**Journal of Economic and Financial Sciences**
ISSN: (Online) 2312-2803, (Print) 1995-7076



# Relationship between executive remuneration and performance of South African mining companies

**Authors:**
Tando O. Siwendu[1]
Matthys J. Swanepoel[1]
Olive Stumke[1]

**Affiliations:**
[1]Department of Accounting Sciences, Faculty of Economic and Management Sciences, North-West University, Potchefstroom, South Africa

**Corresponding author:**
Tando Siwendu,
tsiwendu@wsu.ac.za

**Dates:**
Received: 12 May 2023
Accepted: 16 Nov. 2023
Published: 23 Jan. 2024

**How to cite this article:**
Siwendu, T.O., Swanepoel, M.J. & Stumke, O., 2024, 'Relationship between executive remuneration and performance of South African mining companies', *Journal of Economic and Financial Sciences* 17(1), a888. https://doi.org/10.4102/jef.v17i1.888





**Orientation:** Managers are supposed to manage companies to maximise shareholders' wealth. Instead, there are long-standing perceptions that managers are rent extractors who maximise their own wealth, implying a misalignment between executive remuneration and company performance.

**Research purpose:** The purpose of this study was to determine the existence of a relationship between executive remuneration and the financial performance of South African-listed mining companies.

**Motivation for the study:** Executive remuneration significantly increased over the past five decades relative to company financial performance. The mining sector was selected due to its susceptibility to external factors and shocks leading to volatility in the financial performance of mining companies.

**Research approach/design and method:** This study was a quantitative archival study, using data from 2015 to 2021, by applying the hierarchical linear modelling technique at a 95% confidence level and a 5% significance level.

**Main findings:** The study found a weak to strong relationship between executive remuneration and company financial performance. Furthermore, an analysis of executive remuneration revealed an increase in short-term incentive payments and a decrease in the fixed salary as a proportion of chief executive officer remuneration.

**Practical/managerial implications:** Because the study found a strong link between executive remuneration and earnings-based financial performance metrics, governing bodies should ensure that financial performance metrics include cash flow-based financial metrics as company earnings are highly susceptible to management manipulation.

**Contribution/value-add:** This study contributes to the existing literature on executive remuneration and will be useful to researchers, shareholders, boards of directors, remuneration committees and policymakers.

**Keywords:** agency theory; chief executive officer; company financial performance; corporate governance; executive remuneration; mining sector.

## Introduction

The levels of executive remuneration in relation to company financial performance and to the salary of the average worker are topical, controversial and often headline-grabbing in the media. Some recent topical examples in South Africa are the widely reported chief executive officer (CEO) remunerations at Sibanye-Stillwater, Capitec Bank and Absa Bank. The CEO of Sibanye-Stillwater was paid R300 million in 2021 (Faku, Luvhengo & Deklerk 2023). At Capitec Bank, the CEO received R93 million in 2022 (Buthelezi 2022b), while Absa Bank paid a former CEO who left after just 16 months on the job R30 million for leaving the bank (Buthelezi 2022a). There is widespread interest in this topic from investors, policymakers, researchers (Scholtz & Smith 2012), the media, politicians and trade unions (Deysel & Kruger 2015).

Executive remuneration has generated interest from many quarters for more than five decades (Bussin 2018). Executive remuneration problems reportedly started in the 1970s when executive remuneration started to increase at a rapid pace (Frydman & Jenter 2010; Li 2016). Control mechanisms have been introduced to address executive remuneration. Control mechanisms in place include legislation and codes of corporate governance (Bussin 2015). These control mechanisms are constantly revised to strengthen them. For instance, in the United Kingdom, the *1985 Companies Act* was replaced by a *2006 Companies Act* that incorporated regulations published

in the 2002 Directors Remuneration Report that were aimed at improving disclosure and transparency of executive remuneration, among others (Elmagri 2016). The United States enacted the *Sarbanes-Oxley Act* in 2002, which introduced modifications to accounting for clawback rules. The *Dodd-Frank Act* followed in 2011, affording shareholders an advisory vote on executive remuneration (Li 2016). In terms of corporate governance, there are hundreds of corporate governance codes in the world that seek to, among others, address executive remuneration. Mans-Kemp, Erasmus and Viviers (2016) note that there were approximately 420 corporate governance codes in the world in 2015. In South Africa, the King Code has evolved since the introduction of King I in 1994.

