Conversely, variables that fail to enhance the model's fit remain excluded. This approach ensures that the final models strike a balance between statistical significance and overall predictive power. The resulting models for each year, derived from this thorough variable selection process, are presented in Table 5.18.

Table 5.18 ESG reporting quality model estimation and results (2013-2018)[1]

Variables	2013 Model	2014 Model	2015 Model	2016 Model	2017 Model	2018 Model
EMS	**6.775****	**4.188***	**4.639****	**4.948****	**3.178***	**3.729****
TGI	-	-	0.161	-	-	-
S1GI	**0.368***	-	-	-	-	-
SWS	-	**6.270***	-	-	-	-
SHRS	-	-	-	-	**1.928***	-
BSK	-2.950	-0.863	-	-	-	-
Constant	-2.919	**-5.064****	**-3.389****	**-2.969****	**-2.708****	**-1.764****
Obs.	90	151	110	156	155	155
Chi-square (χ^2)	0.000	0.000	0.001	0.000	0.000	0.000
Degrees of freedom (*df*)	3	3	2	1	2	1

1. *** 5% significance; ** 1% significance.**

Based on Table 5.18, each year's model retains at least one ESG indicator from a subset of six variables: environmental emissions score (EMS), total GHG emissions intensity (TGI), Scope 1 GHG emissions intensity (S1GI), social workforce score (SWS), social human rights score (SHRS) and board skills (BSK). Most notably, the environmental emissions score (EMS) demonstrates the strongest and most consistent predictive power across all years. The EMS coefficients maintain statistical significance at the 1% level throughout the period, except for 2017 where it remains significant at the 5% level.

These positive EMS coefficients indicate that firms with higher environmental emissions scores have higher odds of producing low-quality ESG reports. While the magnitude of the EMS effect shows a general declining trend from its peak in 2013 ($\beta = 6.774$) to 2018 ($\beta = 3.729$), the consistently positive and significant coefficients suggest that greater adoption of environmental emissions policies is associated with lower quality corporate ESG reporting.

Other statistically significant relationships are observed across different years of the analysis. In 2013, scope 1 GHG emissions intensity (S1GI) shows a significant positive relationship ($\beta = 0.368$, $p < .05$), suggesting that firms with poor environmental performance (measured by higher scope 1 GHG emissions intensity) are more likely to produce low-quality ESG reports.

The 2014 results indicate that higher social workforce scores (SWS) correlate with low-quality ESG reporting (β = 6.270, $p < .05$). In 2017, the social human rights score (SHRS) exhibits a significant positive relationship (β = 1.928, $p < .05$), indicating that firms with higher social human rights scores have an increased likelihood of generating low-quality ESG reports.

The models also include two non-significant variables. Total GHG emissions intensity (TGI), despite its positive coefficient (β = 0.161), lacks statistical significance in its only appearance in the 2015 model. Similarly, board skills (BSK) is included in the 2013 and 2014 models with negative coefficients (β = -2.950 and β = -0.863 respectively). While these BSK coefficients suggest that firms with greater board skill diversity might have lower odds of issuing low-quality ESG reports, this relationship also lacks statistical significance.

The goodness of fit for all models is supported by consistently significant chi-square statistics ($p < .01$). Sample sizes range from 90 to 156 observations, with more recent years (2016-2018) maintaining stable sample sizes of approximately 155 observations. Model complexity, as indicated by degrees of freedom, ranges from one to three across the study period, reflecting variations in the number of predictors included in each year's model. To provide a more comprehensive assessment of model performance, Table 5.19 presents additional goodness-of-fit metrics across all years in the in-sample period.

Table 5.19 Goodness-of-fit statistics for estimated models (2013-2018)

Goodness-of-fit statistics	2013 Model	2014 Model	2015 Model	2016 Model	2017 Model	2018 Model
Pseudo R^2	0.276	0.281	0.114	0.114	0.160	0.07
Log-likelihood	-36.263	-61.989	-55.298	-62.247	-74.361	-89.461
Hosmer-Lemeshow χ^2	0.420	0.765	0.319	0.619	0.746	0.762

According to the results in Table 5.19, the 2013 and 2014 models have relatively strong explanatory power, with pseudo R^2 values of 0.276 and 0.281 respectively, indicating that approximately 28% of the variation in the data is explained by these models. Model fit weakens in subsequent years, with identical pseudo R^2 values of 0.114 for both 2015 and 2016. Despite a slight improvement in 2017 (pseudo R^2 = 0.160), the 2018 model shows the lowest performance with a pseudo R^2 of just 0.07. This gradual decline in model fit is further supported by the log-likelihood values, which show progressively poorer fit from -36.263 in 2013 to -

89.461 in 2018. The Hosmer-Lemeshow statistics, however, suggest acceptable calibration across all models, with values ranging from 0.319 to 0.765.

The classification performance metrics in Table 5.20 show distinct variations in predictive accuracy across the study period. The 2016 model achieved the highest overall classification rate at 83.9%, closely followed by the 2014 and 2017 models (81.5% and 81.3% respectively). In contrast, discrimination ability, as measured by the area under the ROC curve (AUC), peaked with the 2013 model at 87.0%, suggesting superior capability in distinguishing between outcome classes.

An interesting pattern emerges in the 2016 model. While it leads in classification accuracy (83.9%), its discriminative power is relatively modest (AUC = 0.735). The 2018 model demonstrates the weakest performance across both metrics, with the lowest classification accuracy (67.7%) and AUC (0.681), indicating substantial degradation in both predictive and discriminative capabilities. The 2013-2014 period represents the most balanced performance, maintaining both strong classification accuracy (>78%) and high discriminative ability (AUC >0.83), suggesting these models offer the most reliable overall predictive framework.

Table 5.20 Classification performance metrics for estimated models (2013-2018)

	2013 Model	**2014 Model**	**2015 Model**	**2016 Model**	**2017 Model**	**2018 Model**
Overall % correctly classified	0.789	0.815	0.755	0.839	0.813	0.677
Area under the ROC curve (%)	0.870	0.839	0.742	0.735	0.755	0.681

5.3.3 Model validation: Testing predictive power on 2019 hold-out sample

This section evaluates the predictive accuracy of logistic regression models estimated for years 2013 through 2018. To validate the models, the coefficients of each model are applied to a hold-out sample from 2019. Table 5.21 presents the composition of this hold-out sample, which includes 148 firms. Among these firms, 46 (31.1%) exhibit low-quality ESG reporting, while the remaining 102 firms (68.9%) demonstrate high-quality ESG reporting.

Table 5.21 Distribution of the dependent variable (2019)

Year	Low quality reporting (Coded as 1)		High quality reporting (Coded as 0)		Total	
	Percentage	Obs.	Percentage	Obs.	Percentage	Obs.
2019	31.1%	46	68.9%	102	100%	148

Table 5.22 summarises the results of applying the coefficients from the models estimated for the years 2013 to 2018 to the 2019 hold-out sample. The model developed using 2017 data demonstrates the strongest overall performance among the evaluated models. It achieves the highest accuracy rate of 73.6%, correctly classifying the ESG reporting quality for the majority of firms in the hold-out sample. Additionally, the 2017 model obtains the best F1 score of 51.9%, which is a weighted average of precision and recall.

The 2017 model's precision of 60.0% indicates that when it predicts a firm as having low ESG reporting quality, it is correct approximately 60% of the time. The recall of 45.7% suggests that the model identifies 45.7% of the firms with actual low ESG reporting quality in the hold-out sample. The balanced combination of precision and recall signifies that the 2017 model has a reliable predictive capability in identifying firms with low ESG reporting quality.

Table 5.22 Model validation results using 2019 hold-out sample (%)

	2013 Model	2014 Model	2015 Model	2016 Model	2017 Model	2018 Model
Accuracy	62.2	69.0	65.4	72.3	73.6	72.3
Precision	57.1	52.3	66.7	77.8	60.0	60.9
Recall	32.4	50.0	23.8	15.2	45.7	30.4
F1 score	41.4	51.1	35.1	25.5	51.9	40.6

The 2016 model exhibits a distinctive characteristic: while achieving the highest precision (77.8%) and good accuracy (72.3%), it has extremely low recall (15.2%), leading to the lowest F1 score (25.5%) among all models. This suggests that while the 2016 model is highly precise in identifying low-quality ESG reporters, it is overly conservative in its predictions. Consequently, the 2016 model has substantial limitations in capturing the full population of low-quality reporters.

The models estimated using data from 2016, 2017 and 2018 display better performance compared to those developed using data from 2013, 2014 and 2015 when applied to the 2019 hold-out sample. The accuracy of the more recent models ranges from 72% to 74%, demonstrating their ability to correctly classify a larger proportion of firms in the hold-out sample. In contrast, the earlier models, based on data from 2013 to 2015, have lower accuracy rates between 62% and 69%. This difference in performance suggests that the predictive capability of the models has improved over time, possibly due to enhancements in the model development process or changes in the relationships between the predictor variables and corporate ESG reporting quality.

Among the earlier models, the 2014 model stands out with surprisingly robust performance. Its balanced precision (52%) and recall (50%) yield an F1 score (51%) nearly matching the best-performing 2017 model. In contrast, the 2013 and 2015 models show weaker performance, particularly in terms of recall (32% and 24%, respectively), suggesting a limited capacity to identify firms with low ESG reporting quality accurately.

5.3.4 Selection of an optimal model for measuring corporate ESG reporting quality

To identify the optimal model that best measures the relevance and representational faithfulness of ESG disclosures among South African listed companies, competing models from the in-sample period are evaluated. The selection criteria include goodness-of-fit, predictive accuracy, out-of-sample validation performance and overall model parsimony.

The models estimated for 2013 and 2014 demonstrate robust performance across multiple goodness-of-fit measures, including pseudo R^2 values and log likelihood values, when compared to other models in the in-sample period. Both models achieve parsimony by effectively capturing corporate ESG disclosure quality with just three predictors each: EMS, S1GI and BSK for 2013 and EMS, SWS and BSK for 2014 (as shown in Table 5.18).

This efficient model specification is particularly valuable given the models' strong explanatory power. The pseudo R^2 values of 0.276 and 0.281 for 2013 and 2014 respectively indicate that approximately 28% of the variance in ESG disclosure quality is explained by these models (see Table 5.19). These values fall within Hensher and Stopher's (1979) established benchmark

range of 0.20 to 0.40 for very good model fit. The models' statistical robustness is further supported by consistently significant chi-square statistics ($p < .01$), log likelihood values (-36.263 in 2013 and -61.989 in 2014) and Hosmer-Lemeshow chi-square values (0.420 in 2013 and 0.765 in 2014), collectively indicating appropriate model fit.

On a one-to-one comparison of goodness-of-fit metrics, although the 2013 model has a better log likelihood value of -36.263 (compared to -61.989 in 2014), the 2014 model demonstrates superior overall performance. This is evidenced by its slightly higher pseudo R^2 value of 0.281 (compared to 0.276 in 2013) and larger sample size of 151 observations (compared to 90 observations in 2013), which enhances the statistical reliability and generalisability of the results in the context of binary logistic regression modelling.

In terms of predictive performance, the 2013 and 2014 models emerge as the strongest among all models estimated in the in-sample period. While the 2016 model achieved the highest classification accuracy at 83.9% (see Table 5.20), its relatively weak discriminative ability (area under the ROC curve = 0.735) raises concerns about model stability. The 2013 and 2014 models, by contrast, demonstrate balanced and robust predictive accuracy. Both models maintain strong classification accuracy above 78% while achieving high discriminative ability with ROC values exceeding 0.83. When comparing these two models directly (2013 and 2014), the 2014 model shows marginally better classification accuracy at 81.5% (versus 78.9% for 2013), while the 2013 model exhibits greater discriminative ability with an area under the ROC curve of 0.870 (versus 0.839 for 2014).

Out-of-sample validation performance varies meaningfully across the models when tested on the 2019 hold-out sample. As shown in Table 5.22, models developed using more recent data (2016-2018) exhibit higher accuracy rates ranging from 72% to 74%, compared to models based on earlier data (2013-2015) which recorded accuracy rates between 62% and 69%. This indicates stronger predictive power from models estimated using more recent observations.

The 2017 model attains the highest accuracy at 73.6% and the best F1 score of 51.9%, while the 2014 model shows remarkably resilient predictive power although developed using data five years prior to the hold-out sample. The 2014 model maintains balanced performance metrics with precision and recall of 52.3% and 50.0% respectively, producing an F1 score of 51.1% that nearly matches the 2017 model's 51.9%. This balanced performance stands in

notable contrast to other models, such as the 2016 model which, with its high precision (77.8%) and accuracy (72.3%), results in limited practical utility given its low recall (15.2%) and consequent F1 score of just 25.5%.

Therefore, based on a rigorous comparative analysis of alternative models, the 2014 model specification stands out as the optimal choice for measuring corporate ESG reporting quality. This selection rests on three fundamental strengths: First, the model achieves efficient parsimony while maintaining strong explanatory power, supported by robust goodness-of-fit metrics. Second, it exhibits consistent stability across both the in-sample period and hold-out sample, suggesting reliable out-of-sample performance. Finally, the model's superior recall capabilities and strong F1 scores across testing periods establish it as the most reliable instrument for assessing ESG reporting quality among South African listed corporations.

Despite its strengths, the 2014 model presents notable limitations. Its relevance may be constrained by evolving ESG disclosure practices and shifting stakeholder priorities, which could weaken the current explanatory power of its predictors. Additionally, because the model draws on ESG data from companies listed in 2014, its representativeness may be affected by structural changes in the corporate landscape, including new listings, delistings and changing disclosure behaviours. While newer models offer improved out-of-sample accuracy, the 2014 specification reflects a considered trade-off, favouring conceptual clarity, statistical stability and balanced precision-recall performance. Accordingly, it remains a methodologically sound instrument for evaluating ESG reporting quality, albeit one that requires cautious interpretation in contemporary applications. Consequently, the final logistic regression model for corporate ESG reporting quality is specified as:

Equation 5.2: Corporate ESG reporting quality model

Logit (LRQ) = -5.064 + 4.188** (EMS) + 6.270* (SWS) – 0.863 (BSK)

Where:
LRQ = Low ESG reporting quality (binary dependent variable)
EMS = Environmental emissions score (independent variable)
SWS = Social workforce score (independent variable)
BSK = Board skills (independent variable)

Statistical significance: ** $p < .01$, * $p < .05$

5.4 Hypotheses testing results and discussion

5.4.1 Environmental policy adoption disclosures and the quality of corporate ESG reporting

The first hypothesis (H_{a1}, detailed in Chapter 3) proposes a statistically significant inverse relationship between South African firms' self-reported adoption of environmental policies and the quality of their ESG reporting. The theoretical foundation for this hypothesis, as elaborated in Section 3.3.1, is grounded in legitimacy theory. According to this theory, some organisations may prioritise reporting on policy adoption over effective environmental management as a low-effort symbolic gesture to acquire or maintain corporate legitimacy (Christmann & Taylor, 2006; Marquis et al., 2016; Mobus, 2005).

By emphasising policy adoption in their reporting, firms may seek to manage public perceptions by superficially aligning with societal norms and expectations rather than driving authentic improvements in environmental performance. As a result, policy declarations may fail to faithfully represent real-life business operations and lack relevant information stakeholders need for decision-making. Therefore, this study hypothesised that ESG reporting quality would decline as reported policy adoption increased.

To test this hypothesis, the study employed three indicators to measure firms' reported adoption of environmental policies: environmental resource use score (ERU), environmental emissions score (EMS) and environmental innovation score (EINV). Among these metrics, EMS emerged as the most significant indicator, showing a statistically significant positive association ($p < .01$) with low ESG reporting quality in the final model specification (see positive coefficient in Equation 5.2), providing strong support for the alternative hypothesis (H_{a1}). ERU did not demonstrate statistical significance when tested in the multivariate context of the final model specifications using the in-sample period (see Table 5.18), while EINV was excluded at an earlier stage, as it did not meet the retention criteria in the Principal Component Analysis (PCA) solution (Table 5.6). Consequently, among the three indicators examined, EMS represents the most robust proxy for measuring firms' self-reported adoption of environmental policies.

These findings support the hypothesis that firms reporting extensive environmental policy adoption tend to produce lower quality ESG reports, particularly when measured through emissions-related policies. This indicates that as firms increase their environmental policy disclosures, covering areas such as emissions reduction, waste management and transport impact, the quality of their ESG reporting decreases. This inverse relationship implies that some organisations may use numerous policy declarations as a legitimacy-seeking behaviour, projecting the appearance of environmental responsibility through policy statements rather than providing detailed, high-quality reporting of their actual environmental performance and impacts. Table 5.23 summarises the hypothesis testing results, confirming the rejection of the null hypothesis (H_{01}) and providing statistical support for the alternative hypothesis (H_{a1}) that postulates an inverse relationship between South African firms' self-reported adoption of environmental policies and the quality of their ESG reporting.

Table 5.23 Summary of hypothesis testing results: Corporate adoption of environmental policies

Hypothesis number	Description	Expected relationship with ESGRQ[1]	Actual relationship with ESGRQ[2]	Conclusion[3]
H_{01}	No statistically significant relationship between South African firms' self-reported adoption of environmental policies and the quality of their ESG reporting.	None	Inverse	Reject
H_{a1}	Statistically significant inverse relationship between South African firms' self-reported adoption of environmental policies and the quality of their ESG reporting.	Inverse	Inverse	**Support**

1. **Expected relationship**: Indicates the hypothesised direction of the relationship between environmental policies and ESG reporting quality (ESGRQ) as postulated in the research hypotheses.
2. **Actual relationship**: Indicates the observed relationship between variables based on statistical analysis of the empirical data.
3. **Conclusion**: Indicates the statistical testing outcome - whether the null hypothesis (H_{01}) is rejected and consequently whether the alternative hypothesis (H_{a1}) is supported. Bold text highlights the final determination for the alternative hypothesis.

5.4.2 Environmental performance and the quality of corporate ESG reporting

Legitimacy theory suggests that companies operate within a social contract, which requires them to align their actions with societal expectations and values (Deegan, 2019). Poor environmental performance can breach this contract, leading to legitimacy crises that threaten a company's societal standing (Patten, 1992). In an effort to address these legitimacy challenges, companies frequently employ strategic disclosure tactics aimed at repairing their legitimacy (O'Donovan, 2000).

These strategic disclosure tactics typically manifest as selective and defensive ESG reporting practices, where companies emphasise remedial actions whilst obscuring negative impacts in an attempt to manage stakeholder perceptions and rehabilitate their reputation (Samkin & Schneider, 2010; Cho et al., 2015). This approach, as argued in Section 3.3.2, often results in lower quality ESG disclosures, as companies with weaker environmental performance prioritise perception management over providing comprehensive and transparent information.

Building on legitimacy theory's explanatory framework, this study puts forward that firms with poor environmental performance are more likely to face greater legitimacy pressures and, consequently, are more inclined to engage in strategic disclosure practices. As a result, the ESG reporting quality of these firms is expected to be lower compared to companies with better environmental performance. Hence, the second alternative hypothesis (H_{a2}) proposes that there is a statistically significant inverse relationship between South African companies' actual environmental performance and the quality of their corporate ESG reporting.

To measure a firm's actual environmental performance, six candidate indicators were proposed, namely, three GHG emissions intensity measures: total GHG emissions intensity (TGI), scope 1 GHG emissions intensity (S1GI) and scope 2 GHG emissions intensity (S2GI). To add further depth to the analysis of a firm's environmental impact, three corresponding year-on-year change metrics were also included: year-on-year % changes in TGI (ΔTGI), year-on-year % changes in S1GI (ΔS1GI) and year-on-year % changes in S2GI (ΔS2GI).

To test the hypothesised relationship between actual environmental performance and ESG reporting quality, univariate logistic regression analyses were conducted for each of the six environmental performance indicators over the 2013-2018 period. The results of these analyses

yielded noteworthy findings for three of the emissions intensity measures. In particular, TGI and S2GI were statistically significant ($p < .05$) in four years (2013, 2015, 2016 and 2018), while S1GI showed significance only in 2013 ($p = 0.003$) (refer to Table 5.18). In the subsequent multivariate modelling, S1GI appeared in the 2013 model with a significant positive relationship ($\beta = 0.368$, $p < .05$), and TGI in the 2015 model ($\beta = 0.161$, not significant). Both coefficients' positive signs align with the hypothesised relationship that higher emissions intensity (poorer environmental performance) is associated with lower quality ESG reporting.

