

**An exploratory analysis of the environmental and social incentives of key
management personnel for JSE-listed companies**

A thesis submitted by

Shriya Haripersadh

Student number: 2096554

Email: shriyaharipersadh3@gmail.com

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Supervisors: Kayleigh Burnham and Professor Wayne Van Zijl

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Abstract

Societal pressure on companies to be environmentally and socially responsible as well as stock exchange requirements have led to the wide adoption of integrated reporting by public companies in South Africa (Baboukardos & Rimmel, 2016; De Villiers et al., 2014; IoDSA, 2016; Lokuwaduge & Heenetigala, 2017; Moloi & Iredele, 2020). The prior literature discusses the importance of remuneration linked to Key Performance Indicators (KPIs). Consequently, analysing whether Key Management Personnel (KMP) have non-financial KPI-linked remuneration provides strong evidence of a company's commitment to being socially and environmentally responsible. Currently, no research investigates this globally and in the South African context. This study presents a comprehensive comparative analysis of the integration of environmental and social (ES) KPIs in KMP remuneration for South African Johannesburg Stock Exchange listed companies. Data was collected from twenty companies from the JSE's top, middle and small capitalization companies at different points in time (2011, 2018 and 2022) using content analysis to provide a total sample of 60 companies with 180 firm-years. Data was analyzed using descriptive and inferential statistics. The prevalence, distribution and settlement methods of E, S, and combined ES KPIs in KMP remuneration structures were examined. Utilising both agency theory and stakeholder theory, the research explores how linking the remuneration of KMP to ES KPIs may serve the interests of both shareholders and stakeholders. The findings reveal a progressive adoption of ES KPIs in KMP remuneration structures over the investigated years, with notable variations observed across industries and company size. Larger companies and companies with higher social and environmental impacts utilize more ES KPIs in their remuneration policies. Industry-specific trends influencing the integration of ES KPIs were identified, shedding light on the evolving landscape of corporate governance and sustainability practices. By elucidating the dynamics between KMP remuneration and environmental and social performance metrics, this study contributes to a deeper understanding of how companies incentivise responsible leadership and foster sustainable business practices.

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Table of abbreviations

Abbreviation	Meaning
AIDS	Acquired immunodeficiency syndrome
CEO	Chief executive officer
CFO	Chief financial officer
COO	Chief operating officer
CSR	Corporate social responsibility
IoDSA	The Institute of Directors in South Africa
EPS	Earnings per share
E	Environmental
ES	Environmental and social
ESG	Environmental, social, and governance
EY	Ernst & Young
HIV	Human immunodeficiency viruses
HSE	Health, safety, and environment
IFAC	International Federation of Accountants
IFRS	International Financial Reporting Standards
IIRC	International Integrated Reporting Council
IR	Integrated Reporting
ISSB	International Sustainability Standards Board
JSE	Johannesburg Stock Exchange
KMP	Key management personnel
KPI	Key performance indicator
LSE	London Stock Exchange
MD	Managing director
OANDA	Olsen & Associates
PO	Prescribed officer
S	Social
SDG	Sustainable Development Goals
SO	Sustainability officer
SOC	State-Owned Companies
SPSS	Statistical Package for the Social Sciences
UN	The United Nations

1. Introduction

1.1. Introductory paragraphs

The detrimental impact of commercial activities on communities and the environment has become increasingly relevant in light of the escalating global sustainability crisis (Johnson et al., 2019; Serafeim, 2020; Shrivastava, 1995b). This crisis is evidenced by rapid climate change, water scarcity, threats to biodiversity, resource depletion, and pollution (Ehrlich & Ehrlich, 1970; Vlek & Steg, 2007). Consequently, companies are facing heightened scrutiny from stakeholders to become environmentally and socially (ES) responsible corporate citizens to ensure long-term sustainability and value creation (Fung, 2014; Lokuwaduge & Heenetigala, 2017; Serafeim, 2020). Corporate social responsibility (CSR) requires that companies go beyond the sole pursuit of corporate value and profitability to operate ethically and sustainably, considering the impact of their actions on society and the environment (Mahmud, 2019). In response to ES pressures, companies are increasingly disclosing their social and environmental impact and initiatives to address social and environmental challenges. In the South African context, this is often through a company's integrated report (IIRC, 2021; IoDSA, 2016; Malola & Maroun, 2019).

Directors and prescribed officers, hereinafter referred to as key management personnel (KMP), guided by their compensation packages, have predominantly focused on the pursuit of profits and the enhancement of share prices as these are the outcomes they have been incentivized to achieve (Amewu & Paul Alagidede, 2021). However, evidence from corporate scandals such as Bain & Company and Glencore evidences the limitations of prioritizing profit and share price maximization (Bhagat & Bolton, 2014; Fahlenbrach & Stulz, 2011; Faulkender et al., 2010; Sharma & Singh, 2018). South Africa has had its share of corporate controversies, including Tongaat-Hullet and Steinhoff International Holdings (Muzata & Marozva, 2022). Focusing solely on profit may result in shareholders and KMP benefitting at the expense of other stakeholders and the community at large (Bouaziz et al., 2020).

A growing body of literature has illustrated that companies focusing exclusively on profits while neglecting ES issues are not sustainable in the long run (George & Schillebeeckx, 2022; Settembre-Blundo et al., 2021). This casts doubt on the applicability and relevance of the shareholder primacy model (Esser & Delport, 2017; Ezeani & Williams, 2017; Signori et al., 2021). Broader stakeholders, including customers, employees, and communities, scrutinise companies' responses to ES impacts. There is also evidence that shareholders are advocating for responsible investing initiatives (Harrison et al., 2020; Signori et al., 2021).

According to Van Zyl and Mans-Kemp (2022), attention should be directed towards KMP remuneration particularly due to its role in contributing to corporate scandals in South Africa. PricewaterhouseCoopers' (PWC's) forensic investigation into Tongaat Hulett Limited's financial affairs revealed extensive manipulation of financial statements, benefiting KMP through a link to achieved employment targets (Phillips, 2019). Companies should exhibit awareness, sensitivity, and responsiveness to issues affecting society and the environment, as these concerns pose threats to their sustainability and continued operation (Settembre-Blundo et al., 2021). Central to this debate is the acknowledgement that companies should factor in societal challenges, such as climate change, pandemics, rapid technological changes, equity, and diversity, into remuneration practices (Kana, 2020). Most existing remuneration studies have overlooked the incorporation of ES performance when scrutinising the pay-performance relationship (Alves & Lourenço, 2022; Harjanti & Farhan, 2022).

Embracing ES responsibilities requires the attention of key decision-makers (Eccles & Krzus, 2010). KMP are engaged extensively in the entity's daily operations and are responsible for setting and implementing the company's strategy and value-creation processes (Epstein & Buhovac, 2010; Huse, 2007). Consequently, it is expected that companies that portray themselves as ES-responsible corporate citizens would include ES metrics as part of their KMP's remuneration via ES-linked key performance indicators (KPIs) (IoDSA, 2016). There is currently limited research on the inclusion of ES-linked KPIs in KMP remuneration. Research on KMP remuneration focuses on regulatory compliance, KMP earning disparities, and the relationship between remuneration and ES performance (Bussin & Barrett, 2016; Espi et al., 2019; Kirsten & Du Toit, 2018; Madlela & Cassim, 2017; Madlela & Lehloeny, 2016; Padia & Callaghan, 2021).

This study will specifically assess the ES KPIs in KMP remuneration policies of Johannesburg Stock Exchange (JSE) listed companies by considering the type and extent of ES KPIs incorporated in KMP remuneration. This research contributes to the existing research by providing evidence of whether companies are committed to ES through incentivizing KMP to perform in these areas. The use of ES KPIs in remuneration is critical to understand as it reveals whether companies are genuinely pursuing sustainability within their operations, rather than treating it as a tick-box exercise disconnected from what KMP are incentivized to pursue.

1.2. Statement of the problem

There is limited research on the use of ES-related KPIs in KMP remuneration in South Africa and globally. The incorporation of ES KPIs in remuneration policies will assist the entity in managing its non-financial performance and incentivize management to actively implement

the company's ES strategies and policies (Kaplan et al., 2004; Prusak, 2010). While several frameworks and guiding codes have been established to assist corporations in accounting for sustainability in their operations, namely the Triple Bottom Line (Elkington, 1997) and the King Codes (IoDSA, 2009, 2016), progress towards sustainability is slow (Allen et al., 2018; Kitsikopoulos et al., 2018). Consequently, exploring the incorporation of ES metrics into KMP remuneration is necessary to evaluate companies' commitment to ES sustainability.

1.3. Objective of the study

This study explores the ES KPIs included in the remuneration of South African KMP of JSE-listed companies for the 2011, 2018, and 2022 years. These years are selected as they represent key changes in the ES regulatory landscape (see Subsection 2.2.2).

1.4. Significance of the study

As KPIs align the interests of KMP with key strategic objectives of the entity, it is critical to understand the ES KPIs of KMP remuneration to evaluate how entities promote sustainable value creation (IoDSA, 2016; Kaplan & Norton, 2001). The sustainability crisis necessitates a holistic approach to remuneration, considering environmental, social, and economic factors to ensure long-term economic stability and societal existence (Benn et al., 2014). This study contributes to the existing body of literature regarding the use of sustainability measures in KMP compensation. With the recent amendments to existing sustainability frameworks and the introduction of new sustainability accounting standards, this research provides insight into the influences of ES KPIs on KMP compensation. The findings may also be useful to JSE-listed companies to benchmark their own ES remuneration policies with those of competitors and other industries, allowing them to adjust as necessary to promote sustainable growth. The study's findings will also be relevant to researchers interested in assessing impression management and greenwashing in integrated reports.

This study includes a discussion on the reporting of ES KPIs in KMP remuneration practices. The inclusion of ES performance has been largely overlooked in the literature, which has been primarily focused on financial performance measures (Arvidsson, 2011; Bouaziz et al., 2020; Hartikainen et al., 2021; Jiang & Jones, 2018; Kirsten & Du Toit, 2018; Matemane et al., 2023; Rappaport, 2006). By discussing the role played by KMP remuneration in ES performance, policymakers can evaluate the degree to which KMP, as stewards of ordinary shareholders' funds, are responsible and held accountable for contributing to the attainment of the Sustainable Development Goals (SDGs).

1.5. Research questions

This thesis explores the ES KPI remuneration of KMP of JSE-listed companies for years ending 2011, 2018, and 2022. The following sub-questions will be evaluated in addition to a general exploration of factors that are associated with different ES KPI remuneration practices:

1. What remuneration ES KPIs are currently implemented and utilized by JSE-listed companies for their KMP?
2. Have the trends in ES KPIs included in KMP remuneration changed over time?
3. Is there a difference in the ES KPIs included in KMP remuneration based on company size, industry, initial listing date, and KMP position?
4. Is there a difference between the number of ES KPIs included in the KMP remuneration of a company based on their EY Excellence in Integrated Reporting ranking¹?

More detail on the exploratory analysis is provided in Chapter 3.

1.6. Assumptions, limitations, delimitations

1.6.1. Assumptions

This study assumes that the remuneration policies disclosed in the integrated, remuneration and annual reports of JSE-listed companies are complete and accurately represent the remuneration policies that are employed by the companies investigated.

1.6.2. Limitations

This study only investigates JSE-listed companies. Caution must be used when applying the results to different countries and contexts. Companies may disclose their KMP remuneration KPIs in different degrees of granularity. This affects the data collected and consequently the findings. As the EY Excellence in Integrated Reporting awards only assess the top 100 JSE-listed companies, only large and some mid-cap companies were studied to answer research question 3. Only a sample of companies' reports for the years ending 2011, 2018, and 2022 were analyzed. Different results could arise if all listed companies had been analyzed.

1.6.3. Delimitations

This study only examined JSE-listed companies with publicly available annual, integrated, and remuneration reports, for the years ending 2011, 2018, and 2022. This research only

¹ The EY Excellence in Integrated Reporting awards only evaluate the Top 100 JSE-listed companies. This study encompasses a sample comprising 20 companies each from the categories of large, mid, and small capitalizations. Consequently, not all companies sampled have EY Excellence rankings. Only those sampled companies with rankings were analyzed for this research question.

considers KPIs for KMP as these profiles are usually disclosed in sufficient detail and impact a company's ES sustainability.

The remainder of this paper is structured as follows. Chapter 2 begins with a discussion of the relevant theoretical frameworks used to frame the study, this is followed by a review of the literature on ES reporting and factors influencing KMP remuneration. Chapter 3 explains the details of the research methodology used in the study. The ensuing Chapter 4 presents the empirical findings of the study, and the conclusive insights drawn from these findings are encapsulated in Chapter 5.

2. Literature review

The literature review begins with a discussion of the theoretical frameworks used to frame the study. This is followed by a discussion of the existing literature on KMP remuneration and ES-linked KPIs and reporting.

2.1. Theoretical frameworks

2.1.1. Agency theory

Agency theory is a fundamental concept in economics, management, and corporate governance that addresses the relationship between principals (such as shareholders) and agents (such as KMP or employees) in organizations (Jensen & Meckling, 1976; Ross, 1973). The theory focuses on the potential conflicts of interest that arise when the goals of principals and agents diverge as a result of the separation of ownership and control in a firm (Panda & Leepsa, 2017). KMP of a company are entrusted with the responsibility of the company's functioning and are assigned specific roles and duties by shareholders (Cadbury, 1992). The principal-agent relationship raises the possibility that the agent will act in their self-interest rather than in the best interest of the principal due to differing goals and preferences (Eisenhardt, 1989; Jensen & Meckling, 1976). Agency costs arise from the need to mitigate conflicts of interest and to ensure that agents act in the best interests of the principals, encompassing monitoring and control expenses, bonding costs, and residual losses due to agency problems (Panda & Leepsa, 2017). Agency theory provides insights into how to align the interests of principals and agents, mitigate the risk of opportunistic behaviour by agents, and design effective incentive systems and control mechanisms (Eisenhardt, 1989).

The optimal contracting theory is an extension of agency theory and uses remuneration as a tool to motivate KMP to operate in the best interests of shareholders, minimizing agency costs and difficulties (Grossman & Hart, 1992; Holmström, 1979). Monitoring systems seek to diminish information asymmetry to prevent agents from misleading their principals (Bergh et

al., 2019). While shareholders may monitor disclosures to prevent concealing adverse organizational outcomes, the effectiveness of monitoring is limited, particularly when agents possess high autonomy and specialized information (Gomez-Mejia & Balkin, 1992). Agents, being closer to the day-to-day operations of the business, have access to intricate details about the company's processes, technologies, market conditions, and other factors that may not be readily available to the shareholders (principals). In such cases, principals resort to outcome-based incentives, aligning the interests of agents with their own and reducing conflicts of self-interest (Eisenhardt, 1989). These incentives are employed to mitigate the impact of information asymmetry by rewarding agents for actions aligned with principal objectives (Jensen, 1983). Corporations tend to use managerial incentives such as annual performance bonuses, share-option schemes, and long-term incentive schemes to align the interests of KMP with those of shareholders to mitigate the principal-agent problem (Boyd, 1994; Goranova & Ryan, 2014). Managerial incentives are a visible and important mechanism to direct managerial attention to specific goals and objectives having both financial and social performance implications (McGuire et al., 2019).

Agency theory indicates that the strategic alignment of KMP remuneration with ES performance is essential in mitigating potential conflicts of interest between KMP and shareholders (IoDSA, 2016). This alignment serves as a fundamental mechanism for incentivizing KMP to make decisions that align with the short and long-term sustainable interests of shareholders (Park & Lee, 2021). By linking remuneration to ES performance, the company establishes a structure where the goals of KMP are directly compatible with those of shareholders, fostering incentive compatibility (Eisenhardt, 1989). This strategic link not only reduces agency costs by aligning objectives but also promotes the creation of sustained value creation through ES KPIs in KMP remuneration (IFAC, 2020b).

As KMP do not have a residual claim on a firm's profits, they may be more inclined to emphasize ES performance than owners, who may be more focused on profit maximization (Barnea & Rubin, 2010; Halme & Huse, 1997). Management's increasing emphasis on environmental and social factors over shareholder interests can be attributed to a strategic recognition of the evolving business landscape. Beyond short-term financial gains, management acknowledges that factors such as sustainability, ethical business practices, and social responsibility significantly impact the company's long-term viability. Barnea and Rubin (2010) consider CSR engagement as a principal-agent relationship between KMP and shareholders and argue that managers have an interest in over-investing in CSR to obtain private benefits of building a reputation as good social citizens, possibly at a cost to shareholders. KMP may be inclined to improve their own reputation as well as the firm's reputation to earn public prestige by pursuing non-profit initiatives (Halme & Huse, 1997). By

prioritizing ES considerations, KMP not only contributes to the greater good but also strategically positions the company for long-term success in a competitive and socially conscious business environment.

An alternative argument should also be considered, whereby owners support the long-term strategic objectives for sustainable value creation and thus encourage the use of ES KPIs to manage KMP (Barnea & Rubin, 2010; Halme & Huse, 1997). In this perspective, owners encourage the use of ES metrics to manage KMP, ensuring that KMP aligns their decisions with the company's long-term sustainability goals. This stance reflects an understanding that responsible corporate behaviour contributes to risk mitigation, market resilience, and the cultivation of a positive corporate image. By integrating ES principles into remuneration and performance, shareholders aim to foster enduring success, recognizing that environmental and social considerations are integral to achieving sustainable value creation and enhancing overall shareholder value. Several South African studies on KMP remuneration, such as those conducted by Deysel and Kruger (2015), Marimuthu and Kwenda (2019), and Padia et al. (2020), rely on the principal-agent theory to explain incentive-based ES performance.

Agency theory asserts that the size of an entity significantly influences the dynamics of the principal-agent relationship. In the context of ES reporting, the size of the entity becomes relevant due to the close relationship between owners (principals) and KMP (agents). Smaller entities typically interact more with owners and KMP, allowing for a higher level of trust and direct monitoring of agent behaviour (Brunninge et al., 2007). As a result, smaller entities may require fewer ES KPIs to align the interests of principals and agents. The proximity of this relationship reduces the necessity for an extensive array of KPIs to ensure that KMP acts in the best interests of owners, consequently diminishing the potential for agency conflicts. However, the scenario shifts for larger entities, where the scale and complexity introduce challenges related to separation of ownership and control, diverse stakeholder interests, and global operations. In larger entities, a more intricate set of ES KPIs becomes essential to address the complexities associated with limited owner-management interaction, diverse stakeholder expectations, risk management on a global scale, regulatory compliance challenges, and the need for robust mechanisms to mitigate agency conflicts. The nuanced dynamics in larger entities underscore the necessity for a comprehensive and sophisticated approach to ES reporting to align the interests of principals and agents in the pursuit of sustainable and responsible business practices.

Agency theory alone offers a limited understanding of the intricate relationship between pay and performance. In the contemporary landscape, shareholders are no longer the sole stakeholders. Customers, employees, and society at large have become essential participants

in the corporate sector (Post et al., 2002; Signori et al., 2021). In the South African context, where poverty, unemployment, and inequality are prevalent (Kerr & Wittenberg, 2021; Viviers, 2015), there is a call for action that benefits the public good, not just from the government but also from the private sector. Companies now require not only a legal permit to operate but also a social license (van der Meer & Jonkman, 2021). This study uses stakeholder theory in conjunction with agency theory to explore KMP remuneration practices.

2.1.2. Stakeholder theory

Stakeholder theory asserts that businesses should create value for all stakeholders, not only those who profit from the business operations (R. Freeman, 1984). R. E. Freeman (1984, p. 46), defines a stakeholder as “any group or individual who can affect or is affected by the achievement of the organization’s objectives”. Being responsible to those involved in business operations, such as employees and customers, may assist in the growth of the business by strengthening the entity’s reputation and building a competitive advantage (Carroll & Shabana, 2010). From a broader perspective, being responsible for the environment and communities, impacted by operations may bring about the benefits of being a good corporate citizen. These benefits include tax rebates and “free” publicity (Sprinkle & Maines, 2010). Given that KMP act on behalf of the company, their decisions and actions have both a direct and indirect impact on all stakeholders (Deloitte, 2017). As a result, company remuneration policies need to incentivize responsible ES performance, to ensure sustainable value creation for all stakeholders (IoDSA, 2016; Kaplan & Norton, 2001).

Stakeholder theory provides a reasoned perspective on how firms should manage their relationships with stakeholders to facilitate the development of competitive resources and attain sustained value (Freeman et al., 2010; IFAC, 2020b). Stakeholder engagement can lead to greater trust in the organization based on increased accountability and transparency, and can ultimately lead to the creation of sustainable stakeholder value (Crous & Van Wyk, 2021). The stakeholder perspective also explains how a firm’s stakeholder network can itself be a source of sustainable competitive advantage (Harrison et al., 2010). Stakeholder theory underscores the need for organizations to align their actions and disclosures with societal expectations and the need to gain and maintain approval in the eyes of stakeholders and the broader society (Parmar et al., 2010).

Stakeholder theory emphasizes the need for a cooperative and collaborative relationship between the company and all its stakeholders to create and sustain value for the benefit of all participants over time (Freeman, 2010; Freudenreich et al., 2020; Lüdeke-Freund & Dembek, 2017). This collaborative approach, guided by stakeholder expectations, has resulted in calls for companies to avoid narrow profit pursuit at the expense of sustainability, humanity, and

the environment (Henisz et al., 2014; Sisodia et al., 2003). Traditionally, organizational value is rooted in profitability, as underpinned by agency theory, with management creating value through increased profits, cash flow, and return on investment, along with reducing costs and taxes (Barnabè et al., 2019; Dalbol & Dalbol, 2011; Freudenreich et al., 2020; Karia, 2019; Śledzik, 2013). On the other hand, value creation for stakeholders entails that an organization must consider the needs of different stakeholder groups to achieve sustainability (Acciaro, 2015). Crous and Van Wyk (2021) note that it may be challenging to identify the contributions to creating value for various stakeholders within an organization especially because the literature on value creation often emphasizes investors as the main stakeholders, with other parties such as employees, KMP, suppliers, customers, and society playing secondary roles (Adams, 2017; Barnabè et al., 2019; Freudenreich et al., 2020; Gokten & Gokten, 2017). Quantifying the objective value created for each group is a common method for defining value; however, identifying qualitative subjective value presents greater difficulty (Crous & Van Wyk, 2021). However, there is a multitude of ES reporting frameworks to assist in the qualitative analysis as discussed in Chapter 2.3.

“Every business has always created and sometimes destroyed multiple kinds of value (e.g., financial, intellectual, social, emotional, spiritual, cultural, and ecological) for customers, suppliers, employees, communities, and financiers” (Freeman et al., 2020, p. 225). A commitment to the diverse interests of stakeholders is rooted in the recognition that businesses should create value not only for shareholders but also for a broader spectrum of stakeholders. Consequently, industry-specific norms and the interests of relevant stakeholders play a pivotal role in determining the ES management systems that are implemented by companies (Galbreath, 2013; Garcia et al., 2017). Different entities operating in different industries will report on distinct ES objectives and responsibilities, driven by the imperative to meet the expectations of owners and other stakeholders as well as comply with regulations to obtain societal approval (Fekrat et al., 1996; Stanga, 1976). The smaller the company, the less visibility and stakeholder pressure it faces to engage in ES reporting to other stakeholders (Jenkins, 2004; Wickert et al., 2016).

Recognizing that companies should be accountable to multiple stakeholders beyond shareholders, this study suggests that executives in South African companies should be incentivized to address ES issues facing the nation. To obtain stakeholder approval, they should contribute to mitigating unemployment, inequality, and climate change to name a few issues (Matemane et al., 2023). Within the stakeholder theory framework, the position and behaviour of KMP are central factors in determining the ES KPIs to promote sustainable behaviours. The strategic oversight provided by KMP aligns with the long-term goals of stakeholder theory, as they set the tone for sustainable practices through their decisions on

resource allocation and strategic initiatives. The level of influence that KMP has over communication, reporting, and organizational ethos underscores the need for ES KPIs to capture both quantitative metrics and qualitative aspects related to sustainability. Recognizing the control and influence that KMP possess over the organization's approach to sustainability, the tailored evaluation of ES KPIs based on their roles ensures a fair and impactful assessment, promoting the integration of sustainable principles into the core strategies and operations of the company. KMP's role is critical not only in running day-to-day operations but also in ensuring that its actions are consistent with the demands of both financial and non-financial stakeholders. To achieve this ES alignment and obtain society's approval, different KPIs may be required to guide the behaviour of KMP (Menz, 2012).

The interplay of agency theory and stakeholder theory provides a comprehensive framework for understanding the integration of ES KPIs in KMP remuneration policies. These theories highlight the importance of addressing agency conflicts, responding to diverse stakeholder expectations, and aligning corporate actions with stakeholder expectations to obtain approval. As companies navigate these multifaceted dynamics, they must consider the intricate relationships between these theories to achieve effective ES reporting and sustainability practices.

2.2. ES reporting

ES reporting acts as a mechanism for entities to obtain stakeholder approval and ultimately survive and prosper in the community (Gray et al., 1995). By incorporating ES considerations, companies embrace a holistic approach to value creation that aligns with the principles of long-term sustainability and success (IFAC, 2020b). ES integration contributes significantly to the enhancement of reputation and brand image, mitigating risks associated with compliance and legal issues (Eccles & Saltzman, 2011; Eskerod, 2020; Power, 2004). Beyond mere risk mitigation, focusing on ES performance, provides a strategic advantage by aligning business goals and objectives with changing consumer preferences, regulatory trends, and societal expectations, thereby ensuring competitiveness and long-term viability (Power, 2004). Additionally, the commitment to ES practices resonates positively with employees, fostering engagement and satisfaction, and underscores the company's role as a responsible corporate citizen (Collier & Esteban, 2007; Eskerod, 2020). This adaptability to changing stakeholder expectations, coupled with the positive impact on communities and society, solidifies the position of ES integration as an indispensable aspect of stakeholder-centric business strategies.

More corporations are recognizing the effect of their entity's operations, on a variety of stakeholders because the company is relying on societal acceptance (Chen & Roberts, 2010;

Hiller, 2013). South African company KMP should also be incentivized to address ES issues facing the nation by mitigating unemployment, inequality, and climate change because societal and stakeholder approval is a key contribution to the company's success and continuance (Matemane et al., 2023; Porter & Kramer, 2006). Identification and revisions of remuneration KPIs should be done in regular and consistent collaboration with key stakeholders (IIRC, 2013; Searcy et al., 2008). To ensure that an entity's management acts in the best interests of all stakeholders, executives need to be remunerated based on KPIs that consider ES elements (Klettner et al., 2014).

ES reporting facilitates the effective communication of sustainability performance to key decision-makers, enabling companies to showcase their capability in creating and sustaining value across diverse timeframes (Lokuwaduge & Heenetigala, 2017). While ES reporting holds the potential to enhance corporate sustainability and transparency, its impact hinges on the quality and quantity of information available (Arvidsson & Dumay, 2022). Identification and revisions of remuneration KPIs should be done in regular and consistent collaboration with key stakeholders (Searcy et al., 2008). Although it is evident that ES-inspired measures have been increasingly incorporated into KMP remuneration, it is uncertain whether this has been done in a way that will spur change (PWC, 2022). It may be challenging to determine the efficiency and effectiveness of these KPIs from an external perspective based on the extensive levels of different disclosures provided in integrated reports (Cheng et al., 2014). Information reported by organizations on their ES impacts does not guarantee that KMP will make decisions that appropriately balance ES impacts, or that the various stakeholder claims will be appropriately prioritized, but it can provide the basis for more informed decision-making (Adams & Frost, 2008).

2.2.1. ES KPI reporting and classification

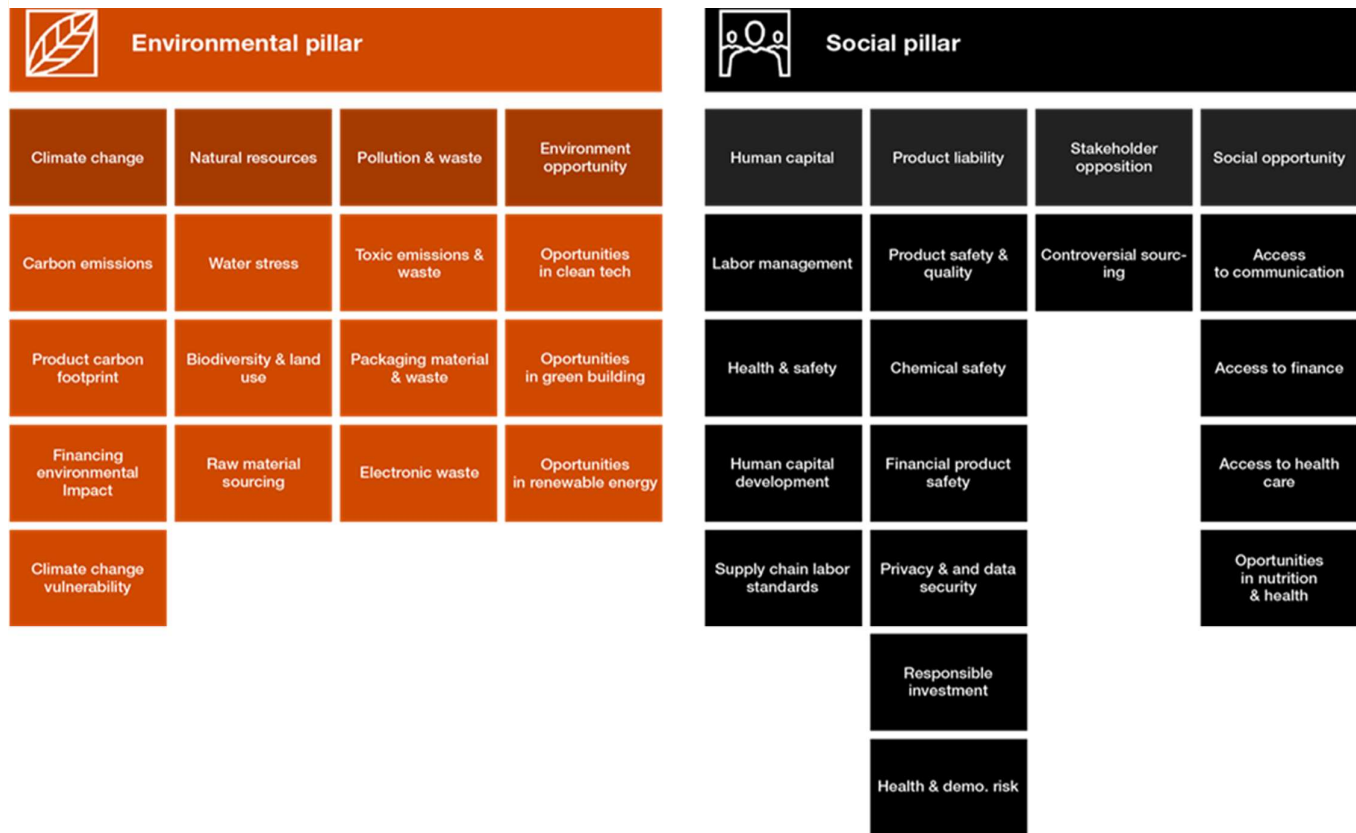
"People can't manage what they can't measure, and they can't measure what they can't describe" (Kaplan et al., 2004, p. 388). This quote emphasizes the need to incorporate and disclose ES KPIs in KMP remuneration policies. Understanding non-financial ES remuneration KPIs is essential because if KMP are incentivized exclusively on financial measures, KMP would prioritize financial performance above all else (Arvidsson, 2011). Individual, team, and entity KPIs need to be achieved for managerial incentives to vest when KMP's performance is evaluated (Parmenter, 2015). When KMP share the interests of shareholders (reap the positive potential and incur the adverse risk of firm success in a sustainable manner), as achieved through equity incentives, they are more inclined to pursue sustainability in operations (Berle, 1932; Dalton et al., 2003; Hillman & Dalziel, 2003).

According to Griffin (2004), there should be a clear connection between an entity's KPIs and their goals, objectives, and strategies. Companies may use KPIs as performance evaluation mechanisms to aid in the alignment of KMP decisions and actions with the company strategy (Domínguez et al., 2019). Doran (1981) introduced the SMART (specific, measurable, attainable, relevant, and time-bound) framework for goal setting, which may be useful for the development of organizational KPIs. The acronym allows for KPIs to be distinctive to the area to be improved, quantifiable as evidence of progress, assignable to identify who is in charge of managing the process, realistic to determine if the objective is feasible with the current resources, and time-based to indicate a date of achievement (Gözaçan & Lafci, 2020). SMART KPIs allow KMP to be actively managed and evaluated in the pursuit of business objectives. As a result of the performance evaluation process, stakeholders may also be able to identify and remove sub-optimal executives, as well as identify opportunities for improvement within the KMP team thereby minimizing agency costs (Tirole, 2010).

When KPIs are crafted to be broader and vague within an organizational framework, the resultant ambiguity can give rise to a host of stakeholder and agency issues (Herz & Krezdorn, 2022). The lack of clarity in these performance metrics creates a fertile ground for misunderstanding and misinterpretation, as stakeholders, including both KMP, shareholders and the public, may have disparate views on the expectations and criteria for ES performance (Herz & Krezdorn, 2022; Pilcher, 2005). This ambiguity can lead to subjective assessments and potential manipulation of results to align with personal or departmental interests, fostering an environment of mistrust and bias (Pilcher, 2005). The absence of specificity in KPIs reduces accountability, as individuals may not be held to clearly defined standards, resulting in a diminished sense of responsibility for delivering concrete outcomes (Herz & Krezdorn, 2022; Pilcher, 2005). The misalignment between vague KPIs and organizational goals can further compound these issues, hindering the establishment of a direct link between individual performance and overall strategic objectives. To mitigate these challenges, organizations should carefully balance the need for flexibility with the imperative for clear, measurable KPIs to ensure effective performance management and alignment with broader corporate goals.