Yet notwithstanding all these efforts and control mechanisms, executive remuneration has continued to grow at a rapid pace and it is questionable if it bears any relationship to the company's financial performance. Executive remuneration levels are considered excessive and there is growing criticism regarding them (Padia & Callaghan 2020).

In the mining sector, executive remuneration is comparatively higher than in other sectors, such as telecoms and banking, with executive remuneration increasing more than fourfold in recent times. This has led to a widening wage gap in the mining sector, which contributes to the high-income inequality in South Africa and the acrimonious labour relations in the mining sector (Bussin 2018). High-income inequality has major socioeconomic issues for the country, including high crime rate levels. The mining sector is extremely sensitive to economic cycles and external shocks, leading to volatility in the performance of the sector (Mitchell & Downham 2016). This volatility makes the South African mining sector an ideal industry to study in order to determine whether there is a relationship between executive remuneration and company financial performance.

The agency theory is the dominant theoretical framework that underpins the executive remuneration problems and is, in fact, considered the source of these problems. This theory and other dominant theories, namely the optimal contracting theory and the managerial power theory, are explored in this study in reviewing the literature on executive remuneration. In an agency relationship in the context of executive remuneration, it is accepted that the interests of the agent (managers or executives) and the principal (shareholder) are misaligned, resulting in managers maximising their own wealth instead of maximising the shareholders' wealth (Mans-Kemp & Viviers 2018). The optimal contracting theory attempts to align the interests of the shareholders and managers by designing executive remuneration contracts that link managers' performance to the financial performance of the company so that the manager can pursue value creation opportunities that are in the interests of the shareholders (Matemane 2022). Due to the power that executives have over the board of directors, the managerial power theory argues that executives possess significant influence over their own remuneration (Chen et al. 2011) as they influence the corporate governance mechanisms, processes and policies relating to executive remuneration (Matemane 2022), thereby nullifying the benefits associated with optimal contracting. Although executive remuneration disclosure has been a requirement in South Africa since the introduction of King II in 2002 (Bussin, Wocke & Deysel 2023), the disclosure of executive remuneration has done very little to deter the problem of misalignment of executive remuneration with company financial performance, mostly due to the managerial power theory (Matemane 2022).

In the optimal contracting theory, executive remuneration is viewed as the potential solution to the agency problem, whereas in the managerial power theory, executive remuneration is regarded as part of the agency problem (Matemane 2022).

## Literature review

Most executive remuneration-related problems are rooted in the agency theory (Kirsten & Du Toit 2018). The agency theory is considered one of the most important and oldest theories in economics and finance (Panda & Leepsa 2017), going as far back as the 1776 book of Adam Smith, *The Wealth of Nations* (Agarwal & Singh 2020; Antwi 2021). In a business context, the agency relationship arises from a contractual agreement under which the shareholders (principal) enlist the services of managers (agents) to manage the company on the principals' behalf. In this contractual relationship, the agent is supposed to manage the company in the best interests of the principal by maximising the value of the principal's shareholding (Kirsten & Du Toit 2018).

According to Antwi (2021), Smith argued in his book that an entity that is not managed by its real owners has a chance of not being managed well, to the owner's detriment. This is due to the misalignment of the interests of the agent and the shareholders caused by the agency relationship, which results in the agents maximising their own wealth instead of maximising shareholders' wealth (Mans-Kemp & Viviers 2018).

Various factors are attributed to the agency problem. There is a conflict of interest leading to managers acting in self-interest (Bussin 2018). This managerial behaviour is based on the theory that human actions are motivated to maximise their own needs (Panda & Leepsa 2017). Another reason is the presence of information asymmetry between the agent and the principal due to managers having more information about the company compared to the shareholders (Schneider 2013). Panda and Leepsa (2017) noted the different risk preferences of the manager and the shareholder. Shareholders are risk-neutral because they hold well-diversified portfolios, whereas managers are risk-averse and rent seekers because they only work for one company at a time, rendering it impossible to diversify their own risk (Chen et al. 2011; Panda & Leepsa 2017). Consequently, managers favour risk-averse actions, leading to conflicting positions between managers and shareholders (Chen et al. 2011). The managers' tenure in

the companies they work for is also limited, whereas the entity has an indefinite lifespan. Managers, therefore, seek to maximise their wealth within the limited tenure at an entity before moving on to another entity (Panda & Leepsa 2017).