The year-on-year change metrics (ΔTGI, ΔS1GI, ΔS2GI) showed no statistical significance in either univariate or multivariate analyses. As a result, neither the absolute emissions intensity measures (TGI, S1GI and S2GI) nor their corresponding year-on-year changes were retained in the final model specification, which was based on the 2014 model results. Therefore, as shown in Table 5.24, the alternative hypothesis (H_{a2}) is not supported. While isolated years showed some evidence of the hypothesised relationship between actual environmental performance and reporting quality, the lack of consistent significance across the study period suggests this relationship is not a reliable predictor of corporate ESG reporting quality.

Table 5.24 Summary of hypothesis testing results: Corporate environmental performance

Hypothesis number	Description	Expected relationship with ESGRQ	Actual relationship with ESGRQ	Conclusion
H_{02}	No statistically significant relationship between South African companies' actual environmental performance and the quality of their corporate ESG reporting.	None	No consistent significant relationship	Fail to reject
H_{a2}	Statistically significant inverse relationship between South African companies' actual environmental performance and the quality of their corporate ESG reporting.	Inverse	No consistent significant relationship	**Not supported**

The absence of a consistent inverse relationship between environmental performance and ESG reporting quality indicates that legitimacy theory's predicted mechanisms may not operate as expected in the South African context. Specifically, this finding suggests that environmental

performance may not be the primary driver of the legitimacy concerns that shape corporate disclosure behaviour.

Two key explanations may account for this finding. First, South Africa's unique socio-economic context may redirect legitimacy pressures away from environmental performance towards more immediate social imperatives. Given the country's persistent challenges with unemployment, inequality and the ongoing imperative for economic transformation, stakeholder attention is likely concentrated on corporate contributions to job creation, black economic empowerment, community development and governance accountability. In this milieu, a company's carbon emissions intensity, while environmentally significant, may not generate the legitimacy threats that would typically influence reporting behaviour. Instead, companies may be responding to legitimacy pressures arising from their social and governance performance, making environmental performance a less salient factor in disclosure decisions.

Second, South Africa's resource-dependent economic architecture may have normalised high emissions intensity, thereby weakening its capacity to serve as a source of legitimacy risk. The economy's fundamental reliance on mining, heavy manufacturing and coal-based electricity generation creates an industrial context where elevated carbon emissions may be perceived as inherent operational characteristics rather than signs of performance deficiencies. Stakeholders including investors, regulators and communities may have calibrated their expectations to reflect the realities of resource extraction and processing industries. This normalisation effect may prevent high emissions intensity from triggering the legitimacy pressures that legitimacy theory predicts should influence corporate disclosure practices. Consequently, companies across the emissions spectrum may face similar legitimacy environments, explaining the absence of the theorised inverse relationship between environmental performance and reporting quality.

5.4.3 Social policy adoption disclosures and the quality of ESG reporting

The third hypothesis (H_{a3}) posits a statistically significant inverse relationship between South African firms' self-reported adoption of social policies and the quality of their corporate ESG reporting. Four social policy indicators were initially considered: social workforce score (SWS), community score (SCS), human rights score (SHRS) and product responsibility score (SPRD). Based on PCA results, SPRD was excluded from subsequent logistic regression

analyses. Univariate logistic regression screening showed that SWS and SHRS were robust predictors of low-quality ESG reporting across all six years of the in-sample period ($p < 0.001$), while SCS was significant in five out of six years (see Table 5.17 for the univariate results).

In the multivariate models developed using the in-sample period, SWS emerged as a significant predictor in the 2014 model specification ($\beta = 6.270$, $p < .05$), while SHRS was significant in the 2017 model ($\beta = 1.928$, $p < .05$). Given that the dependent variable represents low-quality ESG reporting, these positive coefficients indicate that higher self-reported social policy adoption among South African firms is associated with an increased likelihood of low-quality ESG reporting, supporting the alternative hypothesis H_{a3}.

This finding aligns with the theoretical framework presented in Section 3.4.1, which suggests that firms may treat social policy disclosures (many of which are mandatory in South Africa) as a perfunctory exercise to maintain favourable public perception rather than demonstrating genuine commitment to social responsibility. The observed relationship supports the concept of ceremonial conformance, where organisations formally adopt policies without substantive implementation, creating a disconnect between reported policies and actual ESG performance. Table 5.25 outlines the hypothesis testing results regarding the corporate adoption of social policies.

Table 5.25 Summary of hypothesis testing results: Corporate adoption of social policies

Hypothesis number	Description	Expected relationship with ESGRQ[1]	Actual relationship with ESGRQ[2]	Conclusion[3]
H_{03}	No statistically significant relationship between South African firms' self-reported adoption of social policies and the quality of their ESG reporting.	None	Inverse	Reject
H_{a3}	Statistically significant inverse relationship between South African firms' self-reported adoption of social policies and the quality of their ESG reporting.	Inverse	Inverse	**Support**

5.4.4 Corporate philanthropy disclosures and the quality of ESG reporting

As expressed in hypothesis H_{a4}, when corporate philanthropy is driven more by legitimacy-seeking motives rather than a genuine concern for social issues, it can lead to lower quality ESG reporting. The underlying rationale, as discussed in Section 3.4.2, is that companies may be inclined to report on their philanthropic activities to project a socially responsible image while misrepresenting the true impact of their business practices on the communities they claim to support. This can result in selective or biased disclosure (Michelon et al., 2015). Consequently, hypothesis H_{a4} proposed a statistically significant inverse relationship between South African firms' self-reported corporate philanthropy and the quality of their ESG reporting.

However, the empirical evidence in the South African context does not support the hypothesised inverse relationship between corporate philanthropy and ESG reporting quality. The donations to sales ratio (DSR), used as a measure of corporate philanthropy, did not achieve statistical significance in the univariate logistic regression analyses and did not appear in any of the multivariate models built over the 2013-2018 period. Thus, as summarised in Table 5.26, the null hypothesis for reported corporate philanthropy could not be rejected, indicating that the findings do not substantiate hypothesis H_{a4}.

Table 5.26 Summary of hypothesis testing results: Corporate philanthropy

Hypothesis number	Description	Expected relationship with ESGRQ	Actual relationship with ESGRQ	Conclusion
H_{04}	No statistically significant relationship between South African firms' self-reported corporate philanthropy and the quality of their ESG reporting.	None	No consistent significant relationship	Fail to reject
H_{a4}	Statistically significant inverse relationship between South African firms' self-reported corporate philanthropy and the quality of their ESG reporting.	Inverse	No consistent significant relationship	**Not supported**

A few factors may explain the absence of this expected relationship. Firstly, temporal dynamics may play a crucial role in confounding the theorised association. The strategic use of corporate philanthropy as a legitimacy tool to mask ESG deficiencies likely requires time to manifest in

measurable reporting quality differences. Companies may need several years to develop and implement these approaches, while stakeholders require time to respond to and validate these practices. The 2013-2019 study period may have been insufficient to capture these evolving strategic behaviours and their impact on ESG reporting practices.

Additionally, the South African context may present unique institutional factors that influence how corporate philanthropy relates to ESG reporting quality, potentially differing from patterns observed in other markets. Furthermore, the measurement approach of using a donations to sales ratio may not fully capture the nuanced ways companies may tactically deploy philanthropic activities to influence stakeholder perceptions. These findings suggest that future investigations might benefit from longitudinal data beyond 2019, as well as alternative metrics capable of capturing the strategic deployment of philanthropy within varied institutional contexts.

5.4.5 Sustainability-oriented governance policy adoption disclosures and the quality of corporate ESG reporting

Corporate governance mechanisms oriented towards sustainability concerns, which some organisations claim to implement through various policies, are intended to strengthen corporate oversight and accountability for ESG performance. Nevertheless, this study holds that many of these purported policies lack clear definitions and are difficult to monitor, allowing organisations significant discretion in how they present their engagement with these practices.

In Section 3.5.1 of this thesis, legitimacy theory is employed to suggest that firms perceived as underperforming in ESG domains may exploit this ambiguity to their advantage. When faced with intense stakeholder scrutiny and pressure to maintain legitimacy, these organisations may strategically use reporting on sustainability-oriented governance policies as a public display of conformity. In doing so, they signal compliance with the recommendations outlined in King IV, without necessarily reflecting genuine changes in their actual ESG practices. Hence, as stated in H_{a5}, this study hypothesises a statistically significant inverse relationship between South African firms' self-reported adoption of sustainability-oriented corporate governance policies and the quality of their corporate ESG reporting.

The governance CSR strategy score (GCSR) is used as an indicator to represent the reported adoption of sustainability-oriented corporate governance policies. When examined in isolation through univariate binary logistic regression, GCSR demonstrated a significant positive association with low ESG reporting quality across three years (2014, 2016 and 2017), providing initial support for the inverse relationship with ESG reporting quality hypothesised in H_{a5}. However, this support was not maintained when GCSR was not retained as a significant predictor in the multiple binary logistic regression models built from the in-sample period. Consequently, the study fails to reject the null hypothesis (H_{05}), finding no robust evidence that governance CSR strategy independently influences ESG reporting quality (see Table 5.27).

Table 5.27 Summary of hypothesis testing results: Corporate adoption of sustainability-oriented governance policies

Hypothesis number	Description	Expected relationship with ESGRQ	Actual relationship with ESGRQ	Conclusion
H_{05}	No statistically significant relationship between South African firms' self-reported adoption of sustainability-oriented corporate governance policies and the quality of their ESG reporting.	None	No consistent significant relationship	Fail to reject
H_{a5}	Statistically significant inverse relationship between South African firms' self-reported adoption of sustainability-oriented corporate governance policies and the quality of their ESG reporting.	Inverse	No consistent significant relationship	**Not supported**

The lack of an inverse relationship may reflect the relative novelty of sustainability-oriented governance policies within the South African corporate environment. These mechanisms represent recent institutional innovations that may not yet have achieved sufficient maturity to function as reliable legitimacy tools. During the study period, firms may have adopted such policies primarily to align with emerging governance trends, rather than to strategically manage stakeholder perceptions. Consequently, the lack of association observed in this study may suggest that these policies have not yet reached a level of institutionalisation capable of masking deficient ESG performance. Over time, as these mechanisms evolve and gain legitimacy within South Africa's governance landscape, they may acquire the strategic attributes necessary to fulfil the legitimacy functions anticipated by theory.

5.4.6 Board independence and the quality of corporate ESG reporting

This study investigates whether the appointment of independent directors on corporate boards serves as an effective oversight mechanism to enhance the quality of corporate ESG reporting and prevent its use as a mere public relations tool. As elaborated in Section 3.5.2, independent directors, by virtue of their autonomous monitoring role, are uniquely positioned to advocate for stakeholder interests and promote greater transparency and accountability in corporate ESG reporting practices.

This notion is further supported by prior research, which suggests that independent directors can scrutinise and bridge potential information gaps between management and stakeholders, thereby curbing opportunistic ESG reporting behaviour by management (Arif et al., 2021; Mangena & Pike, 2005; Pucheta-Martínez & De Fuentes, 2007). As a result, hypothesis H_{a6} postulated a statistically significant direct relationship between the proportion of independent directors on South African companies' boards and the quality of their ESG reporting.

The univariate logistic regression analysis results presented in Table 5.17 indicate that board independence (proxied by BID, which measures the percentage of independent board members as reported by the company) is statistically significant in 2016 ($p = 0.032$). Nonetheless, the subsequent multivariate analyses demonstrate that BID was not included in any of the final models estimated using the in-sample period. Therefore, the findings of this study do not support the alternative hypothesis (H_{a6}), as shown in Table 5.28.

Table 5.28 Summary of hypothesis testing results: Board independence

Hypothesis number	Description	Expected relationship with ESGRQ	Actual relationship with ESGRQ	Conclusion
H_{06}	No statistically significant relationship between the proportion of independent directors on South African companies' boards and the quality of their ESG reporting.	None	No consistent significant relationship	Fail to reject
H_{a6}	Statistically significant direct relationship between the proportion of independent directors on South African companies' boards and the quality of their ESG reporting.	Direct	No consistent significant relationship	**Not supported**

The non-significant relationship may stem from limitations in how independence is measured and operationalised. The study's proxy for board independence may not adequately capture whether directors genuinely exercise autonomous judgement within South Africa's corporate environment. While firms may formally satisfy independence criteria through adherence to governance codes or listing requirements, the corporate ecosystem is often shaped by extensive professional networks and longstanding relationships among business leaders. These connections can create informal dependencies that neutralise the theoretical monitoring benefits of independence.

This concern aligns with Johnson et al. (2013), who acknowledge that directors inevitably develop professional relationships that influence boardroom dynamics. In such contexts, the practical distinction between independent and non-independent directors may become blurred, offering a plausible explanation for the absence of differential impact on ESG reporting quality. Future research could explore more nuanced monitoring mechanisms such as specialised ESG committees and independent external assurance arrangements, to better identify the drivers of ESG reporting quality within emerging market contexts.

5.4.7 Board skill diversity and the quality of corporate ESG reporting

Section 3.5.3 of the study identifies board skill diversity as another potential monitoring mechanism, in addition to board independence and gender diversity, that can enhance the quality of reported ESG data. This idea builds upon the work of Cucari et al. (2018), Helfaya and Moussa (2017) and Reverte (2009), who find that directors with diverse skills and experiences are more attuned to the information needs and expectations of various stakeholder groups. As a result, these directors' multifaceted expertise enables them to develop and implement appropriate disclosure practices that effectively meet stakeholder needs. With their comprehensive oversight, they facilitate the disclosure of relevant and material ESG information, better satisfying stakeholders' demands for transparency and accountability.

In line with this perspective, the study put forward hypothesis H_{a7}, which expects a statistically significant direct relationship between the degree of board skill diversity in South African firms and the quality of their ESG reporting. The results of the univariate logistic regression analyses in Table 5.17 show that board skills (BSK), a measure of the percentage of board members

with either industry-specific or strong financial backgrounds, was statistically significant (at $p < .05$) in the years 2013 and 2014, lending some credence to the alternative hypothesis.

Interestingly, BSK also retained inclusion in the final 2013 and 2014 multivariate models, enhancing each model's overall fit and predictive power (see Table 5.18). However, in both cases, it fell short of reaching conventional levels of statistical significance, with p-values of 0.192 in 2013 and 0.513 in 2014. The models yielded negative coefficients for BSK, with values of -2.950 in 2013 and -0.863 in 2014, which aligns with the hypothesised direction of the relationship with corporate ESG reporting quality. Given that the logistic regression models calculate the association between BSK and the binary dependent variable of low ESG reporting quality, these negative coefficients suggest that companies with greater board skill diversity may have lower odds of issuing low-quality ESG reports.

However, despite the consistent direction of these relationships and the initial univariate findings, the lack of statistical significance in the multivariate models necessitates a failure to reject the null hypothesis. The empirical evidence does not support the expectation of a statistically significant relationship between board skill diversity and ESG reporting quality, as summarised in Table 5.29.

Table 5.29 Summary of hypothesis testing results: Board skill diversity

Hypothesis number	Description	Expected relationship with ESGRQ	Actual relationship with ESGRQ	Conclusion
H_{07}	No statistically significant relationship between the degree of board skill diversity in South African firms and the quality of their ESG reporting.	None	No consistent significant relationship	Fail to reject
H_{a7}	Statistically significant direct relationship between the degree of board skill diversity in South African firms and the quality of their ESG reporting.	Direct	No consistent significant relationship	**Not supported**

The absence of consistent statistical significance in the multivariate models may be attributed to a few methodological considerations. The sample size may have been insufficient to detect smaller effect sizes that could still be practically meaningful for corporate ESG disclosure practices. Furthermore, as ESG reporting continues to evolve rapidly, the competencies most influential in improving reporting quality may diverge from those traditionally emphasised in

board composition. In particular, effective ESG disclosure increasingly requires specialised expertise in sustainability science, stakeholder engagement, regulatory compliance and non-financial risk assessment, expertise that may be scarce amongst directors in the South African market. This scarcity of ESG-specific competencies may have limited the study's ability to detect meaningful relationships between board composition and reporting outcomes.

5.4.8 Board gender diversity and the quality of corporate ESG reporting

Extending the findings of a growing body of research (see, for example, Bravo & Reguera-Alvarado, 2019, Cooray et al., 2020 and Wasiuzzaman & Wan Mohammad, 2020), this study hypothesises a statistically significant direct relationship between the level of board gender diversity in South African firms and the quality of their ESG reporting, articulated under the alternative hypothesis, H_{a8}.

As discussed in Section 3.5.4, research has demonstrated that female directors exhibit several desirable interpersonal and leadership traits, such as ethical discernment (Borkowski & Ugras, 1998), stakeholder-centric orientation (Adams, 2015), risk intelligence (Lane, 1995) and relational acumen (Eagly & Wood, 2016), which contribute to elevated corporate governance and ESG performance. As a result, this study postulates that these attributes may predispose female directors to champion more relevant and transparent ESG reporting practices.

Nonetheless, the empirical evidence in the South African setting does not corroborate the hypothesised inverse relationship between board gender diversity and ESG reporting quality. The gender diversity (GDIV) indicator, used to gauge the percentage of female directors on the board, did not achieve statistical significance in the univariate logistic regression analyses and was not retained in any of the final multivariate models due to lack of statistical significance over the 2013-2018 period. Thus, as summarised in Table 5.30, the null hypothesis for board gender diversity could not be rejected, indicating that the findings do not substantiate hypothesis H_{a8}.

Table 5.30 Summary of hypothesis testing results: Board gender diversity

Hypothesis number	Description	Expected relationship with ESGRQ	Actual relationship with ESGRQ	Conclusion
H_{08}	No statistically significant relationship between board gender diversity in South African firms and the quality of their ESG reporting.	None	No consistent significant relationship	Fail to reject
H_{a8}	Statistically significant direct relationship between board gender diversity in South African firms and the quality of their ESG reporting.	Direct	No consistent significant relationship	**Not supported**

This finding aligns with prior research documenting non-significant relationships between board gender diversity and ESG reporting quality (e.g., Amran et al., 2014; Giannarakis, Konteos & Sariannidis, 2014; Khan, 2010; and Prado-Lorenzo & García-Sánchez, 2010). The lack of statistical significance likely reflects the structural constraints facing female directors in the South African corporate environment, where gender parity on JSE-listed company boards remains limited (Dludla, 2023). Within the present study's sample, female representation on boards averaged only 22-23% between 2013 and 2018, rising to 32% in 2019. While this upward trajectory indicates progress, it appears insufficient to reach the critical mass necessary for female directors to collectively influence ESG reporting quality in a meaningful way, suggesting that structural barriers may inhibit their capacity to drive substantive disclosure improvements.

5.5 Summary of key research findings

The primary research objective of this thesis was to contribute to the academic literature on evaluating the quality of corporate ESG reporting, by developing a model to measure the relevance and representational faithfulness of the ESG disclosures of South African listed companies. The final model incorporates three key variables: reported environmental policy adoption, social policy adoption and board skills diversity.

While previous studies including those by Wan et al. (2023) and Wang, Zhou and Wang (2020), identify a positive association between board skills diversity and ESG reporting quality, this relationship does not hold in the South African context, at least as captured by the variables and sample in this study. Instead, both environmental and social policy adoption reveal a

statistically significant inverse relationship with disclosure quality. In other words, firms that report having extensive environmental and social policies tend to produce lower quality ESG disclosures.

This seemingly counterintuitive outcome is consistent with prior research by Antonites and De Villiers (2003), Fig (2005), Rajak (2011) and Vos and Reddy (2014), thereby providing further empirical support for this observation. It appears that as companies expand their policy commitments across environmental domains (such as emissions reduction, waste management and transport impact) and social areas (including health and safety, employee development and diversity initiatives), the substantive quality of their ESG reporting tends to decline.

To meaningfully interpret these results, it is helpful to situate them within an integrated theoretical framework that combines stakeholder and legitimacy perspectives. Stakeholder theory, in particular, elucidates why various constituents demand policy information as a means of holding organisations accountable for environmental and social impacts (De Villiers & Van Staden, 2006; Sampong et al., 2018). This dynamic is especially pronounced within the South African context, where persistent socio-economic inequalities have created heightened expectations for corporate contributions to transformative development. In response, companies often adopt a broad array of ESG policies as a means of signalling engagement with stakeholder concerns (Babarinde, 2009).

However, while stakeholder theory explains the motivations behind expansive policy adoption, it does not fully account for the observed decline in reporting quality. Here, legitimacy theory offers a more nuanced explanation, suggesting that extensive corporate disclosures may serve symbolic rather than substantive purposes. Within this view, corporate self-reporting on environmental and social policy adoption often reflects ceremonial conformity, where organisations prioritise projecting an image of responsible corporate citizenship rather than providing detailed, high-quality reporting of their actual performance (Christmann & Taylor, 2006; O'Donovan, 2000).