ES KPIs reported by companies do not guarantee that KMP will make decisions that appropriately balance ES impacts, or that the various stakeholder claims will be appropriately prioritized, but it can provide the basis for more informed decision-making (Adams & Frost, 2008). Environmental (E) factors consider the interaction and effects between the environment and a firm's operations (Shrivastava, 1995a). Social (S) aspects look at the company's relationships with internal and external stakeholders (Neilan et al., 2020). Examples of E and S KPIs and the differences between the two are provided in Figure 1 below.

Figure 1 Differences in E and S factors. Sourced from PWC (2021) and the MSCI ESG score.



2.2.2. Factors influencing the use of ES KPIs

The studies discussed below concentrate on CSR reporting, but it's vital to recognize that related factors can also impact ES reporting and, consequently, the ES remuneration KPI due to the interconnectedness of CSR and ES reporting. The factors influencing the inclusion of ES KPIs in KMP remuneration are likely to be affected by the same factors influencing CSR disclosure. The use of ES KPIs in the KMP remuneration varies across companies depending on several factors (Hackston & Milne, 1996; Owusu-Ansah, 1998; Scholtz et al., 2022; Trotman & Bradley, 1981). These factors are discussed in the paragraphs that follow:

2.2.2.1. Industry

The industry in which the company works is a crucial element influencing the use and reporting of ES information (Galbreath, 2013; Patten, 1991). Companies whose economic operations alter the environment (high ES impact), such as extractive industries (energy, oil, gas, and mining), are more inclined to incorporate ES considerations into their remuneration practices (or sustainability reports and other company disclosures), than companies in less impactful industries (low ES impact) (Dierkes & Preston, 1977; Kumar et al., 2021). This may be due to

the increased risks and pressures from stakeholders, including investors and regulators, to disclose their ES performance (Galbreath, 2013; Garcia et al., 2017). Specific industries, such as healthcare and financial services, are more likely to report on their ES performance due to industry-specific sustainability regulations (Owusu-Ansah, 1998; Weber, 2014). The South African financial industry has adopted the Green Finance Taxonomy, which was released in April 2022 and is based on the European Union's Green Finance Taxonomy (National Treasury, 2022). This official classification system defines a minimum set of assets, projects, and sectors that are eligible to be defined as "green" or environmentally friendly (National Treasury, 2022). The healthcare industry tends to align its focus with the third SDG, namely good health and well-being, as set out by the UN (UNGC & KPMG, 2016). A total of 17 SDGs are designed to address a wide range of global challenges, including poverty, inequality, climate change, environmental degradation, peace, and justice (UN, 2015).

Dissanayake et al. (2019) found that industries focused on consumers or services, like finance and hospitality, demonstrate a heightened dedication to ES reporting, which arises from their close association with reputational impacts and the retention of customers. Driven by transactions built on trust, these sectors are strongly motivated to maintain honesty and ethical standards, with public opinion emerging as a pivotal factor influencing the extent of ES reporting within these industries (Dissanayake et al., 2019). The nature of the industry has been discovered to be a major factor in accounting for disparities in ES reporting (Fekrat et al., 1996; Stanga, 1976). Kumar et al. (2021) explain that the industry plays a significant role in influencing ES reporting practices, and different industries have different levels of ES disclosure. In evaluating research question 3, the industry of the entity will be classified as "high ES impact" or "low ES impact" using Figure 2 in Appendix 3. Below, is an in-depth analysis of how specific industries influence the adoption of ES KPIs is discussed.

a) Basic materials, energy and industrials

The basic materials industry, including mining, forestry, and raw material extraction, is a high ES impact sector (Bassi et al., 2009). Extractive activities can lead to deforestation, habitat destruction, and soil degradation (Hilson, 2012). Additionally, mining operations often result in significant water consumption and contamination (Hilson, 2012; Northey et al., 2016). Socially, these activities may displace local communities and impact indigenous populations, leading to conflicts over land use and resource rights (Hilson, 2012). The energy and industrial sector, encompassing energy production, manufacturing, and heavy industries, is associated with high ES impact (Bassi et al., 2009). The burning of fossil fuels for energy contributes to greenhouse gas emissions, air pollution, and climate change (Ramanathan & Feng, 2009). Industrial processes often generate substantial waste, and pollutants, and consume significant amounts of resources (Freeman et al., 1992). Socially, the sector may face challenges related

to worker safety, community health, and environmental justice concerns in areas with industrial facilities (Freeman et al., 1992). As a result, companies in the basic materials, energy and industrial sectors face greater pressure to address their various ES impacts (Legendre, 2008).

b) Consumer goods and technology:

Consumer goods and technology industries, while contributing to economic development and innovation, also have a high ES impact (Galbreath, 2013; Kumar et al., 2017). The production, consumption, and disposal of consumer goods contribute to resource depletion, waste generation, and pollution (Galbreath, 2013). The technology sector, in particular, faces challenges related to electronic waste and the environmental impact of manufacturing processes (Bakhiyi et al., 2018; Widmer et al., 2005). Socially, issues like supply chain labour practices and product safety can contribute to the overall impact (Galbreath, 2013; Kumar et al., 2017).

c) Healthcare

The healthcare industry has a high ES impact due to its resource-intensive nature, including energy consumption, pharmaceutical production, and medical waste generation (Malik et al., 2021). The healthcare sector's carbon footprint is significant, and the production and disposal of pharmaceuticals pose environmental challenges (Richie, 2022). Additionally, access to healthcare services and ethical considerations in medical research can have notable social implications (Huang et al., 2013).

d) Financials

The financials industry is generally considered to have a lower direct ES impact compared to the aforementioned sectors. Financial institutions primarily provide services and manage capital, which do not involve extensive resource extraction or emissions (Bătae et al., 2020). However, the industry's indirect impact lies in its role in financing projects and companies across various sectors (Bătae et al., 2020, 2021). While financial institutions can influence ES sustainability through responsible lending practices, their direct operational impact is typically lower compared to industries involved in resource extraction, manufacturing, or energy production (Bătae et al., 2021; Galbreath, 2013).

2.2.2.2. Company size

Another factor influencing the use of ES KPIs is the company's size (Cowen et al., 1987; Kelly, 1981; Patten, 1991, 1992). As larger firms are more visible and face greater stakeholder scrutiny and pressure, they tend to incorporate better ES information to ensure their continued existence and create a positive image in public (Dissanayake et al., 2019; Kumar et al., 2021). Larger companies tend to have more significant ES impacts, and as such, to meet their stakeholder's interests, they are more likely to use more ES KPIs (Cowen et al., 1987; Kumar

et al., 2021). This could also be attributable to these larger companies having more resources to devote to ES reporting and facing more pressure from stakeholders to manage their ES performance (Hörisch et al., 2015; Manita et al., 2018). Larger corporations are inclined to leverage capital markets more extensively for external financing and actively compete for international resources in comparison to their smaller counterparts (Clarkson et al., 2008; Cormier et al., 2005; Dissanayake et al., 2019). Economies of scale enjoyed by large firms reduce the cost of voluntary disclosure, and enhanced information systems and the well-organized structure of large companies act as enablers for a more integrated ES approach (Kumar et al., 2021; Papaspyropoulos et al., 2010). Graafland et al. (2003) reason that financial competitiveness and cost pressures between smaller firms are higher, resulting in less ES reporting than in large companies where more resources are ES reporting and performance management.

2.2.2.3. Ownership structure

The incorporation of ES KPIs is additionally affected by the ownership structure of the organization (Matos, 2020; Patten, 1992). Publicly traded companies face more intense scrutiny from investors and regulators compared to private firms, increasing the need for ES considerations (Cordazzo et al., 2020; Hazen, 2020). The divergence of interests between management and ownership, as explained by agency theory (section 2.1.1), necessitates careful consideration of ES metrics to align incentives and goals. Generally, the stock exchange(s) that the company is listed on, will have listing requirements that specifically require certain reporting standards to meet stakeholder interests, such as the JSE and King IV disclosures. Corporations with a higher share of institutional investors may be more likely to disclose ES KPIs due to these investors' growing concern about ES aspects (Lydenberg, 2013; Sherwood & Pollard, 2018). The presence of foreign ownership may have a positive effect on ES KPI reporting, as foreign investors demand greater public disclosures to reduce the information-gathering costs associated with investing in foreign markets (Ahearne et al., 2004; Injeni et al., 2022; Young & Guenther, 2003).

2.2.2.4. Listing age

Listing age also provides insight into ES KPIs. Older firms may use ES measures more frequently than younger listed companies as they have had time to establish and implement ES KPIs and are often more equipped with resources to facilitate the integration (Owusu-Ansah, 1998). Kumar et al. (2021) explain that older and more established Indian companies better integrate ES considerations because they are more concerned about their reputation and societal approval. These companies use their extensive reporting experience to build a positive corporate image as they recognize that their long-term survival and success depend on maintaining a positive relationship with their stakeholders, including customers, employees,

investors, and the wider community (Kumar et al., 2021). By integrating ES aspects these companies can demonstrate their commitment to social responsibility and obtain approval from stakeholders. Conversely, Choi (1973) and Spero (1979), argue that newly listed companies need to incorporate more ES information to reduce scepticism and enhance shareholder confidence, as they might be seen as a risky investment. While Okoye and Adeniyi (2018) state, that listing age does not affect ES reporting because both young and old firms need to report based on listing requirements.

2.2.2.5. Various KMP positions

The controllability principle stipulates that managers should only be evaluated on things over which they have control (Giraud et al., 2008; Merchant, 1987). KMP's job titles and positions may influence the use of remuneration ES KPIs as it is unfair to evaluate an employee based on something they don't control (Bourguignon & Chiapello, 2005). KMP responsibilities include an array of duties specific to their individual functions, necessitating individual KPIs to determine whether KMP are capable and accountable for their responsibilities (Menz, 2012; Parmenter, 2015). Certain companies appoint sustainability officers to oversee and regulate the ES and CSR impacts of the entity. However, as per the Companies Act of 2008, public companies are mandated to have a minimum of three executive directors, typically comprising the CEO, CFO, and prescribed officers. Individual KPIs ultimately influence the achievement of team and corporate targets, as well as the advancement of the company strategy (Strand, 2014; Weber, 2008). To illustrate, the chief executive officer (CEO) is often viewed as the 'leader' of the KMP team, with impacts that should be considered separate from that of the other KMP (Buyl et al., 2011; Halebian & Finkelstein, 1993; Jaw & Lin, 2009).

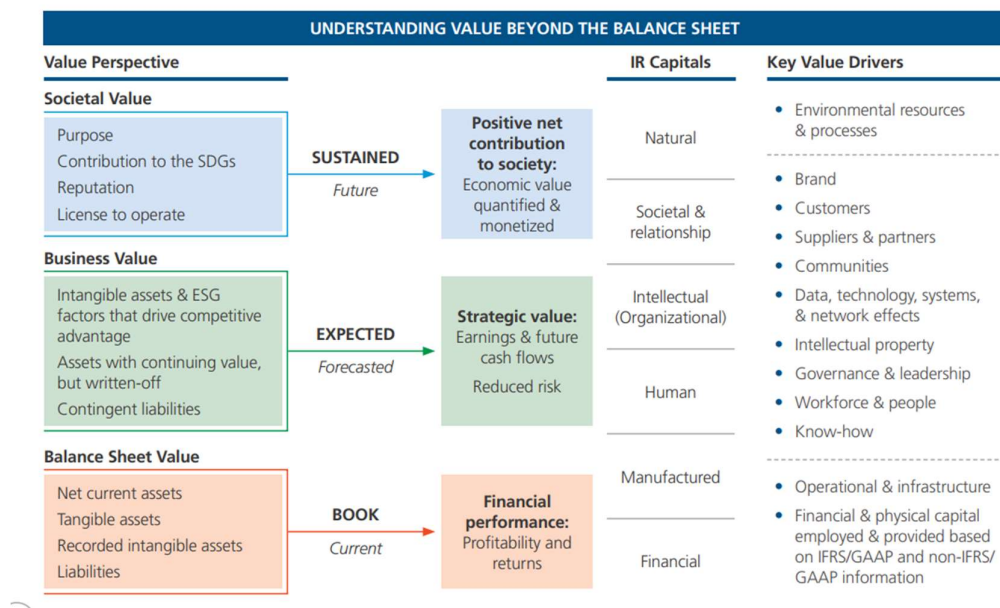
The crucial role of CEOs in implementing ES sustainability transformation within business organizations cannot be overstated (Sancak, 2023). As leaders, they set the vision and strategic direction for sustainability efforts and drive the sustainability agenda (IoDSA, 2016). This involves ensuring that sustainability is integrated into the overall business strategy and promoting a culture of sustainability throughout the organization. In addition to allocating resources, establishing goals and targets, and monitoring progress, the CEO is also responsible for championing sustainability initiatives and engaging with stakeholders (Sancak, 2023). Without the CEO's commitment and involvement, a successful integration of an ES strategy into business operations may not be possible.

Managing directors (MDs) also play a vital role in sustainability transformation, albeit limited to their respective divisions (Adams & Frost, 2008). Sustainability officers (SOs) are MDs focused on driving the organization's sustainability agenda, ensuring compliance with environmental regulations, and promoting sustainable practices across all levels of the

organization (Miller & Serafeim, 2014). Kanashiro and Rivera (2019) found that the presence of SOs in companies has a positive influence on a firm's environmental performance if faced with strict environmental regulations. This reinforces the concept of societal approval in ES reporting, emphasizing the influence of regulatory pressure on driving sustainability initiatives within companies (Martínez-Ferrero & García-Sánchez, 2017; Raven, 1958).

The chief financial officer (CFO) plays a pivotal role in advancing sustainability within an organization by integrating goals into financial planning, ensuring resource allocation for initiatives, assessing financial implications, and identifying cost-saving opportunities (Velte & Stawinoga, 2020). Additionally, the CFO manages financial risks associated with sustainability, engages with investors to attract socially responsible funding, and influences capital allocation decisions toward sustainable technologies and practices (Guo et al., 2021). Their financial acumen and strategic decision-making are crucial for the successful implementation of sustainability initiatives, although the specifics may vary based on the organization's objectives (Guo et al., 2021; Zoni & Pippo, 2017). The role and importance of the CFO of an organization is summarised in figure 2 below:

Figure 2 CFO value creation (IFAC, 2020a)



From a traditional accounting viewpoint, the balance sheet (book) value is an accounting metric derived from the capital employed and contributions, as indicated in the financial statements. In contrast, from the investor's standpoint, the business (expected) value is gleaned from strategic and intangible assets, serving as drivers for future growth and forming the basis for residual income, sustainable earnings, valuations, and risk reduction. Societal (sustained) value, as perceived by society, encompasses the positive and negative effects of

an organization's activities on customers, employees, society, and the environment. Although external impacts can be quantified and monetized, they are not currently reflected in the company's cash flows but signify future opportunities and risks. Non-financial impacts, relevant to future cash flows and financial performance, are anticipated to be evaluated and priced by investors and capital markets over time.

It is important to note that every KMP is a prescribed officer (PO) but not every prescribed officer holds an executive title. While some prescribed officers are involved in compliance and regulatory aspects of a company, the role of a prescribed officer may vary depending on the organization and its specific sustainability goals and strategies.

This thesis will evaluate the differences in ES remuneration KPIs for listed companies when grouped by industry, company size, initial listing date, and KMP position.

2.3. ES reporting codes and guides

Over the years, there have been various reporting codes, guides and standards implemented to assist companies in reporting their performance. These codes and guidance are discussed in the context of ES reporting below.

2.3.1. CSR

CSR reporting involves communicating information regarding an organization's social and environmental performance, initiatives, and impacts, encompassing areas like environmental sustainability, employee well-being, community engagement, and ethical business practices (Solikhah, 2016). CSR activities are seen as a means to improve the company's reputation and build value to maintain or improve the organization's economic position (Clikeman, 2004). CSR is intricately intertwined with and supports IR (Jensen & Berg, 2012). The alignment of CSR reporting with integrated reporting reinforces the notion that sustainable business practices are not isolated efforts but integral to a company's overall strategy and value creation (IoDSA, 2016; Rupley et al., 2017). Ultimately, CSR reporting reinforces the principles and objectives of IR, creating a more comprehensive and holistic portrayal of a company's performance and its impact on society and the environment, thereby assisting in meeting diverse stakeholder needs and expectations (Adhariani & De Villiers, 2019; Romero et al., 2019).

Chakravarthy (1986) highlights the need to expand the approach to measuring corporate performance, moving beyond a narrow focus on financial metrics aimed at maximizing shareholder value. Instead, performance evaluation should encompass elements that assess a company's success in creating value for all stakeholders. This shift in perspective is evident in the increasing emphasis on ES metrics, in alignment with CSR. While conventional financial

performance measures remain entrenched in organizational performance measurement processes (Hübel & Scholz, 2020), there is now a greater imperative for the corporate sector to demonstrate its contribution to corporate citizenship. Companies with more CSR information often yield higher returns, indicating the value of non-financial indicators in understanding financial returns over time (de Klerk & de Villiers, 2012).

While ES reporting within an integrated reporting context has undergone thorough investigation (Garcia et al., 2017; Johnson et al., 2019; Matemane et al., 2023), limited research has been conducted on the relationship between ES reporting and KMP compensation. This lack of knowledge concerning KMP's accountability for ES performance is rooted in the fact that KMP remuneration is traditionally linked to financial measures such as earnings per share (EPS) and share price growth (Hartikainen et al., 2021; Jiang & Jones, 2018; Kirsten & Du Toit, 2018; Rappaport, 2006). The existing literature predominantly delves into the relationship between KMP remuneration and financial performance, with inconclusive findings (Amewu & Paul Alagidede, 2021). Some studies suggest a positive relationship, while others propose a negative or weak relationship, and some even find no relationship at all (Al-Najjar, 2017; Cooper et al., 2016; Raithatha & Komera, 2016).

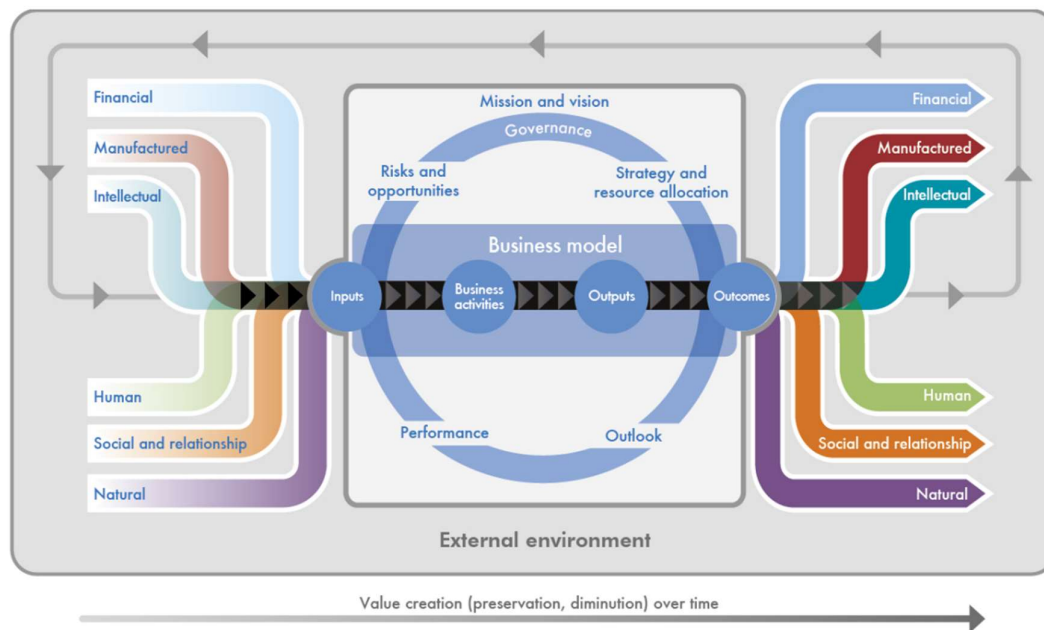
In essence, KMP are primarily incentivized to maximize profits and share prices, which primarily benefit them and their shareholders (Bouaziz et al., 2020). From a South African perspective, Joannou and Herbert (2022) have identified an increased disclosure of social and economic aspects in executive remuneration targets, with relatively limited attention given to environmental remuneration targets. Consequently, there is a growing recognition of the potential benefits of remuneration policies that facilitate more comprehensive data disclosure and reporting, which may serve the best interests of all stakeholders (Padia & Callaghan, 2021).

The remuneration practices of South African companies listed on the JSE have garnered substantial attention from stakeholders and researchers. This heightened focus could be attributed to the enduring inequalities resulting from the apartheid era and recent corruption scandals involving State-Owned Companies (SOC), government bodies, and other corporations (Espí et al., 2019; Lodge, 1998; Ntim et al., 2019; Webster & Francis, 2019). In a nation grappling with one of the highest levels of global income inequality, concerns have also arisen in the media regarding the unequal distribution of wealth between top executives and lower-level workers (Amis et al., 2020; Burger & Jafta, 2006). Discussions have emerged regarding the pay gap concerning race and gender disparities within the South African context (Bussin & Barrett, 2016; Espí et al., 2019; Kirsten & Du Toit, 2018; Madlela & Cassim, 2017; Padia & Callaghan, 2021).

2.3.2. Integrated reporting (IR)

The Integrated Reporting Framework provides a holistic view of an organization's value-creation process by integrating its financial and non-financial performance into a single report (Camilleri, 2018; Eccles & Krzus, 2010). IR aims to go beyond traditional financial reporting by including environmental, social, and governance (ESG) factors, promoting transparency, and fostering a more sustainable and responsible business approach (Jensen & Berg, 2012; Sierra-García et al., 2015). The IR emphasizes that value is not only created for the organization and its investors but for other stakeholders as well. This value-creation process is summarised in Figure 3. The IIRC encourages companies to report on their use of various forms of capital, including financial, manufactured, intellectual, human, natural, social, and relationship capital, and how they interact to create value over time. By doing so, companies can provide a more holistic view of their value-creation process and the impact they have on various stakeholders.

Figure 3 Integrated Reporting value-creation process (IIRC, 2013)



Value is created through an organization's business model, which takes inputs from the six capitals and transforms them through business activities and interactions to produce outputs and outcomes that, over the short, medium, and long term, create or destroy value for the organization, its stakeholders, society and the environment (EY, 2013). Value is created through the organization's purpose, strategy, and business model and then delivered to stakeholders through responsible products and services, and sustained by retaining and protecting value internally, as well as distributing value to shareholders and the wider society

(IFAC, 2020b). The value creation process is not static, as such, regularly reviewing each component and how they interact, while focusing on the organization's goals, leads to revisions and refinements that improve all aspects (IIRC, 2013). The value creation process is a central component of integrated thinking, which is a management approach that seeks to create value by considering the interdependencies between the organization's various resources and relationships (IFAC, 2020b).

In the contemporary business landscape, the interaction between various forms of capital is crucial for sustainable value creation (IIRC, 2021). Human capital, encompassing workforce skills, health, and well-being, plays a pivotal role in the value-creation process (IFAC, 2020b; IIRC, 2021). Through training, talent development, and employee engagement, organizations can nurture their human capital, resulting in a skilled and motivated workforce, increased productivity, and enhanced employee satisfaction (Branco & Rodrigues, 2006; Pocol et al., 2022). Social and relationship capital, rooted in relationships with customers, suppliers, employees, and communities, adds another dimension to value creation (IFAC, 2020b; IIRC, 2021). Building and maintaining positive relationships, coupled with social responsibility initiatives, yield tangible outcomes such as an improved brand reputation, heightened customer loyalty, and a positive societal impact (Branco & Rodrigues, 2006). Natural capital, which includes natural resources, ecosystems, and environmental services, introduces an environmental perspective to the value creation equation (IFAC, 2020b; IIRC, 2021). By adopting sustainable practices and contributing to environmental conservation efforts, organizations can reduce their negative environmental impact, conserve biodiversity, and embrace sustainable practices (Ahmad, 2015).

The interaction between these capitals is intricate and multifaceted. For instance, the positive impact of human capital on financial performance is evident, as a skilled and motivated workforce contributes to overall organizational success (Branco & Rodrigues, 2006; IFAC, 2020b). Similarly, the integration of natural capital with financial capital highlights the influence of sustainable practices on operational costs and financial performance (Ahmad, 2015; IFAC, 2020b). The interplay between social and relationship capital with financial capital showcases the significance of positive relationships in enhancing brand reputation, ultimately contributing to financial success (Branco & Rodrigues, 2006; IFAC, 2020b). Collaborative relationships also extend to manufactured capital, influencing efficient sourcing and supply chain management (IFAC, 2020b). The connections between human and natural capital underscore the role of sustainable practices in fostering a positive corporate culture (Branco & Rodrigues, 2006). Social and relationship capital, when combined with human capital, influences corporate culture and talent attraction, creating a workplace environment aligned with ethical and responsible business practices (Branco & Rodrigues, 2006; Pocol et al., 2022). Positive

social and relationship capital leads to increased trust and collaboration with stakeholders, solidifying the notion that ethical and sustainable business practices contribute not only to financial success but also to the well-being of communities and the environment (IFAC, 2020b).

According to the IR, remuneration policies should include both short-term and long-term incentives when compensating KMP (IIRC, 2021). This stimulates both short- and long-term value creation as well as the retention of key personnel in the employment of the company (Guay et al., 2002; Ittner et al., 2003). IR is mandatory for companies listed on the JSE (Baboukardos & Rimmel, 2016; De Villiers et al., 2014; Moloi & Iredele, 2020). Organizational value creation for employees, including aspects like quality leadership, employee retention, morale, innovation driven by employees, institutional knowledge, and fair policies, is acknowledged in the human capital literature. In contrast to this perspective, the value-creation literature tends to overlook these elements due to their perceived emotional nature and lack of direct connection to financial performance (Adams, 2017; Gokten & Gokten, 2017; Śledzik, 2013).

While ES reporting relates to long-term sustainable value creation, ES KPIs are predominantly integrated into KMP remuneration as a short-term KPI (Gonder & de Gannes). Companies use ES KPIs in their annual incentive plan (bonus), but rarely in their long-term incentive plan (which is typically an equity-based plan) because the targets in the long-term incentive plan must be objective to benefit from the preferential accounting treatment allowed for equity-based incentives (Bebchuk & Tallarita, 2022; Bonner & Burek, 2022). Zou et al. (2015) found that KMP cash incentives have a positive association with environmental performance, while equity incentives have a negative association in developing countries. South Africa is still regarded as a developing country (Singhania & Saini, 2023). In answering research question 1, this thesis considers the ES characteristics of KMP remuneration for JSE-listed companies, including the incorporation of both long- and short-term initiatives in their remuneration policies.

The value of IR is primarily assessed through the lens of corporate reputation, addressing investor requirements, and fostering engagement and relations with stakeholders (Steyn, 2014). Integrated reporting has several benefits, including promoting a more cohesive and efficient approach to corporate reporting, enhancing accountability and stewardship for the six capitals, and supporting integrated thinking, decision-making, and actions that focus on the creation of value over the short, medium, and long term, and unlocking the benefits of integrated reporting, including the increased efficiency of the reporting process itself (IIRC, 2021). Companies believe that producing an integrated report is a means to demonstrate their

commitment to ES sustainability and, thus, satisfy stakeholders' information needs (Adhariani & De Villiers, 2019; Romero et al., 2019; Steyn, 2014).

Eccles and Saltzman (2011) identify three categories of advantages associated with integrated reporting. Internally, organizations stand to gain enhanced resource allocation, more efficient engagement with stakeholders, and a reduction in reputational risk. Externally, in the market, there are benefits such as meeting investor expectations for ES data, as well as being included in ES indices (Eccles & Saltzman, 2011). Additionally, managing regulatory risk entails anticipating and preparing for integrated reporting regulatory and stock exchange requirements, along with active participation in the development of integrated reporting standards and frameworks (Eccles & Saltzman, 2011). These varied benefits underscore the multifaceted advantages that integrated reporting can bring to both internal operations and external relationships within the business landscape.

2.3.2.1. EY Excellence in Integrated Reporting awards

Ernst & Young (EY) benchmarks integrated reporting standards for investors and other stakeholders through their Excellence in Integrated Reporting awards (EY, 2022). These awards assess listed companies' efforts to explain the value they create in the short, medium, and long term. The companies included in the awards are the Top 100 JSE-listed companies, based on their market capitalization on the last trading day of the calendar year. The mark plan of the EY Excellence in Integrated Reporting awards is based on the guiding and fundamental principles of the IR framework, resulting in the companies being ranked as "Excellent", "Good", "Average" or "Progress to be made". This thesis evaluates whether there is an association between the extent of ES remuneration KPIs used by an entity and EY Excellence in Integrated Reporting ranking, for the Top 100 JSE-listed companies. The higher the company ranks in the awards, the better the quality of holistically applied IR throughout the entity, including its remuneration practices to achieve integrated thinking as required by the IR.

2.3.3. South African King Code

The King Code is a guiding set of principles and recommendations to achieve good corporate governance in South Africa (IoDSA, 2016). The various iterations of the King Code (King I in 1994, King II in 2002, King III in 2009, and King IV in 2016) have served in succession, to keep up with changes in the corporate landscape and to address emerging issues (Rossouw et al., 2002). All companies listed on the JSE have been required to prepare an integrated report per the King Code, since 2010 (EY, 2022).

The development of the King Code commenced in 1994, shortly after the country's democratic transition, in response to the need for a framework to assist businesses in operating in a more

transparent and accountable manner (Rossouw et al., 2002). The King I Code (1994) concentrated on the board of directors and fostering transparency and ethical behaviour (West, 2009). King II reiterated the notion of the triple bottom line (profit, people, and the planet), propelling businesses to report on their financial, social, and environmental performance in a single report (Natesan, 2020).

King III, released in 2009 and effective in March 2010, integrated the fundamental concepts of leadership, sustainability, and corporate responsibility, broadening the scope of corporate governance in South Africa (Ramlall, 2012). This version of the King Code introduced the key requirement of an annual integrated report that focuses on the organization's influence in the economic, environmental, and social sectors (IoDSA, 2009; Ramlall, 2012). King III specified that executive remuneration should be fair and responsible (IoDSA, 2009; van Zyl, 2021). The remuneration policy should be aligned with the company strategy and all KMP remuneration benefits are required to be disclosed (IoDSA, 2009).

King IV (2016), effective as of 1 April 2017, is the most recent version of the King Code. The code reiterates the significance of ethical leadership, sustainability, and stakeholder involvement. The King IV Code proposes that a remuneration policy should use performance measures across the ES contexts in which the company operates (IoDSA, 2016). King IV also urges that the remuneration policy incorporate metrics that consider all the capitals that the organization uses or affects (IoDSA, 2016). King IV has stricter disclosure standards than its predecessors, requiring remuneration disclosures in three parts: namely a background statement on remuneration, an overview of the remuneration policy, and an implementation report (van Zyl, 2021). The desired effect of increased disclosure is increased integrated thinking in the organization, which will affect organizational policies such as the inclusion of ES KPIs in KMP remuneration (van Zyl, 2021).

While King IV supports the impartial remuneration process, the Companies Act of 2008 may hinder this progress by not explicitly mandating the establishment of a remuneration committee (Madlela & Cassim, 2017). Annually, the remuneration policy and the implementation report must be presented for separate, non-binding advisory votes by shareholders during the annual general meeting (IoDSA, 2016). Involving shareholders in this procedure helps reduce agency costs. However, it's worth noting that the lack of binding shareholder votes on the resolution to adopt the remuneration policy in the King IV Report may diminish this reduction of agency costs (Madlela & Cassim, 2017).

JSE-listed companies are required to disclose the remuneration practices and policies implemented to accomplish the objectives of King IV in their annual (or integrated) report (JSE, 2017). This thesis will evaluate whether the implementation of the various iterations of the

King code has affected the use of ES KPIs in remuneration policies for KMP for the years ended 2011, 2018, and 2022. These years have been selected based on the implementation dates of King III (effective March 2011) and King IV (effective 1 April 2017), so that the changes, as discussed above, between the codes can be observed. Including the 2022 year in the evaluation allows for a comparison of the latest data, offering insights into the current state of ES KPIs in KMP remuneration policies following the implementation of the King codes.

This literature review aims to offer a detailed analysis of the theoretical frameworks and key concepts related to ES reporting, focusing on the factors influencing companies' use of ES KPIs. Using agency and stakeholder theories, a foundation is laid for understanding the motivations behind linking KMP remuneration to ES KPIs. Additionally, a review of IR, CSR and South Africa's King Code, demonstrates how various standards shape the adoption and integration of ES KPIs in remuneration practices. This thesis analyzes whether there is a difference in the use of ES KMP KPIs in remuneration practices of JSE-listed entities because of the implementation of different guidance codes and standards.