There appears to be limited yet growing literature of South African studies conducted on executive remuneration and its relationship with company performance. The results from South African studies are presented in Table 1, in descending order from the newest to the oldest publication date. The studies were conducted from 2003 to 2017 and cover a variety of industries. A total of 58% of the reviewed studies showed that there is a relationship of varying strengths between executive remuneration and company financial performance, while 17% showed no relationship whatsoever and the remaining 25% showed mixed results. Although the majority of the studies show the existence of a relationship between executive remuneration and company financial performance, there is still an opportunity to conduct further research into this topic to add to the growing South African literature.

Control mechanisms have been introduced over many years to deal with the agency problems in executive remuneration. These control mechanisms are discussed in the next section.

## Control mechanisms

Control mechanisms are broadly categorised into two streams: the positivist agency theory and the principal-agent theory. The positivist agency theory is concerned with the identification of situations where the principal and agent are likely to have conflicting goals. This theory describes the governance mechanisms that seek to solve the agency problem. On the other hand, the principal-agent theory is concerned with the broad relationship across many spheres, relationships like employer-employee, lawyer-client, buyer-supplier and others. The principal-agent stream is focused on determining the optimal contract and the behaviour against the outcome between the principal and the agent. Although different, these two streams are viewed as complementary (Eisenhardt 1989).

One of the control mechanisms introduced to remedy the agency problem is the introduction of corporate governance codes across the globe and the tightening of legislation that deals with executive remuneration and its disclosure.

## Corporate governance and legislation developments

There are hundreds of corporate governance codes in the world (Mans-Kemp et al. 2016) and most countries have legislation that seeks to regulate executive remuneration. This study takes a brief look at the US, the UK and South African positions.

The United States introduced the *Sarbanes-Oxley Act* in 2002 in response to corporate scandals that led to the demise of

**TABLE 1:** Summary of key findings from previous South African studies on the relationship between executive remuneration and company financial performance.

| Author(s) | Industry | Research period | Company financial performance measure(s) | Relationship | Key findings |
|---|---|---|---|---|---|
| Padia and Callaghan (2020) | JSE-listed companies | 2010–2017 | Revenue, TA, Tobin's Q, ROA | Mixed | Significant relationship between executive remuneration and revenue. There is no significant relationship between executive remuneration and TA, Tobin's Q and ROA. |
| Bussin (2018) | Mining | 2009–2013 | ROE, ROA, AT, EBITDA, HEPS, SP, MC | Yes | The fixed executive remuneration component displays a positive relationship with ROA, MC, revenue and EBITDA. STI strongly correlated with MC and EBITDA. Moderate relationship for STI with revenue and HEPS. Weak relationship for STI with ROA and SP. |
| Kirsten and Du Toit (2018) | Consumer goods and services industry | 2006–2015 | ROE, ROA, EPS, TO, SP | Mixed | SP has a relationship with executive remuneration but no meaningful or significant relationship with any of the traditional performance measures. |
| Bezuindenhout (2016) | SOEs | 2006–2014 | Revenue, OP, NP, LR, SR, ROE | Mixed | Relationship between FP and revenue, total pay and revenue (strong positive), OP (moderate), NP, STI and revenue (weak negative). |
| Bussin and Modau (2015) | JSE Top 40 | 2006–2012 | MC, ROE, EVA, MVA | Yes | The declining relationship between executive pay and company performance, especially since the 2008 financial crisis, is suspected to be linked to the pay strategy of executives moving away from performance-related elements. |
| Bussin and Nel (2015) | Retail and consumer goods | 2006–2011 | Du Pont analysis | No | Financial performance had little to no effect on the guaranteed cost-to-company of the CEO. There was a negative relationship between ROE and guaranteed CEO pay. |
| Deysel and Kruger (2015) | Banking | 2006–2012 | EBITDA, ROE, HEPS | Yes | Significant strong relationship between CEO pay and HEPS, EBITDA and ROE. |
| Theku (2014) | Mining | 2009–2013 | Revenue, EBITDA, ROE, ROA | Yes | Significant and strong relationship between CEO pay and revenue, EBITDA, weak for ROA. |
| De Wet (2012) | JSE-listed companies | 2006–2010 | ROE, ROA, EVA, MVA | Yes | There is a significant relationship between executive pay and company performance and a strong relationship between traditional indicators, ROE and ROE, compared to EVA and MVA. |
| Ngwenya and Khumalo (2012) | SOEs | 2009–2011 | Revenue, TA, ROE | No | No significant relationship was observed. |
| Scholtz and Smith (2012) | AltX companies | 2003–2010 | Revenue, EBITDA, TA, SP | Yes | Significant relationship between executive pay and revenue as well as total assets only. Other variables were non-significant. |
| Shaw (2011) | Financial services | 2005–2010 | EBITDA, NP, ROE, SR | Yes | There is a significant and strong relationship between fixed pay and EBITDA and between total pay and EBITDA and NP. Moderate between variable pay and EBITDA. |