Beyond theoretical considerations, several practical factors further illuminate this disconnect. In resource-constrained environments such as South Africa, firms may lack the financial and technical capacity required to translate comprehensive ESG commitments into high-quality disclosures. Moreover, weak regulatory enforcement enables superficial compliance, allowing

companies to appear aligned with stakeholder expectations while avoiding the opportunity to produce meaningful, high-quality reporting. Additionally, pressures to follow industry norms, where companies emulate sector peers to preserve competitive legitimacy, can lead to widespread policy adoption without sufficient internal alignment. The sheer complexity of managing diverse ESG domains can also overwhelm corporate reporting systems, leading to generic, checkbox-style reporting that fails to capture meaningful performance variations. These contributing forces (structural, strategic and systemic) likely interact in a mutually reinforcing manner, offering a multi-layered explanation for why high rates of ESG policy adoption do not necessarily translate into higher reporting quality.

This tension is starkly illustrated in the South African mining industry. Mining companies in South Africa navigate a complex and multifaceted social policy landscape, which encompasses both mandatory regulations, such as the Mining Charter and Mineral and Petroleum Resources Development Act (MPRDA) and voluntary initiatives, like BBBEE policies. Compliance with these policies is often a prerequisite for securing government contracts, obtaining mining rights and ultimately acquiring or maintaining a social license to operate in South Africa (Corrigan, 2019).

Despite this comprehensive regulatory framework, the reality on the ground tells a different story. Horne's (2017) critical analysis finds that many of these policies are poorly implemented, with companies adopting a compliance-based "box-ticking" approach that favours meeting legal requirements over making substantive efforts to address the country's persistent socioeconomic disparities. This problematic situation is further aggravated by inadequate monitoring systems and weak governmental enforcement mechanisms. Consequently, many mining companies may achieve high social policy adoption rates on paper, but they do so primarily to satisfy legal requirements for their own self-preservation, rather than to create meaningful value and benefits for society.

This gap separating policy commitments from actual practice extends across multiple South African industries and policy domains. The case of Sasol, a major South African energy and chemical company, offers a striking example where corporate environmental pledges fall short of performance. Since 2021, Sasol has showcased an extensive suite of environmental policies, particularly around greenhouse gas (GHG) reduction, air pollution mitigation and renewable energy transition. The company frequently references its emission reduction roadmap, which

promises a 30% reduction in emissions by 2030 and net-zero emissions by 2050 (Sasol, 2023). Yet, despite these stated commitments, Sasol's emissions have actually increased over 2022 and 2023, with further increases projected for the 2025 financial year as the company plans to expand production (Crotty, 2024).

The cumulative evidence underscores a critical implication: broad corporate ESG policy adoption does not inherently yield high-quality disclosures. This insight carries practical significance for stakeholders across the spectrum. For corporations, it calls for introspective evaluation of current reporting practices and a shift from performative compliance to demonstrable accountability. Regulators, meanwhile, must confront systemic enforcement shortcomings that allow ceremonial adherence to persist. This calls for the development of robust monitoring frameworks that reward substantive content rather than volumetric policy declarations. Investors and ESG professionals should exercise discernment when encountering expansive policy portfolios, which may signal performative alignment rather than authentic engagement. Ultimately, refined evaluation tools are needed to distinguish between credible ESG efforts and symbolic gestures.

A final consideration relates to board skills diversity, whose lack of statistically significant impact warrants deeper scrutiny and signals opportunities for future inquiry. The non-significance may stem from sample size limitations, which can mask subtle but practical effects in nuanced organisational dynamics. Additionally, the study’s board skills diversity measure may not have captured the specific ESG-relevant competencies most critical within the South African context. Future research could investigate more granular indicators such as direct sustainability certifications, ESG consulting experience or legal expertise in environmental regulation. Alternatively, competencies linked to recent ESG training, active participation in sustainability initiatives, or demonstrated leadership could offer richer insights. Expanding the dataset and extending the temporal scope may also bolster statistical power, enabling researchers to better capture the evolving nature of ESG expertise in South Africa’s corporate governance landscape.

5.6 Chapter summary

This chapter analyses the hypothesised factors that may influence the quality of ESG reporting among South African listed companies, using a two-stage statistical approach.

In the first stage, Principal Component Analysis (PCA) was applied to the ESG dataset, reducing it to two principal components: one characterised by ESG policy disclosure variables and another by GHG emissions intensity measures. Moreover, PCA identified 12 potential determinants that met statistical criteria, and four additional indicators were included for theoretical importance, resulting in a total of 16 variables.

In the second stage, these 16 indicators were then tested as independent variables in binary logistic regression models to assess their association with ESG reporting quality (measured through relevance and representational faithfulness of disclosures). The final model was selected based on goodness-of-fit, predictive accuracy, out-of-sample validation performance and model parsimony. The optimal model retained three variables: environmental emissions score, social workforce score (both statistically significant) and board skills diversity (not statistically significant).

The composition of this optimal model determined which of the initially hypothesised relationships between ESG factors and reporting quality could be supported. Consequently, the study found a statistically significant inverse relationship between South African firms' self-reported adoption of environmental policies (measured by environmental emissions score) and the quality of their ESG reporting. Similarly, a statistically significant inverse relationship was found between firms' self-reported adoption of social policies (measured by social workforce score) and the quality of their ESG reporting.

The chapter interprets these inverse relationships through an integrated theoretical framework that combines stakeholder and legitimacy perspectives. From a stakeholder theory standpoint, South African companies face pressure to adopt comprehensive ESG policies to meet the demands of various constituencies, particularly in addressing historical inequalities and adhering to corporate governance guidelines like King IV. However, when viewed through the prism of legitimacy theory, these pressures often lead organisations to prioritise appearance over substance, resulting in corporate ESG reporting that often becomes a superficial

compliance exercise aimed at securing a social licence to operate, rather than genuinely meeting stakeholder information needs. This dual-theory paradigm offers insight into the study's counterintuitive finding: firms that report extensive environmental and social policies tend to produce lower-quality ESG disclosures. These dynamics are further exacerbated by practical constraints including resource limitations, weak regulatory enforcement and peer imitation that collectively reinforce superficial compliance behaviours. The interplay of these structural, strategic and systemic factors provides a multi-dimensional explanation for why policy expansion may fail to improve disclosure quality in practice.

While board skills diversity was retained in the final model, its lack of statistical significance meant its hypothesised direct relationship with the quality of firms' ESG reporting could not be supported. The absence of the remaining hypothesised disclosure factors (environmental performance, corporate philanthropy, sustainability governance policies, board independence and gender diversity) from the optimal model indicated no support for their proposed relationships with ESG reporting quality. This suggests that these factors may not be as influential in determining the quality of ESG reporting among South African listed companies as initially hypothesised. With the scope of influential factors now clearly delineated and interpreted, the following chapter builds on these empirical and theoretical insights to develop detailed conclusions and practical implications.

CHAPTER 6
Conclusions

6.1 Introduction

To address the challenge of fostering meaningful accountability in the corporate ESG reporting landscape, this study developed a model to measure the relevance and representational faithfulness of ESG disclosures by South African listed companies. Building upon the empirical results and theoretical analysis presented in Chapter 5, this chapter synthesises the study's final conclusions and broader implications.

The chapter progresses through several interconnected sections. Section 6.2 articulates the study's unique contribution to knowledge in both theoretical development and practical measurement of corporate ESG reporting quality. Next, Section 6.3 explores the implications of this research for policy formulation and professional practice, offering actionable insights for various stakeholders. Section 6.4 acknowledges the study's limitations, providing important context for the scope and generalisability of the findings. Informed by these limitations, Section 6.5 charts promising directions for future research. Finally, the chapter concludes with a summary in Section 6.6.

6.2 Contributions to ESG reporting literature and practice

This research advances the academic discourse on corporate ESG reporting quality through multiple distinctive contributions, encompassing theoretical development, methodological approaches, empirical outcomes and practical implications in the South African context.

The study augments existing literature by applying an integrated framework that synthesises stakeholder and legitimacy theoretical perspectives to explain corporate ESG reporting practices. This nuanced multi-theoretical approach yields two vital outcomes. First, it illuminates the dynamic tension between stakeholder demands and legitimacy-seeking behaviour in shaping ESG disclosure quality. Second, it establishes a robust theoretical foundation for identifying and validating ESG reporting indicators used to measure corporate ESG reporting quality amongst selected JSE-listed entities.

To operationalise this theoretical framework, the study employs numeric ESG indicators from the Refinitiv (2022) database, quantified as ratio variables on a continuous scale. This method enables meaningful cross-firm and cross-industry comparisons of reported ESG performance through normalised values.

Through principal component analysis (PCA), the study contributes novel insights by empirically demonstrating that ESG reporting quality among South African listed companies exhibits a distinct dimensional structure. The analysis identifies two principal components that explain significant variation in ESG reporting practices: reported ESG policy adoption and corporate environmental impact.

This finding extends the literature on ESG measurement, which has typically identified five or more dimensions (e.g. Drempetic et al., 2020; Li et al., 2018) or relied on numerous individual indicators (e.g. Sassen, Hinze & Hardeck, 2016; Xie, Nozawa, Yagi, Fujii & Managi, 2019). The identified dimensional structure documents new patterns in how corporate ESG reporting manifests in the South African context, where such dimensional analysis was previously underexplored.

Furthermore, this study takes a unique approach to evaluating firms' corporate ESG reporting quality by using ESG-related controversies as a binary dependent variable (categorised as either low or high). This method departs from several existing studies that traditionally focus on disclosure volume or basic content analysis to assess the credibility of the information in corporate ESG reports (see, for example, Lee & Yeo, 2016; Marcia et al., 2015; Zhou et al., 2019).

Drawing inspiration from the financial accounting literature, which has established external metrics for measuring financial reporting quality, such as shareholder class actions and earnings restatements, this study employs ESG-related controversies as an external metric and an alternative indicator for the dependent variable.

The research culminates in a quantitative model that evaluates the quality of corporate ESG disclosures. This model uses PCA-refined ESG ratio indicators as independent variables to predict the likelihood of ESG controversies, serving as a proxy for low ESG reporting quality.

This approach advances the field by moving beyond traditional content-based assessments to provide an empirically based assessment of reporting quality through the lens of actual ESG performance rather than disclosure characteristics alone.

The study's empirical value is further enhanced by its focus on South Africa, an important emerging market where ESG research remains comparatively scarce. This setting offers distinctive perspectives through its interconnected ESG challenges:

First, South Africa grapples with critical environmental issues, evidenced by high industrial emissions and environmental degradation which are perpetuated by major corporate actors like Eskom and Sasol (Polity, 2021). This landscape sheds light on how companies navigate and report on substantial environmental risks and impacts within a developing economy. Second, the country's complex societal structure reflects deeply entrenched inequality, a multifaceted problem shaped by various historical and contemporary factors (Leibbrandt & Pabón, 2021). These social tensions manifest in many ways such as labour disputes, community conflicts and corporate litigation, offering rich insights into the relationship between ESG reporting and corporate responsibility.

Finally, recent corporate governance failures in South Africa, including several high-profile cases of financial misrepresentation with significant market impacts, notably Steinhoff and Tongaat Hulett, underscore the necessity of examining ESG reporting practices in economies where institutional oversight mechanisms continue to mature. As a result, this particular terrain allows the research to contribute fresh perspectives to both the academic literature and practical understanding of ESG reporting in developing markets.

6.3 Policy and professional implications

This study finds that improving corporate ESG reporting quality and providing stakeholders with decision-useful information will require a fundamental paradigm shift in current practices. This shift would necessitate systemic changes across external regulatory frameworks, professional practices and internal corporate processes, which have not yet been effectively implemented.

From a regulatory standpoint, while South Africa has a robust policy framework, particularly concerning environmental and social governance initiatives, this research identifies critical implementation challenges that require urgent attention from both corporate entities and government institutions. Despite the country's well-structured regulatory architecture, the system suffers from inadequate enforcement mechanisms and insufficient monitoring protocols, creating a substantial gap between policy adoption and practical application.

These implementation shortfalls are evident across multiple policy areas where regulatory design weaknesses undermine intended outcomes. For instance, the government's current approach to addressing greenhouse gas (GHG) emissions under the Carbon Tax Act (No. 15 of 2019) may require substantial revision to drive meaningful change (KPMG, 2023). As of 2024, the carbon tax rate stands at R159 (South African rands) per tonne of CO_2 equivalent. Nonetheless, companies can currently claim up to 95% in tax-free allowances, effectively reducing the tax rate to between R8 and R64 per tonne. This system of extensive allowances weakens the law's potential to reduce emissions, exemplifying broader challenges in regulatory enforcement. Such regulatory design flaws demonstrate how well-intentioned policies can fail to achieve their objectives when implementation mechanisms are inadequately structured. To overcome these regulatory shortcomings, policymakers should consider strengthening enforcement protocols and reducing carbon tax allowances.

While policy reforms and stronger implementation measures are crucial in addressing these regulatory weaknesses, parallel improvements in professional practices are equally important. As ESG factors become more integrated into traditional corporate governance roles, there is an opportunity for professionals to refine best practices and reimagine how the quality of corporate ESG reporting is measured. To do this, external auditors can develop more robust tools, metrics and benchmarks for assessing ESG reporting quality that go beyond mere policy compliance checks. Thorough ESG assurance methods and verification processes are essential for improving the reliability of corporate ESG disclosures and helping stakeholders make informed decisions.

These professional practices must be complemented by strong internal governance structures. For ESG governance to be more effective, board committees need the right expertise and skills, especially when performing their audit and social and ethics functions. Such expertise may better support comprehensive oversight of both reporting assurance and corporate ESG

practices. Academic institutions also have an important role to play by offering specialised programmes that prepare graduates for ESG monitoring positions. These programmes should train students in managing corporate ESG initiatives and evaluating their real environmental and social impact.

Even so, building expertise and capacity alone cannot succeed without genuine corporate commitment to ESG practices. The study's findings, which reveal a concerning pattern of symbolic rather than substantive ESG disclosure, should prompt companies to critically reflect on the real motives behind their own reporting practices. As stakeholders scrutinise ESG policy claims more closely and demand concrete evidence of implementation, companies must demonstrate a sincere commitment to their reported ESG efforts. Without this authentic commitment and follow-through, organisations will continue to fall short of achieving meaningful ESG impact.

In summation, augmenting the quality of corporate ESG reporting requires a multi-faceted approach involving regulatory bodies, professional practices and internal corporate processes. Bolstering enforcement mechanisms, developing robust ESG reporting assurance methods, improving board expertise and fostering genuine commitment from companies are key steps. These efforts may help South African firms drive meaningful change and meet the growing expectations of stakeholders regarding ESG performance, transparency and accountability.

6.4 Research limitations

While this study provides valuable insights into corporate ESG reporting practices, it is important to acknowledge its limitations. The findings are based on data from South African listed companies subject to JSE listing requirements, which prescribe the adoption of the King IV Code's principles-based 'apply and explain' approach to integrated reporting. Although this context provides a substantial dataset for analysis, the results may not be directly generalisable to other jurisdictions with different reporting frameworks, market characteristics and business environments.

Another limitation is that the operational applicability of the corporate ESG reporting quality model developed in this study may be constrained when companies lack one or more of the specified model variables. Additionally, although the model demonstrated robust performance

during the in-sample period (2013-2018) and validation phase (2019), its predictive accuracy for subsequent years remains uncertain, particularly given the evolving nature of ESG reporting standards and practices.

A key methodological decision in this study was the binary classification of ESG reporting quality. The definition of low-quality reporting based on the presence of corporate ESG controversies provides a clear, objective measure grounded in observable events. While this approach offers strong empirical validity and reliability, like any binary classification system, it necessarily simplifies the complex nature of reporting quality. As discussed in Section 4.10, companies with isolated incidents are classified alongside those with multiple controversies, though their underlying reporting practices may differ substantially.

Furthermore, since the controversy-based classification system relies on documented ESG incidents as indicators of reporting quality, companies with suboptimal reporting practices may not be captured if these have not manifested in controversies. This may lead to an underestimation of low-quality reporting within the sample.

In conclusion, these constraints provide important context for interpreting the study's findings, while also shaping promising directions for future research. These research opportunities are explored in detail in the following section.

6.5 Avenues for further research

This study identifies several significant avenues for further research in ESG reporting quality, based on both its empirical findings and methodological limitations. These future research directions cover theoretical foundations, methodological approaches and practical applications, each offering substantial potential to enrich the field.

While this study's theoretical framework, grounded in stakeholder-legitimacy theories, effectively supported the investigation of corporate ESG reporting quality, future research could employ complementary theoretical lenses to provide additional perspectives. For instance, agency theory could offer supplementary insights into how information imbalances between organisations and stakeholders influence the quality and completeness of ESG disclosures provided to different stakeholder groups (Akerlof, 1970; Jensen, 2001).

Similarly, signalling theory could further illuminate how organisations may either enhance their ESG reporting quality to signal superior performance or engage in selective disclosure to manage stakeholder perceptions (Spence, 1973). This theoretical synthesis would extend the stakeholder-legitimacy foundation established in this study, providing nuanced insights into the factors affecting corporate ESG reporting quality and potentially shedding light on more organisational disclosure strategies.

Another area for prospective research relates to the measurement of ESG reporting quality itself. Given the previously discussed limitations of using a binary controversy measure for ESG reporting quality (see Section 4.10), future studies could refine this measurement approach. For example, researchers could develop a weighted controversy scoring system that considers the severity and nature of ESG incidents and examine whether different types of controversies (environmental, social or governance) have varying implications for reporting quality.

Additionally, studies could investigate whether considering controversy frequency over multiple years, along with company responses and remediation efforts, provides a more nuanced and reliable indicator of reporting quality. Beyond controversies, further research could explore alternative external metrics to measure corporate ESG reporting quality, reducing reliance on traditional content-based assessments.

A number of empirical relationships warrant further examination. In particular, board skills diversity did not exhibit a statistically significant association with ESG reporting quality, contrary to theoretical expectations drawn from Eccles and Klimenko (2019), Cucari et al. (2018), Helfaya and Moussa (2017) and Reverte (2009). Although the coefficient was negative, this provides no reliable evidence of a relationship given the lack of statistical significance. This warrants further investigation. Future research could consider whether methodological choices, contextual nuances or limitations in statistical power account for the divergence from established theoretical predictions.

Moreover, a notable finding from the PCA conducted in this study was the identification of corporate environmental impact as a significant driver of variation in South African ESG reporting practices. This, combined with the varying materiality of environmental impacts across industries, underscores the importance of industry-focused research. Such research

should aim to identify and validate ESG metrics tailored to each sector, more accurately reflecting sector-specific conditions.

For example, GHG emissions intensity indicators may be prioritised for manufacturing firms, while water usage could be emphasised for agricultural companies. Similarly, workforce safety indicators could be more relevant for mining companies, whereas data privacy metrics might be crucial for technology firms. By recognising that different indicators carry varying levels of relevance across sectors, this approach may strengthen the precision of ESG measurement, leading to more meaningful cross-industry comparisons and assessments.

Furthermore, prospective research could analyse the interplay between the quality of corporate ESG reporting and financial reporting. In this setting, studies could, for instance, investigate whether organisations with superior ESG reporting quality also exhibit high-quality financial reporting practices. This research direction is particularly relevant as organisations develop integrated reporting systems and stakeholders increasingly demand reliable information across both financial and non-financial domains. Understanding the consistency of reporting quality across these domains could provide valuable insights into organisational reporting capabilities and the effectiveness of corporate governance mechanisms.

Finally, the South African context of this study offers valuable opportunities for broader comparative research across emerging markets. Future studies could evaluate how varying regulatory environments and institutional frameworks shape corporate ESG reporting practices. Such cross-market validation and comparative analysis could reveal whether the drivers of ESG reporting quality differ between emerging and developed markets, considering the unique sustainability landscapes and regulatory maturity levels of different jurisdictions.

6.6 Chapter summary and conclusion

This research makes a significant contribution to the corporate ESG reporting literature by developing a model to measure the relevance and representational faithfulness of ESG disclosures among South African listed companies. Using ESG data from 2013 to 2018 and validating the model against 2019 data, the study reveals a statistically significant inverse relationship between firms' self-reported adoption of environmental and social policies and the quality of their ESG reporting. Specifically, companies with higher levels of self-reported environmental and social policy adoption demonstrate lower ESG reporting quality, as measured by their higher incidence of ESG controversies. This finding indicates a critical disconnect between declared ESG policy commitments and the authenticity of disclosure practices. Rather than reflecting substantive stakeholder engagement, many corporate ESG disclosures appear to serve a symbolic function, raising concerns about the efficacy of current regulatory frameworks and voluntary reporting initiatives in fostering meaningful corporate transparency.