3. Methodology

3.1. Overview

A content analysis has been used to gather data on the ES KPIs linked to KMP remuneration for companies listed on the JSE. Data was collected from the companies' integrated, remuneration and annual report, for the financial years ended 2011, 2018, and 2022. The data gathered from the content analysis was scored to develop numeric data to be used in statistical tests. Descriptive and inferential statistics were used to analyze the data.

3.2. Population and sample

The population of the study consists of all companies listed on the JSE as of 15 May 2023 with an initial listing date before 2011. This allows the development of generalizations about JSE-listed companies and ensures that the required reports are publicly available for the years under observation. This research uses a total sample of 60 JSE-listed companies. This sample size correlates to similar studies performed in other developing countries (Aggarwal & Singh, 2019; Beleneşi et al., 2021; Jeroh, 2020; Wang et al., 2013) as well as developed countries (Ducassy, 2013; Dyduch & Krasodomska, 2017). As of 15 May 2023, the selected JSE-listed companies have been arranged in descending order by market capitalization and divided into three equal subsets, namely large, mid, and small market capitalization. This technique is consistent with other South African studies (Schleu, 2019; Steenkamp et al., 2019; Varachia & Nkhi, 2021; Ward & Muller, 2010).

To reduce bias and allow the extrapolation of results, random sampling was used to select twenty companies from each of the three market capitalization subsets. Each of the companies that were randomly selected was analyzed to ensure that 2011, 2018 and 2022 remuneration-related reports were available for the study. If they were not, another company within the subset was selected randomly. Appendix 1 contains the final list of 60 companies investigated in this study.

3.3. Data collection

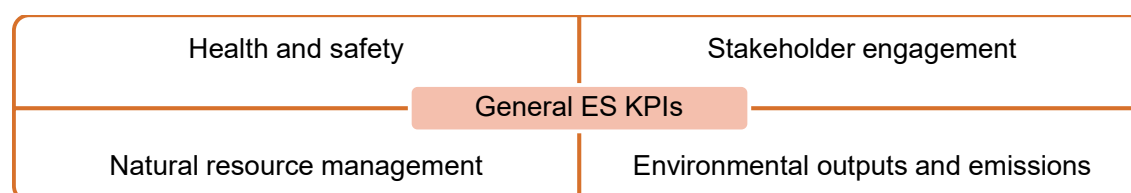
Content analysis has been used to collect data from the annual, integrated, and remuneration reports of companies listed on the JSE. The reports of each company have been read to understand the structure of the report. The table of contents and keyword searches were used to confirm that each portion of the respective reports dealing with any aspect of KMP remuneration has been assessed to ensure that all remuneration and KMP sections have been considered. A pilot study was conducted where ten company reports were read in detail to identify all instances relating to remuneration KPI information. Keywords were then developed from all the identified information to assist in the data collection for the sampled companies. Where the remuneration was provided in foreign currency, it was converted using the spot rate for that respective year-end. All currency exchange rates will be sourced from OANDA.

The research uses each ES KPI disclosed for each KMP as the unit of analysis. The information collected by way of content analysis has been captured using the developed data collection instrument contained in Appendix 2. This instrument was updated as information was acquired and captured from the integrated, remuneration and annual reports of JSE-listed companies. The illustration in Figure 1 was used to classify each KPI as either E or S. All data collected was recorded and stored in Microsoft Excel. All market information was obtained directly from the EquityRT database.

Each listing year and industry was identified directly from the JSE's website and then classified into their respective categories for analysis (Figure 5). The researcher identified the management team section in the company reports classifying each KMP into five categories of KMP, namely CEO, CFO, MD, SO, and PO. Thereafter, the researcher cross-checked the management team's names with the names in the remuneration policy, to ensure that they were part of the KMP team for the reporting year and that the correct ES KPIs corresponded to the correct members of KMP. The data capture process of the KMP considers the titles or positions reported in addition to the prescribed officer status. If a KMP is identified with a title or position other than the prescribed officer in the reports, the classification reflects that specific position. The study used Figure 1 as a guide in identifying whether a remuneration

KPI is E, S or a combined ES KPI. The combined ES KPI category consists of KPIs that relate to both E and S factors. For example, combined ES KPIs include ESG KPIs or sustainability metrics, which specifically address the combined E and S dimensions. The research then classified each E, S, and combined ES KPIs into five broader categories as illustrated in Figure 5, to analyze the types of ES KPIs being used in KMP remuneration policies.

Figure 4 Five sub-categories of ES-related KPIs used by the sampled companies



Health and safety: This category reflects the commitment of JSE-listed companies to ensuring the well-being and safety of their workforce. KPIs in this area may include accident rates, incident response times, and measures to promote a safe working environment.

Stakeholder engagement: KPIs in this category might involve measuring the effectiveness of communication, feedback mechanisms, and overall satisfaction levels of stakeholders, suggesting the importance of relationships beyond the company itself.

Natural resource management: This category highlights the attention given to sustainable resource use and may encompass water and energy consumption, waste management, and efforts to reduce the ecological footprint.

Environmental outputs and emissions: The environmental outputs and emissions signify a commitment to mitigating the ecological impact of business operations and may include carbon emissions, pollution levels, and adherence to environmental standards.

General ES KPIs: This category, with a broader scope, suggests that some companies adopt a more holistic approach to ES responsibilities. These KPIs are not specifically defined to fit into any of the other categories of ES KPIs. It is crucial to grasp that the combined ES KPIs do not inherently imply a categorization as general ES KPI. The study prioritizes categorization based on the specific KPI categories in Figure 5, as well as broad classifications of ES KPIs. For instance, a KPI related to ESG considerations may encompass responsibilities such as the preservation of natural resources alongside stakeholder engagement initiatives. Consequently, while such a KPI would fall under the umbrella of combined ES, it is then recorded within distinct categories such as stakeholder engagement and natural resource management, rather than being grouped under general KPIs.

3.4. Key assumptions

Classification of ES KPIs as short or long-term

In conducting this study, several key assumptions have been established to guide the analysis of remuneration practices within the sample. The distinction between short-term and long-term settlements is based on a 12-month timeframe, with settlements extending beyond this period considered long-term. The study incorporates specific assumptions regarding deferred share plans, also known as single-incentive plans, which comprise both short-term and long-term components. The vesting of the long-term component typically requires no additional conditions, except for the service condition of maintaining employment with the company. These schemes have been distinctly recorded as short-term and long-term, with an additional designation of deferred share plan. The extract below illustrates a typical example of a deferred share plan in the remuneration package.

Figure 5 Extract from a studied company reflecting how deferred share plans are used in remuneration structures

Each element of the total incentive plan is described below.

Element		Description	
Guaranteed pay		Guaranteed pay excludes short- and long-term incentives. To compete effectively for skills in a challenging employment market, we identify the target market to use in benchmarking guaranteed pay. This target market includes organisations or companies that employ similar skills sets to those we require. Comparisons are made predominantly within the South African mining sector to ensure that Harmony remains competitive. The median of the target market is used as the basis of our pay ranges. This same philosophy is applied to our South-east Asia operations.	
Participation factor		Employee	% guaranteed pay
		Chief executive officer	250%
		Financial director, other executive directors and prescribed officers	230%
Balanced scorecard result	Cash portion of total incentive (40%)	A portion of the total incentive is settled in cash immediately when the balanced scorecard results for the financial year have been determined and approved by the board.	
		Cash portion (balance settled in deferred shares)	% of incentive
		Chief executive officer	40%
	Deferred share portion of total incentive (60%)	Financial director, other executive directors and prescribed officers	40%
		The balance of the total incentive is settled in deferred shares, vesting at a rate of 20% per annum over the next five years for executive directors and prescribed officers, and 33% per annum over the next three years for management.	

KMP position classification

The category of MDs encompasses other KMP holding titles distinct from CEO, CFO, and sustainability officer roles. Specifically, when it comes to the leadership structure within divisions, the CEOs heading these segments are designated as MDs. This categorisation is

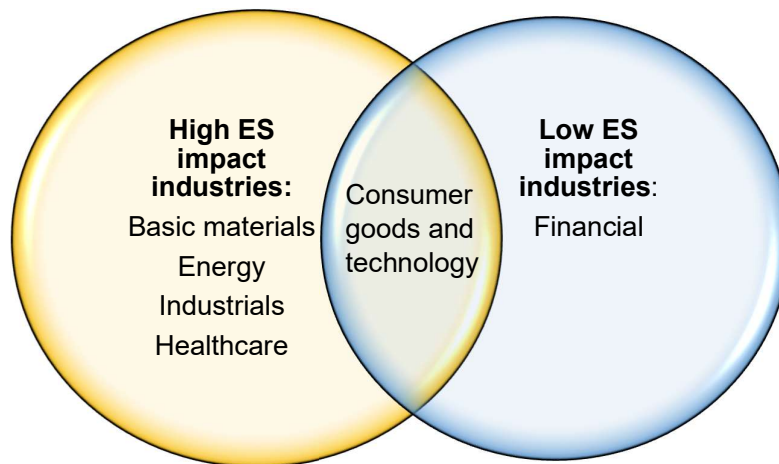
implemented to accurately reflect the hierarchical organization, as the CEO of the entire entity is separately recorded under the CEO category. In essence, this delineation ensures a clear and systematic representation of executive roles, with MDs embodying a category inclusive of divisional CEOs, each playing a pivotal role within the broader corporate framework. MDs concurrently hold titles signifying their status as prescribed officers within the organization. It is also important to clarify that sustainability KPIs do not inherently equate to ES KPIs. Uniformity in remuneration policy application is assumed for all KMP unless explicitly indicated otherwise.

Further, if a KMP holds a title or position in conjunction with being designated as a prescribed officer, the data categorization is based on that specific title or position. In other words, the classification considers the additional title or position held by the KMP in addition to their role as a prescribed officer. This approach ensures a more granular and accurate representation of the individual's responsibilities and functions within the organizational hierarchy. By considering both the prescribed officer status and any additional titles or positions, the data categorization method captures the multifaceted nature of KMP roles, providing a comprehensive understanding of their contributions and responsibilities in the context of remuneration analysis.

Industry classification

The classification into the industries and KPI categories involves a level of judgment to ensure a nuanced and accurate analysis of the data. The four industries that have been deliberated upon under heading 2.2.2 will serve as the basis for categorizing the companies under investigation into their respective domains. This will facilitate a more comprehensive understanding of the nuances and intricacies that are unique to each industry.

Figure 6 Breakdown of high and low ES impact industries into the sub-industry categories



Incorporating ES KPIs in remuneration

The evaluation of ES KPIs within the remuneration structures of KMP poses considerable challenges due to limited disclosure practices in some companies. The breakdown of fixed and variable remuneration, coupled with the specific impact of ES KPIs on variable components, often remains undisclosed. Variable remuneration, contingent on KMP performance against diverse KPIs within the company's remuneration policies, adds complexity, especially when these policies encompass multiple scorecards and varied KPIs, extending beyond ES criteria. Further complicating the assessment, some companies aggregate ES KPIs with other strategic indicators, providing overall category weightings without specifying individual contributions. Attempting to calculate the percentage of variable remuneration over total remuneration as an indicator of the importance of ES KPIs may yield inaccuracies, given the lack of quantification of the ES component. Advocating for improved disclosure practices may enhance transparency and enable more informed assessments of the role of ES KPIs in KMP remuneration structures.

In addition, the study considers the presence of modifiers or penalty clauses within remuneration policies. These clauses are employed to adjust incentives based on certain factors. Notably, these modifiers or penalty clauses may include ES KPIs, which represent specific targets that must be achieved to qualify for the incentive. Given that these modifiers or penalty clauses influence management decisions towards environmentally and socially friendly practices, they are treated as ES KPIs in the study. This recognition aligns with the understanding that such clauses play a pivotal role in shaping management behaviour to align with environmental and social goals.

Figure 7 Extract from an investigated company illustrating how modifier KPIs are used in remuneration policies

The LTI scheme rules were amended as of 1 September 2021 to incorporate an ESG modifier, in terms of which the total LTI payment can be adjusted downwards by up to 15% if specified ESG objectives were not met.

Modifier	Weighting
Composite measure: The maintaining its leadership positioning on the FTSE4Good Index relative to the sub sector average for drug retailers and the consumer services industry average.	6%
Environmental measure: The increasing its use of solar renewable energy from 631 MWh (megawatt hours) to at least 4 500 MWh when compared to the base 2021 financial year.	3%
Social measure: The maintaining its BBBEE leadership positioning relative to the retail industry.	3%
Governance measure: The experiencing no material breaches of customer privacy and data security.	3%

Further, if a KMP holds a title or position in conjunction with being designated as a prescribed officer, the data categorization is based on that specific title or position. In other words, the classification considers the additional title or position held by the KMP in addition to their role as a prescribed officer. This approach ensures a more granular and accurate representation of the individual's responsibilities and functions within the organizational hierarchy. By considering both the prescribed officer status and any additional titles or positions, the data categorization method captures the multifaceted nature of KMP roles, providing a comprehensive understanding of their contributions and responsibilities in the context of remuneration analysis.

3.5. Data analysis

The Statistical Package for the Social Sciences (SPSS) has been used to run the data analysis.

Descriptive statistics such as the data mean, median, mode, range, and standard deviation of the data set were computed, to present an overall picture of ES KPIs to address research question 1.

To address research question 2, the sum of the number of E, S, and combined ES KPIs for the years ending 2011, 2018, and 2022 has been compared using the inferential Kruskal Wallis test to determine if there is a difference in the number of KPIs depending on the year of the report.

To investigate research question 3, the inferential Kruskal Wallis and Mann-Whitney U tests have been computed to determine if there is a difference between the sum of E, S, and combined ES KPIs based on size, industry, and initial listing date. The Kruskal Wallis and

Mann-Whitney U tests have also been computed to evaluate the differences between the sum of E, S, and ES KPIs for each KMP position and their respective settlement conditions (type and period).

The inferential Kruskal Wallis test has been used to determine if there is a difference in the number of ES KPIs based on the EY Excellence in Integrated Reporting ranking for the Top 100 JSE-listed companies, to evaluate research question 4.

The inferential Kruskal-Wallis and Mann-Whitney U tests were conducted at the 5% level of confidence.

Table 1 below reflects each test that was run in this study:

Table 1 Inferential data analysis to address research questions 2, 3, and 4

Description of the independent variable	Type of inferential statistic test	Combined ES frequency	E frequency	S frequency	Reason
Size (1 = small; 2 = mid; 3 = Large)	Kruskal Wallis	Combined ES KPI frequency = $f(\text{size})$	E KPI frequency = $f(\text{size})$	S KPI frequency = $f(\text{size})$	To determine whether the extent of combined ES, E and S KPI frequencies are different when grouped by size.
Industry classification (1= high ES impact; 2= low ES impact)	Mann-Whitney U	Combined ES KPI frequency = $f(\text{industry})$	E KPI frequency = $f(\text{industry})$	S KPI frequency = $f(\text{industry})$	To determine whether the extent of combined ES, E and S KPI frequencies are different when grouped by industry.
The initial JSE-listing date will be allocated to their respective decade.	Kruskal Wallis	Combined ES KPI frequency = $f(\text{listing date})$	E KPI frequency = $f(\text{listing date})$	S KPI frequency = $f(\text{listing date})$	To determine whether the extent of combined ES, E and S KPI frequencies are different when grouped by initial JSE listing date.

EY awards ranking (1= Progress to be made; 2 = Average; 3 = Good; 4=Excellent)	Kruskal Wallis	Combined ES KPI frequency = $f(\text{integrated performance})$	E KPI frequency = $f(\text{integrated performance})$	S KPI frequency = $f(\text{integrated performance})$	To determine whether the extent of combined ES, E and S KPI frequencies are different when grouped by EY awards ranking.
Changes between the years, 2011, 2018 and 2022	Kruskal Wallis	Combined ES KPI frequency = $f(\text{year})$	E KPI frequency = $f(\text{year})$	S KPI frequency = $f(\text{year})$	To determine whether the extent of combined ES, E and S KPI frequencies are different when grouped by the different years under evaluation.
KMP position (CEO, CFO and other KMP)	Kruskal Wallis	Combined ES KPI frequency = $f(\text{integrated performance})$	E KPI frequency = $f(\text{integrated performance})$	S KPI frequency = $f(\text{integrated performance})$	To determine whether the extent of combined ES, E, and S KPI frequencies are different between the positions of KMP.
Settlement period (long-term or short-term)	Kruskal Wallis	Combined ES KPI frequency = $f(\text{integrated performance})$	E KPI frequency = $f(\text{integrated performance})$	S KPI frequency = $f(\text{integrated performance})$	To determine whether the extent of combined ES, E, and S KPI frequencies are different between the settlement periods.
Settlement type (cash or equity)	Kruskal Wallis	Combined ES KPI frequency = $f(\text{integrated performance})$	E KPI frequency = $f(\text{integrated performance})$	S KPI frequency = $f(\text{integrated performance})$	To determine whether the extent of combined ES, E, and S KPI frequencies are different between the settlement types.

3.6. Validity and reliability

The integrated, remuneration and annual reports were obtained directly from each company's respective website. To ensure consistency, the same researcher collected data from integrated, remuneration and annual reports. To enhance the study's internal validity, a rigorous data collection tool was established (Appendix 2), ensuring uniformity in data collection procedures and reducing potential biases. A pilot study was performed on ten listed companies in which the researcher read the prescribed reports in detail to identify and document the ES KPIs used to remunerate KMP. By performing a pilot study, the validity of the study is enhanced and increases the likelihood of success of the main study (Thabane et al., 2010; Van Teijlingen & Hundley, 2001).

A keyword search was conducted in the reports during the pilot study. "Remuneration" "directors", "executive", "environmental", "social" and "key performance indicator (KPI)" are examples of the keywords. Keywords have been continuously updated throughout the pilot study as well as the main data collection process to ensure that they are complete. The keyword list has been created by reading the ten-pilot company reports and identifying all instances of ES KPIs. Then, using the keywords selected, confirm if they would have identified the areas recognized by the preliminary reading. The keywords list will be updated as necessary. The preliminary analysis has assisted the researcher in identifying information on the use of ES KPIs in the remuneration policy for KMP and making any necessary adjustments to the data collection instrument (Van Teijlingen & Hundley, 2001).

To assess the robustness of the Kruskal-Wallis and Mann-Whitney U results, Wilcoxon signed-rank tests have been performed, and the results compared to those of the respective Kruskal-Wallis tests (Hollander et al., 2013). As the conclusions are consistent across the tests, it provides confidence that the results are robust. To reduce the risk of Type-I errors, an alpha value of 5% was used for all tests. In this study, statistical significance was assessed at the 5% significance level ($\alpha = 0.05$). A p-value less than 0.05 was considered statistically significant, leading to the rejection of the null hypothesis.

The Kruskal-Wallis and Mann-Whitney U tests have the following assumptions: (1) the dependent variable should be measured at the ordinal or continuous level; (2) the Kruskal-Wallis test requires two or more categorical, independent groups, whereas the Mann-Whitney U test requires only two; (3) there is no relationship between the observations in each group or between the groups themselves (Sawilowsky et al., 2005). The dependent variables of this study are the ES KPI frequencies of the KMP remuneration of JSE-listed companies which is a continuous variable. The independent variables evaluated in this study are presented in Table 1 above. These independent variables are all categorical variables since they each

represent data that can be further categorized based on specific criteria (Urdan, 2022). Lastly, all observations are independent, meaning that the information gathered from one listed entity's annual reports have no bearing on the information gathered from another. The Chi-squared test assumes that the two variables being measured should be ordinal or categorical and should consist of two or more categorical, independent groups (Laerd Statistics, 2016). The dependent variable is the E, S, and ES KPI categories, while the independent variable is the KMP position, namely director or prescribed officer. Both the variables in the Chi-squared test are categorical, which consists of two or more independent categorical groups.

3.7. Ethical Considerations

The importance of research ethics is critical. As the integrated, remuneration and annual reports used in this study are publicly accessible, ethics clearance is not necessary. The committee has been requested to approve and has approved an ethics waiver for the completion of this research. The researcher has taken care when writing the report to ensure it is unbiased.

4. Analysis of results

The results presented in this section offer a comprehensive analysis of the data collected during this study. These findings provide insight into where companies listed on the JSE place their focus concerning ES KPIs linked to remuneration. In doing so, research question 1 is answered. Data analysis and interpretation identified significant patterns, trends, and relationships, providing valuable insights into whether the ES-related KPIs linked to remuneration differ depending on the size, industry, listing date, KMP position, settlement conditions, and EY ranking to answer research questions 2,3 and 4. A summary of the ES KPIs linked to remuneration used by the sampled companies is included in Tables 2 and 3 below. The analysis of results begins with an overview of the ES KPIs linked to KMP remuneration of the sample population, followed by a detailed examination of the key variables under investigation.

4.1. Overall ES KPIs for KMP remuneration

Per Table 2, S KPIs are most prevalent, accounting for 64% of the total ES KPIs identified linked to remuneration. The total number of ES KPIs has steadily risen from 8% in 2011 to 53% in 2022. As could be expected, companies with a high environmental or social impact account for most (82%) of the ES KPIs linked to remuneration. These findings are encouraging as they reflect that companies see environmental and social imperatives as legitimate and

important enough to include in KMP's remuneration incentives specifically. This adds credibility to the companies' ES claims in integrated reports (Malola & Maroun, 2019).

Table 2 Summary table of the number of ES KPIs used to remunerate KMP

	Number of companies	E KPIs				S KPIs				Combined ES KPIs				Total ES KPIs		
		Number of E KPIs	% of total ES KPIs ²	% total remuneration	Average number of E KPIs per company	Number of S KPIs	% of total ES KPIs ²	% total remuneration	Average number of S KPIs per company	Number of combined ES KPIs	% of total ES KPIs ²	% total remuneration	Average number of combined ES KPIs per company	Total number of ES KPIs	% of total ES KPIs ²	Average number of ES-related KPIs per company
Reporting year																
2011	60	19	18%	3%	0,3	88	82%	14%	1,5	0	0%	0%	0,0	107	8%	2
2018	60	50	10%	18%	0,8	369	70%	21%	6,2	105	20%	22%	1,8	524	39%	9
2022	60	188	26%	18%	3,1	401	56%	22%	6,7	127	18%	24%	2,1	716	53%	12
Total	180	257	19%	17%	1,4	858	64%	21%	4,8	232	17%	23%	1,3	1347	100%	7
Market capitalization																
Large	20	237	21%	17%	11,9	709	62%	21%	35,5	190	17%	23%	9,5	1136	84%	57
Mid	20	4	4%	12%	0,2	85	88%	25%	4,3	8	8%	31%	0,4	97	7%	5
Small	20	16	14%	27%	0,8	64	56%	26%	3,2	34	30%	17%	1,7	114	8%	6
Total	60	257	19%	17%	4,3	858	64%	21%	14,3	232	17%	23%	3,9	1347	100%	22
Listing period																
1982-2011	42	114	23%	18%	2,7	320	65%	23%	7,6	60	12%	30%	1,4	494	37%	12
1955-1981	9	62	18%	21%	6,9	223	64%	25%	24,8	62	18%	27%	6,9	347	26%	39
1924-1954	9	81	16%	14%	9,0	315	62%	17%	35,0	110	22%	16%	12,2	506	38%	56
Total	60	257	19%	17%	4,3	858	64%	21%	14,3	232	17%	23%	16,2	1347	100%	22
Industry																
High ES impact	34	250	23%	17%	7,4	683	62%	19%	20,1	167	15%	20%	4,9	1100	82%	32
Low ES impact	26	7	3%	36%	0,3	175	71%	27%	6,7	65	26%	27%	2,5	247	18%	10
Total	60	257	19%	17%	4,3	858	64%	21%	14,3	232	17%	23%	3,9	1347	100%	22

² Percentage of total KPIs represents the total number of each category of KPIs as a percentage of total ES remuneration KPIs recorded.

Most ES KPIs are used to remunerate CEOs and CFOs, constituting 20% and 17% respectively of all recognized ES KPIs. In contrast, other KMP collectively represent 63% of the total ES KPIs (Table 3). It is worth noting that while there are numerous KMP within each company, each company has only one CEO and CFO.

Figure 8 below provides an extract of the remuneration policy of a consumer goods company. This illustrates how the variable remuneration of the CEO, CFO and COO are tied to ES KPIs, primarily embedded within the 'Transformation' KPI. This strategic alignment underscores the company's commitment to driving environmental and social impact through transformative initiatives. While acknowledging additional social KPIs such as stakeholder relationships and employee experience, the primary focus of ES-related metrics lies within the Transformation KPI. This emphasis signifies a deliberate effort to leverage transformational strategies in advancing the company's environmental and social objectives, reflecting a broader commitment to sustainability and responsible corporate citizenship. By incorporating ES KPIs into the variable remuneration structure of top executives, the company demonstrates a proactive approach towards integrating responsible citizen principles into its core business strategy and operations, reinforcing the importance of environmental and social performance in driving overall business success and stakeholder value.

Figure 8 Extract from a consumer goods company's remuneration report illustrating the KPIs used to remunerate KMP

Element	Description		
Personal performance conditions – key elements of personal scorecards	CEO	CFO	COO
	Corporate strategy and financial performance (40%)		Turnover and profit (40%)
	Network development and franchisee relationships (20%)	Financial governance and reporting (15%)	Restaurant growth and development including new formats and channels (20%)
	Transformation ² (10%)	Transformation ² (5%)	Transformation ² (5%)
	Employee experience (10%)	Organisational governance and risk management (15%)	Ensuring best-in-class dining experience (10%)
	Supply chain (15%)	Stakeholder relationships (10%)	Product development and innovation (5%)
		Information technology and legal (5%)	Franchisee profitability and operational excellence (10%)
	Leadership behaviours (5%)	Leadership behaviours (10%)	Leadership behaviours (10%)

¹ Operating profit of the division (before the cost of incentive schemes).

² Includes environmental and social performance metrics.

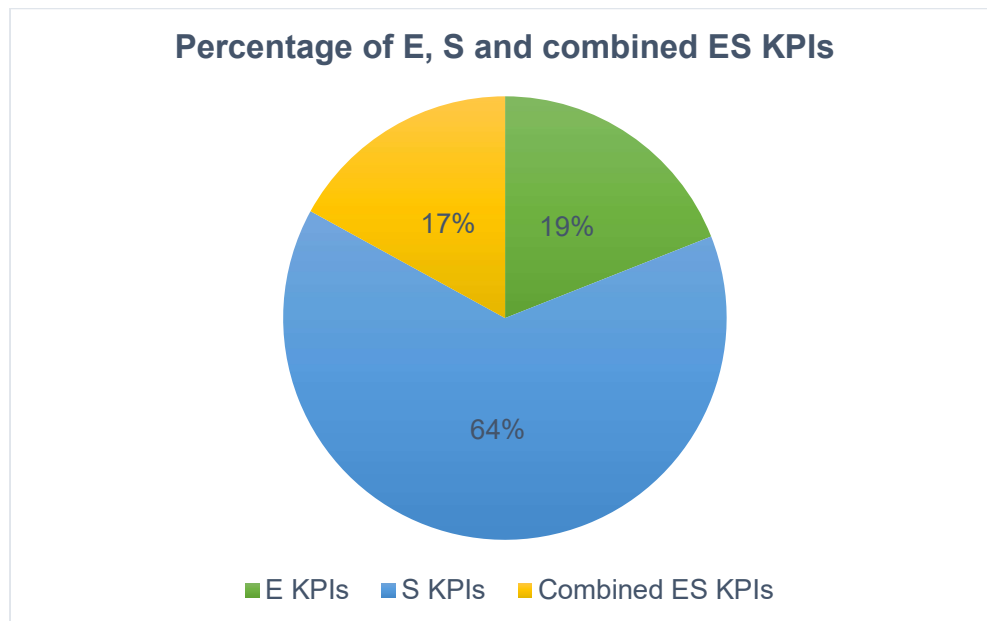
Table 3 illustrates an equitable distribution between short- and long-term ES KPIs, with roughly half being equity-settled and the remaining half being cash-settled. These findings are promising as they align closely with prevailing environmental and social agendas, emphasizing the creation of shareholder value and corporate responsibility across both the short- and long-term.

Table 3 Summary table of the number of ES-related KPIs linked to KMP remuneration on a per-KPI basis

		E KPIs				S KPIs				Combined ES KPIs				Total ES KPIs		
		Number of E KPIs	% of total E KPIs ³	% total remuneration	Average number of E KPIs per company	Number of S KPIs	% of total S KPIs ³	% total remuneration	Average number of S KPIs per company	Number of combined ES KPIs	% of total combined ES KPIs ³	% total remuneration	Average number of combined ES KPIs per company	Total number of ES KPIs	% of total ES KPIs ³	Average number of ES-related KPI per KMP
KMP⁴																
CEO	66	45	17%	20%	0,7	171	63%	23%	2,6	54	20%	23%	0,8	270	20%	4
CFO	60	37	16%	25%	0,6	151	67%	26%	2,5	38	17%	31%	0,6	226	17%	4
Other KMP	186	175	21%	13%	0,9	536	63%	18%	2,9	140	16%	20%	0,8	851	63%	5
Total	312	257	19%	17%	0,8	858	64%	21%	2,8	232	17%	23%	0,7	1347	100%	4
Settlement period⁵																
Short-term	27	113	17%	15%	4,2	464	69%	21%	17,2	98	15%	21%	3,6	675	50%	25
Long-term	22	144	21%	19%	6,5	394	59%	21%	17,9	134	20%	24%	6,1	672	50%	31
Total	49	257	19%	17%	5,2	858	64%	21%	17,5	232	17%	23%	4,7	1347	100%	27
Settlement type ⁵																
Cash settled	28	120	17%	17%	4,3	478	68%	21%	17,1	102	15%	20%	3,6	700	52%	25
Share-based payment	19	137	21%	18%	7,2	380	59%	21%	20,0	130	20%	25%	6,8	647	48%	34
Total	47	257	19%	17%	5,5	858	64%	21%	18,3	232	17%	23%	12,2	1347	100%	29
EY IR ranking⁶																
Progress to be made	3	3	33%	39%	1,0	3	33%	39%	1,0	3	33%	34%	1,0	9	2%	3
Average	4	5	5%	48%	1,3	96	91%	18%	24,0	5	5%	35%	1,3	106	20%	27
Good	9	58	17%	19%	6,4	210	61%	22%	23,3	78	23%	19%	8,7	346	66%	38
Excellent	7	152	29%	15%	21,7	278	53%	21%	39,7	94	18%	24%	13,4	524	53%	75
Total	23	218	22%	18%	9,5	587	60%	21%	25,5	180	18%	22%	7,8	985	100%	43

³ Percentage of total KPIs represents the total number of each category of KPIs as a percentage of total ES remuneration KPIs recorded.⁴ Number of KMP within each category of KMP remunerated based on ES KPIs per company investigated. The average is calculated as the average number of ES KPIs per KMP per company.⁵ Number of companies who use these settlement conditions in settlement of their ES KMP remuneration KPIs.⁶ Number of companies investigated that are ranked in the EY IR awards

Figure 9 Composition of E, S and combined ES KPIs observed in the study



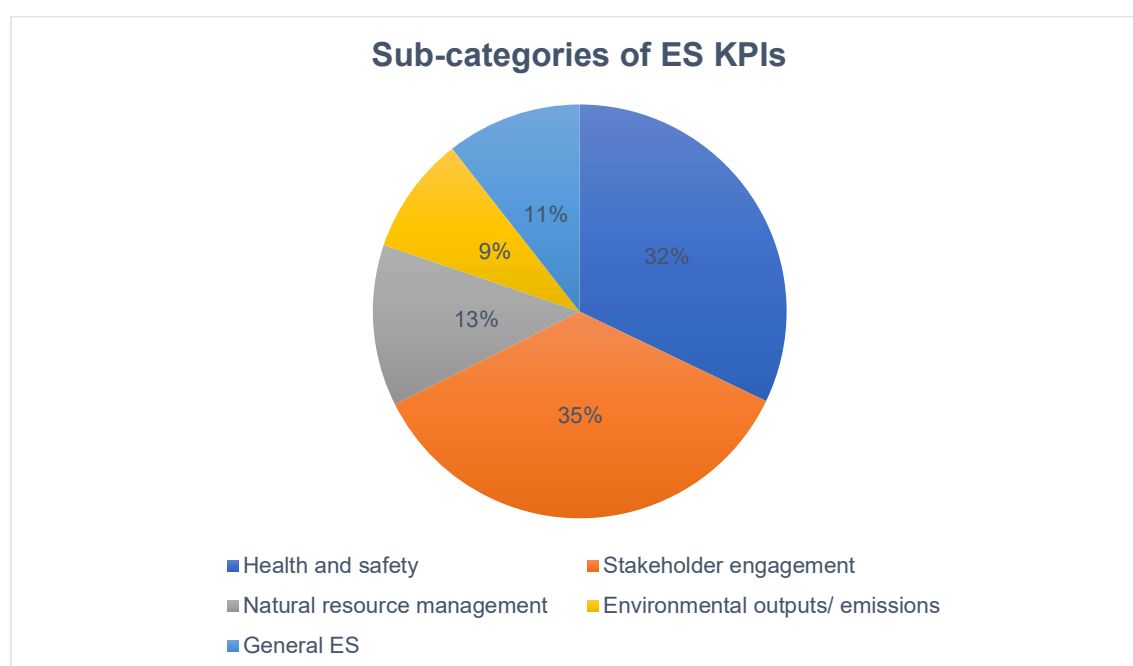
Across all 60 companies, a total of 1347 ES-related KPIs were identified with an average of 449 ES-related KPIs being utilized per year. In total, there are 257 E KPIs, 858 S KPIs and 232 combined ES KPIs for the three reporting years (Table 2). Notably, S KPIs dominate remuneration policies for KMP, representing 64% of all KPIs observed (Figure 9). This prominence is likely attributable to South Africa's historical context of social injustice, leading to initiatives for social responsibility being a key focus area (Hamann & Acutt, 2003; Leubolt, 2014). Using S KPIs encourages KMP to prioritize social responsibility areas for the greater good of society as a whole.