*Source*: Adapted from the original work of Carlson, C. & Bussin, M.H.R., 2020, 'Relationship between executive pay and company financial performance in the South African state-owned entities', *SA Journal of Human Resources Management* 18, 1–11. https://doi.org/10.4102/sajhrm.v18i0.1211

AT, asset turnover; CEO, chief executive officer; EBITDA, earnings before interest tax depreciation and amortisation; EPS, earnings per share; EVA, economic value added; FP, fixed pay; HEPS, headline earnings per share; MC, market capitalisation; MVA, market value added; NP, net profit; OP, operating profit; ROA, return on assets; ROE, return on equity; SP, share price; SR, solvency ratio; LR, liquidity ratio; STI, short-term incentives; TA, total assets; TO, turnover.

companies such as Enron and WorldCom (Mans-Kemp et al. 2016). Through the *Sarbanes-Oxley Act*, the USA legislated corporate governance reforms (Scholtz & Engelbrecht 2015), especially in relation to the accounting treatment of clawback rules (Li 2016). In 2011, the *Dodd-Frank Act* was enacted, granting shareholders a non-binding advisory vote (the say on pay advisory vote) on executive compensation every 3 years (Li 2016). Furthermore, in order to assist shareholders with the say on pay vote, the US Securities and Exchange Commission requires companies to disclose the ratio of the CEO pay to the median employee pay for fiscal years beginning on or after 01 January 2017 (Li 2016).

Also, in response to various corporate scandals in the 1980s, the United Kingdom published the Cadbury Report in 1992, the Greenbury Report in 1995 and the Hampel Report in 1998, all looking at various aspects of corporate governance. These three reports led to the publication of the Combined Code of Corporate Governance in 1998 (Elmagri et al. 2018). The Combined Code has evolved over time with frequent revisions. Another development in the United Kingdom was the replacement of the *1985 Companies Act* by a *2006 Companies Act*. The *2006 Companies Act* incorporated regulations published in the 2002 Directors Remuneration Report that were aimed at improving disclosure and transparency of executive remuneration and requiring mandatory activism by shareholders on executive remuneration by having a say through a vote on executive remuneration, the say on pay vote. The United Kingdom's Code of Corporate Governance follows a principle-based approach based on comply or explain philosophy (Elmagri 2016).

In South Africa, the first code of corporate governance (King I) was introduced in 1994. In South Africa, corporate governance codes are not legislation but merely codes intended to promote good corporate governance in entities and are complementary to legislation. It is compulsory for companies listed on the Johannesburg Stock Exchange (JSE) to comply with the code of corporate governance. King I set the standards for the conduct of directors of JSE-listed companies with a focus on the accountability of boards of directors to the shareholders. King II, which was introduced in 2002, provided guidelines on stakeholder relationships and the triple bottom line, among others. King III, published in 2009, recommended the compilation of an integrated report by JSE-listed companies, reflecting on the sustainability of a company from a financial and non-financial perspective (Mans-Kemp et al. 2016).