The study offers a theoretical contribution by integrating stakeholder and legitimacy theory perspectives to explain the underlying dynamics driving the observed gap in corporate reporting practices. This combined approach demonstrates that companies may prioritise legitimacy management at the expense of fulfilling substantive stakeholder information needs, thereby compromising the integrity of ESG disclosures. On the methodological front, the research advances the field by using this theoretical lens to identify specific indicators for assessing ESG reporting quality and validating these against real-world ESG controversies. This strengthens the reliability of evaluation methods and provides a scalable model adaptable to diverse reporting contexts.

These findings have important implications for practitioners and policymakers in the South African corporate landscape. The disparity between policy declarations and reporting practices challenges the credibility of ESG reporting as a reliable mechanism for promoting responsible corporate conduct. This underscores the need for systemic reform, including more robust regulatory enforcement, improved assurance methods, elevated ESG competencies among board members and a cultural shift toward authentic and transparent ESG reporting. By addressing these shortcomings, ESG reporting in South Africa may evolve into a more effective instrument for driving ethical, sustainable and accountable corporate behaviour.

References

Abbott, W. F., & Monsen, R. J. (1979). On the measurement of corporate social responsibility: Self-reported disclosures as a method of measuring corporate social involvement. *Academy of Management Journal*, *22*(3), 501–515.

Ackers, B., & Eccles, N. S. (2015). Mandatory corporate social responsibility assurance practices: The case of King III in South Africa. *Accounting, Auditing and Accountability Journal*, *28*(4), 515–550.

Ackert, L. F., Khayati, A., & Tompkins, J. G. (2023). *Characteristics of a rubber stamp board: The curious case of Enron*. [Working Paper]. Kennesaw State University: Coles College of Business. Retrieved from https://www.kennesaw.edu/coles/research/docs/spring-2024/spring-2024-02.pdf (Accessed: 5 June 2025).

Adams, R. B. (2015). Myths and facts about female directors. *IFC Private Sector Opinion*, (37), 1–16.

Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, *94*(2), 291–309.

Aerts, W., & Cormier, D. (2009). Media legitimacy and corporate environmental communication. *Accounting, Organizations and Society*, *34*(1), 1–27.

Akerlof, G. A. (1970). The market for "lemons": Quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, *84*(3), 488–500.

Alexander, P. (2013). Marikana, turning point in South African history. *Review of African Political Economy*, *40*(138), 605–619.

Allison, P. (2013). *What's the best R-squared for logistic regression?*. Retrieved from https://statisticalhorizons.com/r2logistic/ (Accessed: 3 May 2023).

Allison, P. (2014). *Measures of fit for logistic regression.* Retrieved from https://support.sas.com/resources/papers/proceedings14/1485-2014.pdf (Accessed: 24 February 2024).

Alves, A. F., & Branco, M. C. (2020). Lonmin CSR reporting practices and the Marikana massacre. *Journal of Sustainability Research*, *4*(3),1–24.

Amel-Zadeh, A., & Serafeim, G. (2018). Why and how investors use ESG information: Evidence from a global survey. *Financial Analysts Journal*, *74*(3), 87–103.

Amran, A., Lee, S. P., & Devi, S. S. (2014). The influence of governance structure and strategic corporate social responsibility toward sustainability reporting quality. *Business Strategy and the Environment*, *23*(4), 217–235.

Andreasson, S. (2011). Understanding corporate governance reform in South Africa: Anglo-American divergence, the King reports, and hybridization. *Business and Society*, *50*(4), 647–673.

Antonites, E., & De Villiers, C. J. (2003). Trends in South African corporate environmental reporting: A research note. *Meditari Accountancy Research*, *11*(1), 1–10.

Antwi, S. K., & Hamza, K. (2015). Qualitative and quantitative research paradigms in business research: A philosophical reflection. *European Journal of Business and Management*, *7*(3), 217–225.

Aouadi, A., & Marsat, S. (2018). Do ESG controversies matter for firm value? Evidence from international data. *Journal of Business Ethics*, *151*, 1027–1047.

Archel, P., Fernández, M., & Larrinaga, C. (2008). The organizational and operational boundaries of triple bottom line reporting: A survey. *Environmental Management*, *41*, 106–117.

Arfken, D. E., Bellar, S. L., & Helms, M. M. (2004). The ultimate glass ceiling revisited: The presence of women on corporate boards. *Journal of Business Ethics*, *50*, 177–186.

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.

Arya, B., & Bassi, B. (2011). Corporate social responsibility and Broad-Based Black Economic Empowerment legislation in South Africa: Codes of good practice. *Business and Society*, *50*(4), 674–695.

Ashforth, B. E., & Gibbs, B. W. (1990). The double-edge of organizational legitimation. *Organization Science*, *1*(2), 177–194.

Atkins, J., & Maroun, W. (2015). Integrated reporting in South Africa in 2012: Perspectives from South African institutional investors. *Meditari Accountancy Research*, *23*(2), 197–221.

Aureli, S., Gigli, S., Medei, R., & Supino, E. (2020). The value relevance of environmental, social, and governance disclosure: Evidence from Dow Jones sustainability world index listed companies. *Corporate Social Responsibility and Environmental Management*, *27*(1), 43–52.

Babarinde, O. A. (2009). Bridging the economic divide in the Republic of South Africa: A corporate social responsibility perspective. *Thunderbird International Business Review*, *51*(4), 355–368.

Bailey, M., Glaeser, S., Omartian, J. D., & Raghunandan, A. (2022). *Misreporting of mandatory ESG disclosures: Evidence from gender pay gap information*. Social Science Research Network. Retrieved from file:///C:/Users/letho/Downloads/ssrn-4192257.pdf (Accessed: 19 June 2023).

Barth, M. E., Cahan, S. F., Chen, L., & Venter, E. R. (2017). The economic consequences associated with integrated report quality: Capital market and real effects. *Accounting, Organizations and Society*, *62*, 43–64.

Bartlett, M. S. (1950). Tests of significance in factor analysis. *British Journal of Psychology*, *3*, 77–85.

Bear, S., Rahman, N., & Post, C. (2010). The impact of board diversity and gender composition on corporate social responsibility and firm reputation. *Journal of Business Ethics*, *97*, 207–221.

Bebbington, J., Larrinaga, C., & Moneva, J. M. (2008). Corporate social reporting and reputation risk management. *Accounting, Auditing and Accountability Journal, 21*(3), 337–361.

Beelitz, A., & Merkl-Davies, D. M. (2012). Using discourse to restore organisational legitimacy: 'CEO-speak' after an incident in a German nuclear power plant. *Journal of Business Ethics*, *108*, 101–120.

Bellucci, M., Acuti, D., Simoni, L., & Manetti, G. (2021). Restoring an eroded legitimacy: The adaptation of nonfinancial disclosure after a scandal and the risk of hypocrisy. *Accounting, Auditing and Accountability Journal*, *34*(9), 195–217.

Ben-Amar, W., Chang, M., & McIlkenny, P. (2017). Board gender diversity and corporate response to sustainability initiatives: Evidence from the carbon disclosure project. *Journal of Business Ethics*, *142*(2), 369–383.

Beneish, M. D. (1999). The detection of earnings management. *Financial Analysts Journal*, *5*(5), 24–36.

Benoit, W. L. (1995). *Accounts, excuses, and apologies: A theory of image restoration strategies*. New York: State University of New York Press.

Benoit, W. L. (1997). Image repair discourse and crisis communication. *Public Relations Review*, *23*(2), 177–186.

Beretta, S., & Bozzolan, S. (2008). Quality versus quantity: The case of forward-looking disclosure. *Journal of Accounting, Auditing and Finance*, *23*(3), 333–376.

Bernardi, C., & Stark, A. W. (2018). Environmental, social and governance disclosure, integrated reporting, and the accuracy of analyst forecasts. *The British Accounting Review*, *50*(1), 16–31.

Berrone, P., Gelabert, L., & Fosfuri, A. (2009). *The impact of symbolic and substantive actions on environmental legitimacy*. [Working Paper No. 778]. University of Navarra: IESE Business School. Retrieved from file:///C:/Users/letho/Downloads/ssrn-1349063%20(1).pdf (Accessed: 5 September 2021).

Blankley, A. I., Hurtt, D. N., & MacGregor, J. E. (2012). Abnormal audit fees and restatements. *Auditing: A Journal of Practice and Theory*, *31*(1), 79–96.

Boiral, O. (2013). Sustainability reports as simulacra? A counter-account of A and A+ GRI reports. *Accounting, Auditing and Accountability Journal*, *26*(7), 1036–1071.

Borkowski, S. C., & Ugras, Y. J. (1998). Business students and ethics: A meta-analysis. *Journal of Business Ethics*, *17*, 1117–1127.

Boxenbaum, E., & Jonsson, S. (2008). *Isomorphism, diffusion and decoupling*. London: Sage Publications.

Brammer, S., & Pavelin, S. (2008). Factors influencing the quality of corporate environmental disclosure. *Business Strategy and the Environment*, *17*(2), 120–136.

Brand South Africa. (2011). *SA leads way in integrated reporting*. Retrieved from https://www.brandsouthafrica.com/investments-immigration/business/king-260111 (Accessed: 8 July 2020).

Bravo, F., & Reguera-Alvarado, N. (2019). Sustainable development disclosure: Environmental, social, and governance reporting and gender diversity in the audit committee. *Business Strategy and the Environment*, *28*(2), 418–429.

Brennan, N. M., & Solomon, J. (2008). Corporate governance, accountability and mechanisms of accountability: An overview. *Accounting, Auditing and Accountability Journal*, *21*(7), 885–906.

Bromley, P., & Powell, W. W. (2012). From smoke and mirrors to walking the talk: Decoupling in the contemporary world. *Academy of Management Annals*, *6*(1), 483–530.

Brown, N., & Deegan, C. (1998). The public disclosure of environmental performance information: A dual test of media agenda setting theory and legitimacy theory. *Accounting and Business Research*, *29*(1), 21–41.

Buitendag, N., Fortuin, G. S., & De Laan, A. (2017). Firm characteristics and excellence in integrated reporting. *South African Journal of Economic and Management Sciences*, *20*(1), 1–8.

Busacca, M. (2013). *Corporate social responsibility in South Africa's mining industry: Redressing the legacy of apartheid* [CMC senior theses]. Claremont McKenna College. Retrieved from https://scholarship.claremont.edu/cgi/viewcontent.cgi?article=1631&context=cmc_theses (Accessed: 2 January 2024).

Busch, T., Johnson, M., & Pioch, T. (2022). Corporate carbon performance data: Quo vadis?. *Journal of Industrial Ecology*, *26*(1), 350–363.

Bussin, M. (2018). Chief executive officer compensation sensitivity in the South African mining industry. *Acta Commercii*, *18*(1), 1–13.

Campbell, D., Craven, B., & Shrives, P. (2003). Voluntary social reporting in three FTSE sectors: A comment on perception and legitimacy. *Accounting, Auditing and Accountability Journal*, *16*(4), 558–581.

Carels, C., Maroun, W., & Padia, N. (2013). Integrated reporting in the South African mining sector. *Corporate Ownership and Control*, *11*(1), 991–1005.

Carroll, A. B. (1991). Corporate social performance measurement: A commentary on methods for evaluating an elusive construct. *Corporate Social Performance and Policy*, *12*(42), 385–401.

Carson, T. L. (2003). Self–interest and business ethics: Some lessons of the recent corporate scandals. *Journal of Business Ethics*, *43*(4), 389–394.

Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *Financial Review*, *38*(1), 33–53.

CDP. (2021). *Who we are*. Retrieved from https://www.cdp.net/en/info/about-us (Accessed: 16 October 2021).

Centre for Environmental Rights. (2020). *More tough questions for climate rogue Sasol at its AGM on Friday*. Retrieved from https://cer.org.za/news/more-tough-questions-for-climate-rogue-sasol-at-its-agm-on-friday (Accessed: 5 May 2022).

Centre for Environmental Rights. (2021). *Carbon criminal Sasol shows no real signs of reforming dirty operations*. Retrieved from https://cer.org.za/news/carbon-criminal-sasol-shows-no-real-signs-of-reforming-dirty-operations (Accessed: 5 September 2024).

Cerbone, D., & Maroun, W. (2020). Materiality in an integrated reporting setting: Insights using an institutional logics framework. *The British Accounting Review*, *52*(3), 1–18.

CFA Institute. (2015). *Environmental, social, and governance issues in investing: A guide for investment professionals.* Charlottesville: CFA Institute.

Chaka, M. (2018). Sustainability reporting in South Africa: A descriptive and comparative analysis. *Journal of Gender, Information and Development in Africa*, *7*(2), 159–184.

Chapman, R., & Milne, M. J. (2004). The triple bottom line: How New Zealand companies measure up. *Corporate Environmental Strategy: International Journal for Sustainable Business, 11*(2), 37–50.

Chang, X. (2024). Vining in the blind: The perils of survivorship bias. *Advances in Economics, Management and Political Sciences, 72*, 47–51.

Chatterjee, S., & Simonoff, J. S. (2013). *Handbook of regression analysis*. New York: John Wiley & Sons.

Chen, J. C., Patten, D. M., & Roberts, R. W. (2008). Corporate charitable contributions: A corporate social performance or legitimacy strategy?. *Journal of Business Ethics, 82*, 131–144.

Chen, J. C., & Roberts, R. W. (2010). Toward a more coherent understanding of the organization–society relationship: A theoretical consideration for social and environmental accounting research. *Journal of Business Ethics, 97*, 651–665.

Chicco, D., & Jurman, G. (2020). The advantages of the Matthews correlation coefficient (MCC) over F1 score and accuracy in binary classification evaluation. *BMC Genomics*, *21*(1), 1–13.

Cho, C. H., & Patten, D. M. (2007). The role of environmental disclosures as tools of legitimacy: A research note. *Accounting, Organizations and Society*, *32*, 639–647.

Cho, C. H., Freedman, M., & Patten, D. M. (2012). Corporate disclosure of environmental capital expenditures: A test of alternative theories. *Accounting, Auditing and Accountability Journal*, *25*(3),486–507.

Cho, C. H., Laine, M., Roberts, R. W., & Rodrigue, M. (2015). Organized hypocrisy, organizational façades, and sustainability reporting. *Accounting, Organizations and Society*, *40*, 78–94.

Choi, B., & Luo, L. (2021). Does the market value greenhouse gas emissions? Evidence from multi-country firm data. *The British Accounting Review, 53*, 1–24.

Chopra, S. S., Senadheera, S. S., Dissanayake, P. D., Withana, P. A., Chib, R., Rhee, J. H., & Ok, Y. S. (2024). Navigating the challenges of environmental, social, and governance (ESG) reporting: The path to broader sustainable development. *Sustainability*, *16*(606), 1–14.

Chouaibi, S., Chouaibi, Y., & Zouari, G. (2021). Board characteristics and integrated reporting quality: Evidence from ESG European companies. *EuroMed Journal of Business*, *17*(4), 425–447.

Christensen, H. B., Hail, L., & Leuz, C. (2021). Mandatory CSR and sustainability reporting: Economic analysis and literature review. *Review of Accounting Studies*, *26*(3), 1176–1248.

Christensen, L. T., Morsing, M., & Thyssen, O. (2013). CSR as aspirational talk. *Organization*, *20*(3), 372–393.

Christmann, P., & Taylor, G. (2006). Firm self-regulation through international certifiable standards: Determinants of symbolic versus substantive implementation. *Journal of International Business Studies*, *37*, 863–878.

Clark, G. L., & Hebb, T. (2005). *Why do they care? The market for corporate global responsibility and the role of institutional investors*. Retrieved from http://staging.community-wealth.org/sites/clone.community-wealth.org/files/downloads/paper-clark.pdf (Accessed: 4 August 2022).

Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society*, *33*(4-5), 303–327.

Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2011). Does it really pay to be green? Determinants and consequences of proactive environmental strategies. *Journal of Accounting and Public Policy*, *30*(2), 122–144.

Clayton, A. F., Rogerson, J. M., & Rampedi, I. (2015). Integrated reporting vs. sustainability reporting for corporate responsibility in South Africa. *Bulletin of Geography (Socio-Economic Series)*, *29*, 7–17.

Climate Council. (2023). *What does net zero emissions mean?*. Retrieved from https://www.climatecouncil.org.au/resources/what-does-net-zero-emissions-mean/ (Accessed: 23 October 2024).

Collevecchio, F., Temperini, V., Barba-Sanchez, V., & Meseguer-Martinez, A. (2025). Sustainable governance: Board sustainability experience and the interplay with board age for firm sustainability. *Journal of Business Ethics*, *197*(2), 371–389.

Companies Regulations. (2011). *Companies Regulations, 2011*. Retrieved from https://www.companiestribunal.org.za/wp-content/uploads/2017/06/Companies-Regulations-2011.pdf (Accessed: 22 July 2021).

Cooper, S. M., & Owen, D. L. (2007). Corporate social reporting and stakeholder accountability: The missing link. *Accounting, Organizations and Society*, *32*(7-8), 649–667.

Cooray, T., Gunarathne, A. N., & Senaratne, S. (2020). Does corporate governance affect the quality of integrated reporting?. *Sustainability*, *12*(10), 1–30.

Cormier, D., & Gordon, I. M. (2001). An examination of social and environmental reporting strategies. *Accounting, Auditing and Accountability Journal*, *14*(5), 587–617.

Cormier, D., Magnan, M., & Van Velthoven, B. (2005). Environmental disclosure quality in large German companies: Economic incentives, public pressures or institutional conditions?. *European Accounting Review*, *14*(1), 3–39.

Corrigan, C. C. (2019). Deriving social benefits from mining through regulation: Lessons learned in South Africa. *The Extractive Industries and Society*, *6*(3), 940–947.

Cosma, S., Soana, M. G., & Venturelli, A. (2018). Does the market reward integrated report quality?. *African Journal of Business Management*, *12*(4), 78–91.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. London: Sage Publications.

Crotty, A. (2024). *How Sasol went rogue on its climate 'plans'*. Retrieved from https://currencynews.co.za/how-sasol-went-rogue-on-its-climate-plans/ (Accessed: 18 November 2024).

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. London: Sage Publications.

Crucke, S., & Knockaert, M. (2016). When stakeholder representation leads to faultlines: A study of board service performance in social enterprises. *Journal of Management Studies*, *53*(5), 768–793.

Crush, J., & Tshitereke, C. (2001). Contesting migrancy: The foreign labor debate in post-1994 South Africa. *Africa Today*, *48*(3), 49–70.

Cucari, N., Esposito De Falco, S., & Orlando, B. (2018). Diversity of board of directors and environmental social governance: Evidence from Italian listed companies. *Corporate Social Responsibility and Environmental Management*, *25*(3), 250–266.

Daoud, J. I. (2017). Multicollinearity and regression analysis. *Journal of Physics*, *949*(1), 1–6.

Davis, K. (1960). Can business afford to ignore social responsibilities?. *California Management Review*, *2*(3), 70–76.

Davis, K. (1973). The case for and against business assumption of social responsibilities. *Academy of Management Journal*, *16*(2), 312–322.

De Silva Lokuwaduge, C. S., & De Silva, K. M. (2022). ESG risk disclosure and the risk of green washing. *Australasian Accounting, Business and Finance Journal*, *16*(1), 146–159.

De Villiers, C. J., & Lubbe, D. S. (2001). Industry differences in respect of corporate environmental reporting in South Africa: A research note. *Meditari: Research Journal of the School of Accounting Sciences, 9*(1), 81–91.

De Villiers, C., & Alexander, D. (2014). The institutionalisation of corporate social responsibility reporting. *The British Accounting Review*, *46*(2), 198–212.

De Villiers, C., & Van Staden, C. J. (2006). Can less environmental disclosure have a legitimising effect? Evidence from Africa. *Accounting, Organizations and Society*, *31*(8), 763–781.

De Villiers, C., & Van Staden, C. J. (2011). Where firms choose to disclose voluntary environmental information. *Journal of Accounting and Public Policy*, *30*(6), 504–525.

De Villiers, C., Rinaldi, L., & Unerman, J. (2014). Integrated reporting: Insights, gaps and an agenda for future research. *Accounting, Auditing and Accountability Journal*, *27*(7), 1042–1067.

De Villiers, C., Venter, E. R., & Hsiao, P. C. K. (2017). Integrated reporting: Background, measurement issues, approaches and an agenda for future research. *Accounting and Finance*, *57*(4), 937–959.

Dechow, P., Ge, W., & Schrand, C. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics*, *50*(2-3), 344–401.

Dechow, P. M., & Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review*, *77*, 35–59.

Deegan, C. (2002). The legitimising effect of social and environmental disclosures: A theoretical foundation. *Accounting, Auditing and Accountability Journal, 15*(3), 282–311.

Deegan, C. (2010). O*rganizational legitimacy as a motive for sustainability reporting*. Sustainability Accounting and Accountability. London: Routledge.