Addressing environmental impacts presents difficulties in defining and allocating responsibilities to KMP, as remuneration KPIs should primarily align with factors within management's control (Giraud et al., 2008; Merchant, 1987). The complexity and interconnectedness of environmental systems make it difficult to attribute specific outcomes to a single action or intervention (Bodin, 2017; Levin et al., 2013). Environmental changes occur over extended periods, making it challenging to measure the direct impacts of E KPIs in a timely manner (Bodin, 2017). A lack of accurate baseline data can further complicate the assessment of the effectiveness of E KPIs, as there is no clear point of comparison to determine whether conditions have improved or deteriorated (Kelly & Reid, 2021). On the other hand, social interventions typically have a more direct and immediate impact, making them easier to measure. There are well-established methods and systems for collecting social data, such as surveys, census data, and administrative records, which facilitate the measurement of social KPIs. Measuring the impact of social interventions may be easier

compared to environmental interventions. For example, in 2011, Company A adopted 'Reserve and resource ounce generation'⁷ as an E KPI. Although Company A outlined the prerequisites for meeting this E KPI and reported on the accomplishments during the year, it remains inherently challenging to manage and measure. This contrasts with Company B's 'Reduction in consumer complaints', an S KPI linked to KMP remuneration, which appears more manageable and measurable in comparison.

Figure 10 assists in answering research question 1 related to what ES KPIs are used by JSE-listed entities. Five broad categories were captured with 'Health and Safety' and 'Stakeholder engagement' accounting for just over two-thirds of all ES KPIs.

Figure 10 Five broad categories of ES KPIs



Acknowledging the profound impact of reputational damage on operational sustainability, particularly within safety-intensive sectors such as mining, manufacturing and heavy machinery, companies are compelled to integrate stringent safety measures into remuneration incentives to ensure KMP are acting in the best interests of the company, its workforce and the communities in which they operate (HSE, 2016; Jiang & Xu, 2022). Beyond the financial implications, companies understand the legal ramifications and operational disruptions that

⁷ This E KPI reflects the company's ability to replenish and expand its mineral reserves and resources over time, which is crucial for sustaining production levels and future growth. By setting targets for reserve and resource ounce generation, the company aims to ensure a consistent and sufficient supply of minerals for extraction and processing operations.

may result from non-compliance with safety regulations. This heightened awareness explains the emphasis placed on these metrics in remuneration KPIs (IIRC, 2021).

For example, one company used *'Improved employee engagement'* and *'Employee development plans'* as stakeholder engagement S KPIs in their KMP remuneration policy. Fostering a workplace culture that prioritizes employee well-being not only enhances morale but also contributes to increased productivity by promoting job satisfaction, reducing stress and burnout, fostering collaboration, and improving retention rates (Coates & Howe, 2015; Lovejoy et al., 2021; Vogel, 2007). Investing in employee well-being is a strategic imperative for organizations seeking to enhance performance and achieve long-term success (Kowalski & Loretto, 2017). Stakeholder engagement assumes a significant role due to its profound impact on corporate reputation and trust (Carroll & Shabana, 2010; Halme & Huse, 1997). The emphasis on engaging customers, employees, and communities is rooted in the belief that positive interactions build brand value, enhance community support and foster customer loyalty (Freeman, 2010). Additionally, companies are increasingly acknowledging their role in and impact on the communities in which they operate, recognising that positive engagement contributes to sustainable development and social capital (Fombrun & Van Riel, 2004). Ultimately, the large number of KPIs in the *'Health and Safety'* and *'Stakeholder engagement'* categories reflects a strategic recognition of the interplay between operational safety, stakeholder relationships, and the overall sustainability of JSE-listed companies.

Given the current focus on environmental sustainability evidenced by the release of sustainability reporting standards such as S1 and S2 (ISSB, 2023a, 2023b), which focus on environmental reporting, it is notable that fewer remuneration KPIs are linked to environmental goal satisfaction. Of the companies investigated, 30 of the 60 companies form part of basic materials, energy and industrials. These types of industries have a significant impact on the environment. Inspection of the annual reports of these companies indicates that their strategies focus on environmental challenges, with many companies citing ESG leadership as one of their key strategic goals. To illustrate, an extract taken from the integrated report of a high-environmental impact company is provided below:

Figure 11 Extract from the annual report of a high-environmental impact company

Strategic priority	Strategic initiatives	Strategy execution in 2022	Medium to long-term targets
A leader in ESG 	Pursue carbon neutrality	- Unveiled the hydrogen-powered haul truck, as part of our nuGen Zero Emission Haulage Solution - Progressed our participation in the group regional renewable energy strategy (through Envusa Energy) with early-generation pipeline ready for construction in 2023.	Medium-term - Pilot programmes for new economic development in our communities - Implement energy-efficiency initiatives. Over 30% reduction by 2030 in carbon emissions - All assets assessed against responsible mining standards. Long-term - Recognised beyond mining industry as a leading sustainability driven organisation - Carbon neutral by 2040 (Scope 1 and 2) and our ambition to reduce Scope 3 emissions by 50% by 2040 - Thriving communities with sustainable livelihoods and low dependence on our mines - Support the creation of jobs off site for every job on site.
	Embed ESG at the centre of our strategy	Strong management of ESG risk via various projects and programmes rewarded through accolades from major ESG global ratings agencies. See details of our performance in implementing targeted commitments of our sustainable mining plan in the sustainability report.	
	Reset social compacts with communities	- Launched Thoba, an industry-leading broad-based employee share ownership scheme. Through Thoba, employees receive Anglo American Platinum listed shares to the value of R8,000 each per year, in addition to participating in the evergreen ownership of 2% of Rustenburg Platinum Mines (RPM), our operating subsidiary. The estimated total value of employee share allocations over the life of the scheme is R1.8 billion and the estimated day one value of the 2% evergreen shares is R6.5 billion - Concluded a ground-breaking five-year wage agreement with unions and our employees.	

Although low and high-ES companies do have environmental goals and targets, limited environmental considerations are linked to KMP remuneration. This may result in a conflict of interest where management may not be actively pursuing the environmental goals of the business as KMP are not directly affected by the achievement of these goals (Eisenhardt, 1989; Jensen & Meckling, 1976). The level of granularity of disclosure⁸ provided in remuneration disclosures among JSE-listed companies may also contribute to this observation (as seen in Figure 11 above).

4.2. Reporting years

There has been an increase in the total number of ES-related KPIs used to remunerate KMP from 107 in 2011 to 716 in 2022 (Table 2). Table 2 reflects the percentage of total E, S and combined ES KPIs as a percentage of total ES KPIs used in each of the reporting years. In 2011, the ES remuneration KPIs consisted of 18% E KPIs, 82% S KPIs and no combined ES KPIs. In 2018, E KPIs constituted 10% (50), S KPIs made up the majority at 70% (369), and combined ES KPIs accounted for 20% (105) of the total number of 2018 ES-related KPIs linked to remuneration. Between 2011 and 2018, there was an 8% decline in E KPIs, accompanied by a simultaneous 20% rise in combined ES KPIs.

The comparison between the years 2011 and 2018 in Figure 13 reveals significant shifts in sustainability metrics and remuneration practices within the companies investigated. There is a clear trend towards greater emphasis on environmental and social performance indicators, as evidenced by the substantial increases in both the average and maximum number of ES

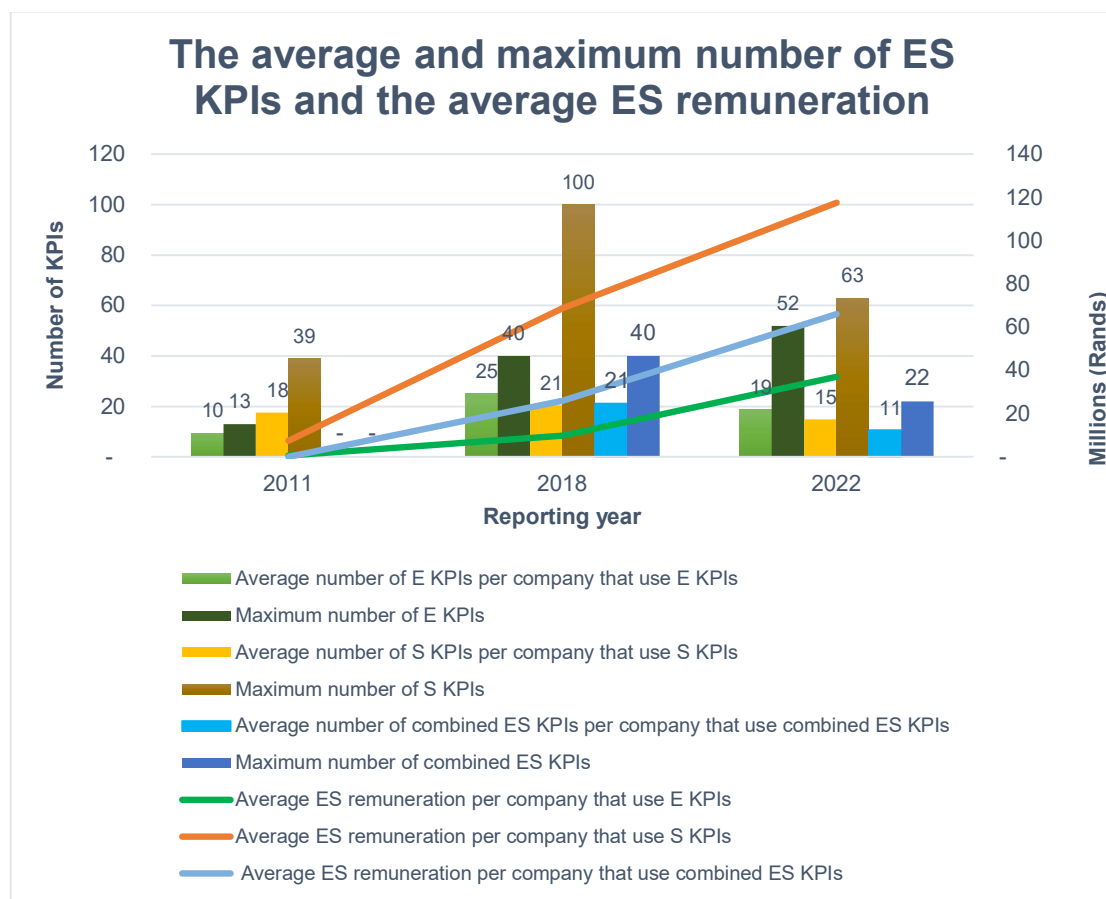
⁸ This discrepancy arises from the fact that companies have the autonomy to determine the level of detail they provide in their disclosures. While some companies may choose to comprehensively explain both E and S KPIs in their remuneration policies, others may opt to focus solely on detailing social metrics.

KPIs per company (Figure 13). This suggests a heightened recognition of the importance of sustainability in business operations and the importance of linking sustainability goals and objectives to KMP remuneration. The considerable rise in average ES remuneration per company associated with both E and S KPIs underscores the increasing acknowledgement of the financial implications of robust environmental and social performance.

The introduction of combined ES KPIs in 2018 may signify a shift towards integrated sustainability metrics, reflecting a growing understanding of the interconnectedness between environmental and social sustainability. The increase in the use of ES KPIs linked to remuneration between 2011 and 2018 is likely a result of a growing trend among companies to incorporate a combined approach to E and S KPIs into KMP remuneration practices, driven by the imperatives of IR and the principles outlined in King IV and may evidence integrated thinking. IR encourages organizations to provide a holistic view of their performance by considering not only financial aspects but also ES factors (IIRC, 2021). By integrating E and S KPIs into remuneration practices, companies align their compensation structures with the broader goals of IR, ensuring that executives are incentivised to consider and improve both environmental and social performance alongside financial performance. King IV outlines principles and practices for effective corporate governance in South Africa, emphasizing ethical leadership, sustainability, and stakeholder inclusivity (IoDSA, 2016). By incorporating E and S KPIs into remuneration practices, companies demonstrate their commitment to sustainability and stakeholder value creation, aligning with the principles of King IV.

Figure 12 depicts the average and maximum number of E, S and combined ES KPIs linked to KMP remuneration, as well as the average ES remuneration for the three reporting years under observation. A discernible trend emerges from 2011 to 2018, indicating a progressive rise in the incorporation of ES KPIs in KMP remuneration structures. Furthermore, the integration of ES KPIs appears to adopt a more streamlined approach in 2022, with a slight reduction in the number of S and combined ES KPIs. This suggests a maturation in the strategic alignment of executive incentives with environmental and social performance metrics, addressing research question 2.

Figure 12 Average and maximum number of ES KPIs and the average ES remuneration for each reporting year



In 2022, the total number of KPIs linked to remuneration increased further to 716 (Table 2). E KPIs represented 26% (188), S KPIs comprised 56% (401), and combined ES KPIs constituted 18% (127) of the total number of ES-related remuneration KPIs. This reflects the proliferating integration of ES KPIs into remuneration policies. An updated version of the IR report was released in January 2021 and became effective from 1 January 2022 (IIRC, 2021). The updates in IR and the emphasis placed by markets on applying principles from these standards contribute to the increase in the number of ES KPIs used. The maximum number of E KPIs used by a single company increased to 52, highlighting a growing emphasis on measuring the environmental impact of KMP performance (Figure 12). Compared to 2018, the maximum number of S KPIs and the combined ES KPIs have declined in 2022, reaching 63 and 22, respectively. A basic material company that used 44 S KPIs to remunerate its KMP in 2022 had previously used the highest number of S KPIs in 2018, with 100 S KPIs used to remunerate its KMP. The decrease in the number of S KPIs used by this entity may indicate that the entity is following a more streamlined approach to remuneration, by reducing the number of KPIs, but not necessarily the remuneration allocated to ES KPIs. Figure 13 below

provides an excerpt of a company's remuneration report, representing the reduced number of ES KPIs used in their remuneration policies.

Figure 13 Excerpt from a basic materials company's 2018 and 2022 remuneration report

2018 DSP performance measure		DSP performance metrics 2022		
Financial measures	Relative total shareholder return: three year relative ranking with the selected comparator group. The comparators are: Barrick, Gold Fields, Harmony, Newmont, Kinross, Goldcorp, Gold ETF (World Gold Council SPDR classification), Randgold, Newcrest and Sibanye-Stilwater Absolute total shareholder return Normalised cash return on equity (nCRDE) Production All-in sustaining costs	Strategic driver	Variable	Performance metric and related weighting
Future optionality	• Ore Reserve additions (pre-depletion, asset sales, mergers and acquisitions) • Mineral Resource (pre-depletion, asset sales, mergers and acquisitions)	 Maintain financial flexibility	Total shareholder returns (TSR)	Absolute returns Relative returns
			Return on equity	Normalised cash return on equity (nCRDE)
Safety, health, environment and community	AIFR: three-year rolling average Major hazard management critical control percentage compliance Safety management systems and practices protocol Health - site compliance to the global safety standards on organisational health wellness and fitness for work standard Completion of bowtie risk assessments per region, including identification of critical controls and actions managed to closure Number of reportable environmental incidents at operating mines Greenhouse gas emissions intensity at gold producing operations, measured in kg CO ₂ e/tonne Community: number of human rights violations Number of business disruptions as a result of community unrest	 Improve portfolio quality	Production	Moz
			Costs	All-in sustaining costs Total cash costs
		 Optimise overhead, costs and capital expenditure	Future pipeline	Mineral Resource Mineral Reserve
Core value: People	• Strategic coverage ratio – measured by the number of successors ready to take up a role within one year for identified key leadership positions • Key staff retention – measured through turnover excluding retrainments, retirements and deaths within the leadership talent pool • Gender diversity – measured through female representation at leadership level	 Maintain long-term optionality	People	• Gender diversity • Key talent retention
Total			Safety	Combination of: • All injury frequency rate • Major hazard control compliance
		 Prioritise people and ESG	Health	Reduction in workforce exposed to high respirable crystalline silica dust
			Environment	Greenhouse gas emissions management
			Communities	Business disruptions caused by community unrest

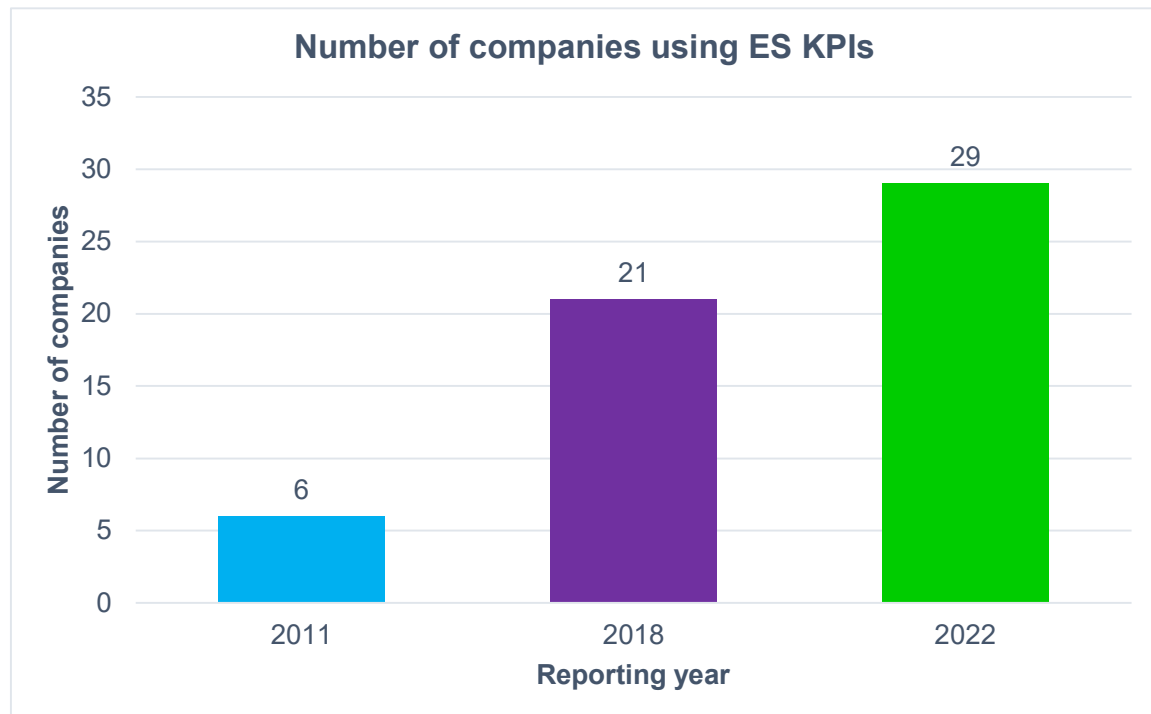
While there is a decrease in the maximum number of S KPIs and combined ES KPIs, the average ES remuneration per company using ES KPIs remains high, indicating possible streamlined integration of ES KPIs (Figure 12). The increase in the remuneration linked to ES KPIs indicates that companies are allocating more resources to the achievement of sustainable growth and development. The remuneration allocated specifically to ES considerations increased from 12% (2011) to 21% (2018 and 2022). The average number of ES KPIs decreased in 2022. This may be due to the holistic approach suggested by King IV and IR, where sustainable goals should be integrated rather than viewing each social and environmental goal as an isolated event (IIRC, 2021; IoDSA, 2016).

Although there has been a decline observed in the average E and S KPIs, there has been a substantial increase in the total ES KPIs from the year 2011 to 2022. This trend can be attributed to the rising number of companies that have started incorporating ES KPIs into their remuneration policies. There has been a related increase in the average remuneration linked to ES KPIs for the companies investigated.

Companies with a higher number of ES-related KPIs may be more transparent and willing to disclose detailed information about their sustainability performance. This increased transparency can positively influence stakeholder perceptions and trust. When the average ES remuneration has not increased proportionally with the number of ES KPIs, it could raise concerns about resource allocation. The company may be measuring more aspects of sustainability without allocating sufficient resources to address and improve performance in those areas. A significant increase in the number of specific KPIs without a proportional increase in remuneration might indicate challenges in implementing and managing the expanded set of metrics. This could lead to difficulties in achieving sustainability goals.

Figure 14 illustrates the number of companies in the selected sample that make use of E, S or combined ES KPIs to remunerate their KMP. In 2011, only 6 out of the 60 companies studied utilized ES KPIs that were linked to remuneration. This number increased to 21 companies in 2018 and further grew to 29 companies in 2022. The significant increase in the number of companies implementing ES-linked remuneration policies is an indication of the growing importance of sustainability and the commitment of the company and management towards enhancing their environmental and social performance.

Figure 14 Number of investigated companies using E, S or combined KPIs



The trend in the use of ES KPIs when companies are grouped by year is apparent from the results of the Kruskal Wallis test (Table 4). The results indicate that there is a significant difference in the number of E, S and combined ES KPIs, depending on the year under review.

Table 4 Results from Kruskal Wallis tests data grouped by reporting period

	<i>E KPIs</i>	<i>S KPIs</i>	<i>Combined ES KPIs</i>	<i>Total</i>
<i>H-statistic</i>	9,756	18,305	15,389	20.247
<i>df</i>	2	2	2	2
<i>Asymp. Sig. (2-tailed)</i>	,008*	<,001*	<,001*	<,001*

*Significant at the 5% level

**Significant at the 10% level

Results from the pairwise comparison test revealed statistically significant differences in S and combined ES KPIs between the 2011 and 2018 years, as well as between 2011 and 2022. Similarly, there is a significant difference in E KPIs between each of the years 2011, 2018, and 2022, with the use increasing year on year. This increase in the use of ES remuneration KPIs is in line with the increased focus on IR and CSR in recent years, as underscored by the release of the IR report and the King Code, both highlighting the increased significance of integrating ES objectives into remuneration structures (Johnson et al., 2019; Matemane et al., 2023). As global awareness of the impact of business activities on society and the environment grows, companies are under increased pressure to demonstrate their commitment to responsible and sustainable practices (Serafeim, 2020; Shrivastava, 1995b). Utilising ES-related KPIs for KMP remuneration reflects a strategic response to the evolving business landscape, where stakeholders place greater value on companies that integrate ES principles into their core operations (IoDSA, 2016).

The influence of the King code and the IR framework on the use of ES KPIs by the companies investigated is illustrated in Figure 15. One of the investigated companies had renamed a social remuneration KPI. The change in the KPI from “human productivity” to “human capital productivity” shows an alignment between the remuneration policies of the entity and the 6 capitals discussed in King IV and the IR Framework. Incorporating such terminology aligns with the principles of IR, which advocates for businesses to provide a comprehensive view of their performance, including their impact on the various capitals. By recognising human capital as a distinct and valuable asset, the company demonstrates a commitment to transparency and accountability in its reporting practices, as well as a recognition of the interconnectedness of its operations with broader societal and environmental contexts.

Figure 15 Extract from the educational company's remuneration policy illustrating the evolution of KPIs to integrate IR and King IV practices into remuneration policies



This alignment is again evident in the 2022 integrated report of a financial company investigated. This company aligns their remuneration policy (and broader company strategies) with both ES concerns and the UN SDGs (Figure 16). Linking company policies to SDGs demonstrates a commitment to contributing to broader global development objectives, reflecting the company's dedication to sustainability.

Figure 16 Extract from a financial company's IR to illustrate the integration of SDGs into their remuneration policy among other company policies



Different companies in 2022 utilized the maximum values of each ES-related KPI category, showcasing unique focuses for each company (Figure 11). While each of the companies has a different focus area, they all operate in the basic materials sector, a high ES-impact industry classification and are categorised as large market capitalization companies. This indicates that large market capitalization and high-ES impact industries dominate the use of ES remuneration KPIs. The possible reasons for this will be explored in more detail in Sections 4.3 and 4.4.

Figures 12 and 14 indicate a notable upward trend among companies adopting E, S and combined ES KPIs in remuneration policies, answering research question 2. While this adoption of integrated metrics underscores a commitment to comprehensive sustainability metrics, potential challenges may arise. The risk of metric duplication could lead to redundancy in reporting, complicating the analysis and making it challenging to discern the unique contributions of each set of KPIs (Noja et al., 2020). The complexity introduced by maintaining and reporting on multiple KPIs may strain resources, diverting attention from other strategic initiatives (Lavy et al., 2014). The potential for overlap may pose difficulties for executive management in maintaining a clear strategic focus. To address these challenges, companies may consider streamlining their KPIs, allocating remuneration to a smaller number of well-designed KPIs, enhancing communication within the organization, and ensuring alignment with overarching goals.

4.3. Market capitalization (size)

Results from the Kruskal Wallis tests as presented in Table 5 suggest that there are significant statistical differences in the number of ES KPIs when grouped by market capitalization.

Table 5 Results from Kruskal Wallis tests data grouped by market capitalization

	<i>E KPIs</i>	<i>S KPIs</i>	<i>Combined ES KPIs</i>	<i>Total</i>
<i>H-statistic</i>	18,712	39,040	16,571	46,847
<i>df</i>	2	2	2	2
<i>Asymp. Sig. (2-tailed)</i>	<,001*	<,001*	<,001*	<,001*

*Significant at the 5% level

**Significant at the 10% level

Pairwise comparisons performed identified that a significant difference exists between the number of ES KPIs used by large and small capitalization companies, as well as between large and mid-capitalization companies. Large market capitalization companies predominantly utilize a greater number of ES remuneration KPIs to remunerate their KMP. Large capitalization companies employ a total of 1136 (84%) ES-related KPIs, averaging 379 KPIs

per large market capitalization company investigated (Table 2). In contrast, small and mid-capitalization companies use fewer ES KPIs, with a weighting of 8% and 7% of total ES KPIs, respectively, for the sampled companies (Figure 17). These findings reflect the differences in the use of ES KPIs across the different market capitalizations, offering valuable insights in answering research question 3.

Figure 17 Percentage of total ES KPIs used by each market capitalization

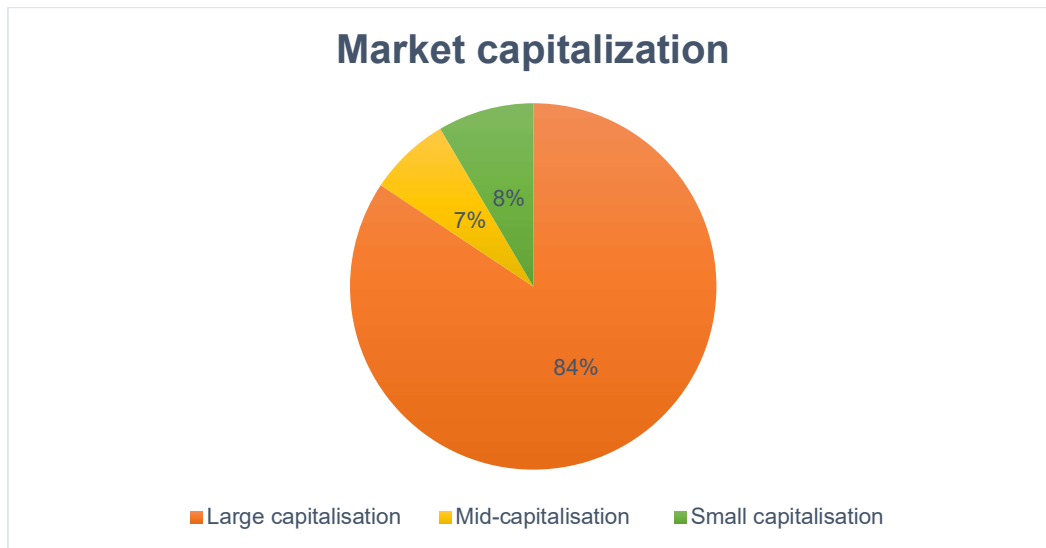
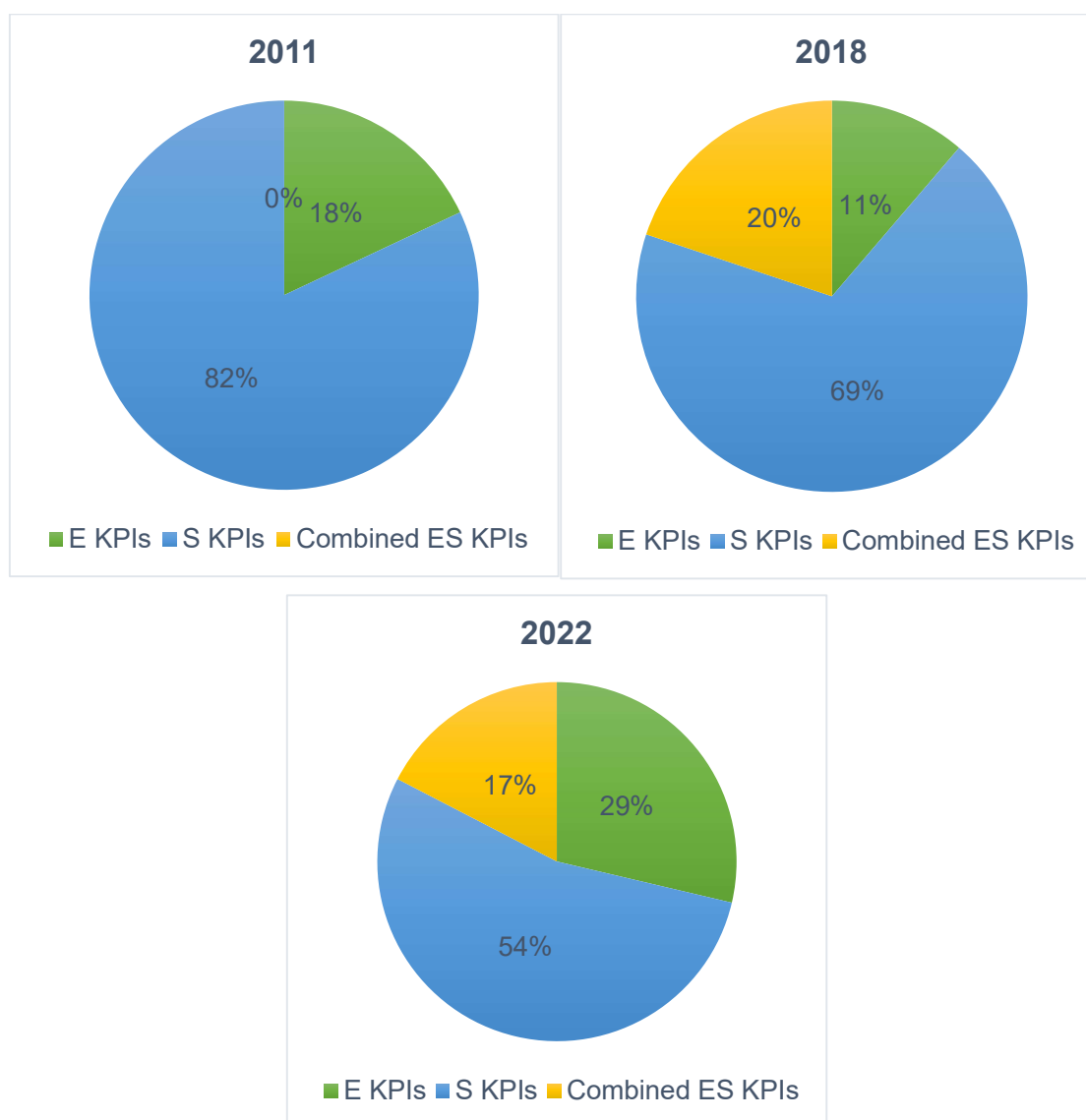


Figure 18 displays the composition of ES KPIs used by large market capitalization companies in the different reporting years, reflecting the shift in the ES KPIs used by large market capitalization companies over the years.

Figure 18 Composition of E, S and combined ES KPIs for each reporting year



The most notable difference is the increase in the use of E KPIs linked to remuneration, with the use increasing from 18% in 2011 to 29% in 2022. This may be due to the majority of large market capitalization companies having high-ES impacts and environmental performance is key to sustainability for these entities. There has also been a shift in the use of combined ES KPIs. There were no combined ES KPIs used in 2011. There was a sharp increase to 20% in 2018 and 17% in 2022. This trend suggests an evolving approach towards integrating ES metrics in KMP remuneration policies, aligning with changing corporate governance practices and stakeholder expectations (refer to section 4.2 above).

On average, small-capitalization companies employ 6 ES-related KPIs, while mid-capitalization companies utilize an average of 5 ES-related KPIs throughout the sample,

across the reporting periods (Table 2). Mid-capitalization companies employing ES remuneration KPIs exhibit greater diversity concerning industry representation compared to small capitalization firms, with eight companies represented across each of the four industry categories of basic materials, energy and industrials, consumer goods and technology, financials and healthcare. Among these mid-capitalization companies, there is a predominant focus on S KPIs with 88% of the ES KPIs used focus on social goals. Small market capitalization companies tend to have a slightly higher average number of total E KPIs of 0.8, compared to mid-market capitalization companies with an average of 0.2 E KPIs (Table 2). Additionally, all small market cap companies belong to high ES impact industry entities. The environmental and social impact of these entities has a larger effect on the sustainability of these entities and may account, in part for the increased number of KPIs in the small entities investigated compared to the medium-sized entities. The small market capitalization companies investigated incorporate a more varied array of types of ES KPIs in their remuneration policies compared to mid-capitalization counterparts. Specifically, 14% of their total number of ES KPIs are E KPIs, 56% are S KPIs and 30% are combined ES KPIs (Table 2).