King IV was introduced in 2016 and came into effect on 01 April 2017. King IV has been condensed to just 17 basic principles compared to 75 principles contained in King III. In response to the criticism of the 'apply or explain' approach adopted by King III, which was viewed as a tick-box exercise, King IV adopted the 'apply and explain' approach. This approach is intended to encourage those charged with governance to view corporate governance as a meaningful exercise intended to allow stakeholders to make informed decisions about whether or not the organisation is upholding good corporate governance instead of viewing it as a mindless compliance exercise. King IV encourages transparent and meaningful reporting to stakeholders (Institute of Directors in Southern Africa [IoDA] 2016; Van Zyl & Mans-Kemp 2020).

According to IoDA (2016), remuneration issues receive great prominence in King IV, as King IV aims to foster enhanced accountability on remuneration. The board is given the ultimate responsibility of ensuring fair and responsible remuneration. One of the ways of achieving this objective is by including more definitive disclosures. Principle 14 of King IV places emphasis on transparency of the remuneration policy by requiring a three-part disclosure of the remuneration report included in the integrated report in order to ensure that the organisation remunerates fairly, responsibly and transparently.

King IV requires that the remuneration report prepared by the governing body must contain the following:

- A background statement that provides context for the remuneration policy and decisions.
- An overview of the remuneration policy.
- An implementation report detailing the remuneration awarded, accrued and paid to each director and prescribed officer as a result of the implementation of the policy.

King IV offers shareholders an opportunity to influence the remuneration policies and practices of a company (Scholtz & Engelbrecht 2015). Institute of Directors in Southern Africa (2016) recommends shareholders to pass separate non-binding advisory votes on the remuneration policy and on the implementation report. There have been calls for the non-binding vote to be made a binding vote (Van Zyl & Mans-Kemp 2020), like in the United Kingdom for instance (Gregory-Smit & Main 2014). The non-binding vote is not strong enough and management can simply ignore the shareholders' views on executive remuneration (Matemane 2022). The motivation behind changing the non-binding vote to a binding vote is the expectation that the binding vote will enhance the responsiveness of the vote to directors' pay (Gregory-Smit & Main 2014). King IV, instead of having a binding vote, tightened the recommendation on voting and required the remuneration policy to record the measures that the board commits, where 25% or more have voted against either the implementation report, policy report or both. King IV recommends the measures taken by the board should include engagement and addressing the objections and concerns (IoDA 2016). Such measures may include the amendment of the remuneration policy or the clarification or adjustment of remuneration governance and/or processes (PwC 2016).

King IV also recommends that performance measures should not only be limited to the financial performance of the entity but should also cover the triple context in which the entity operates. The triple context comprises the

three pillars: the economic (profit), the social (people) and the environmental (planet) pillars. Performance measures based on the triple context are aimed at promoting integrated thinking and ensuring the creation of sustainable value (International Integrated Reporting Council [IIRC] 2011). King IV recommends that the board uses remuneration as a tool to ensure that the business creates value in a sustainable manner within the economic, social and environmental context in which the company operates. Specifically, for executive remuneration, King IV recommends that an organisation provides an account 'of the performance measures and targets used as a basis for awarding of remuneration' (IoDA 2016). The remuneration disclosures must include the targets for the performance measures and the amount of the award opportunity. The disclosures for each performance measure must show how the company and the executive managers individually performed against the set targets (Deloitte 2017).

However, notwithstanding all of the aforementioned developments aimed to foster enhanced accountability on executive remuneration, there could still be a disconnection between executive remuneration and company financial performance due to the optimal contracting theory and the managerial power theory, which are discussed in the following sections.