Deegan, C. M. (2019). Legitimacy theory: Despite its enduring popularity and contribution, time is right for a necessary makeover. *Accounting, Auditing and Accountability Journal, 32*(8), 2307–2329.

Deegan, C., & Blomquist, C. (2006). Stakeholder influence on corporate reporting: An exploration of the interaction between WWF-Australia and the Australian minerals industry. *Accounting, Organizations and Society*, *31*(4-5), 343–372.

Deegan, C., & Gordon, B. (1996). A study of the environmental disclosure practices of Australian corporations. *Accounting and Business Research*, *26*(3), 187–199.

Deegan, C., & Rankin, M. (1996). Do Australian companies objectively report environmental news? An analysis of environmental disclosures by firms successfully prosecuted by the Environmental Protection Authority. *Accounting, Auditing and Accountability Journal*, *9*(2), 50–67.

Deegan, C., & Unerman, J. (2011). *Financial accounting theory*. United Kingdom: McGraw-Hill Education.

Deloitte. (2012). *Integrated reporting: Navigating your way to a truly integrated report.* Retrieved from file:///C:/Users/letho/Downloads/ZA%20Integrated%20Reporting%20Aug%202012.pdf (Accessed: 26 August 2021).

Department of Trade and Industry. (2016). *Broad-Based Black Economic Empowerment Act*: *Broad-Based Black Economic Empowerment Act 53 of 2003 as amended by Act 46 of 2013.* Retrieved from http://bbbeecommission.co.za/wp-content/uploads/2016/09/Consolidated-B-BBEE-Act-2013.pdf (Accessed: 9 August 2021).

Deva, S. (2006). Global Compact: A critique of the UN's public-private partnership for promoting corporate citizenship. *Syracuse Journal of International Law and Commerce*, *34*(1), 107–151.

Dilling, P. F., & Caykoylu, S. (2019). Determinants of companies that disclose high-quality integrated reports. *Sustainability*, *11*, 1–31.

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, *48*(2), 147–160.

Dludla, S. (2023). *Gender parity in JSE-listed company boards remains elusive, despite progress - latest report*. Retrieved from https://iol.co.za/business-report/economy/2023-11-07-gender-parity-in-jse-listed-company-boards-remains-elusive-despite-progress--latest-report/ (Accessed: 29 June 2025).

Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review*, *20*(1), 65–91.

Dorfleitner, G., & Zhang, R. (2024). ESG news sentiment and stock price reactions: A comprehensive investigation via BERT. *Schmalenbach Journal of Business Research*, *76*(2), 197–244.

Dorobantu, S., Gupte, A., & Li, S. Y. (2022). *Stakeholder governance: Aligning stakeholder interests on complex sustainability issues*. United Kingdom: Edward Elgar Publishing.

Dowling, J., & Pfeffer, J. (1975). Organizational legitimacy: Social values and organizational behavior. *Pacific Sociological Review*, *18*(1), 122–136.

Drempetic, S., Klein, C., & Zwergel, B. (2020). The influence of firm size on the ESG score: Corporate sustainability ratings under review. *Journal of Business Ethics*, *167*, 333–360.

Du Toit, E. (2017). The readability of integrated reports. *Meditari Accountancy Research*, *25*(4), 629–653.

Du Toit, E., & Lekoloane, K. (2018). Corporate social responsibility and financial performance: Evidence from the Johannesburg Stock Exchange, South Africa. *South African Journal of Economic and Management Sciences*, *21*(1), 1–11.

Dubbink, W., Graafland, J., & Van Liedekerke, L. (2008). CSR, transparency and the role of intermediate organisations. *Journal of Business Ethics*, *82*, 391–406.

Dube, S. (2015). *CSR disclosures in mining companies: Repairing and maintaining legitimacy* [Doctoral dissertation]. University of the Witwatersrand. Retrieved from https://core.ac.uk/download/pdf/188773369.pdf (Accessed: 16 August 2023).

Dube, S., & Maroun, W. (2017). Corporate social responsibility reporting by South African mining companies: Evidence of legitimacy theory. *South African Journal of Business Management*, *48*(1), 23–34.

Dumay, J., De Villiers, C., Guthrie, J., & Hsiao, P. C. (2018). Thirty years of Accounting, Auditing and Accountability Journal: A critical study of the journal's most cited articles. *Accounting, Auditing and Accountability Journal*, *31*(5), 1510–1541.

Duran, I. J., & Rodrigo, P. (2018). Why do firms in emerging markets report? A stakeholder theory approach to study the determinants of non-financial disclosure in Latin America. *Sustainability*, *10*(9), 1–20.

Du Rietz, S. (2018). Information vs knowledge: Corporate accountability in environmental, social, and governance issues. *Accounting, Auditing and Accountability Journal*, *31*(2), 586–607.

Eagly, A. H., & Wood, W. (2016). *Social role theory of sex differences*. New York: John Wiley & Sons.

Eccles, R. G., & Klimenko, S. (2019). The investor revolution. *Harvard Business Review*, *97*(3), 106–116.

Eccles, R. G., Krzus, M. P., & Solano, C. (2019). *A comparative analysis of integrated reporting in ten countries*. Retrieved from http://integratedreportingsa.org/ircsa/wp-content/uploads/2019/04/Survey-A-Comparative-Analysis-of-Integrated-Reporting-in-Ten-Countries.pdf (Accessed: 8 August 2021).

Eccles, R. G., Serafeim, G., & Krzus, M. P. (2011). Market interest in nonfinancial information. *Journal of Applied Corporate Finance*, *23*(4), 113–127.

Ecker, F., Francis, J., Kim, I., Olsson, P. M., & Schipper, K. (2006). A returns-based representation of earnings quality. *The Accounting Review*, *81*(4), 749–780.

Edlin, B. (2007). *Boardroom decision-making: Determinants of effectiveness* [Doctoral dissertation]. Massey University. Retrieved from https://mro.massey.ac.nz/server/api/core/bitstreams/bbc43565-8969-4cd5-b7b7-2d7db7526aab/content (Accessed: 12 May 2023).

Elsbach, K. D. (1994). Managing organizational legitimacy in the California cattle industry: The construction and effectiveness of verbal accounts. *Administrative Science Quarterly*, *39*(1), 57–88.

Elsbach, K. D., & Sutton, R. I. (1992). Acquiring organizational legitimacy through illegitimate actions: A marriage of institutional and impression management theories. *Academy of Management Journal*, *35*(4), 699–738.

Ernst & Young (EY). (2014). *How can business bridge financial and sustainability reporting to drive value? Excellence in integrated reporting 2024*. Retrieved from https://www.ey.com/content/dam/ey-unified-site/ey-com/en-za/insights/tax/images/ey-eir-2024-brochure-final.pdf (Accessed: 8 October 2024).

Esser, I. M., & Delport, P. (2017). The protection of stakeholders: The South African social and ethics committee and the United Kingdom's enlightened shareholder value approach. *De Jure Law Journal*, *50*(1), 97–110.

Esterhuyse, L. (2019). Towards corporate transparency: The link between inclusion in a socially responsible investment index and investor relations practices. *The Bottom Line*, *32*(4), 290–307.

Esty, D., & Cort, T. (2021). Toward enhanced corporate sustainability disclosure: Making ESG reporting serve investor needs. *Virginia Law and Business Review*, *16*(3), 423–443.

European Commission. (2011). *A renewed EU strategy 2011-14 for corporate social responsibility*: *Communication from the Commission to the European Parliament*, the Council, the European Economic and Social Committee and the Committee of the Regions. Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011DC0681&from=EN (Accessed: 21 July 2021).

Evan, W. M., & Freeman, R. E. (1988). *A stakeholder theory of the modern corporation: Kantian capitalism*. New Jersey: Prentice Hall.

Ewert, R., & Wagenhofer, A. (2012). Earnings management, conservatism, and earnings quality. *Foundations and Trends in Accounting*, *6*(2), 65–186.

Fama, E. F., & Jensen, M. C. (1983a). Separation of ownership and control. *The Journal of Law and Economics*, *26*(2), 301–325.

Fama, E. F., & Jensen, M. C. (1983b). Agency problems and residual claims. *The Journal of Law and Economics*, *26*(2), 327–349.

Fernandez-Feijoo, B., Romero, S., & Ruiz-Blanco, S. (2014). Women on boards: Do they affect sustainability reporting?. *Corporate Social Responsibility and Environmental Management*, *21*(6), 351–364.

Fig, D. (2005). Manufacturing amnesia: Corporate social responsibility in South Africa. *International Affairs*, *81*(3), 599–617.

Financial Accounting Standards Board (FASB). (2010). *Conceptual framework: Statement of financial accounting concepts no. 8.* Retrieved from https://www.fasb.org/resources/ccurl/515/412/Concepts%20Statement%20No%208.pdf (Accessed: 5 November 2019).

Flower, J. (2015). The international integrated reporting council: A story of failure. *Critical Perspectives on Accounting*, *27*, 1–17.

Food Safety News. (2018). *South Africa's processed meats blamed in Listeria outbreak.* Retrieved from https://www.foodsafetynews.com/2018/03/south-africas-processed-meats-blamed-in-deadly-listeria-outbreak/ (Accessed: 29 July 2024).

Fossil Free SA. (2021). *Sasol: Industrial-scale greenwash.* Retrieved from https://www.fossilfreesa.org.za/sasol-industrial-scale-greenwash/ (Accessed: 15 September 2024).

Fourie, A., & Eloff, T. (2005). The case for collective business action to achieve systems change: Exploring the contributions made by the private sector to the social, economic and political transformation process in South Africa. *Journal of Corporate Citizenship*, (18), 39–48.

Fowler, J., Cohen, L., & Jarvis, P. (1998). *How good are our estimates?*. 2nd ed. United Kingdom: John Wiley & Sons.

Fox, N. J. (2008). *Postpositivism*. Thousand Oaks, California: Sage Publications.

Fracarolli Nunes, M., & Lee Park, C. (2016). Caught red-handed: The cost of the Volkswagen Dieselgate. *Journal of Global Responsibility*, *7*(2), 288–302.

Freeman, R. E. (1984). *Strategic management, a stakeholder approach*. Boston: Pitman Publishing.

Freeman, R. E., & McVea, J. (2005). *A stakeholder approach to strategic management*. New York: John Wiley & Sons.

Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., & De Colle, S. (2010). *Stakeholder theory: The state of the art.* Cambridge: Cambridge University Press.

Freeman, R. E., Martin, K., & Parmar, B. (2007). Stakeholder capitalism. *Journal of Business Ethics*, *74*, 303–314.

Freeman, R. E., Wicks, A. C., & Parmar, B. (2004). Stakeholder theory and "the corporate objective revisited." *Organization Science*, *15*(3), 364–369.

Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance and Investment*, *5*(4), 210–233.

Friedman, A. L., & Miles, S. (2006). *Stakeholders: Theory and practice*. Oxford: Oxford University Press.

Friedman, M. (1970). The social responsibility of business is to increase its profits. *New York Times Magazine*, 13 September:122–126.

Friedman, S., Hudson, J., & Mackay, S. (2008). *New whims for old? Corporate giving in South Africa.* Cape Town: HSRC Press.

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.

Galbreath, J. (2011). Are there gender-related influences on corporate sustainability? A study of women on boards of directors. *Journal of Management and Organization*, *17*(1), 17–38.

Gautier, A., & Pache, A. C. (2015). Research on corporate philanthropy: A review and assessment. *Journal of Business Ethics*, *126*, 343–369.

Giamporcaro, S., & Pretorius, L. (2012). Sustainable and responsible investment (SRI) in South Africa: A limited adoption of environmental criteria. *Investment Analysts Journal*, *41*(75), 1–19.

Giannarakis, G., Andronikidis, A., & Sariannidis, N. (2020). Determinants of environmental disclosure: Investigating new and conventional corporate governance characteristics. *Annals of Operations Research*, *294*(1), 87–105.

Giannarakis, G., Konteos, G., & Sariannidis, N. (2014). Financial, governance and environmental determinants of corporate social responsible disclosure. *Management Decision*, *52*(10), 1928–1951.

Gill, A. (2008). Corporate governance as social responsibility: A research agenda. *Berkeley Journal of International Law*, *26*(2), 452–478.

Global Reporting Initiative (GRI). (2024). *We're GRI.* Retrieved from https://www.globalreporting.org/ (Accessed: 18 October 2024).

Gonzalez, A., & André, P. (2014). Board effectiveness and short termism. *Journal of Business Finance and Accounting*, *41*(1-2), 185–209.

Gray, R. (2012). Integrated reporting: Integrated with what and for whom?. *The Loop*, *5*. Retrieved from https://research-portal.st-andrews.ac.uk/en/publications/integrated-reporting-integrated-with-what-and-for-whom (Accessed: 21 July 2025).

Gray, R. (2010). Is accounting for sustainability actually accounting for sustainability…and how would we know? An exploration of narratives of organisations and the planet. *Accounting, Organizations and Society*, *35*, 47–62.

Gray, R. H., & Milne, M. J. (2004). *Towards reporting on the triple bottom line: Mirages, methods and myths*. In A. Henriques & J. Richardson (Eds.), The triple bottom line: Does it all add up?. London: Earthscan.

Gray, R., Kouhy, R., & Lavers, S. (1995). Corporate social and environmental reporting: A review of the literature and a longitudinal study of UK disclosure. *Accounting, Auditing and Accountability Journal*, *8*(2), 47–77.

Gray, R., Owen, D., & Adams, C. (1996). *Accounting and accountability: Changes and challenges in corporate social and environmental reporting*. New Jersey: Prentice Hall.

Gray, R., Owen, D., & Maunders, K. T. (1991). Accountability, corporate social reporting and the external social audits. *Advances in Public Interest Accounting*, *4*, 1–21.

Gray, R., Owen, D., & Maunders, K. (1988). Corporate social reporting: Emerging trends in accountability and the social contract. *Accounting, Auditing and Accountability Journal*, *1*(1), 6–20.

Greenhouse Gas Protocol (GHG Protocol). (2022). *Scope 3 frequently asked questions*. Retrieved from https://ghgprotocol.org/sites/default/files/2022-12/Scope%203%20Detailed%20FAQ.pdf (Accessed: 21 April 2023).

Greenhouse Gas Protocol (GHG Protocol). (2024). *About us*. Retrieved from https://ghgprotocol.org/about-us (Accessed: 22 September 2024).

Greenpeace. (2021). *Carbon criminal Sasol shows no real signs of reforming dirty operations.* Retrieved from https://www.greenpeace.org/africa/en/press/49507/carbon-criminal-sasol-shows-no-real-signs-of-reforming-dirty-operations/ (Accessed: 17 August 2024).

Guthrie, J., & Parker, L. D. (1989). Corporate social reporting: A rebuttal of legitimacy theory. *Accounting and Business Research*, *19*(76), 343–352.

Guthrie, J., & Parker, L. D. (1990). Corporate social disclosure practice: A comparative international analysis. *Advances in Public Interest Accounting*, *3*, 159–175.

Habermann, F., & Fischer, F. B. (2021). Corporate social performance and the likelihood of bankruptcy: Evidence from a period of economic upswing. *Journal of Business Ethics*, *182*(1), 243–259.

Hackston, D., & Milne, M. J. (1996). Some determinants of social and environmental disclosures in New Zealand companies. *Accounting, Auditing and Accountability Journal*, *9*(1), 77–108.

Hahn, R., & Kühnen, M. (2013). Determinants of sustainability reporting: A review of results, trends, theory, and opportunities in an expanding field of research. *Journal of Cleaner Production*, *59*, 5–21.

Hahn, R., & Lülfs, R. (2014). Legitimizing negative aspects in GRI-oriented sustainability reporting: A qualitative analysis of corporate disclosure strategies. *Journal of Business Ethics*, *123*(3), 401–420.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). New Jersey: Pearson Prentice Hall.

Haji, A. A., & Anifowose, M. (2016). The trend of integrated reporting practice in South Africa: Ceremonial or substantive?. *Sustainability Accounting, Management and Policy Journal*, *7*(2), 190–224.

Haji, A. A., & Hossain, D. M. (2016). Exploring the implications of integrated reporting on organisational reporting practice: Evidence from highly regarded integrated reporters. *Qualitative Research in Accounting and Management*, *13*(4), 415–444.

Hamann, R. (2003). Mining companies' role in sustainable development: The 'why' and 'how' of corporate social responsibility from a business perspective. *Development Southern Africa*, *20*(2), 237–254.

Hamann, R. (2004). Corporate social responsibility, partnerships, and institutional change: The case of mining companies in South Africa. *Natural Resources Forum*, *28*(4), 278–290.

Hamann, R., & Acutt, N. (2003). How should civil society (and the government) respond to 'corporate social responsibility'? A critique of business motivations and the potential for partnerships. *Development Southern Africa*, *20*(2), 255–270.

Hamann, R., & Bezuidenhout, A. (2003). *Case study of corporate social responsibility in the South African mining sector*. [Working Paper]. University of the Witwatersrand.

Hamann, R., & Kapelus, P. (2004). Corporate social responsibility in mining in Southern Africa: Fair accountability or just greenwash?. *Development*, *47*(3), 85–92.

Hammond, K., & Miles, S. (2004). Assessing quality assessment of corporate social reporting: UK perspectives. *Accounting Forum, 28*(1), 61–79.

Handajani, L., Subroto, B., Sutrisno, T., & Saraswati, E. (2014). Does board diversity matter on corporate social disclosure? An Indonesian evidence. *Journal of Economics and Sustainable Development*, *5*(12), 8–16.

Healy, P. M. (1985). The effect of bonus schemes on accounting policies. *Journal of Accounting and Economics*, *7*(1-3), 85–107.

Heese, K. (2005). The development of socially responsible investment in South Africa: Experience and evolution of SRI in global markets. *Development Southern Africa*, *22*(5), 729–739.

Helfaya, A., & Moussa, T. (2017). Do board's corporate social responsibility strategy and orientation influence environmental sustainability disclosure? UK evidence. *Business Strategy and the Environment*, *26*(8), 1061–1077.

Helfaya, A., & Whittington, M. (2019). Does designing environmental sustainability disclosure quality measures make a difference?. *Business Strategy and the Environment*, *28*(4), 525–541.

Helfaya, A., Whittington, M., & Alawattage, C. (2019). Exploring the quality of corporate environmental reporting: Surveying preparers' and users' perceptions. *Accounting, Auditing and Accountability Journal*, *32*(1), 163–193.

Hensher, D. A., & Stopher, P. R. (1979). *Behavioural travel modelling*. London: Croom Helm.

Henson, J. M., Reise, S. P., & Kim, K. H. (2007). Detecting mixtures from structural model differences using latent variable mixture modeling: A comparison of relative model fit statistics. *Structural Equation Modeling*: *A Multidisciplinary Journal*, *14*(2), 202–226.

Herremans, I. M., Nazari, J. A., & Mahmoudian, F. (2016). Stakeholder relationships, engagement, and sustainability reporting. *Journal of Business Ethics*, *138*(3), 417–435.

Herringer, A., Firer, C., & Viviers, S. (2009). Key challenges facing the socially responsible investment (SRI) sector in South Africa. *Investment Analysts Journal*, *38*(70), 11–26.

Hess, D., & Dunfee, T. W. (2007). The Kasky-Nike threat to corporate social reporting: Implementing a standard of optimal truthful disclosure as a solution. *Business Ethics Quarterly*, *17*(1), 5–32.

Hillman, A. J., Cannella, A. A., & Harris, I. C. (2002). Women and racial minorities in the boardroom: How do directors differ?. *Journal of Management*, *28*(6), 747–763.

Hillman, A. J., Keim, G. D., & Luce, R. A. (2001). Board composition and stakeholder performance: Do stakeholder directors make a difference?. *Business and Society*, *40*(3), 295–314.

Hinson, R. E., & Ndhlovu, T. P. (2011). Conceptualising corporate social responsibility (CSR) and corporate social investment (CSI): The South African context. *Social Responsibility Journal*, *7*(3), 332–346.

Homroy, S., & Slechten, A. (2019). Do board expertise and networked boards affect environmental performance?. *Journal of Business Ethics*, *158*, 269–292.

Hooghiemstra, R. (2000). Corporate communication and impression management: New perspectives why companies engage in corporate social reporting. *Journal of Business Ethics*, *27*, 55–68.

Hopwood, A. G. (2009). Accounting and the environment. *Accounting, Organizations and Society*, *34*(3-4), 433–439.

Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika*, *30*, 179–185.

Horne, R. (2017). Patterns of empowerment and disempowerment in the South African mining sector. *African Review of Economics and Finance*, *9*(1), 3–32.

Horn, R., De Klerk, M., & De Villiers, C. (2018). The association between corporate social responsibility reporting and firm value for South African firms. *South African Journal of Economic and Management Sciences*, *21*(1), 1–10.