Following the same rationale as Choi (1973) and Spero (1979), smaller capitalization firms, often operating with resource constraints, may employ a higher number of ES KPIs to demonstrate their commitment to sustainable practices despite limited resources. This may allow these companies to differentiate themselves in a bid to increase their access to resources (Choi, 1973; Spero, 1979). Additionally, the influence of local stakeholders and community expectations, where smaller entities may have a more direct impact on livelihoods may prompt smaller companies to adopt a more comprehensive set of KPIs, catering to specific concerns (Okoye & Adeniyi, 2018). The motivation to mitigate perceived risks, differentiate themselves in the market, comply with industry-specific regulations, and appeal to socially conscious investors may collectively contribute to the higher average of ES-related KPIs among small-capitalization companies compared to the average observed in mid-capitalization counterparts (Table 2).

Across each of the three reporting years investigated large market capitalization companies had significantly more ES remuneration KPIs than their small and medium counterparts. This is due in part to the resources available to these larger entities to design and implement ES KPIs. They also generally have staff with more experience and higher levels of skills and expertise due to the ability of large companies to attract staff at the prospects of growth, prestige and potentially higher income (Kaplan & Strömberg, 2004). In addition, larger companies are under increased scrutiny from investors and other users due to their financial and social impacts (Cowen et al., 1987). This impact is evidenced by the EY integrated

reporting awards that focus on the top 100 companies on the JSE (refer to section 4.8). The visibility and prominence of large-cap companies expose them to heightened public scrutiny (Dissanayake et al., 2019; Hörisch et al., 2015; Manita et al., 2018). By actively engaging in ES activities and transparently disclosing these activities, these companies seek the approval of diverse stakeholders. This strategic move aligns with societal expectations and helps demonstrate compliance with a range of local and international regulations, reinforcing their business activities across different markets (Cowen et al., 1987; Kumar et al., 2021). Typically, large-market companies have access to more financial resources, affording them the capacity to invest in more sophisticated and integrated ES systems (Hörisch et al., 2015; Manita et al., 2018). All of these factors contribute to the increased use of ES KPIs linked to remuneration for companies with larger market capitalizations.

The company with the most ES KPIs was a company that fell within the large market capitalization category with a total of 320 ES KPIs throughout the three reporting years. The company with the most ES KPIs in the small and medium cap categories had 56 and 32 KPIs respectively across all three years. Within each of the market capitalizations, there are companies with no ES KPIs for remunerating their KMP. The consistent presence of minimum values at 0 across all market capitalizations and reporting years proves that there are still companies using no ES KPIs to remunerate their KMP. This suggests a potential gap in corporate governance and sustainability practices among these companies. It highlights the need for greater awareness and adoption of ES principles in KMP compensation structures to drive responsible business practices and long-term value creation. Additionally, it underscores the importance of regulatory and industry initiatives aimed at promoting ES integration and transparency in corporate decision-making processes.

From the perspective of agency theory, the relationship between shareholders and management is central and ES remuneration practices serve as a mechanism to align the interests of shareholders and management, mitigating potential conflicts (Boyd, 1994; Goranova & Ryan, 2014; Grossman & Hart, 1992; Holmström, 1979). Given the typically long-term perspective of ES, these companies view CSR practices as a means to contribute to sustained value creation. This resonates with the interests of shareholders seeking stable and sustainable returns on their investments. By adopting socially responsible practices, large companies signal their commitment to acting in the best interests of shareholders. Without this ES integration into KMP remuneration, management may pursue profiteering which could endanger the company's sustainable continuance. ES remuneration practices also function as a form of risk management. By proactively addressing ES issues, companies can mitigate potential risks to their reputation and financial performance (Power, 2004). In essence, the use of ES remuneration practices by large market capitalization companies reflects a strategic

approach to navigating complex relationships with diverse stakeholders while ensuring long-term sustainability and responsible business conduct, responding to question 3.

4.4. Industry

Results of the Mann-Whitney U test related that a significant difference exists in the use of E, S and total ES KPIs depending on whether the entity operates in a high or low ES impact industry (Table 6). This test addresses research question three, investigating whether a company's industry affects the implementation of ES KPIs in KMP remuneration.

Table 6 Results from the Mann-Whitney test grouped by high and low ES impact industries

	<i>E KPIs</i>	<i>S KPIs</i>	<i>Combined ES KPIs</i>	<i>Total</i>
<i>U-statistic</i>	3518,000	3272,000	3563,000	3179,000
<i>Z</i>	-1,974	-2,064	-1,407	-2,333
<i>Asymp. Sig. (2-tailed)</i>	0.048*	0.039*	0.160	0.020*

*Significant at the 5% level

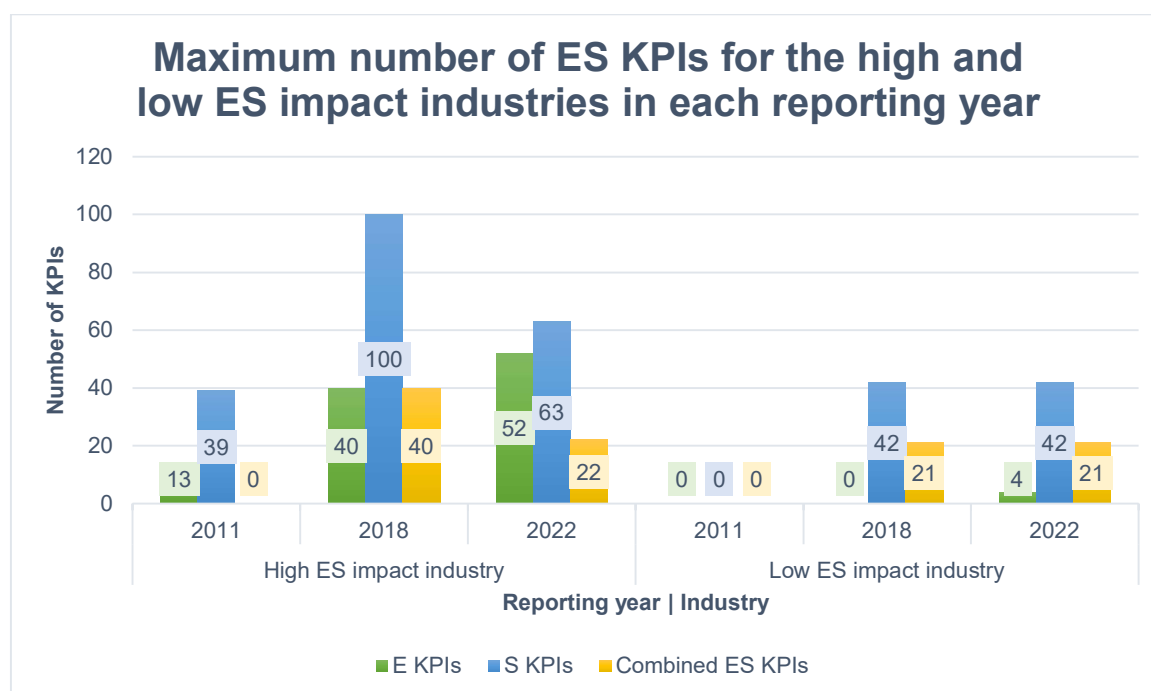
**Significant at the 10% level

Organizations operating in higher ES impact industries employ a substantially higher amount of ES remuneration KPIs, with 82% of the ES KPIs identified relating to these entities. Companies in industries with lower ES impact industries account for only 18% of the ES KPIs observed (Table 2).

On average, high ES impact industries use 20 S KPIs and 7 E KPIs, with an average of 4.9 combined ES KPIs (Table 2). This suggests that both E and S factors are being taken into account in a balanced manner. This is in contrast to low ES impact industries that use on average 6.7 S KPIs, 0.3 E KPIs, and 2.5 combined ES KPIs. The consistent trend of higher S KPI averages compared to E KPI averages in both industry categories underscores the prioritization of social considerations in KMP remuneration KPIs in South African listed companies.

Figure 19 depicts the range in the number of ES KPIs for both high and low-ES impact industries across the reporting years. It is apparent from the figure that companies in high-ES impact industries consistently employ a greater number of ES KPIs throughout each reporting year compared to those in low-ES impact industries.

Figure 19 Maximum number of ES KPIs in the high and low ES-impact industries



In high ES impact industries, the maximum number of E KPIs steadily increased from 13 in 2011 to 40 in 2018, and then to 52 in 2022, reflecting a consistent effort to incorporate environmental metrics into KMP remuneration plans (Figure 18). The peak of 100 S KPIs in 2018 suggests a potentially excessive approach to social metrics within that reporting year, as evidenced by the subsequent decrease to 63 in 2022 suggesting a refinement in the focus of KMP remuneration when considering social impacts. The reduced maximum combined ES KPIs in 2022, as discussed under the reporting year (section 4.2), highlights the initial integration of both ES factors, suggesting a streamlining of KMP remuneration KPIs in later years. Initially, there may have been a tendency towards an extensive approach to social metrics, driven by the adoption of IR and King IV principles. However, as entities gained experience, they became more discerning, focusing on the most relevant and impactful KPIs. Advancements in IR have facilitated more effective guidance, empowering entities to streamline reporting and management processes, thereby enabling a more precise focus on material ES metrics.

The 2021 revision of the IR Framework further reinforces the shift towards a holistic approach to reporting. Unlike the 2013 Framework, which primarily focused on integrating financial and non-financial information, the 2021 Framework places greater emphasis on value creation for both the organization and its stakeholders (IFRS Foundation, 2021). This shift reflects a deeper understanding of the interconnectedness between financial and non-financial aspects of a company's performance and its broader impact on society and the environment (IIRC,

2021). Additionally, the streamlining of content elements in the 2021 IR Framework aims to provide a clearer and more concise reporting structure. By integrating elements such as Organizational Overview and Governance into other sections, organizations can more effectively communicate their value creation story to stakeholders (IFRS Foundation, 2021). The increased emphasis on stakeholder engagement and materiality in the 2021 IR Framework reflects a growing recognition of the importance of stakeholder inclusivity and transparency in corporate reporting. This underscores the need for meaningful stakeholder interactions and the selection of relevant KPIs that align with stakeholder expectations. The revisions to the IR Framework aim to make reporting more practical, relevant, and aligned with evolving stakeholder expectations (IFRS Foundation, 2021). This evolution reflects a maturation of reporting practices driven by increased experience and a deeper understanding of stakeholder needs, ultimately enhancing transparency and accountability in corporate reporting.

In contrast, low ES impact industries noted an increase in the use of E KPIs from 0 in 2011 to 4 in 2022. This change likely reflects a growing awareness of environmental factors, albeit at a slower pace compared to industries with higher ES impacts. The limited presence of E KPIs initially suggests a lesser emphasis on environmental considerations in KMP remuneration, possibly due to the perceived lower environmental impact of companies within these industries. However, the gradual introduction of E KPIs over time suggests an increasing recognition of the importance of environmental sustainability, even within sectors traditionally viewed as having lower environmental significance. The steady increase in the maximum number of S KPIs to 42 in both 2018 and 2022 indicates a sustained emphasis on social metrics. This indicates a continuous commitment to monitoring and enhancing the industries' social impact, possibly in response to evolving societal expectations and corporate social responsibility considerations.

In high-ES impact industries, such as mining, manufacturing, and energy production, which frequently have a pronounced impact on the environment and society, there is a heightened awareness of the need to address and mitigate potential negative consequences (Dierkes & Preston, 1977; Kumar et al., 2021). Using ES KPIs is crucial as these industries often face increased scrutiny and public attention due to their significant ES impacts. Initiatives like environmental impact assessments, community engagement programmes, and sustainable development strategies are becoming standard practices to mitigate negative effects and promote long-term viability (IIRC, 2021). Additionally, the incorporation of ES remuneration practices aligns with the principles of agency theory. In these contexts, where there may be heightened agency conflicts due to the potential misalignment of interests between shareholders and management, ES KPIs become a strategic tool for demonstrating that the

company is acting in the best interests of all stakeholders (Grossman & Hart, 1992; Holmström, 1979). In industries with high ES impacts, adopting CSR practices serves as a proactive risk management strategy, helping companies address concerns related to environmental sustainability and social responsibility, thereby mitigating potential reputational risks and legal challenges (Power, 2004). Overall, the incorporation of CSR disclosure in higher ES impact industries reflects a strategic response to secure stakeholder approval, manage agency conflicts, and contribute to sustainable and responsible business practices, addressing research question 3.

Although it was noted that a significant difference existed in the number of ES remuneration KPIs when companies were categorised based on social and environmental impact, when further categorising these companies into sub-industries, no significant difference was noted in the use of ES KPIs depending on sub-industry. The results are presented in Table 7.

Table 7 Results from Kruskal Wallis tests companies grouped by sub-industry

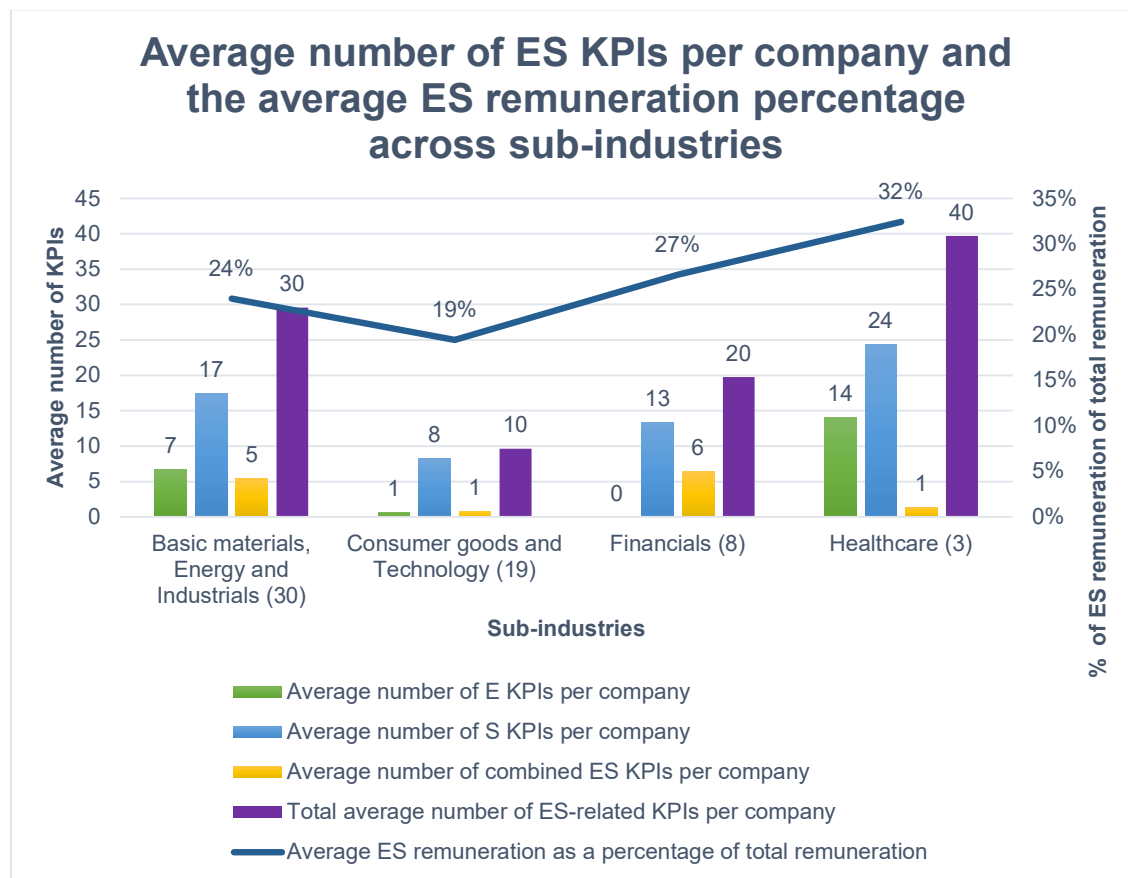
	<i>E KPIs</i>	<i>S KPIs</i>	<i>Combined ES KPIs</i>	<i>Total</i>
<i>H-statistic</i>	4,237	5,600	3,756	5,992
<i>df</i>	3	3	3	3
<i>Asymp. Sig. (2-tailed)</i>	0,237	0.133	0.289	0.112

*Significant at the 5% level

**Significant at the 10% level

Figure 20 illustrates the average number of ES-related KPIs per company across various industries in the sample, alongside the average ES remuneration expressed as a percentage of total remuneration within different sub-industries. The figure highlights the distinct patterns in the incorporation of ES KPIs into KMP remuneration practices across diverse industry sectors, providing greater clarity on research question 3.

Figure 20 Average number of ES KPIs per company and the average ES remuneration percentage across the different sub-industries



Within the high ES impact industry, the basic materials, energy, and industrial sub-industries exhibit a robust commitment to sustainable ES remuneration practices. On average, companies within these sectors incorporate a total of 30 ES KPIs per company. Additionally, ES remuneration accounts for approximately 24% of the total remuneration within these sectors (Figure 20). In contrast, the consumer goods and technology sector maintains a more conservative approach, with an average of 10 total ES-related KPIs and ES remuneration comprising 19% of total remuneration. Financial companies strike a balance with an average of 20 ES-related KPIs, and ES remuneration accounts for a significant 27% of total remuneration. The healthcare sector emerges as a leader, integrating a noteworthy average of 40 ES-related KPIs, with ES remuneration representing 32% of total remuneration. These findings underscore a diversity of strategies, with certain sectors prioritizing environmental and social considerations in KMP compensation more prominently than others. The financial and

healthcare sectors demonstrate a substantial allocation of their remuneration towards ES metrics, reflecting an increased focus on sustainable ES practices in compensation structures.

Given the potentially adverse effects that the basic materials, energy, and industrial sectors have on the environment and communities, these industries employ a greater number of ES-related KPIs to effectively manage KMP and their overall business, aiming to establish and maintain sustainable operations (Dierkes & Preston, 1977; Kumar et al., 2021). Notably, this industry constitutes a substantial majority of companies in the sample, accounting for 50% of the total companies investigated, while the remaining three industries collectively constitute the remaining 50%. However, when scrutinizing the average number of ES-related KPIs on a per-company basis, the healthcare industry surpasses others, utilizing the highest number of ES-related KPIs in their remuneration policies, totaling 40 ES-related KPIs (Figure 20). Following closely, the basic materials, energy, and industrial categories deploy an average of 30 ES-related KPIs, trailed by the financial industry with an average of 20 KPIs, and lastly, the consumer goods and technology category with 10 ES-related KPIs.

The healthcare industry uses double the average amount of E KPIs (14) per company compared to companies in all other industries. This reflects a stronger commitment to environmental-related remuneration policies (Figure 20). This is concerning given the environmental harm associated with extractive industries. It is crucial to understand why social KPIs are prioritized by healthcare companies to a significant extent. This prioritization may be attributed to the unique characteristics of the healthcare industry, especially in regions such as South Africa. The healthcare systems in South Africa face significant challenges related to access, equity, and public health issues, particularly concerning diseases like HIV and AIDS (Maphumulo & Bhengu, 2019). These challenges require a comprehensive approach to social responsibility and stakeholder engagement within the healthcare sector. Healthcare companies operating in South Africa are closely connected with the wider socio-economic landscape and often play a crucial role in addressing public health challenges and improving access to healthcare services. Due to the country's history of healthcare disparities and ongoing efforts to address them, healthcare companies may prioritize social KPIs as part of their commitment to addressing societal needs and promoting equitable access to healthcare (Maphumulo & Bhengu, 2019).

The consumer goods and technology category use the least amount of S KPIs (8), a surprising observation considering the interconnected nature of consumer goods and technology with stakeholders and business continuity. Although the nature of their products and services differs significantly, the consumer goods and healthcare industries share common business principles related to consumer-centricity and regulatory compliance (Lambert & Stock, 1993).

We could expect to see a similar trend in the S KPIs compared to other consumer-centric industries such as the healthcare sector and financials sector, however, this is not the case as consumer goods and technology industries have a mere third (8 KPIs) of the S KPIs that the healthcare industry (24 KPIs) uses.

Another factor that may affect the use of KPIs by industries is the resources and legislation related to these entities. Notably, the financial and healthcare sectors are subjected to heightened public scrutiny due to their profound impacts on the economy and societal health (Kumar et al., 2021; Owusu-Ansah, 1998). In the financial industry, institutions navigate a tightly regulated environment aimed at ensuring financial stability and safeguarding investors' interests. Consequently, financial entities may place a strong emphasis on ES KPIs to underscore their commitment to responsible business practices and sustainable operations. Similarly, healthcare organizations operate within a stringent regulatory framework that demands a focus on patient care, safety, and ethical standards. Given their pivotal role in safeguarding public health, healthcare companies often adopt a wide array of social KPIs to reflect the industry's intrinsic mission to address broader societal concerns and ensure equitable access to healthcare services.

Figure 21 below is an example of the ES remuneration policy of a healthcare provider. The focus on social factors while still acknowledging the environmental impact of the organization is apparent from the extract below:

Figure 21 Extract from the healthcare company that significantly contributes to the industry's ES KPI average

Group balanced scorecard FY2022

Area	Measure	Weighting
Financial results 60%	EBITDA margin	15.0%
	Adjusted HEPS	15.0%
	ROIC	15.0%
	Cash conversion	15.0%
Consistency of care 10%	Care4YOU compassion programme: number of hospitals rolled out by September 2022	5.0%
	Improved levels of compassion displayed by nurses as a result of Care4YOU	5.0%
Digitisation 10%	CareOn EMRs: number of hospitals rolled out by September 2022	5.0%
	CareOn adoption by doctors: adoption of e-scripts	2.5%
	CareOn adoption by doctors: adoption of clinical orders	2.5%
Environmental sustainability 10%	Reduction in carbon emissions (tCO ₂ e) through the implementation of energy efficient projects	5.0%
	Reduction in water usage (kl) through recycling/efficiency projects	3.0%
	Reduction in general waste to landfill percentage in pilot projects	2.0%
	Board and management race and gender diversity: percentage of the points available for the management control overall pillar of the B-BBEE scorecard	5.0%
Transformation 10%	Inclusion of QSEs, EMEs and black-owned enterprises: percentage of the points available for preferential procurement in the B-BBEE scorecard	3.0%
	Diversity and culture: number of sites engagement, diversity and inclusion survey rolled out to by September 2022	2.0%
		100.0%

The consumer goods and technology industry, together with the healthcare industry use 1 combined ES KPI each per company. This aligns with the healthcare industry's extensive use of 14 E KPIs and 24 S KPIs per company to remunerate their KMP. However, for the consumer goods and technology companies, with their already low utilisation of 1 E KPI and 8 S KPIs, the data suggests a lower focus on CSR and IR in their remuneration policies. The healthcare

company under discussion has developed a comprehensive remuneration policy that contributes to the industry's higher average (Figure 20).

Upon closer examination of these sub-industries, it is noteworthy that financial companies use both combined ES KPIs and S KPIs. This strategic choice suggests a potential outcome wherein KMP may perceive a heightened emphasis on social considerations within their compensation structures. Such a perception arises from the prevalence of isolated S KPIs, compounded by the incorporation of combined ES KPIs. Consequently, this phenomenon may inadvertently amplify the perceived significance of S KPIs, owing to the dual representation of social metrics within the remuneration framework. This observation could be attributed to the limited environmental impact of financial companies, posing challenges in determining specific E remuneration KPIs (Weber, 2014). This is also evidence of the direct financial effect that these types of companies have on households across the country, necessitating the responsibility towards social goals and objectives (Cowen et al., 1987). The recommended practices of King IV advocate for a comprehensive assessment of the spheres in which companies operate, including the environment (IoDSA, 2016). These findings enhance our understanding of research question 3, which examines the differences in ES KPIs included in KMP remuneration across industries.

4.5. Listing period

The results of the Kruskal Wallis test performed when companies were grouped by listing period are provided in Table 8 below.

Table 8 Results from Kruskal Wallis tests grouped by listing periods

	<i>E KPIs</i>	<i>S KPIs</i>	<i>Combined ES KPIs</i>	<i>Total</i>
<i>H-statistic</i>	6,293	12,293	5,209	9,711
<i>df</i>	2	2	2	2
<i>Asymp. Sig. (2-tailed)</i>	0,043*	0,002*	0,074**	0,008*

*Significant at the 5% level

**Significant at the 10% level

The results indicate that there is a statistically significant difference at a 5% significance level in the number of E, S, and the total number of KPIs when grouped by listing period (Table 8). At a 10% significance level, there is a statistically significant difference in the number of combined ES KPIs when grouped by listing year. The pairwise comparison reveals that there are significant differences between the listing periods 1982-2011 (newly listed) and 1924-1954 (maturely listed). This evidence contributes to our understanding of how the timing of a

company's listing on the stock exchange influences the incorporation of ES KPIs in KMP remuneration, thereby addressing research question 3.

Table 9 Listing period analysis

Listing date	1982-2011	1955-1981	1924-1954
Number of companies within each listing period	42	9	9
Number of companies that use ES-related KPIs	20	4	6
% of companies who use ES KPIs	48%	44%	67%
The average number of ES-related KPIs per company using ES KPIs	25	87	85
Min total ES KPIs per company	0	0	0
Max total ES KPIs per company	106	159	320

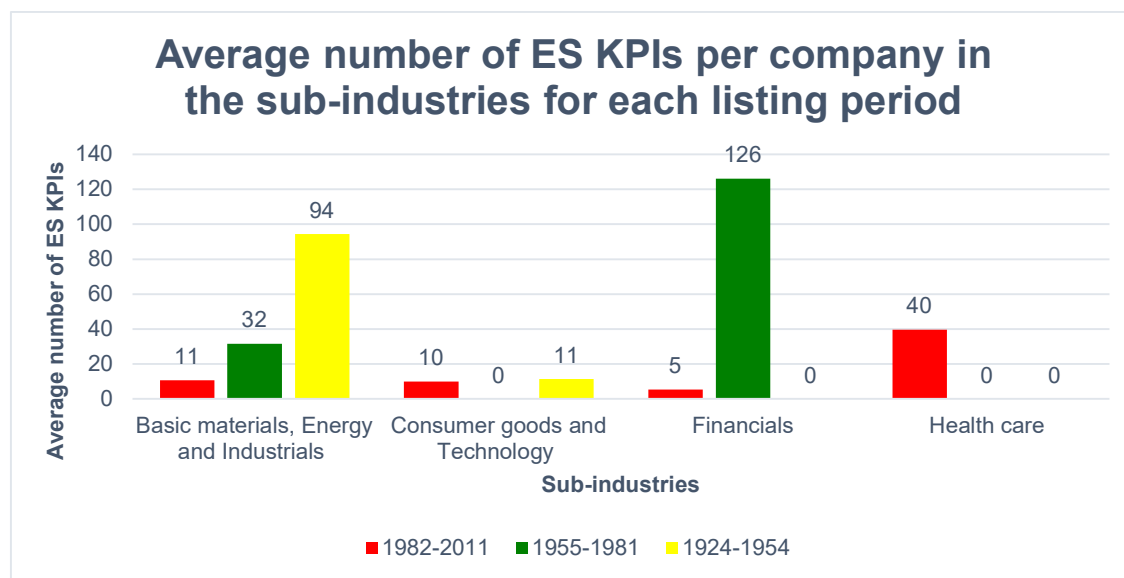
Between the 1982 and 2011 listing period, the number of ES KPIs linked to remuneration was an average of 25 per company, with a maximum of 106 ES KPIs (Table 9). In the preceding listing period, between 1955 and 1981, companies used an average of 87 ES KPIs per company, with a maximum of 159 ES KPIs. Similarly, those listed between 1924 and 1954 had an average of 85 ES KPIs per company, with a maximum of 320 ES KPIs. Based on the data, it appears that companies that have been listed for a longer period tend to place greater emphasis on ES KPIs when incentivizing their KMP, while newer companies tend to use fewer of these KPIs.

In the recent listing period from 1982 to 2011, approximately 48% of companies make use of ES KPIs to remunerate their KMP. Interestingly, during the mid-term listing period of 1955 to 1981, this percentage slightly decreased to 44%, indicating a somewhat lesser emphasis on ES metrics among companies listed during that period. Notably, companies with a longer listing history, between 1924 and 1954, exhibit a significantly higher adoption of ES KPIs at approximately 67%. With a longer operational history and established reputation, these companies are mindful of maintaining operations by showcasing a commitment to sustainable business practices through ES initiatives (Owusu-Ansah, 1998). The extensive and intricate relationships cultivated with diverse stakeholders over the years further drive the need to meet evolving expectations for ES responsibility (Kumar et al., 2021). The data suggests that older companies, operating with a long-term perspective, appear to view ES practices as integral to their enduring success, aligning with their historical orientation. Companies with longer listing

histories possess greater resources and experience for the development of sustainable ES remuneration practices (Owusu-Ansah, 1998).

Figure 22 presents the average number of ES KPIs per company in each of the sub-industries for the different listing periods. Despite the uneven distribution of companies across listing periods, the analysis of the listing period provides valuable insights that deepen our understanding of research question 3.

Figure 22 Average number of ES KPIs per company in the sub-industries for each listing period



In the sectors of basic materials, energy, and industry, companies have consistently shown a strong commitment to ES KPIs, with an average of 11 to 94 ES KPIs across the analyzed listing periods (Figure 22). This agrees with the above discussion that longer-listed companies will use more ES KPIs to remunerate their KMP. Additionally, companies in this sub-industry recorded the highest maximum number of ES KPIs across all listing periods. The companies that used the most ES KPIs had a total of 106 KPIs (listed from 1982-2011), 159 ES KPIs (listed from 1955-1981), and 320 ES KPIs (listed from 1924-1954), all of which were large market capitalization companies (Table 2).

When looking deeper into the other sub-industry categories, different insights are observed. The consumer goods and technology companies listed between 1924 and 1954, utilized an average number of 11 ES KPIs, with the maximum reported number of ES KPIs reaching 18 (Figure 22). Interestingly, the company using the most ES KPIs to remunerate their KMP belonged to the mid-capitalization category for companies listed between 1924 and 1954. This

diverges from the trend observed in other sub-industries where large market capitalization companies typically reported the highest numbers of ES KPIs. During the 1955 and 1981 listing period, companies in this sub-industry did not use any ES KPIs, indicating a potential lag in recognising sustainability issues.

Notably, the financial sector exhibits significant ES KPI utilisation for companies listed between 1955 and 1981, contrasting with a lower adoption rate for those listed between 1982 and 2011. The average of 5 ES KPIs in the latest listing period (1982-2011) offers insight into the ES focus of newly listed companies (Figure 22). This financial company is one of South Africa's leading financial institutions. This company is the only financial company in the sample that was listed in the middle listing period and contributes 80% to the sub-industry's total number of ES KPIs. The only financial company listed in the earliest listing period (1924-1954) used none of the ES KPIs in remunerating their KMP. However, this company is secondary listed on the JSE and has a primary listing on the London Stock Exchange (LSE) which is governed by different regulations that may not require full disclosure of ES KPIs used to remunerate their KMP. Further, the LSE-listed companies are not required to apply King IV principles. Between the 1981 and 2011 listing period, a large capitalization company reported a maximum of 20 ES KPIs. In contrast, during the listing period from 1955 to 1981, another large capitalization company utilized a significantly higher number of 126 ES KPIs (Figure 22). This observation supports the notion that the longer a company has been listed, the more ES KPIs it tends to use to remunerate its KMP. Over time, companies may develop and refine their sustainability reporting practices, incorporating a wider range of ES metrics to reflect evolving stakeholder expectations and demonstrate their commitment to sustainable and responsible business practices.

Finally, the healthcare sector showed an average of 40 in the recently listed period (Figure 22). While there was a substantial average of ES KPIs during the later listing period (1982-2011), indicating recognition of environmental and social issues, no usage was observed during the earlier listing periods. However, due to the imbalanced sample regarding the listing periods, all healthcare companies investigated were listed in the category 1982-2011. The presence of the ES KPIs in the newly listed healthcare company's remuneration plan may be guided by strict regulations in the healthcare industry due to the potential risks involved. The company using the maximum of 103 KPIs belong to the large market capitalization (Figure 22). This company's commitment to innovation, data utilization, and sustainability positions them for continued success in the healthcare sector. When evaluating two healthcare companies, one directly involved in hospital services and the other in the pharmaceutical industry, both listed in the most recent period, a notable decrease of 13 KPIs is evident. The observed difference in the number of ES KPIs between the hospital directly involved in patient

care and the pharmaceutical company focused on research and drug development could indeed be attributed to the variation in their respective operations. Hospitals, with their direct involvement with patients, may prioritize KPIs related to patient care, safety, and satisfaction. In contrast, pharmaceutical companies may place more emphasis on KPIs related to research and development, drug efficacy, regulatory compliance, and innovation.

4.6. KMP positions

Based on the Kruskal Wallis test results presented in Table 10, there are no statistically significant differences in the number of E, S and total ES KPIs among the specific groups of KMP based on their positions held.