## Optimal contracting theory

The optimal contracting theory is considered an extension of the agency theory. It suggests that executive remuneration design should link to the companies' performance in order to ensure a mutually beneficial process for executives and shareholders (Matemane 2022). Executive remuneration should be designed to attract and retain talented CEOs, incentivise CEOs to exert effort, exploit growth opportunities, reject wasteful projects and minimise the cost of doing business in order to maximise the wealth of shareholders (Edmans & Gabaix 2009). It was expected that efficient or optimal contracting would eliminate agency problems (Bussin 2018). However, some evidence appears to suggest that CEO remuneration bears little relationship to a company's financial performance. For instance, the severance packages paid to failed CEOs, rewarding CEOs for luck and the high levels of stock options compared to shares are some of the examples that are inconsistent with optimal contracting (Bussin & Modua 2015). The design of executive remuneration contracts, although necessary and beneficial, can lead to opportunistic managerial behaviour (Faulkender et al. 2010).

## Managerial power theory

The managerial power theory refers to the power the CEO has over the board of directors and how this power impacts the CEO's salary. Matemane (2022) states that CEOs influence and exploit the very same corporate governance mechanisms and policies that have been put in place to manage the agency problem for their benefit. Executives exploit their advantage of running the day-to-day operations. The managerial power approach sees managers possessing significant influence over their remuneration packages (Chen et al. 2011) and extracting rent from companies (Frydman & Jenter 2010), leading to increased executive compensation even when there is no corresponding increase in company performance (Matemane 2022). The phenomena of rent extraction are explained by Bebchuck, Fried and Walker (2002). According to this theory, executives have considerable power over the board of directors, including power over the independent directors.

Therefore, executives use the considerable power they have to increase their remuneration, as the setting of executive remuneration is not at the ideal arm's length position. The excess remuneration executives receive due to their positional power is commonly referred to as rent. This extracted rent is the excess amount executives receive compared to what the executive would receive if the contract maximised shareholder value as envisioned under the optimal contracting theory. The extent of the power the executive has over the board depends on the ownership structure and the board composition. Matemane (2022) provides an example of executives manipulating the remuneration process to their favour where, for instance, executives reduce the fixed pay of their remuneration and replace the reduced fixed pay with increased incentives such as share options.

Research shows that as the power of the CEO has increased, the remuneration has also increased and the sensitivity of the remuneration to financial company performance has decreased (Bussin & Modau 2015). Although there are various measures in place to manage executive remuneration, such as corporate governance disclosure requirements, executives can use tactical reporting to counter some of these measures. Tactical reporting refers to the use of language that is difficult to understand by the readers of annual reports or the concealment of some of the remuneration under fringe benefits, share options and other remuneration components that are not easily understood by the readers of annual reports (Matemane 2022). Such action is against the requirements of transparent and meaningful reporting to stakeholders encouraged by King IV. In short, executive compensation or certain features of it, under the managerial power approach, are viewed as part of the agency problem and not a remedy to the agency problem as advocated by the optimal contracting theory (Bebchuck et al. 2002).

In order to manage these agency problems that have led to the introduction of control mechanisms discussed earlier, agency costs are incurred by the entity and the principal.

## Agency costs

Agency costs are the costs incurred when 'monitoring and rewarding the managers so that managerial self-interest is aligned with that of shareholders, and the overarching goal of maximising shareholder value is achieved' (Schneider 2013). Jensen and Meckling (1976) define

agency costs as the sum of monitoring costs, bonding costs and residual loss. Monitoring costs include the costs of recruitment, training and development, cost of maintaining boards of directors, remuneration and the costs of evaluating the agents' behaviour, performance incentive schemes and costs related to the award of share options (Kirsten & Du Toit 2018; Panda & Leepsa 2017). Bonding costs are incurred when creating or introducing incentives that are aimed at aligning the interests of the agent and the principal (Schneider 2013). Monitoring costs and bonding costs move in the opposite direction, meaning that when bonding costs increase, monitoring costs decrease and vice versa (Panda & Leepsa 2017). The misalignment of interests and goals between the principal and the agent leads to agency costs that are referred to as residual loss. This residual loss is a consequence of the inefficient decisions made by the management (agent). In order to reduce the residual loss, the principal incurs the monitoring and bonding costs discussed earlier (Jensen & Meckling 1976; Panda & Leepsa 2017).

The primary objective of executive management is to maximise the wealth of the company shareholders, even if there is a divergence of interests. For shareholders to determine if their wealth has been maximised, they ought to be able to measure the performance of the company. Performance measures are used to evaluate whether the company has achieved its objectives or not (Roode 2016).