Hrasky, S. (2012). Visual disclosure strategies adopted by more and less sustainability-driven companies. *Accounting Forum*, *36*(3), 154–165.

Htay, S. N. N., Aung, M. Z., Rashid, H. M. A., & Adnan, M. A. (2012). The impact of corporate governance on the voluntary accounting information disclosure in Malaysian listed banks. *Global Review of Accounting and Finance*, *3*(2), 128–142.

Hummel, K., & Schlick, C. (2016). The relationship between sustainability performance and sustainability disclosure: Reconciling voluntary disclosure theory and legitimacy theory. *Journal of Accounting and Public Policy*, *35*(5), 455–476.

Ibrahim, N. A., & Angelidis, J. P. (1995). The corporate social responsiveness orientation of board members: Are there differences between inside and outside directors?. *Journal of Business Ethics*, *14*, 405–410.

IFRS Foundation. (2025). *About us.* Retrieved from https://integratedreporting.ifrs.org/the-iirc-2/council/ (Accessed: 1 July 2025).

Ingley, C., Mueller, J., & Cocks, G. (2011). The financial crisis, investor activists and corporate strategy: Will this mean shareholders in the boardroom?. *Journal of Management and Governance*, *15*, 557–587.

Institute of Directors in Southern Africa (IoDSA). (1994). *The King Report on Corporate Governance (King I)*, King Committee, Johannesburg, South Africa. Retrieved from https://cdn.ymaws.com/www.iodsa.co.za/resource/collection/94445006-4F18-4335-B7FB-7F5A8B23FB3F/King_1_Report.pdf (Accessed: 23 August 2021).

Institute of Directors in Southern Africa (IoDSA). (2002). *King Report on Corporate Governance for South Africa (King II)*, King Committee, Johannesburg, South Africa. Retrieved from https://cdn.ymaws.com/www.iodsa.co.za/resource/collection/94445006-4F18-4335-B7FB-7F5A8B23FB3F/IoDSA_King_II_web_version.pdf (Accessed: 23 August 2021).

Institute of Directors in Southern Africa (IoDSA). (2009). *King Report on Governance for South Africa (King III)*, King Committee, Johannesburg, South Africa. Retrieved from https://cdn.ymaws.com/www.iodsa.co.za/resource/resmgr/king_iii/King_Report_on_Governance_fo.pdf (Accessed: 30 June 2020).

Institute of Directors in Southern Africa (IoDSA). (2011). *Code for responsible investing in South Africa 2011*. Retrieved from https://cdn.ymaws.com/www.iodsa.co.za/resource/resmgr/crisa/crisa_19_july_2011.pdf (Accessed: 1 July 2020).

Institute of Directors in Southern Africa (IoDSA). (2016). *King Report on Governance for South Africa (King IV)*, King Committee, Johannesburg, South Africa. Retrieved from https://cdn.ymaws.com/www.iodsa.co.za/resource/collection/684B68A7-B768-465C-8214-E3A007F15A5A/IoDSA_King_IV_Report_-_WebVersion.pdf (Accessed: 25 January 2021).

Integrated Reporting Committee of South Africa (IRCSA). (2017). *Integrated Reporting Committee of South Africa.* Retrieved from https://integratedreportingsa.org/about/about-the-irc-of-sa/ (Accessed: 25 July 2025).

International Accounting Standards Board (IASB). (2010). *The conceptual framework for financial reporting.* London: IFRS Foundation.

International Integrated Reporting Council (IIRC). (2021). *International <IR> Framework January 2021*. Retrieved from https://integratedreporting.org/wp-content/uploads/2021/01/InternationalIntegratedReportingFramework.pdf (Accessed: 2 September 2021).

Ioannou, I., & Serafeim, G. (2012). What drives corporate social performance? The role of national-level institutions. *Journal of International Business Studies*, *43*(9), 834–864.

Isaacs, G. L. (2018). *Financialisation in post-apartheid South Africa* [Doctoral dissertation, SOAS University of London]. Retrieved from https://eprints.soas.ac.uk/26178/1/4493_Isaacs.pdf (Accessed: 4 June 2024).

Jensen, M. (2001). Value maximisation, stakeholder theory, and the corporate objective function. *European Financial Management*, *7*(3), 297–317.

Jeong, H. J., & Chung, D. S. (2023). "Not enough yet": CSR communication of stigmatized industries through news coverage. *Corporate Communications: An International Journal*, *28*(6), 857–872.

Johannesburg Stock Exchange (JSE). (2010). *JSE Limited Listings Requirements.* Retrieved from file:///C:/Users/letho/Downloads/2010_01%20(1).pdf (Accessed: 6 May 2021).

Johannesburg Stock Exchange (JSE). (2014). *FTSE/JSE Responsible Investment Index Series*. Retrieved from https://www.jse.co.za/services/indices/ftsejse-responsible-investment-index (Accessed: 29 September 2022).

Johannesburg Stock Exchange (JSE). (2019). *JSE Limited listings requirements.* Retrieved from https://www.jse.co.za/sites/default/files/media/documents/2019-04/JSE%20Listings%20Requirements.pdf (Accessed: 26 August 2021).

Johannesburg Stock Exchange (JSE). (2021). *ESG data products.* Retrieved from https://www.jse.co.za/esg-data-products (Accessed: 19 January 2021).

Johannesburg Stock Exchange (JSE). (2023). *JSE and FTSE Russell join forces to launch multi-asset index for South African market*. Retrieved from https://www.jse.co.za/news/market-news/jse-and-ftse-russell-join-forces-launch-multiasset-index-south-african-market (Accessed: 30 September 2022).

Johnson, E., & Sylvia, M. L. (2018). Secondary data collection. In M. L. Sylvia & M. F. Terhaar (Eds.), *Critical analytics and data management for the DNP* (pp. 61–67). Springer Publishing Company.

Johnston, L. R. (2017). *Curating research data volume two: A handbook of current practice*. Chicago: Association of College and Research Libraries.

Jolliffe, I. T. (2002). *Principal component analysis for special types of data*. New York: Springer.

Jones, J. J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, *29*(2), 193–228.

Just Share. (2020). *Just Share's analysis of Standard Bank's fossil fuels financing policy.* Retrieved from https://justshare.org.za/media/news/just-shares-analysis-of-standard-banks-fossil-fuels-financing-policy (Accessed: 2 July 2021).

Kaiser, H. F. (1958). The varimax criterion for analytic rotation in factor analysis. *Psychometrika, 23*(3), 187–200.

Kaspereit, T., & Lopatta, K. (2018). Detecting carbon emission disclosure management. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3095495 (Accessed: 12 June 2020).

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.

Keightley, R. (2011). Fat cats, slim pickings: An examination of corporate corruption and the efficacy of existing countermeasures in South Africa. *Journal of Corporate Law Studies*, *11*(2), 343–368.

Khan, H. U. Z. (2010). The effect of corporate governance elements on corporate social responsibility (CSR) reporting: Empirical evidence from private commercial banks of Bangladesh. *International Journal of Law and Management*, *52*(2), 82–109.

Khemir, S. (2018). The perceived usefulness of ESG indicators by Tunisian financial professionals: Exploratory study for the construction of a measurement scale. *International Journal of Business and Social Science*, *9*(10), 9–25.

Khemir, S., Baccouche, C., & Ayadi, S. D. (2019). The influence of ESG information on investment allocation decisions. *Journal of Applied Accounting Research*, *20*(4), 458–480.

Killian, S., & O'Regan, P. (2016). Social accounting and the co-creation of corporate legitimacy. *Accounting, Organizations and Society*, *50*(2016), 1–12.

Kloppers, H., & du Plessis, W. (2008). Corporate social responsibility, legislative reforms and mining in South Africa. *Journal of Energy and Natural Resources Law*, *26*(1), 91–119.

Kotsantonis, S., & Serafeim, G. (2019). Four things no one will tell you about ESG data. *Journal of Applied Corporate Finance*, *31*(2), 50–58.

KPMG. (2023). *Carbon tax: Extending the utilisation period in the carbon offsets regulations*. Retrieved from https://assets.kpmg.com/content/dam/kpmg/us/pdf/2023/02/tnf-sa-feb23-2023.pdf (Accessed: 21 November 2024).

KPMG. (2022). *Challenges and opportunities in ESG reporting and assurance*. Retrieved from https://kpmg.com/xx/en/our-insights/esg/challenges-and-opportunities-in-esg-reporting-and-assurance.html (Accessed: 21 July 2025).

KPMG. (2017). *The KPMG survey of corporate responsibility reporting 2017*. Retrieved from https://assets.kpmg/content/dam/kpmg/be/pdf/2017/kpmg-survey-of-corporate-responsibility-reporting-2017.pdf (Accessed: 29 June 2020).

KPMG. (2024). *The move to mandatory reporting: Survey of sustainability reporting 2024*. Retrieved from https://assets.kpmg.com/content/dam/kpmgsites/xx/pdf/2024/11/the-move-to-mandatory-reporting-web-copy.pdf.coredownload.inline.pdf (Accessed: 23 June 2025).

KPMG. (2020). *The time has come: The KPMG Survey of Sustainability Reporting 2020*. Retrieved from https://assets.kpmg/content/dam/kpmg/xx/pdf/2020/11/the-time-has-come.pdf (Accessed: 23 October 2021).

Landi, G., & Sciarelli, M. (2018). Towards a more ethical market: The impact of ESG rating on corporate financial performance. *Social Responsibility Journal*, *15*(1), 11–27.

Lane, J. C. (1995). Ethics of business students: Some marketing perspectives. *Journal of Business Ethics*, *14*, 571–580.

Laplume, A. O., Sonpar, K., & Litz, R. A. (2008). Stakeholder theory: Reviewing a theory that moves us. *Journal of Management*, *34*(6), 1152–1189.

Laufer, W. S. (2003). Social accountability and corporate greenwashing. *Journal of Business Ethics*, *43*(3), 253–261.

Lautjärvi, J. (2015). *"True and fair view?" A critical discourse analysis on how companies report on negative corporate social responsibility events*. [Master's thesis]. Aalto University. Retrieved from https://aaltodoc.aalto.fi/server/api/core/bitstreams/bc966af0-55f5-4966-a59c-a77d04e2f566/content (Accessed: 13 May 2024).

Lee, K. W., & Yeo, G. H. H. (2016). The association between integrated reporting and firm valuation. *Review of Quantitative Finance and Accounting*, *47*, 1221–1250.

Leedy, P. D., & Ormrod, J. E. (2013). *Practical research*. 10th ed. Harlow: Pearson Education.

Legassick, M. (1974). Legislation, ideology and economy in post-1948 South Africa. *Journal of Southern African Studies*, *1*(1), 5–35.

Lehman, G. (2001). Reclaiming the public sphere: Problems and prospects for corporate social and environmental accounting. *Critical Perspectives on Accounting*, *12*(6), 713–733.

Leibbrandt, M., & Pabón, F. A. D. (2021). Inequality in South Africa. In A. Oqubay, F. Tregenna, & I. Valodia (Eds.), *The Oxford handbook of the South African economy* (pp. 175–191). Oxford, United Kingdom: Oxford University Press.

Levitt, T. (1958). The dangers of social responsibility. *Harvard Business Review*, *36*(5), 41–50.

Li, Z., Haque, S., & Chapple, L. (2023). Disclosures of labour practices: Perspectives of legitimacy and impression management. *Journal of Accounting Literature*, *45*(2), 256–288.

Lindblom, C. K. (1994). *The implications of organizational legitimacy for corporate social performance and disclosure* [Paper presentation]. Critical Perspectives on Accounting Conference, New York.

Loate, B., Padia, N., & Maroun, W. (2015). Acid mine drainage in South Africa: A test of legitimacy theory. *Journal of Governance and Regulation*, *4*(2), 26–40.

Lokuwaduge, C. S. D. S., & Heenetigala, K. (2017). Integrating environmental, social and governance (ESG) disclosure for a sustainable development: An Australian study. *Business Strategy and the Environment*, *26*(4), 438–450.

Lonmin. (2011). *Web-based sustainable development report for the year ending 30 September 2011*. Retrieved from https://thevault.exchange/?get_group_doc=166/1449139843-SustainableDevelopmentReport.pdf (Accessed: 20 January 2021).

Lonmin. (2012). *Annual report and accounts for the year ended 30 September 2012*. Retrieved from https://www.annualreports.co.uk/HostedData/AnnualReportArchive/l/LSE_LMI_2012.pdf (Accessed: 20 January 2021).

López, M. V., Garcia, A., & Rodriguez, L. (2007). Sustainable development and corporate performance: A study based on the Dow Jones sustainability index. *Journal of Business Ethics*, *75*, 285–300.

LSEG. (2024). *Environmental, social and governance scores from LSEG: October 2024*. Retrieved from https://www.lseg.com/content/dam/data-analytics/en_us/documents/methodology/lseg-esg-scores-methodology.pdf?ref=zoya-blog (Accessed: 2 July 2024).

Luft Mobus, J. (2005). Mandatory environmental disclosures in a legitimacy theory context. *Accounting, Auditing and Accountability Journal*, *18*(4), 492–517.

Luo, L., & Tang, Q. (2023). The real effects of ESG reporting and GRI standards on carbon mitigation: International evidence. *Business Strategy and the Environment*, *32*(6), 2985–3000.

Lyon, T. P., & Maxwell, J. W. (2011). Greenwash: Corporate environmental disclosure under threat of audit. *Journal of Economics and Management Strategy*, *20*(1), 3–41.

Maaloul, A. (2018). The effect of greenhouse gas emissions on cost of debt: Evidence from Canadian firms. *Corporate Social Responsibility and Environmental Management*, *25*(6), 1407–1415.

Maddock, L. (2020). *Impression management through minimal narrative disclosures in integrated reports: An analysis of the top 100 JSE listed firms* [Doctoral dissertation]. University of the Witwatersrand. Retrieved from https://wiredspace.wits.ac.za/server/api/core/bitstreams/cc119e16-fcd1-4e1d-b1f4-dda4c66bf597/content (Accessed: 5 May 2023).

Mahoney, P. G., & Mahoney, J. D. (2021). The new separation of ownership and control: Institutional investors and ESG. *Columbia Business Law Review*, *2*, 840–880.

Mail & Guardian. (2022). *'I want my life back and I will have justice' – Sasol whistleblower*. Retrieved from https://mg.co.za/the-green-guardian/2022-01-12-i-want-my-life-back-and-i-will-have-justice-sasol-whistleblower/ (Accessed: 5 August 2024).

Makgoba, M. (2019). Constructing black economic empowerment in South African mining: Government v corporate discourse. *African Studies*, *78*(4), 568–589.

Malherbe, S., & Segal, N. (2001). *Corporate governance in South Africa*. Trade and Industrial Policy Strategies. Development Centre Discussion Paper.

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.

Mangena, M., & Pike, R. (2005). The effect of audit committee shareholding, financial expertise and size on interim financial disclosures. *Accounting and Business Research*, *35*(4), 327–349.

Manita, R., Bruna, M. G., Dang, R., & Houanti, L. H. (2018). Board gender diversity and ESG disclosure: Evidence from the USA. *Journal of Applied Accounting Research*, *19*(2), 206–224.

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.

Manyike, N. N. (2023). *Impact of the environmental, social, and governance reporting framework on practices in JSE listed companies.* . [Master's thesis]. University of the Witwatersrand. Retrieved from https://wiredspace.wits.ac.za/server/api/core/bitstreams/a210a49a-74b6-4509-bf11-1090e034302a/content (Accessed: 13 June 2025).

Marcia, A., Maroun, W., & Callaghan, C. (2015). Value relevance and corporate responsibility reporting in the South African context: An alternate view post King-III. *South African Journal of Economic and Management Sciences*, *18*(4), 500–518.

Marikana Commission. (2015). *Marikana commission of inquiry: Report on matters of public, national and international concern arising out of the tragic incidents at the Lonmin mine in Marikana, in the North West province*. Retrieved from https://www.sahrc.org.za/home/21/files/marikana-report-1.pdf (Accessed: 18 September 2023).

Maroun, W. (2015). *Social and governance disclosure by Lonmin Plc pre and post Marikana: A research note*. Southern African Accounting Association. Retrieved from https://www.saaa.org.za/Downloads/Publications/AUD008%20Social%20and%20governance%20disclosures%20by%20Lonmin%20Plc%20pre%20and%20post%20Marikana_A%20research%20note.pdf (Accessed: 8 August 2021).

Marquis, C., Toffel, M. W., & Zhou, Y. (2016). Scrutiny, norms, and selective disclosure: A global study of greenwashing. *Organization Science*, *27*(2), 483–504.

Marrone, A., & Oliva, L. (2020). The level of integrated reporting alignment with the IIRC framework: Evidence from South Africa. *International Journal of Business and Management*, *15*(1), 99–108.

Marston, C. L., & Shrives, P. J. (1991). The use of disclosure indices in accounting research: A review article. *The British Accounting Review*, *23*(3), 195–210.

Masaka, D. (2008). Why enforcing corporate social responsibility (CSR) is morally questionable. *Electronic Journal of Business Ethics and Organization Studies*, *13*(1),13–21.

Massey, J. E. (2001). Managing organizational legitimacy: Communication strategies for organizations in crisis. *The Journal of Business Communication*, *38*(2), 153–182.

Matemane, R., Moloi, T., Adelowotan, M., & Biswas, P. K. (2023). The use of non-financial performance metrics in determining directors' remuneration: The case of listed companies in South Africa. *African Journal of Business Ethics*, *17*(1), 22–44.

Mat Roni, S., Merga, M. K., & Morris, J. E. (2020). *Conducting quantitative research in education.* Springer Publishing Company.

Maubane, P., Prinsloo, A., & Van Rooyen, N. (2014). Sustainability reporting patterns of companies listed on the Johannesburg Securities Exchange (JSE). *Public Relations Review*, *40*(2), 153–160.

McGuire, J. W. (1963). *Business and society*. New York: McGraw-Hill.

McNally, M., Dannielle, C., & Warren, M. (2017). Exploring the challenges of preparing an integrated report. *Meditari Accountancy Research, 25*(4), 481–504.

Merkl-Davies, D. M., & Brennan, N. M. (2007). Discretionary disclosure strategies in corporate narratives: Incremental information or impression management?. *Journal of Accounting Literature*, *27*, 116–196.

Merkl-Davies, D. M., Brennan, N. M., & McLeay, S. J. (2011). Impression management and retrospective sense-making in corporate narratives: A social psychology perspective. *Accounting, Auditing and Accountability Journal, 24*(3), 315–344.

Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology, 83*(2), 340–363.

Michelon, G., Pilonato, S., & Ricceri, F. (2015). CSR reporting practices and the quality of disclosure: An empirical analysis. *Critical Perspectives on Accounting, 33*, 59–78.

Milne, M. J., & Adler, R. W. (1999). Exploring the reliability of social and environmental disclosures content analysis. *Accounting, Auditing and Accountability Journal*, *12*, 237–256.

Milne, M. J., & Gray, R. (2013). W(h)ither ecology? The triple bottom line, the global reporting initiative, and corporate sustainability reporting. *Journal of Business Ethics, 118*(1), 13–29.

Milne, M. J., Kearins, K., & Walton, S. (2006). Creating adventures in wonderland: The journey metaphor and environmental sustainability. *Organization, 13*(6), 801–839.

Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review*, *22*(4), 853–886.

Moerman, L., & Van Der Laan, S. (2005). Social reporting in the tobacco industry: All smoke and mirrors?. *Accounting, Auditing and Accountability Journal*, *18*(3), 374–389.

Mokabane, M., & Du Toit, E. (2022). The value of integrated reporting in South Africa. *South African Journal of Economic and Management Sciences*, *25*(1), 1–8.

Moneva, J. M., Archel, P., & Correa, C. (2006). GRI and the camouflaging of corporate unsustainability. *Accounting Forum*, *30*(2), 121–137.

Morais, F., Kakabadse, A., & Kakabadse, N. K. (2019). *Dealing with strategic tensions on the board: The role of the chair in fostering engagement and debate*. Edward Elgar Publishing.

Morkel, D. L. (2019). *Decoupling of corporate social investment in South Africa: Optics over impact* [Doctoral dissertation]. University of Cape Town. Retrieved from https://open.uct.ac.za/server/api/core/bitstreams/365b574d-6eb0-4434-aa7d-03a1580e00b9/content (Accessed: 13 May 2024).

Murombo, T. (2013). Regulating mining in South Africa and Zimbabwe: Communities, the environment and perpetual exploitation. *Law, Environment and Development Journal*, *9*(1), 1–49.

Natesan, P. (2020). The evolution and significance of the "apply and explain" regime in King IV. *Journal of Global Responsibility*, *11*(2), 155–160.