Table 10 Results from Kruskal Wallis tests grouped by KMP position

	<i>E KPIs</i>	<i>S KPIs</i>	<i>Combined ES KPIs</i>	<i>Total</i>
<i>H-statistic</i>	4,865	2,465	12,711	3,328
<i>df</i>	4	4	4	4
<i>Asymp. Sig. (2-tailed)</i>	0,301	0,651	0,013*	0,504

*Significant at the 5% level

**Significant at the 10% level

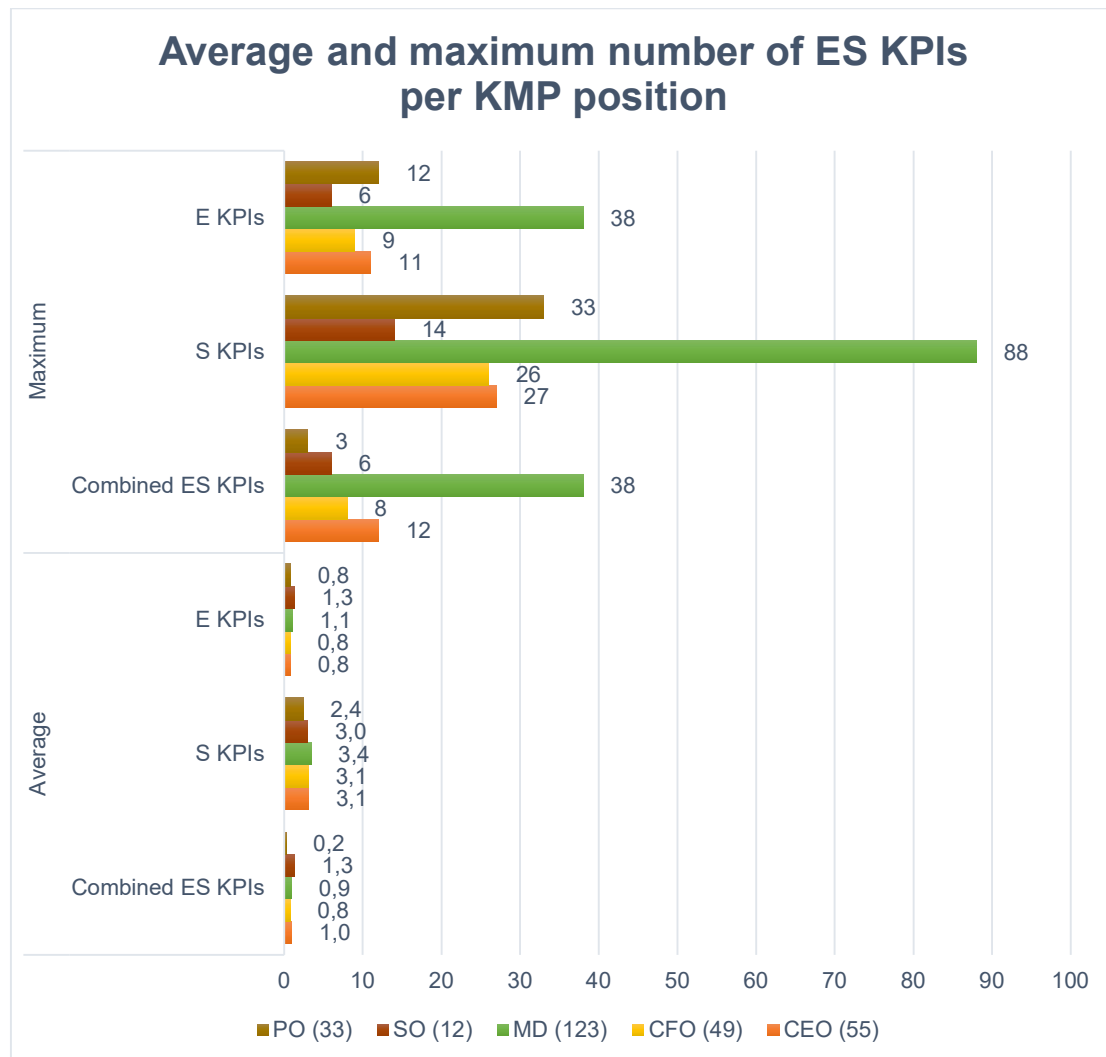
There may be multiple reasons why we observe minimal disparities in the E, S, and total ES KPIs among various KMP positions. One possibility is that executive roles share comparable responsibilities and job scopes of governing the entity. KMP occupying different positions may share an organizational culture and values, with all KMP working towards a common goal and being remunerated based on the achievement of this common goal (IoDSA, 2016). When KMP have comparable expectations and duties, it is natural for them to deliver comparable performance indicators across E, S, and total ES KPIs.

Stakeholder expectations and shareholder expectations influence these KMP remuneration KPIs, to ensure alignment with their functional expertise and responsibilities (Freeman et al., 2010; Menz, 2012). Although no significant differences were noted in the E, S and total ES KPIs based on KMP position, the Kruskal Wallis test results indicate a statistically significant difference in combined ES KPIs among the specific groups of KMP at a 5% significance level (Table 10). The pairwise comparison revealed differences in the number of combined ES KPIs between POs and CEOs, POs and MDs, POs and SOs, and CFOs and SOs. The higher number of combined ES KPIs among POs may indeed be a consequence of their multifaceted role within the organization. POs occupy pivotal positions with diverse responsibilities spanning various aspects of the company's operations and governance. With oversight across

multiple functions, including finance, operations, and compliance, POs are well-positioned to consider a broad spectrum of ESG factors in their decision-making processes. PO responsibilities often entail managing regulatory compliance, mitigating risks, and engaging with stakeholders from diverse backgrounds. This interaction with stakeholders allows POs to address varying expectations regarding sustainability issues, which may result in the inclusion of a wider array of ES KPIs in their reporting. Additionally, POs play a crucial role in shaping the organization's strategic direction and long-term sustainability goals. Their involvement in setting targets, implementing initiatives, and monitoring progress necessitates the use of extensive ES KPIs to track performance and ensure alignment with strategic objectives. The combination of their cross-functional responsibilities, risk management duties, stakeholder engagement efforts, and strategic decision-making authority likely contributes to the higher number of ES KPIs observed among PO positions.

Figure 23 portrays the average number of E, S and combined ES KPIs for each category of KMP, as well as the maximum number of E, S, and combined ES KPIs per KMP per company investigated. This figure provides insights into the distribution of E, S, and ES KPIs across various KMP positions, as well as the maximum number of ES KPIs associated with each KMP position within the sample, contributing to our understanding of research question 3.

Figure 23 Average and maximum number of E, S and combined ES KPIs per KMP position

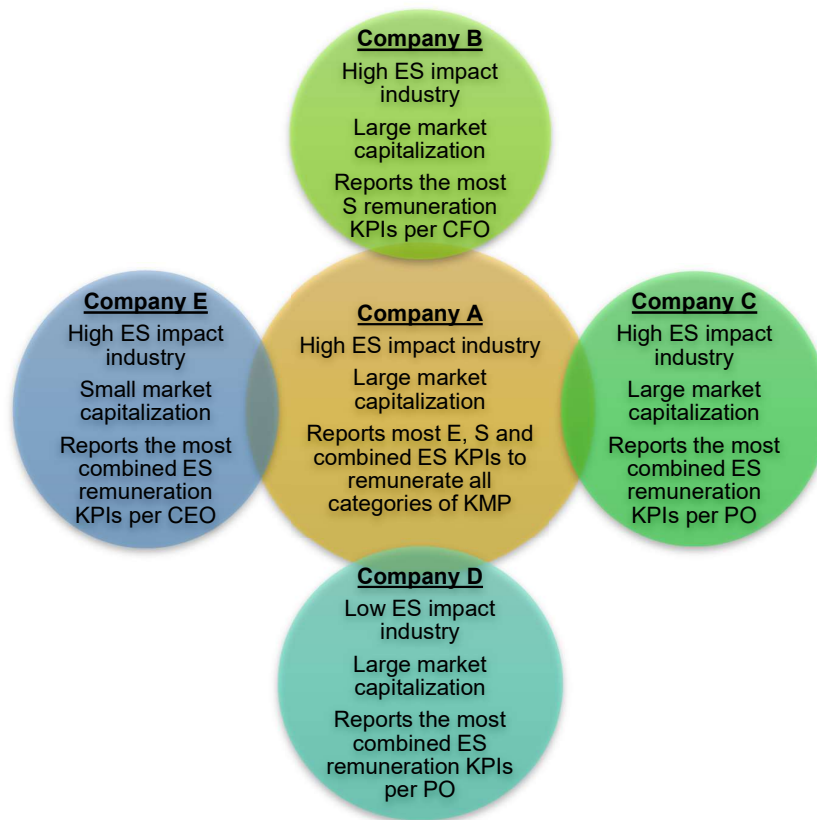


Based on the findings presented in Figure 23, MDs demonstrate the highest average number of 3.4 S KPIs per individual. This indicates a strong focus on social considerations within broader corporate responsibilities. CEOs and CFOs exhibit a similar average number of E and S KPIs per individual, suggesting a strategic approach to environmental and social responsibility as integral components of leadership (IFAC, 2020a; Sancak, 2023). SOs are remunerated using the highest average number of E and combined ES KPIs, reaffirming the role's commitment to addressing both environmental and social dimensions of sustainability (Miller & Serafeim, 2014). The sustainability officer role is specialised, focusing on integrating sustainability principles and ES considerations into business strategies and operations. The role of a PO, as indicated by the lower average number of S and combined ES KPIs, may involve a more specialised focus on specific environmental and social aspects compared to other key management positions. This aligns with the legal obligations and specific roles

assigned to POs in ensuring compliance and responsible corporate governance in the South African context. CEOs, as the highest-ranking executives, play a pivotal role in steering the company's sustainability agenda (Sancak, 2023). The analysis indicates a balanced approach, with a slightly higher emphasis on S KPIs, reflecting the CEO's responsibility for both the company's strategic success and its societal impact.

Figure 24 showcases the various characteristics of companies with the highest number of ES KPIs per KMP per company investigated. This visual summary aids in comprehending the subsequent discussion by providing insights into the distinguishing features of companies that prioritize ES metrics in their remuneration structures for KMP.

Figure 24 Characteristics of companies using the most ES KPIs for each KMP position



In line with the industry analysis in section 4.4, high-impact industries implemented the most ES-linked remuneration KPIs per KMP. In the basic materials, energy, and industrial with high ES impact, large market capitalization companies usually lead in utilizing the most E, S, and combined ES KPIs per company across all categories of KMP (Company A) - except for specific instances indicated by the following discussion. It was found that Company B, within the consumer goods and technology sector, employed the highest number of S KPIs per CFO, totalling 26 S KPIs. This industry focuses on the provision of fast-moving goods that are

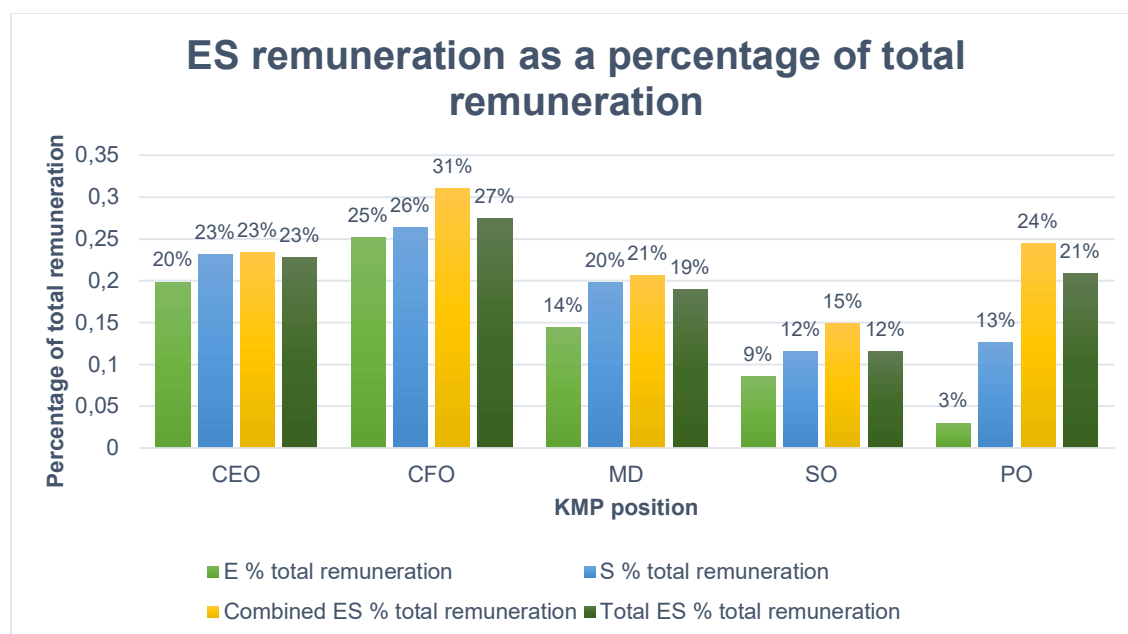
subject to substantial technological change over time. Both Company C and D employed the highest number of 3 combined ES remuneration KPIs per PO, despite Company C operating within a high ES impact industry and Company D within a low ES impact industry. Company D is a financial company that provides complete transparency and accountability regarding the actions undertaken by each KMP throughout the year, to successfully achieve their ES remuneration KPIs. Figure 24 illustrates the CFO's efforts to achieve their remuneration KPIs. Finally, in a unique scenario, a small market capitalization company within the basic materials, energy, and industrial sectors, stands out for employing the most combined ES KPIs per company per CEO (Company E). This underscores the importance of leadership commitment to sustainability, even among smaller companies, and highlights the role of CEOs in driving organizational culture and priorities. These insights provide a glimpse into the different strategies and priorities of companies in integrating sustainability metrics across various organizational roles, reflecting differing levels of commitment to environmental and social responsibility.

Figure 25 Extract from the financial company's remuneration report illustrating the CFO's achievement of KPIs linked to remuneration.



Figure 26 depicts the distribution of remuneration across the different KMP positions. This analysis helps determine whether KMP are incentivised to promote environmentally and socially responsible behaviour.

Figure 26 ES remuneration as a percentage of total KMP remuneration



The CFOs have the highest E, S and combined ES remuneration percentages (25%, 26% and 31% respectively) compared to other positions (Figure 26). This could be due to the essential role that CFOs play in CSR (IFAC, 2020a). CEOs and MDs exhibit similar distributions in S remuneration and combined ES remuneration percentages. This similarity suggests comparable roles, likely involving overall management oversight and a shared emphasis on specific KPIs in remuneration practices. POs demonstrate a distinctively lower E remuneration percentage (3%), with a significant focus on Combined ES KPIs (24%). This suggests that POs may have a broader set of roles and responsibilities and as such broader ES goals that need to be met. SOs exhibit notably low percentages in E, S and combined ES remuneration. This raises concerns about the alignment of their remuneration with their role, which is specifically designated to manage the ES performance of the entity. The discrepancy raises questions about accountability for ES performance and potential agency problems. The low remuneration percentages for SOs in critical areas such as S and Combined ES raise questions about who is accountable for the ES performance of the company. The potential misalignment of remuneration with responsibilities may lead to agency problems, highlighting the need for a review and adjustment of the remuneration structure for SOs.

The typical structure of KMP remuneration policies provides a consistent number of ES-related KPIs across all KMP positions. This standardisation provides a foundational measure of performance expectations and assists in aligning all KMP's interests with those of stakeholders, to mitigate agency costs and encourage ES-friendly behaviours (Barnea & Rubin, 2010; Cadbury, 1992; Halme & Huse, 1997; Jensen & Meckling, 1976). Standardization ensures fair compensation for similar positions or responsibilities, enhancing morale and reducing conflicts. Additionally, some companies may introduce a supplementary personal or individual scorecard to incorporate job-specific performance metrics tailored to the unique responsibilities of each KMP (Kaplan, 2009; Kaplan & Norton, 2001). This strategic approach aligns with the controllability principle, ensuring that performance evaluations consider factors within the direct influence of the individuals being assessed. Operating at this senior echelon, each KMP possesses the capacity to contribute to ES-friendly performance while fulfilling their regular duties. Consequently, it is logical and pragmatic for companies to adopt a uniform remuneration policy for all KMP. This consistency reflects the shared expectations of high-level performance and aligns with the collective responsibility of the executive team in advancing the company's overarching goals. Although the number of KPIs is consistent across positions, the level of remuneration linked to ES performance differs depending on the position held by KMP. A greater portion of remuneration is allocated to E and S KPIs for CEOs and CFOs compared to other positions. This is reasonable as these directors are primarily responsible for implementing the strategy of the company and are the main determinants of whether financial and non-financial goals are met (IoDSA, 2016).

4.7. Settlement methods

The Kruskal-Wallis tests reveal significant differences in E KPIs, S KPIs, and combined ES KPIs between short-term and long-term settlement periods, at a 5% level of significance (Table 11).

Table 11 Results from Kruskal Wallis tests grouped by the settlement periods (short-term or long-term)

	<i>E KPIs</i>	<i>S KPIs</i>	<i>Combined ES KPIs</i>
<i>H-statistic</i>	33,547	202,214	32,581
<i>df</i>	2	2	2
<i>Asymp. Sig. (2-tailed)</i>	<,001*	<,001*	<,001*

*Significant at the 5% level

**Significant at the 10% level

The Kruskal-Wallis tests provide evidence that there are significant differences in E KPIs, S KPIs, and combined ES KPIs between cash and equity incentives, at a 5% level of significance (Table 12).

Table 12 Results from Kruskal Wallis tests grouped by the settlement types (cash or equity)

	<i>E KPIs</i>	<i>S KPIs</i>	<i>Combined ES KPIs</i>
<i>H-statistic</i>	32,206	200,678	32,844
<i>df</i>	2	2	2
<i>Asymp. Sig. (2-tailed)</i>	<,001*	<,001*	<,001*

*Significant at the 5% level

**Significant at the 10% level

Figure 27 The different settlement periods and settlement types for E, S and combined ES KPIs linked to KMP remuneration

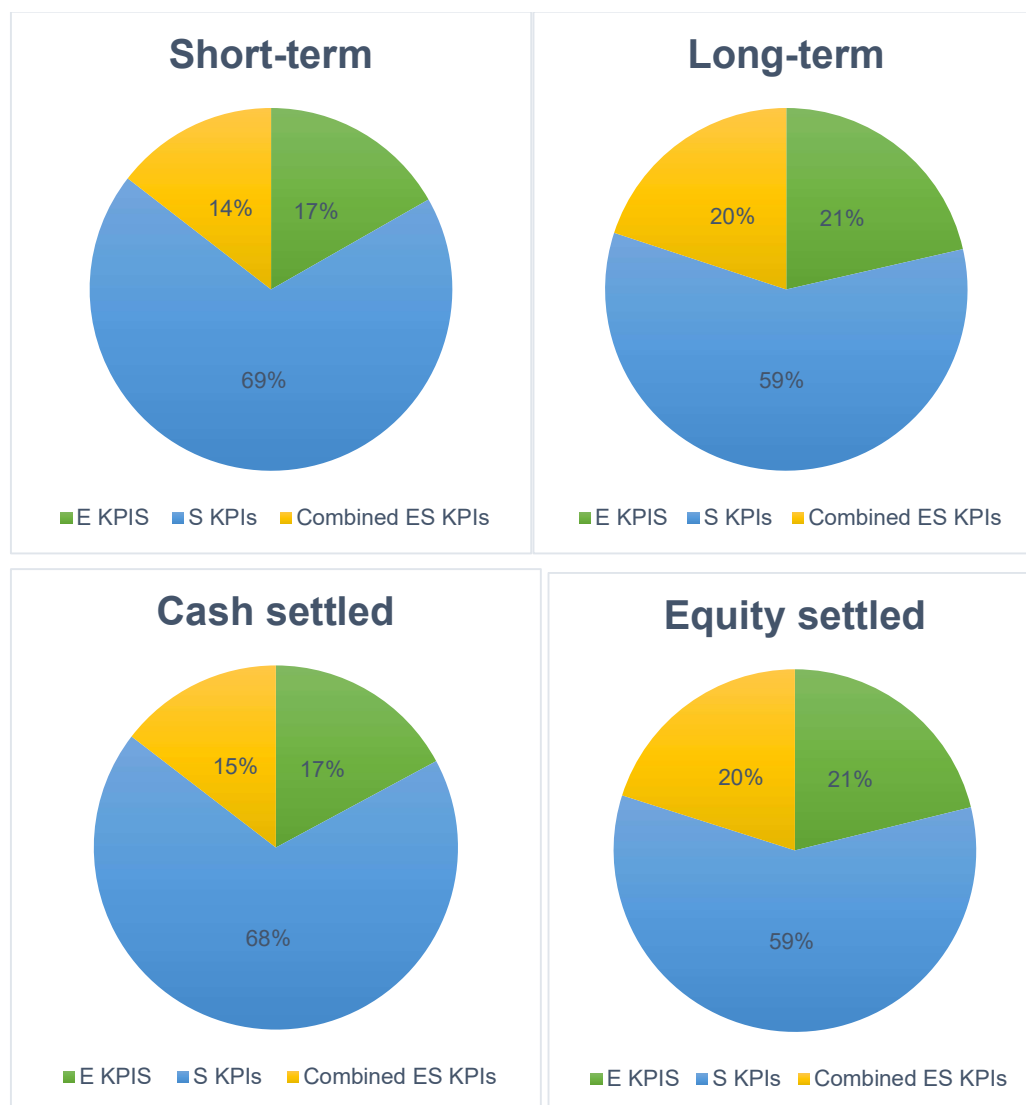
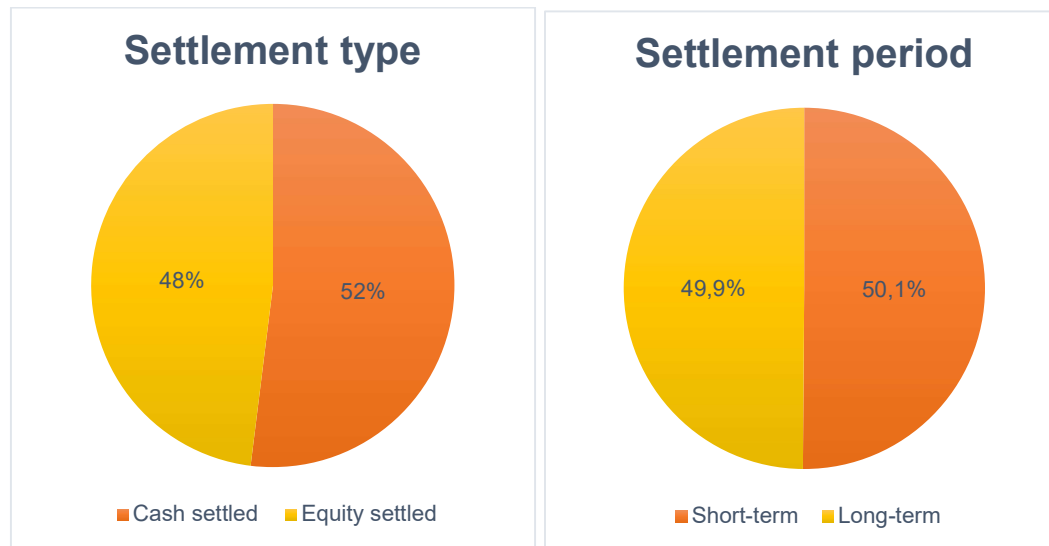


Figure 27 displays the settlement conditions of ES-related remuneration KPIs for KMP. Short-term ES remuneration KPIs comprise 17% of E KPIs, while S KPIs represent a higher proportion at 69% with combined ES KPIs making up 14% of the total. In the long term, a similar trend is observed, with E KPIs at 21%, S KPIs at 59%, and combined ES KPIs at 20%. The division between cash-settled and equity-settled KPIs remains consistent across both short and long-term perspectives. Cash settled KPIs, represented by 17% E KPIs, 68% S KPIs and 15% combined ES KPIs. In contrast, equity-settled ES remuneration displays a greater focus on E and combined ES KPIs with 21% E KPIs, 20% combined ES KPIs and 59% S KPIs.

Figure 28 illustrates the different settlement types and periods used when remunerating KMP based on ES KPIs. The similar distribution between long and short-term perspectives, as well as between cash-settled and equity-settled components, suggests a strategic and balanced approach in aligning ES-related remuneration KPIs for KMP.

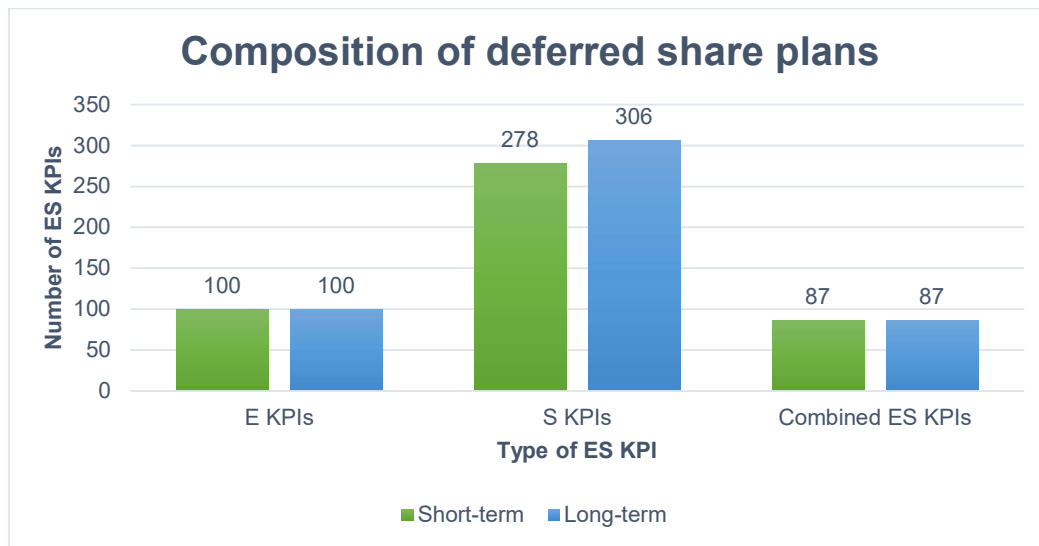
Figure 28 The settlement types and periods used to remunerate ES KPIs



The similarity between settlement type and period implies that organizations are integrating E, S and combined ES KPIs into their performance metrics with a consistent emphasis on both short-term operational goals and long-term sustainability objectives. The inclusion of equity-settled components underscores a recognition of the importance of aligning KPIs not only with financial outcomes but also with broader equity-based considerations, fostering a holistic approach to performance measurement and incentivisation. The use of equity instruments to settle ES remuneration links ES goals to a potential ownership interest in the entity, increasing management's incentive to meet the goals and objectives in the long term as the performance will have a related impact on their own long-term wealth (Boyd, 1994; Goranova & Ryan, 2014).

In aligning ES KPIs to the long-term performance of the entity, E KPIs and combined ES KPIs adopt a more prolonged perspective, often tied to share-based payments. These KPIs are presented in Figure 29 below. These findings enrich our insights into research question one by exploring the characteristics of the ES KPIs employed for KMP remuneration.

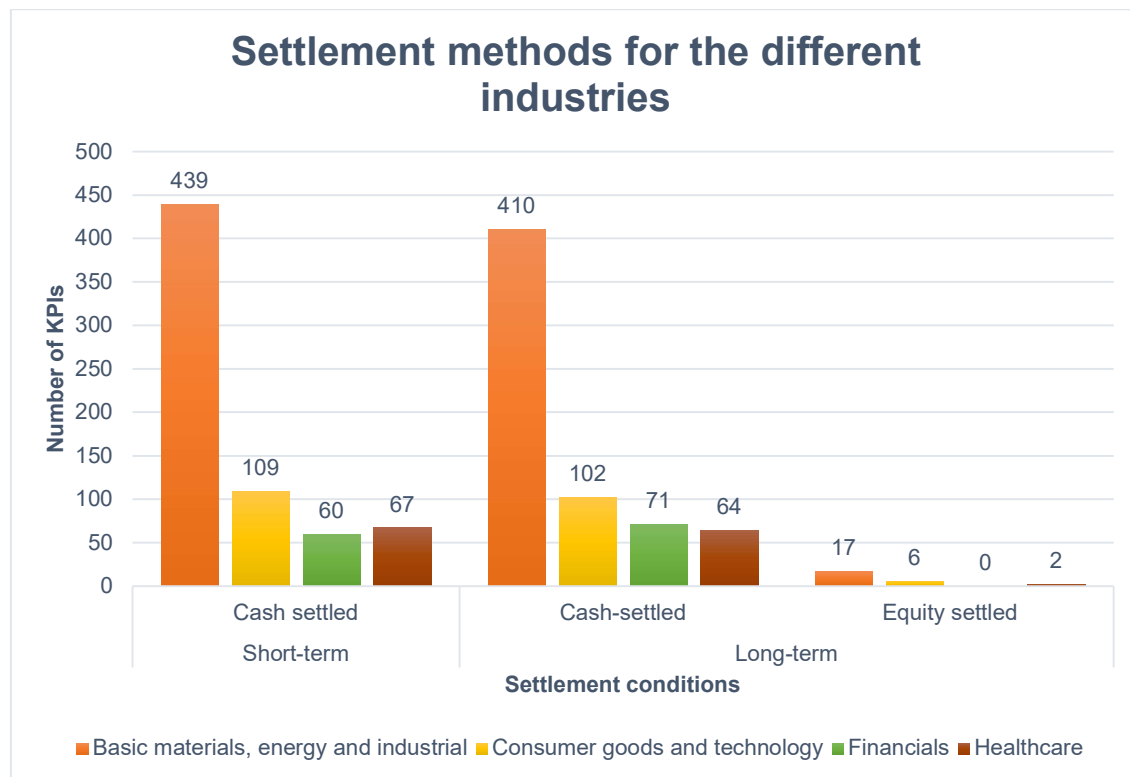
Figure 29 Composition of the deferred share plans used by the investigated companies



The basic materials, energy, and industrial sectors use a substantial portion of deferred plans, showing their commitment to ES in the long and short term (Figure 29). This may be attributed to the lasting detrimental impacts on the environment (Serafeim, 2020; Shrivastava, 1995b). In contrast, S KPIs, predominantly focus on the short term and are settled with cash, possibly reflecting the volatility in the social landscape (Hamann & Acutt, 2003). The deferred plans primarily emphasize S KPIs while serving the dual purpose of a retention tool, suggesting the potential for further integration of E KPIs.

Figure 30 presents the various settlement methods of ES-related KPIs employed by different industries, aiding our analysis of both research questions one and three. The variation in settlement type and periods observed across industries is primarily attributed to differences in the utilisation of E, S and combined ES KPIs, rather than discrepancies in settlement type and period.

Figure 30 The different settlement methods of ES KPIs used by the different sub-industries



The financial industry has a more long-term focus in comparison to the healthcare industry, regarding their remuneration settlement periods. This could be attributed to financial institutions often engaging in long-term investment strategies, and managing portfolios that may include assets with extended maturity periods. Aligning remuneration with longer settlement periods allows for a more accurate assessment of the success and performance of these investments over time (Bebchuk & Fried, 2010). This may also indicate that these industries have fierce competition to attract and maintain staff (Nardhamuni et al., 2023). Overall, ES-related remuneration tied to longer settlement periods ensures that executives are incentivized to act in an ES-friendly manner, to make decisions that contribute to the sustained growth and profitability of the organization.

In the healthcare industry, the preference for short-term remuneration KPIs is grounded in the unique characteristics and objectives inherent to the field. The sector's patient-centric focus

places a premium on immediate health outcomes, aligning with the ethos of addressing acute health concerns promptly (Shohet, 2006). Medical treatments often have relatively short timeframes, particularly in emergency and urgent care settings, where rapid decision-making and efficient responses are critical. Regulatory standards and accreditation requirements underscore the importance of delivering prompt and quality care, making short-term KPIs essential for ensuring healthcare compliance. Operational efficiency, financial considerations, and the need for adaptability to dynamic healthcare landscapes further contribute to the preference for short-term KPIs. Additionally, measuring performance based on short-term indicators facilitates timely assessments of healthcare professionals' effectiveness and enhances the patient experience. While short-term KPIs dominate in certain areas, a balanced approach incorporating long-term measures remains crucial for addressing chronic diseases, research initiatives, and sustained health promotion efforts in the healthcare sector.

It was found that short-term KPIs are exclusively settled with cash. This settlement decision may be grounded in the need for a direct and immediate mechanism to acknowledge and reward employee performance. This choice ensures that the outcomes of accomplishing short-term objectives are promptly evident to employees, promoting transparency and clarity in the reward system. The use of cash settlements for short-term KPIs is rationalized by their ability to immediately address financial requirements, and circumvent the intricacies and potential risks associated with equity instruments. However, the settlement type – cash or equity- is dependent on several factors including growth prospects, firm size, equity risk and business risk of the company (Pandher, 2022).

Most long-term ES KPIs are settled using both cash and equity components, as discussed earlier in the context of deferred share plans. Some companies opt to settle both long and short-term KPIs using cash. This approach is adopted during the development of a new remuneration policy or in anticipation of policy approval. An essential factor for businesses to consider when structuring their remuneration policy is their ability to attract and retain top talent in a competitive job market. To achieve this, companies may align their compensation packages with industry standards or those offered by larger competitors. In response to market conditions, regulations, or shareholder demands, businesses may also make adjustments to their remuneration policies to remain compliant and adaptable. Furthermore, companies may optimize their remuneration structures to improve performance and align employee incentives with organizational objectives.