## Company financial performance measurements

There are several inputs and variables used to measure a company's financial performance (Carlson & Bussin 2020). Resnick (2013) notes that the performance of a company is measured by using multiple performance measures that can be tracked and measured by the board. Financial performance measures are typically divided into accounting-based performance measures and market-based performance measures (Bussin 2018; Kirsten & Du Toit 2018; Scholtz & Smit 2012). Accounting-based performance measures use accounting data as the basis for the computation of financial ratios used to measure the performance of a company. Market-based performance measures use share market performance to measure the performance of the company (Bussin 2018). Accounting-based performance measures include absolute financial indicators and financial ratios (Carlson & Bussin 2020). Absolute financial indicators include indicators like revenue or turnover (TO), earnings before interest tax depreciation and amortisation (EBITDA), earnings before interest and tax (EBIT), total assets (TA), earnings per share (EPS), headline earnings per share (HEPS) and economic value added (EVA). Financial performance ratios include ratios such as return on equity (ROE) and return on assets (ROA). Market-based performance measures include market capitalisation (MC), market value added (MVA), change in share price (ΔSP), price-earnings ratio (P/E) and earnings yield (EY) (Bussin 2018; Bussin & Modau 2015; Kirtsen & Du Toit 2018; Scholtz & Smit 2012). This study used revenue, ROA, ROE, HEPS, ΔSP, MC, EY and P/E ratio as the company's financial performance indicators as they are widely used in the literature.

The mining sector is the focus of this study because of its unique set of characteristics and challenges.

## Mining sector

The mining sector is claimed to have a high wage gap (Bussin 2018; Scholtz & Smit 2012; Viviers 2015). This results in acrimonious relationships between management and labour as witnessed by often violent and prolonged labour action, such as the Lonmin strike, where workers demanded a salary increase of R7000 from R5000 to R12 000 per month (South African History Online 2014). The high wage gap contributes to the widening high-income inequality recorded in South Africa. South Africa consistently ranks as one of the most unequal countries in the world measured by the Gini coefficient (World Inequality Report 2022). Furthermore, the salaries of the CEOs of mining companies were higher than those of their telecom and banking counterparts, which is out of proportion compared to their company's financial performance (Bussin 2018).

The mining sector is also one of the JSE sectors that is most affected by economic cycles and external shocks, making its financial performance highly sensitive to external factors. The financial results of the mining companies are affected by factors outside the companies' control, such as commodity cycles, commodity prices and the USD/ZAR exchange rate (Mitchell & Downham 2016). The mining sector is also vulnerable to external shocks as witnessed previously, namely the 1981–1987 oil shock, the collapse of the Soviet Union in 1991–1994, the 2001–2004 dot.com bubble, the global financial crisis in 2008–2009, the 2015–2016 commodity price crises (Azavedo et al. 2020), COVID-19 (PwC 2021), and the Russia-Ukraine conflict (PwC 2022).

Based on this volatility, the South African mining sector is considered an ideal industry that should be able to demonstrate the existence or non-existence of the relationship between executive remuneration and company performance. It is expected that the effects of fluctuations in company financial performance can be witnessed in the variable component of executive remuneration because variable remuneration by its nature is supposed to vary or fluctuate in line with the company's financial performance.

## Contribution of the study

This study expanded and refined the study by Bussin (2018). Like Bussin (2018), this study only focused on the mining sector. In contrast, this study only included JSE-listed mining companies in order to eliminate the influence of other jurisdictions or frameworks. Finally, as a further refinement

to existing studies, this study used hierarchical linear modelling (HLM) for regression analysis, as the analysed data are hierarchical in nature. This is the first known study to use this method when determining the relationship between executive remuneration and company financial performance.

Another contribution of this study is to highlight the point that the relationship between executive remuneration and company financial performance should not use generic company financial performance indicators, as specific industries use specific indicators because of the nature of their operations. Therefore, in addition to generic company financial performance indicators like profit measurement, researchers should identify the key financial performance indicators most relevant to the industry and assess this relationship based on those relevant financial performance indicators.