Nattrass, N., & Seekings, J. (2010). *State, business and growth in post-apartheid South Africa*. Research Programme Consortium on Improving Institutions for Pro-Poor Growth Discussion Paper Series 34.

Nedbank. (2020). *Society report for the year ended 31 December 2020*. Retrieved from https://www.nedbank.co.za/content/dam/nedbank/site-assets/AboutUs/Information%20Hub/Integrated%20Report/2021/2020%20Nedbank%20Group%20Society%20Report%20(High%20Res)%20double-page.pdf (Accessed: 29 June 2021).

Negash, M., & Lemma, T. T. (2020). Institutional pressures and the accounting and reporting of environmental liabilities. *Business Strategy and the Environment*, *29*(5), 1941–1960.

Nel, R., Wesson, N., & Steenkamp, L. A. (2021). The association between ownership concentration and payout behaviour: Evidence from South Africa. *Acta Commercii*, *21*(1), 1–10.

Ngu, S. B., & Amran, A. (2019). The impact of sustainable board capital on sustainability reporting. *Strategic Direction*, *35*(12), 8–11.

Nicholson, G., Pugliese, A., & Bezemer, P. J. (2017). Habitual accountability routines in the boardroom: How boards balance control and collaboration. *Accounting, Auditing and Accountability Journal*, *30*(2), 222–246.

Nielsen, S., & Huse, M. (2010). The contribution of women on boards of directors: Going beyond the surface. *Corporate Governance: An International Review*, *18*(2), 136–148.

Nolan, J. (2005). The United Nations' Compact with business: Hindering or helping the protection of human rights. *The University of Queensland Law Journal*, *24*, 445–466.

Ntim, C. G., Opong, K. K., & Danbolt, J. (2012). The relative value relevance of shareholder versus stakeholder corporate governance disclosure policy reforms in South Africa. *Corporate Governance: An International Review*, *20*(1), 84–105.

Ntim, C. G., & Soobaroyen, T. (2013). Black economic empowerment disclosures by South African listed corporations: The influence of ownership and board characteristics. *Journal of Business Ethics*, *116*, 121–138.

Oakshott, L. (2020). *Essential quantitative methods for business, management and finance* (7th ed.). Hampshire: Palgrave and Macmillan.

Oberholzer, M., Botha, M., Middelberg, S. (2023). Developing a water disclosure index: An integrative perspective. In Buys, P.W., & Oberholzer, M. (Eds.), *Business Research* (pp. 157–180). Palgrave Macmillan: Singapore.

O’Donovan, G. (2002). Environmental disclosures in the annual report: Extending the applicability and predictive power of legitimacy theory. *Accounting, Auditing and Accountability Journal*, *15*(3), 344–371.

Odriozola, M. D., & Baraibar-Diez, E. (2017). Is corporate reputation associated with quality of CSR reporting? Evidence from Spain. *Corporate Social Responsibility and Environmental Management*, *24*(2), 121–132.

O'Dwyer, B., Humphrey, C., & Rowbottom, N. (2024). From institutional integration to institutional demise: The disintegration of the International Integrated Reporting Council (IIRC). *Critical Perspectives on Accounting*, *99*, 1–19.

Oliver, C. (1991). Strategic responses to institutional processes. *Academy of Management Review*, *16*(1), 145–179.

Omran, M., & M. El-Galfy, A. (2014). Theoretical perspectives on corporate disclosure: A critical evaluation and literature survey. *Asian Review of Accounting*, *22*(3), 257–286.

Orazalin, N., & Mahmood, M. (2020). Determinants of GRI-based sustainability reporting: Evidence from an emerging economy. *Journal of Accounting in Emerging Economies*, *10*(1), 140–164.

Orazalin, N., & Mahmood, M. (2021). Toward sustainable development: Board characteristics, country governance quality, and environmental performance. *Business Strategy and the Environment*, *30*(8), 3569–3588.

Patel, L., & Mushonga, H. (2014). Corporate social responsibility and development: A study of stakeholder perspectives of listed South African companies. *Africanus*, *44*(2), 50–63.

Patten, D. M. (1991). Exposure, legitimacy, and social disclosure. *Journal of Accounting and Public Policy*, *10*(4), 297–308.

Patten, D. M. (1992). Intra-industry environmental disclosures in response to the Alaskan oil spill: A note on legitimacy theory. *Accounting, Organizations and Society*, *17*(5), 471–475.

Patten, D. M. (2002). The relation between environmental performance and environmental disclosure: A research note. *Accounting, Organizations and Society*, *27*(8), 763–773.

Pfeffer, J. (1982). *Organisations and organisational theory.* London: Pitman.

Phillips, D. C., & Burbules, N. C. (2000). *Postpositivism and educational research*. Lanham, Maryland: Rowman and Littlefield.

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

Pitrakkos, P., & Maroun, W. (2020). Evaluating the quality of carbon disclosures. *Sustainability Accounting, Management and Policy Journal*, *11*(3), 553–589.

Polity. (2021). *South Africa the 12th biggest source of greenhouse gases? Yes, but that's not the only measure that matters*. Retrieved from https://www.polity.org.za/article/south-africa-the-12th-biggest-source-of-greenhouse-gases-yes-but-thats-not-the-only-measure-that-matters-2021-04-19 (Accessed: 19 November 2024).

Pollman, E. (2024). The making and meaning of ESG. *Harvard Business Review*, *14*, 403–453.

Ponte, S., Roberts, S., & Van Sittert, L. (2007). 'Black economic empowerment', business and the state in South Africa. *Development and Change*, *38*(5), 933–955.

Post, J. E., Preston, L. E., & Sauter-Sachs, S. (2002). *Redefining the corporation: Stakeholder management and organizational wealth*. Stanford: Stanford University Press.

Prado-Lorenzo, J. M., & García-Sánchez, I. M. (2010). The role of the board of directors in disseminating relevant information on greenhouse gases. *Journal of Business Ethics*, *97*, 391–424.

Pucheta-Martínez, M. C., & De Fuentes, C. (2007). The impact of audit committee characteristics on the enhancement of the quality of financial reporting: An empirical study in the Spanish context. *Corporate Governance: An International Review*, *15*(6), 1394–1412.

Pucheta-Martínez, M. C., & García-Meca, E. (2014). Institutional investors on boards and audit committees and their effects on financial reporting quality. *Corporate Governance: An International Review*, *22*(4), 347–363.

PwC. (2021). PwC's 2021 global investor survey. Retrieved from https://www.pwc.com/gx/en/services/audit-assurance/corporate-reporting/2021-esg-investor-survey.html (Accessed: 21 June 2025).

Qian, W., & Schaltegger, S. (2017). Revisiting carbon disclosure and performance: Legitimacy and management views. *The British Accounting Review*, *49*, 365–379.

Qian, W., Tilt, C., Dissanayake, D., & Kuruppu, S. (2020). Motivations and impacts of sustainability reporting in the Indo-Pacific region: Normative and instrumental stakeholder approaches. *Business Strategy and the Environment*, *29*(8), 3370–3384.

Radtke, J. V., Terhorst, L., & Cohen, S. M. (2011). The menopause-specific quality of life questionnaire: Psychometric evaluation among breast cancer survivors. *Menopause*, *18*(3), 289–295.

Rajak, D. (2011). Theatres of virtue: Collaboration, consensus, and the social life of corporate social responsibility. *Focaal – Journal of Global and Historical Anthropology*, *60*, 9–20.

Ramlall, S. (2012). Corporate social responsibility in post-apartheid South Africa. *Social Responsibility Journal*, *8*(2), 270–288.

Ramón-Llorens, M. C., García-Meca, E., & Pucheta-Martínez, M. C. (2019). The role of human and social board capital in driving CSR reporting. *Long Range Planning*, *52*(6), 1–17.

Ranganathan, P., Pramesh, C. S., & Aggarwal, R. (2017). Common pitfalls in statistical analysis: Logistic regression. *Perspectives in Clinical Research*, *8*(3), 148–151.

Rankin, M., Stanton, P., McGowan, S., Ferlauto, K., & Tilling, M. (2012). *Contemporary issues in accounting*. New York: John Wiley & Sons.

Rao, K., & Tilt, C. (2016). Board composition and corporate social responsibility: The role of diversity, gender, strategy and decision making. *Journal of Business Ethics*, *138*, 327–347.

Rappaport, A. (1986). *Creating shareholder value.* New York: The Free Press.

Reddy, P. S. (2016). The politics of service delivery in South Africa: The local government sphere in context. *The Journal for Transdisciplinary Research in Southern Africa*, *12*(1), 1–8.

Reed, D. (2002). Employing normative stakeholder theory in developing countries: A critical theory perspective. *Business and Society*, *41*(2), 166–207.

Refinitiv. (2022). *Environmental, social and governance scores from Refinitiv.* Retrieved from https://www.lseg.com/content/dam/marketing/en_us/documents/methodology/refinitiv-esg-scores-methodology.pdf (Accessed: 5 May 2022).

Rensburg, R., & Botha, E. (2014). Is integrated reporting the silver bullet of financial communication? A stakeholder perspective from South Africa. *Public Relations Review*, *40*(2), 144–152.

Reverte, C. (2009). Determinants of corporate social responsibility disclosure ratings by Spanish listed firms. *Journal of Business Ethics*, *88*, 351–366.

Rezaee, Z. (2016). Business sustainability research: A theoretical and integrated perspective. *Journal of Accounting Literature*, *36*(1), 48–64.

Roberts, C. B. (1991). Environmental disclosures: A note on reporting practices in mainland Europe. *Accounting, Auditing and Accountability Journal*, *4*(3), 62–71.

Roberts, J., McNulty, T., & Stiles, P. (2005). Beyond agency conceptions of the work of the non-executive director: Creating accountability in the boardroom. *British Journal of Management, 16*, S5–S26.

Roberts, L. G. (2017). Integrated reporting: The South African experience. *The CPA Journal, 87*(7), 10 –13.

Roberts, L., van Zijl, W., & Cerbone, D. (2020). *The Integrated Reporting Committee of South Africa*. Abingdon: The Routledge Handbook of Integrated Reporting.

Romanus, R. N. (2019). Earnings quality and investor reaction to restatement announcements. *Advances in Business Research, 9*(1), 46–63.

Romero, S., Ruiz, S., & Fernandez-Feijoo, B. (2019). Sustainability reporting and stakeholder engagement in Spain: Different instruments, different quality. *Business Strategy and the Environment, 28*(1), 221–232.

Rosener, J. B. 1995. *America's competitive secret: Utilizing women as a management strategy*. Oxford: Oxford University Press.

Ross, S. A., Westerfield, R. W., & Jordan, B. D. (2010). *Fundamentals of corporate finance (4e)*. New York: McGraw-Hill Irwin.

Rossouw, G. J., Van der Watt, A., & Rossouw, D. M. (2002). Corporate governance in South Africa. *Journal of Business Ethics, 37*(3), 289–302.

Rouen, E., Sachdeva, K., & Yoon, A. (2022). *The evolution of ESG reports and the role of voluntary standards*.[Working Paper No. 23-024]. Harvard Business School. Retrieved from https://www.hbs.edu/ris/Publication%20Files/23-024_5d9ec300-5c37-4cac-9edb-bcf59650ceb4.pdf (Accessed: 18 July 2025).

Ruch, G. W., & Taylor, G. (2015). Accounting conservatism: A review of the literature. *Journal of Accounting Literature, 34*(1), 17–38.

Ryan, A. B. (2006). Post-positivist approaches to research. *Researching and writing your thesis: A guide for postgraduate students*. Maynooth Adult and Community Education.

Samkin, G., & Schneider, A. (2010). Accountability, narrative reporting and legitimation: The case of a New Zealand public benefit entity. *Accounting, Auditing and Accountability Journal*, *23*(2), 256–289.

Sampong, F., Boahene, K. O., & Kweitsu, G. (2018). Apartheid-induced corporate social responsibility in the context of South Africa: A review. *Journal of Developing Country Studies*, *8*(10), 62–71.

Sarkar, J., Sarkar, S., & Sen, K. (2008). Board of directors and opportunistic earnings management: Evidence from India. *Journal of Accounting, Auditing and Finance*, *23*(4), 517–551.

Sasol. (2020). *Sasol limited integrated report for the year ended 30 June 2020*. Retrieved from https://www.sasol.com/sites/default/files/financial_reports/Integrated%20Report%202020.pdf (Accessed: 29 June 2021).

Sasol. (2023). *Sasol Limited integrated report for the year ended 30 June 2023*. Retrieved from https://www.sasol.com/sites/default/files/2023-12/SASOL%20Integrated%20Report%202023%20%281%29.pdf (Accessed: 18 August 2024).

Sassen, R., Hinze, A. K., & Hardeck, I. (2016). Impact of ESG factors on firm risk in Europe. *Journal of Business Economics*, *86*, 867–904.

Sciarelli, M., Cosimato, S., Landi, G., & Iandolo, F. (2021). Socially responsible investment strategies for the transition towards sustainable development: The importance of integrating and communicating ESG. *The TQM Journal*, *33*(7), 39–56.

Scott, W. R. (1995). *Institutions and organizations*. Thousand Oaks, California: Sage Publications.

Serafeim, G. (2015). Integrated reporting and investor clientele. *Journal of Applied Corporate Finance*, *27*(2), 34–51.

Sethi, S. P., & Schepers, D. H. (2014). United Nations Global Compact: The promise–performance gap. *Journal of Business Ethics*, *122*, 193–208.

Setia, N., Abhayawansa, S., Joshi, M., & Huynh, A. V. (2015). Integrated reporting in South Africa: Some initial evidence. *Sustainability Accounting, Management and Policy Journal*, *6*(3), 397–424.

Shocker, A. D., & Sethi, S. P. (1973). An approach to incorporating societal preferences in developing corporate action strategies. *California Management Review*, *15*(4), 97–105.

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

Siew, R. Y. (2015). A review of corporate sustainability reporting tools (SRTs). *Journal of Environmental Management*, *164*, 180–195.

Simon, M. A. (1996). Beyond inductive and deductive reasoning: The search for a sense of knowing. *Educational Studies in Mathematics*, *30*(2), 197–210.

Sinclair, P., & Walton, J. (2003). Environmental reporting within the forest and paper industry. *Business Strategy and the Environment*, *12*, 326–337.

Sinwell, L. (2013). The Marikana strike: The origins of a living wage demand and changing forms of worker struggles in Lonmin platinum mine, South Africa. *Labour, Capital and Society*, *46*(1/2), 92–115.

Siueia, T. T., Wang, J., & Deladem, T. G. (2019). Corporate social responsibility and financial performance: A comparative study in the Sub-Saharan Africa banking sector. *Journal of Cleaner Production*, *226*, 658–668.

Skinner, C., & Mersham, G. (2008). Corporate social responsibility in South Africa: Emerging trends. *Society and Business Review*, *3*(3), 239–255.

Soederberg, S. (2007). Taming corporations or buttressing market-led development? A critical assessment of the global compact. *Globalizations*, *4*(4), 500–513.

Solomon, J. (2013). *Corporate governance and accountability (4e).* Chichester: Wiley.

Solomon, J., & Maroun, W. (2012a). *The influence of King III on social, ethical and environmental reporting*. London: ACCA.

Solomon, J., & Maroun, W. (2012b). *Reporting pre- and post-King III: What's the difference?*. London: ACCA.

Sonnenberg, D., & Hamann, R. (2006). The JSE Socially Responsible Investment Index and the state of sustainability reporting in South Africa. *Development Southern Africa*, *23*(2), 305–320.

Soobaroyen, T., & Ntim, C. G. (2013). Social and environmental accounting as symbolic and substantive means of legitimation: The case of HIV/AIDS reporting in South Africa. *Accounting Forum*, *37*(2), 92–109.

South Africa. (1983). Conservation of Agricultural Resources Act, No. 43 of 1983. *Government Gazette*, 214(8673), 1–46. Retrieved from https://www.gov.za/sites/default/files/gcis_document/201504/act-43-1983.pdf (Accessed: 16 February 2024).

South Africa. (1998). Employment Equity Act, No. 55 of 1998. *Government Gazette*, 400(19370), 1–54. Retrieved from https://www.gov.za/sites/default/files/gcis_document/201409/a55-980.pdf (Accessed: 15 August 2021).

South Africa. (1998). National Forests Act, No. 84 of 1998. *Government Gazette, 400*(19408), 1–82. Retrieved from https://www.gov.za/sites/default/files/gcis_document/201409/a84-98.pdf (Accessed: 7 August 2022).

South Africa. (2002). Mineral and Petroleum Resources Development Act, No. 28 of 2002. *Government Gazette, 448*(23922), 1–122. Retrieved from https://www.gov.za/sites/default/files/gcis_document/201409/a28-02ocr.pdf (Accessed: 22 July 2021).

South Africa. (2003). Broad-Based Black Economic Empowerment Act, No. 53 of 2003. *Government Gazette,* 463(25899), 1–10. Retrieved from https://www.gov.za/sites/default/files/gcis_document/201409/a53-030.pdf (Accessed: 9 August 2021).

South Africa. (2008). Companies Act, No. 71 of 2008. *Government Gazette,* 526(32121), 1–197. Retrieved from https://www.gov.za/sites/default/files/gcis_document/201409/321214210.pdf (Accessed: 22 July 2021).

South Africa. (2011). Companies Amendment Act, No. 3 of 2011. *Government Gazette,* 550(34243), 1–114. Retrieved from https://www.gov.za/sites/default/files/gcis_document/201409/34243gon370.pdf (Accessed: 22 July 2021).

South Africa. (2011). National Treasury, Pension Funds Act, No. 24 of 1956: Amendment of Regulation 28 of the Regulations made under section 36. *Government Gazette,* 549(34070), 1–19. Retrieved from http://www.treasury.gov.za/publications/other/Reg28/Reg%2028%20-%20for%20Budget%202011.pdf (Accessed: 1 September 2021).

South Africa. (2019). Carbon Tax Act, No. 15 of 2019. *Government Gazette,* 647(42483), 1–65. Retrieved from https://www.gov.za/sites/default/files/gcis_document/201905/4248323-5act15of2019carbontaxact.pdf (Accessed: 21 November 2024).

South African Institute of Chartered Accountants (SAICA). (2012). Framework for integrated

reporting and the integrated report: Discussion paper. Retrieved from https://www.integratedreportingsa.org/ircsa/wp-content/uploads/2017/05/IRC-of-SA-Integrated-Reporting-Guide-Jan-11.pdf (Accessed: 25 July 2025).

Sørensen, H. T., Sabroe, S., & Olsen, J. (1996). A framework for evaluation of secondary data sources for epidemiological research. *International Journal of Epidemiology*, *25*(2), 435–442.

Spence, M. (1973). Job market signaling. *Quarterly Journal of Economics*, *87*(3), 355–374.
Sperandei, S. (2014). Understanding logistic regression analysis. *Biochemia Medica*, *24*(1), 12–18.

Srinidhi, B. I. N., Gul, F. A., & Tsui, J. (2011). Female directors and earnings quality. *Contemporary Accounting Research*, *28*(5), 1610–1644.

Standard Bank. (2020). *Standard Bank Group annual integrated report 2020*. Retrieved from https://www.standardbank.com/static_file/StandardBankGroup/filedownloads/2020SBGAnnualIntegratedReport.pdf (Accessed: 2 July 2021).

Steyn, M. (2014). Organisational benefits and implementation challenges of mandatory integrated reporting: Perspectives of senior executives at South African listed companies. *Sustainability Accounting, Management and Policy Journal*, *5*(4), 476–503.

Stubben, S. R. (2010). Discretionary revenues as a measure of earnings management. *The Accounting Review*, *85*(2), 695–717.

Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, *20*(3), 571–610.

Sustainability Accounting Standards Board (SASB). (2022). *About us*. Retrieved from https://sasb.ifrs.org/ (Accessed: 2 September 2022).

Swaminathan, B., & Gerner-Smidt, P. (2007). The epidemiology of human listeriosis. *Microbes and Infection*, *9*(10), 1236–1243.

Taherdoost, H. A. M. E. D., Sahibuddin, S. H. A. M. S. U. L., & Jalaliyoon, N. E. D. A. (2014). Exploratory factor analysis: Concepts and theory. *Advances in Applied and Pure Mathematics*, *27*, 375–382.

Talbot, D., & Boiral, O. (2018). GHG reporting and impression management: An assessment of sustainability reports from the energy sector. *Journal of Business Ethics*, *147*(2), 367–383.

Taylor, A. B., West, S. G., & Aiken, L. S. (2006). Loss of power in logistic, ordinal logistic, and probit regression when an outcome variable is coarsely categorized. *Educational and Psychological Measurement*, *66*(2), 228–239.