In the ever-evolving landscape of corporate sustainability, companies are increasingly exploring innovative strategies to align executive remuneration policies with ES priorities. Each company in this study has a tailored remuneration policy specific to their entity's strategy

and needs. Some companies allocate a percentage weighting to ES priorities while others use ES KPIs as a downward modifier of the total variable remuneration accruing to KMP. One notable approach, observed in this study involves a company adopting a distinctive stance on ES KPIs within its remuneration policy. Unlike traditional methods that assign percentage weightings to ES factors, this company stands out by making ES KPIs a prerequisite for the vesting of variable remuneration, intertwining environmental responsibility with financial success.

A primary concern in incentivizing ES KPIs is the risk of greenwashing, where companies may exaggerate their environmental efforts to meet KPIs and gain incentives without effecting substantive changes. The distinctive remuneration policy observed in the study discussed above serves as a potential antidote to greenwashing by making ES KPIs a non-negotiable prerequisite for the vesting of variable remuneration. This not only safeguards against superficial practices but also enhances the credibility and effectiveness of sustainability initiatives within the company.

4.8. EY IR ranking

Out of the 60 sampled companies, 23 were awarded rankings in the EY Excellence in Integrated Reporting Awards (Table 3). The Kruskal-Wallis tests indicate statistically significant differences in S, combined ES, and total ES-related KPIs based on the 2018 EY rankings at the 5% level of significance. In 2022, a significant difference was noted in E, S, combined ES KPIs and total ES KPIs depending on the EY excellence in integrated reporting awards. Overall, statistical differences are identified between “progress to be made” and “good”, “no rank” and “excellent”, “no rank” and “good” for total ES-related KPIs at a 5% significance level. This test enhances our understanding of research question 4 by evaluating whether there is a difference in the number of ES KPIs included in KMP remuneration based on a company's EY Excellence in IR ranking. The results of these tests are included in Tables 13 and 14 below.

Table 13 Results from Kruskal Wallis tests grouped by the 2018 EY rankings

	<i>E KPIs</i>	<i>S KPIs</i>	<i>Combined ES KPIs</i>	<i>Total</i>
<i>H-statistic</i>	5,254	17,167	15,218	17,868
<i>df</i>	4	4	4	4
<i>Asymp. Sig. (2-tailed)</i>	0,262	0,002*	0,004*	0,001*

*Significant at the 5% level

**Significant at the 10% level

Table 14 Results from Kruskal Wallis tests grouped by the 2022 EY rankings

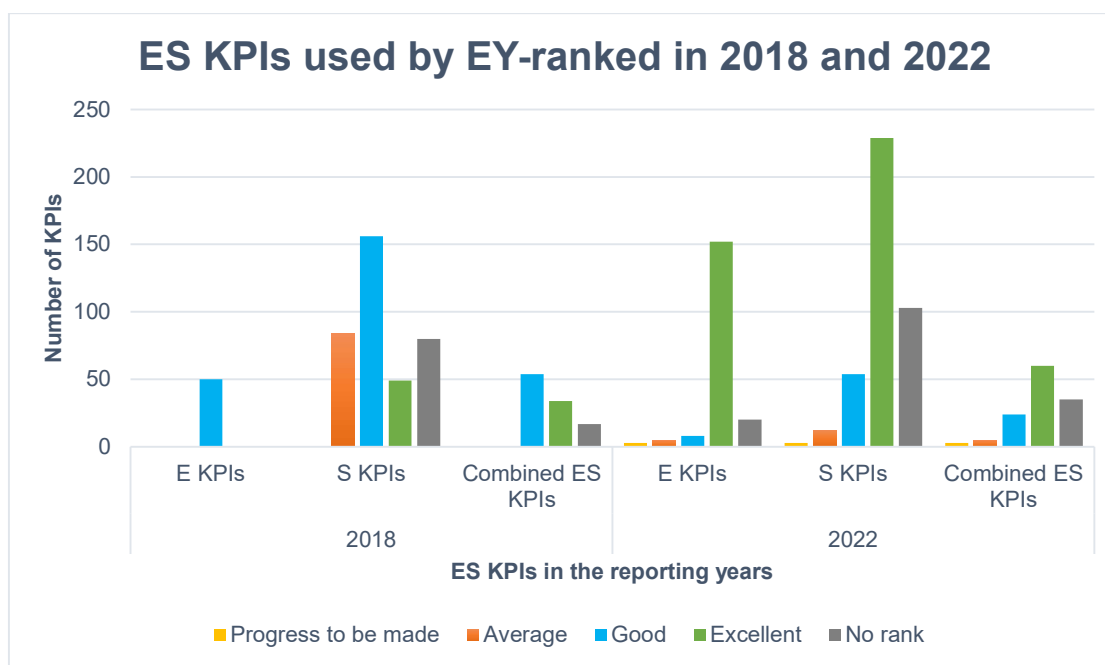
	E KPIs	S KPIs	Combined ES KPIs	Total
<i>H-statistic</i>	54,013	40,217	28,519	43,002
<i>df</i>	4	4	4	4
<i>Asymp. Sig. (2-tailed)</i>	<,001*	<,001*	<,001*	<,001*

*Significant at the 5% level

**Significant at the 10% level

A graph illustrating how EY-ranked companies used E, S and combined ES KPIs in 2018 and 2022 to remunerate their KMP is shown below in Figure 31. The figure sheds light on the ES sustainability reporting practices of the investigated companies.

Figure 31 Number of ES KPIs used by EY-ranked companies



Across different EY-rank categories, varying degrees of emphasis on E, S, and combined ES KPIs are observed. Notably, entities falling into the "Progress to be made" category exhibit an absence of reported E, S, or combined ES KPIs linked to remuneration, indicating a clear imperative for enhancing sustainability efforts. Conversely, companies classified as "Average"

display a predominant focus on social aspects, lacking reported E KPIs. However, "Good"-ranked companies stand out for utilising all three categories of KPIs and the greatest number of ES KPIs in 2018. The prevalence of E KPIs remains conspicuously low across all categories except for the "Good" rank, raising questions about the overarching commitment to environmental sustainability. Even among companies labelled as "Excellent" or those lacking an EY IR rank, the absence of E KPIs persists in 2018.

The EY IR awards specifically acknowledge companies that excel in communicating not only their financial performance but also their environmental and social practices (EY, 2022). The observed emphasis on S, combined ES, and total ES KPIs suggests that higher-ranked companies place a premium on addressing stakeholder expectations and demonstrating a comprehensive view of their sustainable business practices (Figure 31). These companies align executive remuneration with the principles of integrated reporting, reflecting a commitment to transparency, accountability, and the interconnectedness of financial and non-financial aspects. The significance of S, combined ES, and total ES KPIs further implies a dedication to long-term value creation, with executive compensation structures incentivising sustainability and responsible business practices. The EY Integrated Reporting Awards not only provide industry recognition but also serve as a benchmark for companies leading the way in integrating social and environmental considerations into their core business strategy, ultimately shaping their executive remuneration practices (EY, 2022). The observed differences in KPI emphasis highlight the intentional and strategic approach these companies take in linking executive performance evaluations to the broader principles of integrated reporting.

The majority of companies using ES KPIs in and associated remuneration fell into the "Good" and "Excellent" categories, indicating a significant focus on ES KPIs in 2022 (Figure 31). The distribution of remuneration aligns with the higher proportion of KPIs in the "Excellent" category, reinforcing the correlation between performance levels and financial rewards. The data suggests a robust commitment to EY IR ranking, with a notable emphasis on recognising and rewarding excellence in environmental and social performance. The analysis implies a strategic approach towards integrating environmental and social responsibility into the overall performance evaluation, as evidenced by the allocation of KPIs and remuneration across different EY IR ranking categories. To reiterate the EY IR ranking only considers companies listed in the Top 100 on the JSE. There is a discernible positive correlation between EY-ranked companies in both 2018 and 2022, and the five ES-related sub-categories. In 2018, statistical significance was not observed for natural resource management, environmental outputs or emissions, and combined ES KPIs. However, health and safety, as well as stakeholder

engagement KPIs, exhibit statistically significant differences. In 2022, the EY IR ranking revealed positive and statistically significant correlations across all KPI categories.

On the contrary, companies distinguished as "excellent" and "good" in the rankings exhibit a notable inclination towards incorporating a significant array of ES-related KPIs into the remuneration structures for their KMP. This strategic alignment not only serves as an internal benchmark for sustainable practices but also results in tangible reputational benefits derived from the prestigious recognition accorded by the EY IR awards. Interestingly, smaller entities—those not included in the Top 100 on the JSE and companies without a specific ranking—may harbour aspirations to achieve these prestigious rankings and the associated benefits. Despite not having a formal rank, these companies recognize the value of incorporating ES-related KPIs in executive remuneration as a means of enhancing their sustainability practices and, in turn, their reputations. Consequently, these aspiring companies may actively seek to emulate the practices of the "excellent" and "good" ranked companies to gain advantage and market share. The mimic is driven by a desire to align with recognized standards of sustainability and social responsibility, reflecting a broader trend in the business landscape where companies, regardless of their formal ranking, strive to adopt and integrate best practices for the benefit of both their internal operations and external perceptions.

The EY IR awards focus on recognising the quality of integrated reports, which includes how effectively companies communicate their environmental and social performance alongside financial information (EY, 2022). These awards aim to encourage transparency and accountability in corporate reporting practices, aligning with the principles of integrated reporting. On the other hand, ES KPIs measure a company's commitment and progress towards achieving its environmental and social goals. However, there can be a potential disconnect between the goals stated in integrated reports and the actual commitment to reaching those goals, as evidenced by the inclusion of ES KPIs. While integrated reports may highlight aspirational targets and positive narratives regarding environmental and social responsibility, the implementation and effectiveness of initiatives to achieve these goals may vary. The incorporation of ES KPIs serves to bridge this gap by providing tangible metrics that stakeholders can use to assess a company's performance in environmental and social sustainability (Adams & Frost, 2008). ES KPIs offer a more objective measure of progress and enable stakeholders to evaluate the alignment between ES commitments and actual outcomes.

5. Conclusion

This study provides an overview of the use of ES KPIs in the remuneration policies of companies listed on the JSE. The research provides insight into how ES KPIs vary based on factors such as industry, company size, and year of listing, across the reporting years of 2011, 2018, and 2022. The research identifies five focus areas for ES KPIs, namely: stakeholder engagement, health and safety, environmental outputs/emissions, natural resource management, and general ES KPIs, providing insight into the ES KPIs currently implemented and utilized by JSE-listed companies to remunerate their KMP. The study shows that of the 60 companies investigated, only half made use of ES KPIs. Social KPIs dominated the use of ES KPIs by companies listed on the JSE, which is unsurprising given the landscape in which these companies operate. In a South African context, social factors are at the forefront of sustainable success. The research identified that although there are companies that are incorporating ES KPIs in remuneration, these KPIs are largely isolated, with only a few companies adopting an integrated approach to ES remuneration by incorporating metrics that include both the social and environmental impacts of the entity.

The findings of the study highlight several key factors influencing the reporting and use of ES remuneration KPIs. These factors include the reporting period, the listing date of the company, market capitalization, industry, KMP position and EY rankings. The results of the study reveal a significant increase in the use of ES KPIs in KMP remuneration over the years analyzed, indicating a growing recognition among companies of the importance of environmental and social responsibility in KMP compensation. This shift signifies a growing recognition among companies of the importance of aligning KMP compensation with ES sustainability goals and responsible business practices, addressing research question 2. By linking KMP remuneration to ES KPIs, organizations may incentivise executives to prioritize environmental stewardship and social responsibility, in their decision-making processes (IFAC, 2020b; IIRC, 2021). This not only helps drive positive environmental and social outcomes but also fosters transparency and accountability within the corporate structure (IoDSA, 2016). Overall, the increasing use of ES KPIs in executive remuneration reflects a broader commitment to sustainable business practices and stakeholder value creation.

The study underscores the significant influence of King IV and IR on ES KMP remuneration KPIs among companies listed on the JSE. The study reveals that large-capitalization companies in high ES industries tend to utilize more ES KPIs when remunerating their KMP. Interestingly, while maturely listed companies lead in employing ES KPIs, newly listed companies also integrate ES KPIs in their remuneration plans of KMP, albeit in differing concentrations. It was noted that companies with more resources (larger companies) and

companies with more experience and skills (longer listing status companies), tend to incorporate more ES KPIs into their remuneration reports and these KPIs tend to be more integrated. It was also noted that high ES companies, particularly healthcare companies, place a greater emphasis on ES KPIs in determining remuneration policies. Although it was noted that a larger portion of remuneration is allocated to ES goals for CEOs and CFOs, no significant difference was noted in the number of ES KPIs allocated to different members of KMP. E KPIs typically entail long-term incentives, while S KPIs lean towards short-term approaches. Remuneration for ES KPIs often involves cash for short-term goals and a blend of cash and equity for long-term objectives. Additionally, the study highlights the alignment between the EY IR rank and the variation in companies' use of ES KMP remuneration KPIs. The study explores the correlation between EY Excellence in Integrated Reporting ranking and the number of ES KPIs used in KMP remuneration structures. The findings show a stronger relationship between higher EY IR ranks and a greater number of ES KPIs utilized in 2022, compared to the more nuanced relationship observed in 2018. The above outlines how each investigated factor affects the use of ES KPIs in KMP remuneration, in response to research questions 3 and 4.

In conclusion, this research highlights the importance of transparent and comprehensive reporting of ES KPIs and linking these KPIs to remuneration in fostering sustainable business practices and cultivating stakeholder trust. By embedding ES considerations within remuneration frameworks and strategic decision-making processes, organizations stand poised to harmonise their corporate objectives with environmental and social imperatives, thereby fostering enduring value creation and sustainable development trajectories (IIRC, 2021). Nonetheless, it is incumbent upon stakeholders to recognize and navigate the inherent limitations and challenges associated with ES KPI reporting, including data granularity, comparability concerns, and the imperative for ongoing monitoring and evaluation. This study provides valuable insights for practitioners, policymakers, and scholars who are at the forefront of advancing our collective understanding and implementation of ES KPIs in KMP remuneration policies. The study only considered JSE-listed companies in a South African context. As such the results of this study may not apply to other jurisdictions.

This research did not investigate the effectiveness of the ES KPIs linked to remuneration. While this study did not specifically investigate impression management in Integrated Reports, the results will be useful for researchers in that area. Future research in the field of ES remuneration could explore the effectiveness of different ES KPIs in remuneration in driving sustainable business practices and long-term value creation. Investigating the impact of ES KPI-linked remuneration on executive decision-making and behaviour could provide valuable insights into the role of incentives in promoting corporate sustainability. Examining the

integration of ES KPIs into broader performance management systems and incentive structures beyond executive remuneration could offer a more holistic view of how organizations embed sustainability into their strategic priorities. A focused analysis utilising interviews could provide insights into how companies operationalise ES KPIs in KMP remuneration. Research should also interview companies to better understand why they have selected E, S and ES KPIs. Due to limitations in company reports, interviews would offer qualitative data on the percentage weighting of ES factors relative to other performance metrics in KMP remuneration structures and capture the reasoning behind the remuneration choices made.

6. References

- Acciaro, M. (2015). Corporate responsibility and value creation in the port sector. *International Journal of Logistics Research and Applications*, 18(3), 291-311.
- Adams, C. A. (2017). Conceptualising the contemporary corporate value creation process. *Accounting, auditing & accountability journal*, 30(4), 906-931.
- Adams, C. A., & Frost, G. R. (2008). Integrating sustainability reporting into management practices. Accounting forum,
- Adhariani, D., & De Villiers, C. (2019). Integrated reporting: perspectives of corporate report preparers and other stakeholders. *Sustainability Accounting, Management and Policy Journal*, 10(1), 126-156.
- Aggarwal, P., & Singh, A. K. (2019). CSR and sustainability reporting practices in India: An in-depth content analysis of top-listed companies. *Social Responsibility Journal*, 15(8), 1033-1053.
- Ahearne, A. G., Grier, W. L., & Warnock, F. E. (2004). Information costs and home bias: an analysis of US holdings of foreign equities. *Journal of international economics*, 62(2), 313-336.
- Ahmad, S. (2015). Green human resource management: Policies and practices. *Cogent Business & Management*, 2(1), 1030817.
- Al-Najjar, B. (2017). Corporate governance and CEO pay: Evidence from UK Travel and Leisure listed firms. *Tourism Management*, 60, 9-14.
- Allen, C., Metternicht, G., & Wiedmann, T. (2018). Initial progress in implementing the Sustainable Development Goals (SDGs): a review of evidence from countries. *Sustainability science*, 13, 1453-1467.
- Alves, I., & Lourenço, S. M. (2022). The use of non-financial performance measures for managerial compensation: evidence from SMEs. *Journal of Management Control*, 33(2), 151-187.
- Amewu, G., & Paul Alagidede, I. (2021). Mergers, executive compensation and firm performance: The case of Africa. *Managerial and Decision Economics*, 42(2), 407-436.
- Amis, J. M., Mair, J., & Munir, K. A. (2020). The organizational reproduction of inequality. *Academy of Management Annals*, 14(1), 195-230.
- Arvidsson, S. (2011). Disclosure of non-financial information in the annual report: A management-team perspective. *Journal of intellectual capital*.
- 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.
- Baboukardos, D., & Rimmel, G. (2016). Value relevance of accounting information under an integrated reporting approach: A research note. *Journal of Accounting and public policy*, 35(4), 437-452.
- Bakhiyi, B., Gravel, S., Ceballos, D., Flynn, M. A., & Zayed, J. (2018). Has the question of e-waste opened a Pandora's box? An overview of unpredictable issues and challenges. *Environment international*, 110, 173-192.
- Barnabè, F., Giorgino, M. C., & Kunc, M. (2019). Visualizing and managing value creation through integrated reporting practices: a dynamic resource-based perspective. *Journal of Management and Governance*, 23, 537-575.
- Barnea, A., & Rubin, A. (2010). Corporate social responsibility as a conflict between shareholders. *Journal of business ethics*, 97, 71-86.
- Bassi, A. M., Yudken, J. S., & Ruth, M. (2009). Climate policy impacts on the competitiveness of energy-intensive manufacturing sectors. *Energy Policy*, 37(8), 3052-3060.

- Bătae, O. M., Dragomir, V. D., & Feleagă, L. (2020). Environmental, social, governance (ESG), and financial performance of European banks. *Accounting and Management Information Systems*, 19(3), 480-501.
- Bătae, O. M., Dragomir, V. D., & Feleagă, L. (2021). The relationship between environmental, social, and financial performance in the banking sector: A European study. *Journal of Cleaner Production*, 290, 125791.
- Bebchuk, L. A., & Fried, J. M. (2010). Paying for long-term performance. *University of Pennsylvania Law Review*, 1915-1959.
- Bebchuk, L. A., & Tallarita, R. (2022). The perils and questionable promise of ESG-based compensation. *J. Corp. L.*, 48, 37.
- Beleneși, M., Bogdan, V., & Popa, D. N. (2021). Disclosure dynamics and non-financial reporting analysis. The case of Romanian listed companies. *Sustainability*, 13(9), 4732.
- Benn, S., Edwards, M., & Williams, T. (2014). *Organizational change for corporate sustainability*. Routledge.
- Bergh, D. D., Ketchen Jr, D. J., Orlandi, I., Heugens, P. P., & Boyd, B. K. (2019). Information asymmetry in management research: Past accomplishments and future opportunities. *Journal of Management*, 45(1), 122-158.
- Berle, A. A. (1932). For whom corporate managers are trustees: a note. *Harvard law review*, 45(8), 1365-1372.
- Bhagat, S., & Bolton, B. (2014). Financial crisis and bank executive incentive compensation. *Journal of Corporate Finance*, 25, 313-341.
- Bodin, Ö. (2017). Collaborative environmental governance: achieving collective action in social-ecological systems. *Science*, 357(6352), eaan1114.
- Bonner, M., & Burek, M. (2022). *Long-Term Incentive Plans: Payouts and Performance Alignment*. Harvard Law School Forum on Corporate Governance. <https://corpgov.law.harvard.edu/2022/05/12/long-term-incentive-plans-payouts-and-performance-alignment/>
- Bouaziz, D., Salhi, B., & Jarboui, A. (2020). CEO characteristics and earnings management: empirical evidence from France. *Journal of Financial Reporting and Accounting*, 18(1), 77-110.
- Bourguignon, A., & Chiapello, E. (2005). The role of criticism in the dynamics of performance evaluation systems. *Critical perspectives on accounting*, 16(6), 665-700.
- Boyd, B. K. (1994). Board control and CEO compensation. *Strategic Management Journal*, 15(5), 335-344.
- Branco, M. C., & Rodrigues, L. L. (2006). Corporate social responsibility and resource-based perspectives. *Journal of business ethics*, 69, 111-132.
- Brunninge, O., Nordqvist, M., & Wiklund, J. (2007). Corporate governance and strategic change in SMEs: The effects of ownership, board composition and top management teams. *Small business economics*, 29(3), 295-308.
- Burger, R., & Jafta, R. (2006). Returns to race: Labour market discrimination in post-apartheid South Africa. *Department of Economics, University of Stellenbosch*.
- Bussin, M., & Barrett, S. (2016). The effect of race on CEO pay-performance sensitivity in South Africa. *South African Journal of Labour Relations*, 40(2), 8-29.
- Buyl, T., Boone, C., Hendriks, W., & Matthyssens, P. (2011). Top management team functional diversity and firm performance: The moderating role of CEO characteristics. *Journal of Management studies*, 48(1), 151-177.
- Cadbury, A. (1992). The financial aspects of corporate governance (Cadbury Report). London, UK: *The Committee on the Financial Aspect of Corporate Governance (The Cadbury Committee) and Gee and Co, Ltd.*
- Camilleri, M. A. (2018). Theoretical insights on integrated reporting: The inclusion of non-financial capitals in corporate disclosures. *Corporate Communications: An International Journal*.

- Carroll, A. B., & Shabana, K. M. (2010). The business case for corporate social responsibility: A review of concepts, research and practice. *International Journal of Management Reviews*, 12(1), 85-105.
- Chakravarthy, B. S. (1986). Measuring strategic performance. *Strategic Management Journal*, 7(5), 437-458.
- 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.
- Cheng, M., Green, W., Conradie, P., Konishi, N., & Romi, A. (2014). The international integrated reporting framework: key issues and future research opportunities. *Journal of International Financial Management & Accounting*, 25(1), 90-119.
- Choi, F. D. (1973). Financial disclosure and entry to the European capital market. *Journal of accounting research*, 159-175.
- 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.
- Clikeman, P. M. (2004). Return of the socially conscious corporation: how can you reap the rewards of good corporate citizenry? Be one--and broadcast it! *Strategic Finance*, 22-27.
- Coates, D., & Howe, D. (2015). Combatting staff burnout in mental health: Key managerial and leadership tasks that are fundamental to staff wellbeing and retention. *Asia Pacific Journal of Health Management*, 10(2), 24-32.
- Collier, J., & Esteban, R. (2007). Corporate social responsibility and employee commitment. *Business ethics: a European review*, 16(1), 19-33.
- Cooper, M. J., Gulen, H., & Rau, P. R. (2016). Performance for pay? The relation between CEO incentive compensation and future stock price performance. *The Relation Between CEO Incentive Compensation and Future Stock Price Performance* (November 1, 2016).
- Cordazzo, M., Bini, L., & Marzo, G. (2020). Does the EU Directive on non-financial information influence the value relevance of ESG disclosure? Italian evidence. *Business Strategy and the Environment*, 29(8), 3470-3483.
- 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.
- Cowen, S. S., Ferreri, L. B., & Parker, L. D. (1987). The impact of corporate characteristics on social responsibility disclosure: A typology and frequency-based analysis. *Accounting, Organizations and Society*, 12(2), 111-122.
- Crous, C., & Van Wyk, M. C. (2021). Balancing quantitative and qualitative value-creation reporting. *South African Journal of Economic and Management Sciences*, 24(1), 1-8.
- Dalbol, J. P., & Dalbol, M. L. (2011). Sustainability and value creation. *MSc. Strategy, Organization and Leadership*.
- Dalton, D. R., Daily, C. M., Certo, S. T., & Roengpitya, R. (2003). Meta-analyzes of financial performance and equity: fusion or confusion? *Academy of Management Journal*, 46(1), 13-26.
- de Klerk, M., & de Villiers, C. (2012). The value relevance of corporate responsibility reporting: South African evidence. *Meditari Accountancy Research*, 20(1), 21-38.
- De Villiers, C., Rinaldi, L., & Unerman, J. (2014). Integrated Reporting: Insights, gaps and an agenda for future research. *Accounting, auditing & accountability journal*.
- Deloitte. (2017). *Duties of Directors. The standard of directors' conduct.*
<https://www2.deloitte.com/za/en/pages/governance-risk-and-compliance/articles/duties-of-directors.html>
- Deysel, B., & Kruger, J. (2015). The relationship between South African CEO compensation and company performance in the banking industry. *Southern African Business Review*, 19(1), 137-169.

- Dierkes, M., & Preston, L. E. (1977). Corporate social accounting reporting for the physical environment: A critical review and implementation proposal. *Accounting, Organizations and Society*, 2(1), 3-22.
- Dissanayake, D., Tilt, C., & Qian, W. (2019). Factors influencing sustainability reporting by Sri Lankan companies. *Pacific Accounting Review*, 31(1), 84-109.
- Domínguez, E., Pérez, B., Rubio, Á. L., & Zapata, M. A. (2019). A taxonomy for key performance indicators management. *Computer Standards & Interfaces*, 64, 24-40.
- Doran, G. T. (1981). There's a SMART way to write management's goals and objectives. *Management review*, 70(11), 35-36.
- Ducassy, I. (2013). Does corporate social responsibility pay off in times of crisis? An alternate perspective on the relationship between financial and corporate social performance. *Corporate Social Responsibility and Environmental Management*, 20(3), 157-167.
- Dyduch, J., & Krasodomska, J. (2017). Determinants of corporate social responsibility disclosure: An empirical study of Polish listed companies. *Sustainability*, 9(11), 1934.
- Eccles, R. G., & Krzus, M. P. (2010). *One report: Integrated reporting for a sustainable strategy*. John Wiley & Sons.
- Eccles, R. G., & Saltzman, D. (2011). Achieving sustainability through integrated reporting. *Stanford Social Innovation Review*, 9(3), 56-61.
- Ehrlich, P. R., & Ehrlich, A. H. (1970). Population, resources, environment. *San Francisco*.
- Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of Management Review*, 14(1), 57-74.
- Elkington, J. (1997). The triple bottom line. *Environmental management: Readings and cases*, 2, 49-66.
- Epstein, M. J., & Buhovac, A. R. (2010). Solving the sustainability implementation challenge. *Organizational dynamics*, 39(4), 306.
- Eskero, P. (2020). A stakeholder perspective: Origins and core concepts. In *Oxford Research Encyclopedia of Business and Management*.
- Espi, G., Francis, D., & Valodia, I. (2019). Gender inequality in the South African labour market: Insights from the Employment Equity Act data. *Agenda*, 33(4), 44-61.
- 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: Part 2. *De Jure Law Journal*, 50(2), 221-241.
- EY. (2013). Value Creation Background Paper. <https://www.integratedreporting.org/wp-content/uploads/2013/08/Background-Paper-Value-Creation.pdf>
- EY. (2022). *Excellence in Integrated Reporting*. EY. https://www.ey.com/en_zs/assurance/excellence-in-integrated-reporting
- Ezeani, E. C., & Williams, E. (2017). Regulating corporate directors' pay and performance: a comparative review. *African journal of international and comparative law*, 25(4), 482-506.
- Fahlenbrach, R., & Stulz, R. M. (2011). Bank CEO incentives and the credit crisis. *Journal of financial economics*, 99(1), 11-26.
- Faulkender, M., Kadyrzhanova, D., Prabhala, N., & Senbet, L. (2010). Executive compensation: An overview of research on corporate practices and proposed reforms. *Journal of Applied Corporate Finance*, 22(1), 107-118.
- Fekrat, M. A., Inclan, C., & Petroni, D. (1996). Corporate environmental disclosures: Competitive disclosure hypothesis using 1991 annual report data. *The International Journal of Accounting*, 31(2), 175-195.
- Fombrun, C. J., & Van Riel, C. B. (2004). *Fame & fortune: How successful companies build winning reputations*. FT press.
- Freeman, H., Harten, T., Springer, J., Randall, P., Curran, M. A., & Stone, K. (1992). Industrial pollution prevention! A critical review. *Journal of the Air & Waste Management Association*, 42(5), 618-656.
- Freeman, R. (1984). *Strategic management: A stakeholder approach* (Marshall, MA/Pitman). ISBN-10, 521151740.

- Freeman, R. E. (1984). *Strategic management: A stokcholder approach*. Pitman.
- Freeman, R. E. (2010). *Strategic management: A stakeholder approach*. Cambridge university press.
- Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., & De Colle, S. (2010). Stakeholder theory: The state of the art.
- Freeman, R. E., Phillips, R., & Sisodia, R. (2020). Tensions in stakeholder theory. *Business & Society*, 59(2), 213-231.
- Freudenreich, B., Lüdeke-Freund, F., & Schaltegger, S. (2020). A stakeholder theory perspective on business models: Value creation for sustainability. *Journal of business ethics*, 166, 3-18.
- Fung, B. (2014). The demand and need for transparency and disclosure in corporate governance. *Universal Journal of Management*, 2(2), 72-80.
- Galbreath, J. (2013). ESG in focus: The Australian evidence. *Journal of business ethics*, 118, 529-541.
- Garcia, A. S., Mendes-Da-Silva, W., & Orsato, R. J. (2017). Sensitive industries produce better ESG performance: Evidence from emerging markets. *Journal of Cleaner Production*, 150, 135-147.
- George, G., & Schillebeeckx, S. J. (2022). Digital transformation, sustainability, and purpose in the multinational enterprise. *Journal of World Business*, 57(3), 101326.
- Giraud, F., Langevin, P., & Mendoza, C. (2008). Justice as a rationale for the controllability principle: A study of managers' opinions. *Management Accounting Research*, 19(1), 32-44.
- Gokten, S., & Gokten, P. O. (2017). Value Creation Reporting: Answering the Question „Value to Whom” according to the International Integrated Reporting Framework. *Zeszyty Teoretyczne Rachunkowości*(91 (147)), 145-169.
- Gomez-Mejia, L. R., & Balkin, D. B. (1992). Determinants of faculty pay: An agency theory perspective. *Academy of Management Journal*, 35(5), 921-955.
- Gonder, A., & de Gannes, N. Integrating ESG into incentives.
- Goranova, M., & Ryan, L. V. (2014). Shareholder activism: A multidisciplinary review. *Journal of Management*, 40(5), 1230-1268.
- Gözaçan, N., & Lafci, Ç. (2020). Evaluation of key performance indicators of logistics firms. *Logistics, Supply Chain, Sustainability and Global Challenges*, 11(1), 24-32.
- Graafland, J., van de Ven, B., & Stoffele, N. (2003). Strategies and Instruments for Organising CSR by Small and Large Businesses in the Netherlands. *Journal of business ethics*, 47(1), 45-60. <https://doi.org/10.1023/A:1026240912016>
- 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 & accountability journal*, 8(2), 47-77.
- Griffin, J. (2004). Developing strategic KPIs for your BPM system. *Information Management*, 14(10), 70.
- Grossman, S. J., & Hart, O. D. (1992). *An analysis of the principal-agent problem*. Springer.
- Guay, W. R., Core, J. E., & Larcker, D. F. (2002). Executive equity compensation and incentives: A survey. *Available at SSRN* 276425.
- Guo, J., Kim, S., Yu, Y., & Kim, J. Y. (2021). Does CFO accounting expertise matter to corporate social responsibility disclosure in 10-Ks? *Journal of Applied Accounting Research*, 22(5), 800-822.
- Hackston, D., & Milne, M. J. (1996). Some determinants of social and environmental disclosures in New Zealand companies. *Accounting, auditing & accountability journal*, 9(1), 77-108.
- Haleblian, J., & Finkelstein, S. (1993). Top management team size, CEO dominance, and firm performance: The moderating roles of environmental turbulence and discretion. *Academy of Management Journal*, 36(4), 844-863.
- Halme, M., & Huse, M. (1997). The influence of corporate governance, industry and country factors on environmental reporting. *Scandinavian journal of Management*, 13(2), 137-157.