Terjesen, S., Sealy, R., & Singh, V. (2009). Women directors on corporate boards: A review and research agenda. *Corporate Governance: An International Review*, *17*(3), 320–337.

The Organisation for Economic Co-operation and Development (OECD). (1999). *OECD principles of corporate governance*: *Meeting of the OECD council at ministerial level, 1999*. Retrieved from https://one.oecd.org/document/C/MIN(99)6/en/pdf (Accessed: 4 August 2022).

Thomas, R., van Zijl, W., & Maroun, W. (2017). *HIV/AIDS related disclosures in South African mining companies' integrated reports: Initial insights*. In 2017 Southern African Accounting Association Biennial International Conference Proceedings . Retrieved from https://www.saaa.org.za/Downloads/Publications/FAC019%20HIV-AIDS%20related%20disclosures%20in%20SA%20mining%20companies%20integrated%20reports.pdf (Accessed: 5 June 2024).

Thomson, I. (2015). 'But does sustainability need capitalism or an integrated report' a commentary on 'the International Integrated Reporting Council: A story of failure' by Flower, J. *Critical Perspectives on Accounting*, *27*, 18–22.

Tiger Brands. (2016). *Tiger Brands integrated annual report 2016*. Retrieved from https://www.tigerbrands-online.co.za/reports/ir-2016/pdf/int-shr.pdf (Accessed: 29 July 2024).

Trialogue (2018). *Trialogue: Business in society handbook 2018*. Retrieved from https://trialogue.co.za/wp-content/uploads/2018/11/BusinessInSociety2018.pdf (Accessed: 5 November 2021).

Tricker, R. I. (2015). *Corporate governance: Principles, policies, and practices*. Oxford: Oxford University Press.

Tshipa, J. J. (2017). *Corporate governance and financial performance: A study of companies listed on the Johannesburg Stock Exchange* [Doctoral dissertation]. University of Pretoria.

Utz, S. (2019). Corporate scandals and the reliability of ESG assessments: Evidence from an international sample. *Review of Managerial Science, 13*(2), 483–511.

Vähämaa, E. (2017). Female executives and corporate governance. *Managerial Finance, 43*(10), 1056–1072.

Van der Laan, S. (2009). The role of theory in explaining motivation for corporate social disclosures: Voluntary disclosures vs 'solicited' disclosures. *Australasian Accounting, Business and Finance Journal, 3*(4), 15–29.

Van der Waal, J. W., & Thijssens, T. (2020). Corporate involvement in Sustainable Development Goals: Exploring the territory. *Journal of Cleaner Production, 252*, 1–11.

Van Vuuren, H. J. (2020). The disclosure of corporate governance: A tick-box exercise or not?. *International Journal of Business and Management Studies, 12*(1), 50–65.

Van Zijl, W., Maroun, W., & Wöstmann, C. (2017). Strategy disclosures by listed financial services companies: Signalling theory, legitimacy theory and South African integrated reporting practices. *South African Journal of Business Management, 48*(3), 73–85.

Van Zyl, A. S. (2013). Sustainability and integrated reporting in the South African corporate sector. *International Business and Economics Research Journal, 12*(8), 903–926.

Varachia, Z., & Yasseen, Y. (2020). The use of graphs as an impression management tool in the annual integrated reports of South African listed entities. *Journal of Economic and Financial Sciences*, *13*(1), 1–11.

Vaughn, M., & Ryan, L. V. (2006). Corporate governance in South Africa: A bellwether for the continent?. *Corporate Governance*: *An International Review*, *14*(5), 504–512.

Visser, W. (2005a). *Revisiting Carroll's CSR pyramid: An African perspective.* Retrieved from http://www.waynevisser.com/wp-content/uploads/2012/04/chapter_wvisser_africa_csr_pyramid.pdf (Accessed: 3 July 2021).

Visser, W. (2005b). Corporate citizenship in South Africa: A review of progress since democracy. *Journal of Corporate Citizenship*, *18*, 29–38.

Viviers, S., & Eccles, N. S. (2012). 35 years of socially responsible investing (SRI) research-general trends over time. *South African Journal of Business Management*, *43*(4), 1–16.

Viviers, S., & Els, G. (2017). Responsible investing in South Africa: Past, present and future. *African Review of Economics and Finance*, *9*(1), 122–155.

Vos, B. S., & Reddy, T. L. (2014). *The use of environmental sustainability reporting by South African companies to promote environmental sustainability* [Paper presentation]. Actuarial Society Convention, Cape Town. Retrieved from https://www.actuarialsociety.org.za/convention/convention2014/assets/pdf/papers/2014%20ASSA%20Vos%20Reddy.pdf (Accessed: 9 May 2022).

Vourvachis, P., & Woodward, T. (2015). Content analysis in social and environmental reporting research: Trends and challenges. *Journal of Applied Accounting Research*, *16*(2), 166–195.

Wan, Y., Hong, Z., Liu, W., & Cui, J. (2023). Executives' education: A catalyst for enhanced ESG disclosure. *Finance Research Letters*, *58*, 1–8.

Wand, Y., & Weber, R. (1993). On the ontological expressiveness of information systems analysis and design grammars. *Information Systems Journal*, *3*(4), 217–237.

Wang, M. C. (2017). The relationship between firm characteristics and the disclosure of sustainability reporting. *Sustainability*, *9*(4), 1–14.

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.

Wang, X., & Wu, M. (2011). The quality of financial reporting in China: An examination from an accounting restatement perspective. *China Journal of Accounting Research*, *4*(4), 167–196.

Wasiuzzaman, S., & Wan Mohammad, W. M. (2020). Board gender diversity and transparency of environmental, social and governance disclosure: Evidence from Malaysia. *Managerial and Decision Economics*, *41*(1), 145–156.

Weber, O. (2014). Environmental, social and governance reporting in China. *Business Strategy and the Environment*, *23*(5), 303–317.

West, A. (2006). Theorising South Africa's corporate governance. *Journal of Business Ethics*, *68*(4), 433–448.

Wild, S., & van Staden, C. (2013). *Integrated reporting: Initial analysis of early reporters–an institutional theory approach*. 7th Asia Pacific interdisciplinary accounting research conference. Retrieved from http://www.sakauelab.org/archives/apira2013/proceedings/pdfs/K236.pdf (Accessed: 2 July 2021).

Williams, R. J., & Barrett, J. D. (2000). Corporate philanthropy, criminal activity, and firm reputation: Is there a link?. *Journal of Business Ethics*, *26*, 341–350.

Windolph, S. E. (2011). Assessing corporate sustainability through ratings: Challenges and their causes. *Journal of Environmental Sustainability*, *1*(1), 37–57.

Winn, M. L., & Angell, L. C. (2000). Towards a process model of corporate greening. *Organization Studies*, *21*(6), 1119–1147.

Wiseman, J. (1982). An evaluation of environmental disclosures made in corporate annual reports. *Accounting, Organizations and Society*, *7*(1), 53–63.

Wolpe, H. (1972). Capitalism and cheap labour-power in South Africa: From segregation to apartheid. *Economy and Society*, *1*(4), 425–456.

Woodward, D., & Woodward, T. (2001). *The case for a political economy of accounting: A critique of the arguments*. . [Working Paper No. 21]. Bournemouth University: School of Finance and Law. Retrieved from https://eprints.bournemouth.ac.uk/3076/1/314.pdf (Accessed: 22 May 2025).

World Health Organization (WHO). (2018). *Disease outbreak news: Listeriosis-South Africa*. Retrieved from https://www.who.int/emergencies/disease-outbreak-news/item/28-march-2018-listeriosis-south-africa-en (Accessed: 29 July 2024).

Xie, J., Nozawa, W., Yagi, M., Fujii, H., & Managi, S. (2019). Do environmental, social, and governance activities improve corporate financial performance?. *Business Strategy and the Environment*, *28*(2), 286–300.

Zarzycka, E., & Krasodomska, J. (2021). Non-financial key performance indicators: What determines the differences in the quality and quantity of the disclosures?. *Journal of Applied Accounting Research*, *23*(1), 139–162.

Zheng, Q., Luo, Y., & Maksimov, V. (2015). Achieving legitimacy through corporate social responsibility: The case of emerging economy firms. *Journal of World Business*, *50*(3), 389–403.

Zhou, S., Simnett, R., & Hoang, H. (2019). Evaluating combined assurance as a new credibility enhancement technique. *Auditing: A Journal of Practice and Theory*, *38*(2), 235–259.

Zhou, X., Zhang, J., & Li, J. (2013). Industrial structural transformation and carbon dioxide emissions in China. *Energy Policy, 57,* 43–51.

Appendices

Appendix A: Scoring criteria for indicators related to the corporate adoption of ESG policies

VARIABLES RELATED TO THE CORPORATE ADOPTION OF ENVIRONMENTAL POLICIES		
Environmental resource use score (ERU) - total 18 points	**Environmental emissions score (EMS) - total 18 points**	**Environmental innovation score (EINV) - total 18 points**
Resource Reduction Policy	Policy Emissions	Environmental Products
Policy Water Efficiency	Targets Emissions	Eco-Design Products
Policy Energy Efficiency	Biodiversity Impact Reduction	Noise Reduction
Policy Sustainable Packaging	Emissions Trading	Hybrid Vehicles
Policy Environmental Supply Chain	Climate Change Commercial Risks Opportunities	Environmental Assets Under Management
Resource Reduction Targets	NOx and SOx Emissions Reduction	Equator Principles
Targets Water Efficiency	VOC or Particulate Matter Emissions Reduction	Environmental Project Financing
Targets Energy Efficiency	VOC Emissions Reduction	Nuclear
Environment Management Team	Particulate Matter Emissions Reduction	Organic Products Initiatives
Environment Management Training	Waste Reduction Initiatives	Product Impact Minimization
Environmental Materials Sourcing	e-Waste Reduction	Take-back and Recycling Initiatives
Toxic Chemicals Reduction	Environmental Restoration Initiatives	Product Environmental Responsible Use
Renewable Energy Use	Staff Transportation Impact Reduction	GMO Products
Green Buildings	Environmental Expenditures Investments	Agrochemical 5 % Revenue
Environmental Supply Chain Management	Environmental Investments Initiatives	Renewable/Clean Energy Products
Environmental Supply Chain Monitoring	Environmental Partnerships	Water Technologies
Env Supply Chain Partnership Termination	Internal Carbon Pricing	Sustainable Building Products
Land Environmental Impact Reduction	Policy Nuclear Safety	Fossil Fuel Divestment Policy

Note. Data sourced from Refinitiv ESG database (2022).

VARIABLES RELATED TO THE CORPORATE ADOPTION OF SOCIAL POLICIES			
Social workforce score (SWS) - total 20 points	**Social community score (SCS) - total 13 points**	**Social product responsibility score (SPRD) - total 12 points**	**Social human rights score (SHRS) - total 9 points**
Health & Safety Policy	Policy Fair Competition	Policy Customer Health & Safety	Human Rights Policy
Policy Employee Health & Safety	Policy Bribery and Corruption	Policy Data Privacy	Policy Freedom of Association
Policy Supply Chain Health & Safety	Policy Business Ethics	Policy Cyber Security	Policy Child Labor
Training and Development Policy	Policy Community Involvement	Policy Responsible Marketing	Policy Forced Labor
Policy Skills Training	Improvement Tools Business Ethics	Policy Fair Trade	Policy Human Rights
Policy Career Development	Whistleblower Protection	Product Responsibility Monitoring	Fundamental Human Rights ILO UN
Policy Diversity and Opportunity	OECD Guidelines for Multinational Enterprises	Quality Mgt Systems	Human Rights Contractor
Targets Diversity and Opportunity	Extractive Industries Transparency Initiative	ISO 9000	Ethical Trading Initiative ETI
Employees Health & Safety Team	Employee Engagement Voluntary Work	Six Sigma and Quality Mgt Systems	Human Rights Breaches Contractor
Health & Safety Training	Corporate Responsibility Awards	Product Access Low Price	
Supply Chain Health & Safety Training	Product Sales at Discount to Emerging Markets	Healthy Food or Products	
Supply Chain Health & Safety Improvements	Diseases of the Developing World	Retailing Responsibility	
Employees Health & Safety OHSAS 18001	Crisis Management Systems		
Flexible Working Hours			
Day Care Services			
HIV-AIDS Program			
Internal Promotion			
Management Training			
Supplier ESG training			
Employee Resource Groups			

Note. Data sourced from Refinitiv ESG database (2022).

VARIABLES RELATED TO THE CORPORATE ADOPTION OF GOVERNANCE POLICIES
Governance CSR strategy score (GCSR) - total 26 points
CSR Sustainability Committee
Integrated Strategy in MD&A
Global Compact Signatory
Stakeholder Engagement
CSR Sustainability Reporting
GRI Report Guidelines
CSR Sustainability Report Global Activities
CSR Sustainability External Audit
UNPRI Signatory
SDG 1 No Poverty
SDG 2 Zero Hunger
SDG 3 Good Health and Well-being
SDG 4 Quality Education
SDG 5 Gender Equality
SDG 6 Clean Water and Sanitation
SDG 7 Affordable and Clean Energy
SDG 8 Decent Work and Economic Growth
SDG 9 Industry, Innovation and Infrastructure
SDG 10 Reduced Inequality
SDG 11 Sustainable Cities and Communities
SDG 12 Responsible Consumption and Production
SDG 13 Climate Action
SDG 14 Life Below Water
SDG 15 Life on Land
SDG 16 Peace and Justice Strong Institutions
SDG 17 Partnerships to achieve the Goal

Note. Data sourced from Refinitiv ESG database (2022).

Appendix B: The Mark Plan used in EY's Ranking

Fundamental Concepts of <IR> Framework	
• Various capitals (e.g. financial, manufacturing, human, intellectual, social and relationship, and natural capitals) that the organization uses and affects • How value is created	
Seven Guiding Principles	**Eight Content Elements**
• Strategic focus and future orientation • Connectivity of information • Stakeholder relationships • Materiality • Conciseness • Reliability and completeness • Consistency and comparability	• Organisational overview and external environment • Governance • Business model • Risk and opportunities • Strategy and resource allocation • Performance • Outlook • Basis of presentation

Note. Data sourced from EY Excellence in Integrated Reporting (2023).

Appendix C: Refinitiv Controversy Themes

Pillar	Category	Label	Description
Environment	Resource use	Environmental controversies	Number of controversies related to the environmental impact of the company's operations on natural resources or local communities.
Social	Community	Anti-competition controversy	Number of controversies published in the media linked to anti-competitive behaviour (e.g., anti-trust and monopoly), price-fixing or kickbacks.
Social	Community	Business ethics controversies	Number of controversies published in the media linked to business ethics in general, political contributions or bribery and corruption.
Social	Community	Intellectual property controversies	Number of controversies published in the media linked to patents and intellectual property infringements.
Social	Community	Critical countries controversies	Number of controversies published in the media linked to activities in critical, undemocratic countries that do not respect fundamental human rights principles.
Social	Community	Public health controversies	Number of controversies published in the media linked to public health or industrial accidents harming the health and safety of third parties (non-employees and non-customers).
Social	Community	Tax fraud controversies	Number of controversies published in the media linked to tax fraud, parallel imports or money laundering.
Social	Human rights	Child labour controversies	Number of controversies published in the media linked to use of child labour issues.
Social	Human rights	Human rights controversies	Number of controversies published in the media linked to human rights issues.
Social	Product responsibility	Consumer controversies	Number of controversies published in the media linked to consumer complaints or dissatisfaction directly linked to the company's products or services.
Social	Product responsibility	Customer health and safety controversies	Number of controversies published in the media linked to customer health and safety.
Social	Product responsibility	Privacy controversies	Number of controversies published in the media linked to employee or customer privacy and integrity.
Social	Product responsibility	Product access controversies	Number of controversies published in the media linked to product access.
Social	Product responsibility	Responsible marketing controversies	Number of controversies published in the media linked to the company's marketing practices, such

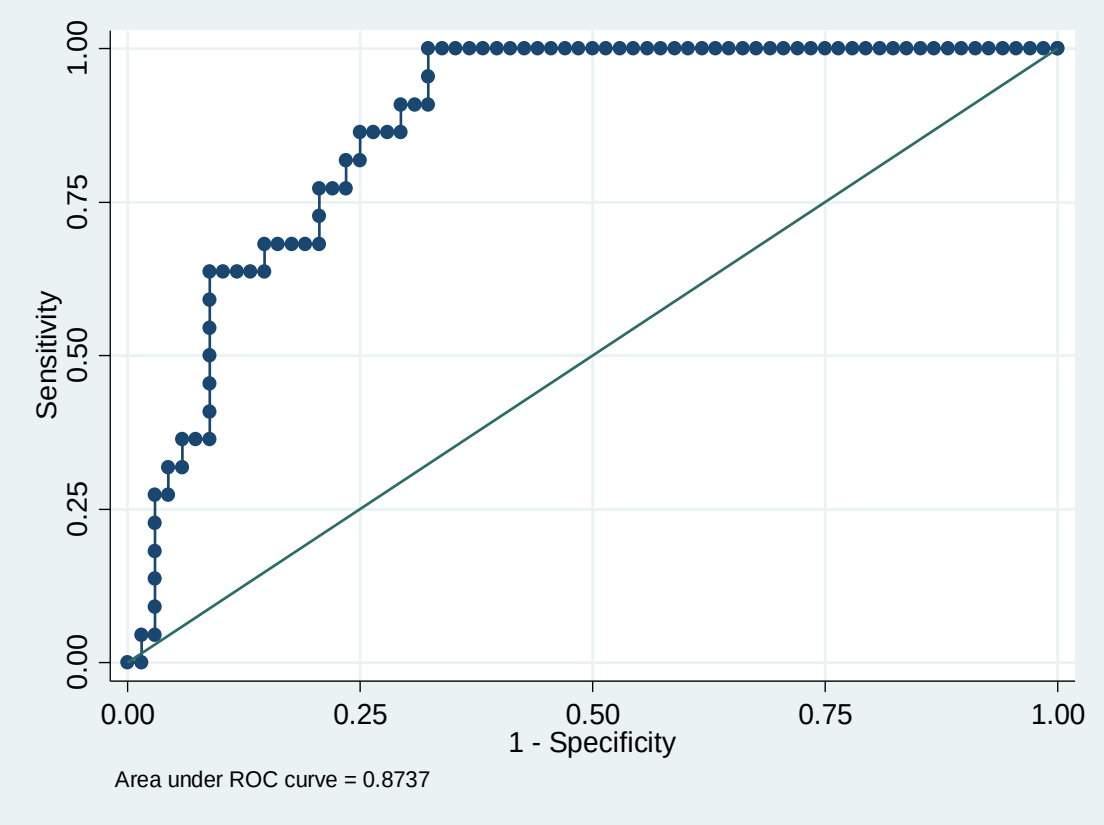
			as over-marketing of unhealthy food to vulnerable consumers.
Social	Product responsibility	Responsible R&D controversies	Number of controversies published in the media linked to responsible R&D.
Social	Workforce	Diversity and opportunity controversies	Number of controversies published in the media linked to workforce diversity and opportunity (e.g., wages, promotion, discrimination and harassment).
Social	Workforce	Employee health and safety controversies	Number of controversies published in the media linked to workforce health and safety.
Social	Workforce	Wages or working conditions controversies	Number of controversies published in the media linked to the company's relations with employees or relating to wages or wage disputes.
Social	Workforce	Strikes	Has there has been a strike or an industrial dispute that led to lost working days?
Governance	Shareholders	Accounting controversies count	Number of controversies published in the media linked to aggressive or non-transparent accounting issues.
Governance	Shareholders	Insider dealings controversies	Number of controversies published in the media linked to insider dealings and other share price manipulations.
Governance	Shareholders	Shareholder rights controversies	Number of controversies published in the media linked to shareholder rights infringements.
Governance	Management	Management compensation controversies count	Number of controversies published in the media linked to high executive or board compensation.

Note. Data sourced from Refinitiv ESG database (2022).

Appendix D: Classification matrix for 2013 logistic regression model

-------- True --------			
Classified	D	~D	Total
+	8	5	13
-	14	63	77
Total	22	68	90
Classified + if predicted Pr (D) >= .5 True D defined as contr ! = 0			
Sensitivity	Pr (+ | D)		36.36%
Specificity	Pr (- | ~D)		92.65%
Positive predictive value	Pr (D | +)		61.54%
Negative predictive value	Pr (~D | -)		81.82%
False + rate for true ~D	Pr (+ | ~D)		7.35%
False – rate for true D	Pr (- | D)		63.64%
False + rate for classified +	Pr (~D | +)		38.46%
False – rate for classified -	Pr (D | -)		18.18%
Correctly classified			**78.89%**

Appendix E: ROC curve for 2013 logistic regression model



Note. Data sourced from Refinitiv ESG database (2013).