- 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.
- Harjanti, W., & Farhan, A. (2022). CEO Compensation: A Brief Study from Indonesia. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 5(2), 13279-13288.
- Harrison, J. S., Bosse, D. A., & Phillips, R. A. (2010). Managing for stakeholders, stakeholder utility functions, and competitive advantage. *Strategic Management Journal*, 31(1), 58-74.
- Harrison, J. S., Phillips, R. A., & Freeman, R. E. (2020). On the 2019 business roundtable "statement on the purpose of a corporation". *Journal of Management*, 46(7), 1223-1237.
- Hartikainen, H., Järvenpää, M., & Rautiainen, A. (2021). Sustainability in executive remuneration-A missing link towards more sustainable firms? *Journal of Cleaner Production*, 324, 129224.
- Hazen, T. L. (2020). Social Issues in the Spotlight: The Increasing Need to Improve Publicly-Held Companies' CSR and ESG Disclosures. *U. Pa. J. Bus. L.*, 23, 740.
- Henisz, W. J., Dorobantu, S., & Nartey, L. J. (2014). Spinning gold: The financial returns to stakeholder engagement. *Strategic Management Journal*, 35(12), 1727-1748.
- Herz, M., & Krezdorn, N. (2022). Epic fail: Exploring project failure's reasons, outcomes and indicators. *Review of Managerial Science*, 16(4), 1169-1193.
- Hiller, J. S. (2013). The benefit corporation and corporate social responsibility. *Journal of business ethics*, 118, 287-301.
- Hillman, A. J., & Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *Academy of Management Review*, 28(3), 383-396.
- Hilson, G. (2012). Corporate Social Responsibility in the extractive industries: Experiences from developing countries. *Resources Policy*, 37(2), 131-137.
- Hollander, M., Wolfe, D. A., & Chicken, E. (2013). *Nonparametric statistical methods*. John Wiley & Sons.
- Holmström, B. (1979). Moral hazard and observability. *The Bell journal of economics*, 74-91.
- Hörisch, J., Johnson, M. P., & Schaltegger, S. (2015). Implementation of sustainability management and company size: A knowledge-based view. *Business Strategy and the Environment*, 24(8), 765-779.
- HSE. (2016). The Importance of Leadership and Employee Participation in Creating a Safe Workplace. <https://www.hse.gov.uk/leadership/whyleadership.htm>
- Huang, S. H., Liu, P., Mokasdar, A., & Hou, L. (2013). Additive manufacturing and its societal impact: a literature review. *The International journal of advanced manufacturing technology*, 67, 1191-1203.
- Hübel, B., & Scholz, H. (2020). Integrating sustainability risks in asset management: the role of ESG exposures and ESG ratings. *Journal of Asset Management*, 21(1), 52-69.
- Huse, M. (2007). *Boards, governance and value creation: The human side of corporate governance*. Cambridge University Press.
- IFAC. (2020a). THE CFO AND FINANCE FUNCTION ROLE IN VALUE CREATION. https://www.ifac.org/flysystem/azure-private/publications/files/The-CFO-and-Finance-Function-Role-in-Value-Creation_0.pdf
- IFAC. (2020b). UNDERSTANDING VALUE CREATION. https://www.ifac.org/flysystem/azure-private/publications/files/Understanding-Value-Creation_0.pdf
- IFRS Foundation. (2021). Revisions to the International <IR> Framework: 2013/2021 comparison document. In.
- IIRC. (2013). *CAPITALS-BACKGROUND PAPER FOR <IR>*. <https://www.integratedreporting.org/wp-content/uploads/2013/03/IR-Background-Paper-Capitals.pdf>

- IIRC. (2021). The Integrated Reporting Framework. In *INTERNATIONAL <IR> FRAMEWORK*: IFRS Foundation.
- Injeni, G., Mangena, M., Mathuva, D., & Mudida, R. (2022). Agency and institutional-related factors and the heterogeneity of sustainability and integrated report information disclosures in Kenya. *Journal of Financial Reporting and Accounting*, 20(5), 809-840.
- IoDSA. (2009). King III Report on Corporate Governance for South Africa (2009). In: Institute of Directors in Southern Africa: IoDSA.
- IoDSA. (2016). King IV Report on Corporate Governance for South Africa (2016). In: Institute of Directors in Southern Africa: King IV Report on Corporate Governance for South Africa (2016).
- ISSB. (2023a). *IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information*. IFRS. Retrieved 24 October from <https://www.ifrs.org/issued-standards/ifrs-sustainability-standards-navigator/ifrs-s1-general-requirements/#about>
- ISSB. (2023b). *IFRS S2 Climate-related Disclosures*. IFRS. Retrieved 1 October from <https://www.ifrs.org/issued-standards/ifrs-sustainability-standards-navigator/ifrs-s2-climate-related-disclosures/>
- Ittner, C. D., Lambert, R. A., & Larcker, D. F. (2003). The structure and performance consequences of equity grants to employees of new economy firms. *Journal of Accounting and Economics*, 34(1-3), 89-127.
- Jaw, Y.-L., & Lin, W.-T. (2009). Corporate elite characteristics and firm's internationalization: CEO-level and TMT-level roles. *The International Journal of Human Resource Management*, 20(1), 220-233.
- Jenkins, H. (2004). A critique of conventional CSR theory: An SME perspective. *Journal of general Management*, 29(4), 37-57.
- Jensen, J. C., & Berg, N. (2012). Determinants of traditional sustainability reporting versus integrated reporting. An institutionalist approach. *Business Strategy and the Environment*, 21(5), 299-316.
- Jensen, M. C. (1983). Organization theory and methodology. *Accounting Review*, 319-339.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, 3(4), 305-360.
- Jeroh, E. (2020). An assessment of the internal determinants of the environmental disclosure practices of firms across Sub-Saharan Africa. *Ekonomski horizonti*, 22(1), 47-59.
- Jiang, L., & Xu, X. (2022). Leadership and Safety. *Handbook on Management and Employment Practices*, 67-89.
- Jiang, Y., & Jones, S. (2018). Corporate distress prediction in China: A machine learning approach. *Accounting & Finance*, 58(4), 1063-1109.
- Joannou, H., & Herbert, S. (2022). The extent of inclusion of sustainability targets for bonus pay in South African executive remuneration packages. *Southern African Journal of Accountability and Auditing Research*, 24(1), 7-24.
- Johnson, R., Erasmus, P. D., & Mans-Kemp, N. (2019). Assessing the business case for environmental, social and corporate governance practices in South Africa. *South African Journal of Economic and Management Sciences*, 22(1), 1-13.
- JSE. (2017). *JSE Limited Listings Requirements*. LexisNexis. <https://www.jse.co.za/sites/default/files/media/documents/2019-04/JSE%20Listings%20Requirements.pdf#:~:text=The%20Listings%20Requirements%20contain%20the%20rules%20and%20procedures,on%20with%20due%20regard%20to%20the%20public%20interest>
- Kana, S. P. (2020). Corporate governance practice in the context of the political situation in South Africa over the last 25 years. *Journal of Global Responsibility*, 11(2), 127-137.
- Kanashiro, P., & Rivera, J. (2019). Do chief sustainability officers make companies greener? The moderating role of regulatory pressures. *Journal of business ethics*, 155, 687-701.
- Kaplan, R. S. (2009). Conceptual foundations of the balanced scorecard. *Handbooks of management accounting research*, 3, 1253-1269.

- Kaplan, R. S., Kaplan, R. E., & Norton, D. P. (2004). *Strategy maps: Converting intangible assets into tangible outcomes*. Harvard Business Press.
<https://books.google.co.za/books?id=vCnhFu52rosC&lpg=PR9&ots=wN0OTM1GrC&dq=kaplan%20and%20norton&lr&pg=PA388%22%20\l%20%22v=onepage&qe>
- Kaplan, R. S., & Norton, D. P. (2001). Transforming the balanced scorecard from performance measurement to strategic management: Part II. *Accounting horizons*, 15(2), 147-160.
- Kaplan, S. N., & Strömberg, P. E. (2004). Characteristics, contracts, and actions: Evidence from venture capitalist analyzes. *The Journal of Finance*, 59(5), 2177-2210.
- Karia, N. (2019). Knowledge of value creation and sustainable performance. *Medcave J Bus Manag*, 2(1), 2-10.
- Kelly, G. J. (1981). Australian social responsibility disclosure: some insights into contemporary measurement. *Accounting & Finance*, 21(2), 97-107.
- Kelly, L. M., & Reid, C. (2021). Baselines and monitoring: More than a means to measure the end. *Evaluation Journal of Australasia*, 21(1), 40-53.
- Kerr, A., & Wittenberg, M. (2021). Union wage premia and wage inequality in South Africa. *Economic Modelling*, 97, 255-271.
- Kirsten, E., & Du Toit, E. (2018). The relationship between remuneration and financial performance for companies listed on the Johannesburg Stock Exchange. *South African Journal of Economic and Management Sciences*, 21(1), 1-10.
- Kitsikopoulos, C., Schwaibold, U., & Taylor, D. (2018). Limited progress in sustainable development: Factors influencing the environmental management and reporting of South African JSE-listed companies. *Business Strategy and the Environment*, 27(8), 1295-1301.
- Klettner, A., Clarke, T., & Boersma, M. (2014). The governance of corporate sustainability: Empirical insights into the development, leadership and implementation of responsible business strategy. *Journal of business ethics*, 122, 145-165.
- Kowalski, T. H., & Loretto, W. (2017). Well-being and HRM in the changing workplace. In (Vol. 28, pp. 2229-2255): Taylor & Francis.
- Kumar, A., Holuszko, M., & Espinosa, D. C. R. (2017). E-waste: An overview on generation, collection, legislation and recycling practices. *Resources, Conservation and Recycling*, 122, 32-42.
- Kumar, K., Kumari, R., Poonia, A., & Kumar, R. (2021). Factors influencing corporate sustainability disclosure practices: empirical evidence from Indian National Stock Exchange. *Journal of Financial Reporting and Accounting*, 21(2), 300-321.
- Laerd Statistics. (2016). Chi-square test for association using SPSS Statistics. *Statistical tutorials and software guides*. <https://statistics.laerd.com/spss-tutorials/chi-square-test-for-association-using-spss-statistics.php>
- Lambert, D. M., & Stock, J. R. (1993). *Strategic logistics management* (Vol. 69). Irwin Homewood, IL.
- Lavy, S., A. Garcia, J., & K. Dixit, M. (2014). KPIs for facility's performance assessment, Part I: identification and categorization of core indicators. *Facilities*, 32(5/6), 256-274.
- Legendre, A.-L. (2008). Drivers for corporate social responsibility and sustainable practice in Australia. *Green Capital and CSR Sydney*.
- Leubolt, B. (2014). *Social policies and redistribution in South Africa*.
- Levin, S., Xepapadeas, T., Crépin, A.-S., Norberg, J., De Zeeuw, A., Folke, C., Hughes, T., Arrow, K., Barrett, S., & Daily, G. (2013). Social-ecological systems as complex adaptive systems: modeling and policy implications. *Environment and Development Economics*, 18(2), 111-132.
- Lodge, T. (1998). Political corruption in South Africa. *African Affairs*, 97(387), 157-187.
- 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.

- Lovejoy, M., Kelly, E. L., Kubzansky, L. D., & Berkman, L. F. (2021). Work redesign for the 21st century: promising strategies for enhancing worker well-being. *American Journal of Public Health*, 111(10), 1787-1795.
- Lüdeke-Freund, F., & Dembek, K. (2017). Sustainable business model research and practice: Emerging field or passing fancy? *Journal of Cleaner Production*, 168, 1668-1678.
- Lydenberg, S. (2013). Responsible investors: Who they are, what they want. *Journal of Applied Corporate Finance*, 25(3), 44-49.
- Madlela, V., & Cassim, R. (2017). Disclosure of directors' remuneration under South African company law: Is it adequate? *South African Law Journal*, 134(2), 383-414.
- Madlela, V., & Lehloeny, P. M. (2016). The regulation of executive remuneration in South Africa. *Obiter*, 37(1), 1-19. <https://doi.org/doi:10.10520/EJC191683>
- Mahmud, M. T. (2019). Legitimacy theory and its relationship to CSR disclosures: A literature review.
- Malik, A., Padget, M., Carter, S., Wakiyama, T., Maitland-Scott, I., Vyas, A., Boylan, S., Mulcahy, G., Li, M., & Lenzen, M. (2021). Environmental impacts of Australia's largest health system. *Resources, Conservation and Recycling*, 169, 105556.
- 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.
- 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*.
- Maphumulo, W. T., & Bhengu, B. R. (2019). Challenges of quality improvement in the healthcare of South Africa post-apartheid: A critical review. *Curationis*, 42(1), 1-9.
- Marimuthu, F., & Kwenda, F. (2019). The relationship between executive remuneration and financial performance in South African State-owned entities. *Academy of Accounting and Financial Studies Journal; Vol. 23, Issue 4*.
- Martínez-Ferrero, J., & García-Sánchez, I.-M. (2017). Coercive, normative and mimetic isomorphism as determinants of the voluntary assurance of sustainability reports. *International Business Review*, 26(1), 102-118.
- 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.
- Matos, P. (2020). ESG and responsible institutional investing around the world: A critical review.
- McGuire, J., Oehmichen, J., Wolff, M., & Hilgers, R. (2019). Do contracts make them care? The impact of CEO compensation design on corporate social performance. *Journal of business ethics*, 157, 375-390.
- Menz, M. (2012). Functional top management team members: A review, synthesis, and research agenda. *Journal of Management*, 38(1), 45-80.
- Merchant, K. A. (1987). How and why firms disregard the controllability principle. *Accounting and management: Field study perspectives*, 316-338.
- Miller, K., & Serafeim, G. (2014). Chief sustainability officers: Who are they and what do they do?
- Moloi, T., & Iredele, O. (2020). Firm value and integrated reporting quality of South African listed firms. *Academy of Strategic Management Journal*, 19(1), 1-12.
- Muzata, T., & Marozva, G. (2022). Executive compensation schemes: Accelerants of agency and corporate governance problems in South Africa. *African Journal of Governance & Development*, 11(1.2), 328-350.
- Nardhamuni, R., Greenslade, K., & van Zijl, W. (2023). An analysis of the use of share-based payments by the JSE Top 100 companies. *South African Journal of Accounting Research*, 37(2), 85-105.
- Natesan, P. (2020). The evolution and significance of the "apply and explain" regime in King IV. *Journal of Global Responsibility*.

- National Treasury. (2022). *SOUTH AFRICA'S FIRST NATIONAL GREEN FINANCE TAXONOMY LAUNCHED TO ASSIST THE FINANCIAL SECTOR RESPONSE TO CLIMATE CHANGE AND SUPPORT SUSTAINABLE DEVELOPMENT* https://www.treasury.gov.za/comm_media/press/2022/2022040101%20Media%20Statement%20-%20Green%20Finance%20Taxonomy.pdf
- Neilan, J., Reilly, P., & Fitzpatrick, G. (2020). Time to Rethink the S in ESG. Harvard Law School Forum on Corporate Governance,
- Noja, G. G., Cristea, M., Jurcut, C. N., Buglea, A., & Lala Popa, I. (2020). Management financial incentives and firm performance in a sustainable development framework: Empirical evidence from European companies. *Sustainability*, 12(18), 7247.
- Northey, S. A., Mudd, G. M., Saarivuori, E., Wessman-Jääskeläinen, H., & Haque, N. (2016). Water footprinting and mining: where are the limitations and opportunities? *Journal of Cleaner Production*, 135, 1098-1116.
- Ntim, C. G., Lindop, S., Thomas, D. A., Abdou, H., & Opong, K. K. (2019). Executive pay and performance: The moderating effect of CEO power and governance structure. *The International Journal of Human Resource Management*, 30(6), 921-963.
- Okoye, E. I., & Adeniyi, S. (2018). Company age and voluntary corporate social disclosure in Nigeria: A study of selected listed manufacturing firms on the Nigerian Stock Exchange. *Academic Journal of Economic Studies*, 4(2), 138-145.
- Owusu-Ansah, S. (1998). The impact of corporate attributes on the extent of mandatory disclosure and reporting by listed companies in Zimbabwe. *The International Journal of Accounting*, 33(5), 605-631.
- Padia, N., & Callaghan, C. W. (2021). Executive director remuneration and company performance: panel evidence from South Africa for the years following King III. *Personnel Review*, 50(3), 829-844.
- Padia, N., Naik, M., & Callaghan, C. W. (2020). Variable executive remuneration and company performance: Insights from the Johannesburg Stock Exchange, South Africa. *Acta Commercii*, 20(1), 1-10.
- Panda, B., & Leepsa, N. M. (2017). Agency theory: Review of theory and evidence on problems and perspectives. *Indian journal of corporate governance*, 10(1), 74-95.
- Pandher, G. (2022). Determinants of Return-maximizing CEO Equity & Cash compensation. *International Review of Economics & Finance*, 79, 154-168.
- Papaspapropoulos, K. G., Blioumis, V., & Christodoulou, A. S. (2010). Environmental reporting in Greece: The Athens stock exchange. *African Journal of Business Management*, 4(13), 2693.
- Park, B.-J., & Lee, K.-H. (2021). The sensitivity of corporate social performance to corporate financial performance: A "time-based" agency theory perspective. *Australian Journal of Management*, 46(2), 224-247.
- Parmar, B. L., Freeman, R. E., Harrison, J. S., Wicks, A. C., Purnell, L., & De Colle, S. (2010). Stakeholder theory: The state of the art. *Academy of Management Annals*, 4(1), 403-445.
- Parmenter, D. (2015). *Key performance indicators: developing, implementing, and using winning KPIs*. John Wiley & Sons.
- 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.
- Phillips, L. (2019). *Top executives fingered in Tongaat Hulett investigation*. Farmer's Weekly. Retrieved 25 November from <https://www.farmersweekly.co.za/agri-news/south-africa/top-executives-fingered-in-tonga-hulett-investigation/>
- Pilcher, R. (2005). Local government financial key performance indicators—not so relevant, reliable and accountable. *International Journal of Productivity and Performance Management*, 54(5/6), 451-467.

- Pocol, C. B., Stanca, L., Dabija, D.-C., Pop, I. D., & Mişcoiu, S. (2022). Knowledge co-creation and sustainable education in the labor market-driven university–business environment. *Frontiers in Environmental Science*, 10, 781075.
- Porter, M. E., & Kramer, M. R. (2006). The link between competitive advantage and corporate social responsibility. *Harvard business review*, 84(12), 78-92.
- Post, J. E., Preston, L. E., & Sauter-Sachs, S. (2002). *Redefining the corporation: Stakeholder management and organizational wealth*. Stanford University Press.
- Power, M. (2004). The risk management of everything. *The Journal of Risk Finance*, 5(3), 58-65.
- Prusak, L. (2010). What can't be measured. *Harvard business review*, 7. <https://hbr.org/2010/10/what-cant-be-measured>
- PWC, P. (2022). *Executive Directors-Practices and remuneration trends report*. <https://www.pwc.co.za/executive-directors-report>
- Raithatha, M., & Komera, S. (2016). Executive compensation and firm performance: Evidence from Indian firms. *IIMB Management Review*, 28(3), 160-169.
- Ramanathan, V., & Feng, Y. (2009). Air pollution, greenhouse gases and climate change: Global and regional perspectives. *Atmospheric environment*, 43(1), 37-50.
- Ramlall, S. (2012). Corporate social responsibility in post-apartheid South Africa. *Social Responsibility Journal*, 8(2), 270-288.
- Rappaport, A. (2006). Ways to create shareholder value. *Harvard business review*, 84(9), 66-77.
- Raven, B. H. (1958). Legitimate power, coercive power, and observability in social influence. *Sociometry*, 21(2), 83-97.
- Richie, C. (2022). Environmental sustainability and the carbon emissions of pharmaceuticals. *Journal of Medical Ethics*, 48(5), 334-337.
- 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.
- Ross, S. A. (1973). The economic theory of agency: The principal's problem. *The American economic review*, 63(2), 134-139.
- Rossouw, G., Van der Watt, A., & Rossouw, D. M. (2002). Corporate governance in South Africa. *Journal of business ethics*, 37, 289-302.
- Rupley, K. H., Brown, D., & Marshall, S. (2017). Evolution of corporate reporting: From stand-alone corporate social responsibility reporting to integrated reporting. *Research in accounting regulation*, 29(2), 172-176.
- Sancak, I. E. (2023). Change management in sustainability transformation: A model for business organizations. *Journal of environmental management*, 330, 117165.
- Sawilowsky, S., Kruskal, F. G., & Test, W. (2005). *Encyclopedia of Statistics in Behavioral Science*. Hoboken. In: NJ: John Wiley and Sons Ltd.
- Schleu, J. L. (2019). *Performance evaluation of equal-weighted and value-weighted portfolios on the JSE University of Pretoria*].
- Scholtz, H. E., Nel, G. F., & Smit, E. V. (2022). Corporate governance of executive directors' remuneration: Measurement and determinant analysis. *Southern African Journal of Accountability and Auditing Research*, 24(1), 65-80.
- Searcy, C., McCartney, D., & Karapetrovic, S. (2008). Identifying priorities for action in corporate sustainable development indicator programs. *Business Strategy and the Environment*, 17(2), 137-148.
- Serafeim, G. (2020). Social-impact efforts that create real value. *Harvard business review*, 98(5), 38-48.
- Settembre-Blundo, D., González-Sánchez, R., Medina-Salgado, S., & García-Muiña, F. E. (2021). Flexibility and resilience in corporate decision making: a new sustainability-based risk management system in uncertain times. *Global Journal of Flexible Systems Management*, 22(Suppl 2), 107-132.
- Sharma, S., & Singh, M. (2018). Corporate governance and firm's performance during subprime crisis: evidence from Indian firms. *Gurukul Business Review*, 14, 12-25.

- Sherwood, M. W., & Pollard, J. L. (2018). The risk-adjusted return potential of integrating ESG strategies into emerging market equities. *Journal of Sustainable Finance & Investment*, 8(1), 26-44.
- Shohet, I. M. (2006). Key performance indicators for strategic healthcare facilities maintenance. *Journal of construction engineering and management*, 132(4), 345-352.
- Shrivastava, P. (1995a). Environmental technologies and competitive advantage. *Strategic Management Journal*, 16(S1), 183-200.
- Shrivastava, P. (1995b). Industrial/environmental crises and corporate social responsibility. *The Journal of Socio-Economics*, 24(1), 211-227.
- Sierra-García, L., Zorio-Grima, A., & García-Benau, M. A. (2015). Stakeholder engagement, corporate social responsibility and integrated reporting: An exploratory study. *Corporate Social Responsibility and Environmental Management*, 22(5), 286-304.
- Signori, S., San-Jose, L., Retolaza, J. L., & Rusconi, G. (2021). Stakeholder value creation: Comparing ESG and value added in European companies. *Sustainability*, 13(3), 1392.
- Singhania, M., & Saini, N. (2023). Institutional framework of ESG disclosures: comparative analysis of developed and developing countries. *Journal of Sustainable Finance & Investment*, 13(1), 516-559.
- Sisodia, R., Wolfe, D., & Sheth, J. N. (2003). *Firms of endearment: How world-class companies profit from passion and purpose*. Pearson Prentice Hall.
- Śledzik, K. (2013). Financial and non-financial value drivers in shareholder value creation process. *Young Scientists Revue, Faculty of Management Science and Informatics*, (ed) Stefan Hittmar, University of Zilina.
- Solikhah, B. (2016). An overview of legitimacy theory on the influence of company size and industry sensitivity towards CSR disclosure. *International Journal of Applied Business and Economic Research (IJABER)*, 14(5), 3013-3023.
- Spero, L. L. (1979). *THE EXTENT AND CAUSES OF VOLUNTARY DISCLOSURE OF FINANCIAL INFORMATION IN THREE EUROPEAN CAPITAL MARKETS: AN EXPLORATORY STUDY*. Harvard University.
- Sprinkle, G. B., & Maines, L. A. (2010). The benefits and costs of corporate social responsibility. *Business Horizons*, 53(5), 445.
- Stanga, K. G. (1976). Disclosure in published annual reports. *Financial management*, 42-52.
- Steenkamp, G., Dippenaar, M., Fourie, C., & Franken, D. (2019). Share-based remuneration: Per-director disclosure practices of selected listed South African companies. *Journal of Economic and Financial Sciences*, 12(1), 1-12.
- Steyn, M. (2014). Organizational 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.
- Strand, R. (2014). Strategic leadership of corporate sustainability. *Journal of business ethics*, 123, 687-706.
- Thabane, L., Ma, J., Chu, R., Cheng, J., Ismaila, A., Rios, L. P., Robson, R., Thabane, M., Giangregorio, L., & Goldsmith, C. H. (2010). A tutorial on pilot studies: the what, why and how. *BMC medical research methodology*, 10, 1-10.
- Tirole, J. (2010). *The theory of corporate finance*. Princeton university press.
- Trotman, K. T., & Bradley, G. W. (1981). Associations between social responsibility disclosure and characteristics of companies. *Accounting, Organizations and Society*, 6(4), 355-362.
- UN. (2015). Transforming our world: the 2030 Agenda for Sustainable Development. *United Nations: New York, NY, USA*.
- UNGC, & KPMG. (2016). *SDG Industry Matrix: Healthcare & Life Sciences*.
- Urdan, T. C. (2022). *Statistics in plain English*. Taylor & Francis.

- van der Meer, T. G., & Jonkman, J. G. (2021). Politicization of corporations and their environment: Corporations' social license to operate in a polarized and mediatized society. *Public relations review*, 47(1), 101988.
- Van Teijlingen, E., & Hundley, V. (2001). The importance of pilot studies. *Social research update*(35), 1-4.
- van Zyl, M. (2021). *Reflecting on the King IV director remuneration recommendations: A financial services perspective* Stellenbosch: Stellenbosch University].
- Van Zyl, M., & Mans-Kemp, N. (2022). Insider perspectives on director remuneration governance deliberations. *Personnel Review*.
- Varachia, Z., & Nkhi, N. (2021). Impression Management Strategies Used When Tweeting: An Analysis of Performance and Market Capitalization. *Communicatio*, 47(3), 104-132.
- Velte, P., & Stawinoga, M. (2020). Do chief sustainability officers and CSR committees influence CSR-related outcomes? A structured literature review based on empirical-quantitative research findings. *Journal of Management Control*, 31(4), 333-377.
- Viviers, S. (2015). Executive remuneration in South Africa: Key issues highlighted by shareholder activists.
- Vlek, C., & Steg, L. (2007). □ Human Behavior and Environmental Sustainability: Problems, Driving Forces, and Research Topics. In (Vol. 63, pp. 1-19): Wiley Online Library.
- Vogel, D. (2007). *The market for virtue: The potential and limits of corporate social responsibility*. Brookings Institution Press.
- Wang, J., Fu, G., & Luo, C. (2013). Accounting information and stock price reaction of listed companies—empirical evidence from 60 listed companies in Shanghai Stock Exchange. *Journal of Business & Management*, 2(2), 11-21.
- Ward, M., & Muller, C. (2010). The long-term share price reaction to black economic empowerment announcements on the JSE. *Investment Analysts Journal*, 39(71), 27-36.
- Weber, M. (2008). The business case for corporate social responsibility: A company-level measurement approach for CSR. *European management journal*, 26(4), 247-261.
- Weber, O. (2014). The financial sector's impact on sustainable development. In (Vol. 4, pp. 1-8): Taylor & Francis.
- Webster, E., & Francis, D. (2019). The paradox of inequality in South Africa: a challenge from the workplace. *Transformation: Critical Perspectives on Southern Africa*, 101(1), 11-35.
- West, A. (2009). The ethics of corporate governance: A (South) African perspective. *International Journal of Law and Management*, 51(1), 10-16.
- Wickert, C., Scherer, A. G., & Spence, L. J. (2016). Walking and talking corporate social responsibility: Implications of firm size and organizational cost. *Journal of Management studies*, 53(7), 1169-1196.
- Widmer, R., Oswald-Krapf, H., Sinha-Khetriwal, D., Schnellmann, M., & Böni, H. (2005). Global perspectives on e-waste. *Environmental impact assessment review*, 25(5), 436-458.
- Young, D., & Guenther, D. A. (2003). Financial reporting environments and international capital mobility. *Journal of accounting research*, 41(3), 553-579.
- Zoni, L., & Pippo, F. (2017). CFO and finance function: what matters in value creation. *Journal of Accounting & Organizational Change*, 13(2), 216-238.
- Zou, H., Zeng, S., Lin, H., & Xie, X. (2015). Top executives' compensation, industrial competition, and corporate environmental performance: Evidence from China. *Management Decision*.

Appendices

Appendix 1: 60 randomly sampled companies based on market capitalization

Sample		
Small	Medium	Large
Brimstone Investment Corporation Limited	Hulamin Limited	Advtech Limited
Sephaku Holdings Limited	Gemfields Group Limited	Anglo American Platinum Limited
Cafca Limited	Afrocentric Investment Corporation Limited	Anglogold Ashanti Limited
Trustco Group Holdings Limited	Hudaco Industries Limited	Aspen Pharmacare Holdings Limited
Kibo Energy Plc	Invicta Holdings Limited	Barloworld Limited
Nampak Limited	Bell Equipment Limited	Clicks Group Limited
London Finance & Investment Group Plc	Santova Limited	Coronation Fund Managers Limited
Murray & Roberts Holdings Limited	Trencor Limited	Datatec Limited
Nu-World Holdings Limited	Enx Group Limited	Exxaro Resources Limited
Calgro M3 Holdings Limited	Lesaka Technologies Inc	Harmony Gold Mining Company Limited
Mc Mining Limited	Cashbuild Limited	Mondi Plc
South Ocean Holdings Limited	Spur Corporation Limited	Netcare Limited
Europa Metals Limited	Grand Parade Investments Limited	Omnia Holdings Limited
Cognition Holdings Limited	Caxton And CTP Publishers And Printers Limited	Remgro Limited
Adcorp Holdings Limited	Metair Investments Limited	Standard Bank Group Limited
Telemasters Holdings Limited	Clientele Limited	Sun International Limited
Vunani Limited	Mustek Limited	The Bidvest Group Limited
Bowler Metcalf Limited	Eoh Holdings Limited	The Foschini Group Limited
Ellies Holdings Limited	Blue Label Telecoms Limited	Tiger Brands Limited
Huge Group Limited	Raubex Group Limited	Truworths International Limited

Appendix 2: Data collection instrument

For presentation purposes, the data collection instrument has been split into two exhibits as presented below.

Exhibit 1 presents column A to M of the data collection instrument

Company JSE listing code	Dual listed (1/0) / (Yes/No)	Intital listing year	Country of PRIMARY LISTING	If dual listed, country of secondary listing	Market Capitalisation (large=1; mid=2; small=3)	Industry	Reporting year	Report (IR/RR/AR)	Place in report	Director or prescribed officer name	Position held by director	Type of KPI Environmental KPI/ Social (En/Soc)
SOL	1	1979	South Africa	United States	1	1	2022	IR	IR Remuneration Report	FR Grobler	CEO	Soc
SOL	1	1979	South Africa	United States	1	1	2022	IR	IR Remuneration Report	FR Grobler	CEO	Soc
SOL	1	1979	South Africa	United States	1	1	2022	IR	IR Remuneration Report	FR Grobler	CEO	En
SOL	1	1979	South Africa	United States	1	1	2022	IR	IR Remuneration Report	FR Grobler	CEO	En
SOL	1	1979	South Africa	United States	1	1	2022	IR	IR Remuneration Report	VD Kahla	Executive	Soc
SOL	1	1979	South Africa	United States	1	1	2022	IR	IR Remuneration Report	VD Kahla	Executive	Soc
SOL	1	1979	South Africa	United States	1	1	2022	IR	IR Remuneration Report	VD Kahla	Executive	En
SOL	1	1979	South Africa	United States	1	1	2022	IR	IR Remuneration Report	VD Kahla	Executive	En

Exhibit 2 presents columns N-V of the data collection instrument

KPI in executive remuneration from report (category)	Notes (Disclosure wording and page reference)	Cash/ SBPT/ Choice/ Both	Long-term/short-term incentive (LT/ST)	Weighting of component LT/STI (%)	Total LT/ST (Currency)	Total remuneration (Currency)	NOTES
Process Safety	page 68, 70. Pursue zero harm through a relentless focus on preventing high-severity injuries and eliminating fatalities. Rebuild trust and create shared value. Health and safety of our employees and communities	Cash	ST	5%	10 008 000	42 945 000	President and CEO's STI is based on the Group STI Scorecard, with a multiplier in respect of individual performance ONLY . President and CEO is the same person. Page 67
Occupational Safety	page 68, 70. Pursue zero harm through a relentless focus on preventing high-severity injuries and eliminating fatalities. Rebuild trust and create shared value. Health and safety of our employees and communities	Cash	ST	5%	10 008 000	42 945 000	
Energy sustainability	page 70 Energy Efficiency Improvement and 200MW secured for Energy.	Cash	ST	15%	10 008 000	42 945 000	Reduction in Carbon Emissions were stated as a short term initiative but hasn't been measured.
New sustainable venture	page 70 Setting up the new sustainable Business Venture by Full ecoFT governance structure established and populated. Two global Ptx partnerships established and feasibility study announced.	Cash	ST	5%	10 008 000	42 945 000	
Process Safety	page 68, 70. Pursue zero harm through a relentless focus on preventing high-severity injuries and eliminating fatalities. Rebuild trust and create shared value. Health and safety of our employees and communities	Cash	ST	5%	5272000	22 975 000	For all other Executive Directors and Prescribed Officers differentiated weightings are applied in respect of Group and BU STI scorecard outcomes. Group scorecard=60%; Business Unit scorecard=40%
Occupational Safety	page 68, 70. Pursue zero harm through a relentless focus on preventing high-severity injuries and eliminating fatalities. Rebuild trust and create shared value. Health and safety of our employees and communities	Cash	ST	5%	5272000	22 975 000	
Energy sustainability	page 70 Energy Efficiency Improvement and 200MW secured for Energy.	Cash	ST	15%	5272000	22 975 000	Reduction in Carbon Emissions were stated as a short term initiative but hasn't been measured.
New sustainable venture	page 70 Setting up the new sustainable Business Venture by Full ecoFT governance structure established and populated. Two global Ptx partnerships established and feasibility study announced.	Cash	ST	5%	5272000	22 975 000	