# Research design and methods

## Research approach and questions

The objective of this study was to determine the existence of a relationship between executive remuneration and company financial performance in the South African mining sector. This study adopted an archival longitudinal approach using quantitative statistical research design methods in order to determine this relationship, and applied the fixed effects method to control for variables that differ across the companies under study. The data used for this study were numerical secondary data contained in the published annual reports of the companies. The annual reports were obtained from the official websites of the companies under study. An analysis of the data for the CEO remuneration and financial performance indicators for the period 2015–2021 was undertaken.

This study seeks to answer the following research question:

Is there a relationship between executive remuneration and company financial performance in the South African mining sector?

## Data collection and sampling

The secondary financial data required for this study were obtained from the published annual reports of the companies, obtained from each company's website. The remuneration and the revenue were obtained from the annual reports. The ROE, ROA, HEPS, EY and P/E ratio were calculated from the figures obtained in the annual reports. The SPs of the companies were obtained from the annual reports or, if not available, from the website of the company concerned. The period of this study was for the financial years ending on 31 March 2015 up to 31 March 2021, a 7-year time horizon, which covers both the King III and King IV reporting periods. The study applied purposive sampling to select only companies listed on the JSE's mining sector.

The study only focused on companies solely listed on the JSE, meaning that dual-listed companies were excluded from this study in order to eliminate the impact of other listings and jurisdictions on the reported numbers (Thomson et al. 2018). Out of the 36 listed mining companies at the time of the collection of data, 11 companies met the conditions for this study, resulting in 77 individual company observations. The companies that were excluded were either dual-listed or were not listed for all the years under study. Similar to the study by Kirsten and Du Toit (2018), this study focused only on one sector in order to eliminate the need to make adjustments for industry-specific differences between companies.

## Data reliability and trustworthiness

Resnick (2013) states that reliability in research studies measures the sustainability and applicability of results. The data used in this study were obtained from the audited published annual financial statements that were downloaded from the websites of the selected mining companies. The information obtained from published annual financial statements is publicly available and has been audited by independent external auditors. According to PwC (2017), the external audit of financial statements improves confidence in the financial statements and provides assurance that the audited financial statements are a fair reflection of the companies' financial performance and position. The audit enhances the users' confidence in the reported information. Audited financial statements are intended to be relied upon by their users. Therefore, the data obtained from these financial statements are considered to be credible, reliable and trustworthy.

## A brief on the companies used

Eleven JSE-listed mining companies were analysed for this study. All these mining companies are listed on the JSE only. At the time of the study, two of the companies were ranked among the JSE top 40 companies by MC. Market capitalisation is the total value of a publicly traded company's outstanding shares. Outstanding shares are shares of a company currently held by all shareholders (JSE 2022). According to the JSE (2022), the top 40 companies are large capitalisation companies. Small capitalisation companies are considered higher risk companies due to the markets they serve and their size (JSE 2022). Medium capitalisation companies fall in between the top 40 largest companies and the small cap companies. Two companies are regarded as medium cap companies as their MC was R40 billion and R57bn, respectively. The remaining seven companies are small cap companies with an MC ranging from R75m to R3bn. Using market cap as a proxy for size, the sampled companies are representative of the sizes of JSE-listed companies as they cover all the available sizes of listed companies. The same observations and conclusions about the size of these companies and their representativeness emerged when using revenue as a proxy for size.

## Data analysis and discussion

Trochim (2022) considers data analysis to be an activity that typically involves the cleaning and organising of the data for analysis (data preparation), description of the data (descriptive statistics), and the answering of research questions or hypotheses. For data preparation, the required data were sourced from the published annual financial statements and captured in the required format in Microsoft Excel in accordance with the research design requirements.

Eight independent variables consisting of four accounting-based and four market-based company financial performance measures were used for this study. The accounting-based performance measures are revenue, ROE, ROA and HEPS. The market-based performance measures are ΔSP, MC, P/E ratio and EY. These eight independent variables were selected because they are widely used in executive remuneration-related research (Bussin & Modau 2015) and for the ease with which interested parties can obtain or calculate them (Kirsten & Du Toit 2018). Carlson and Bussin (2020) note that absolute financial metrics such as revenue and earnings are ideal measures of financial performance because they are observable financial measures as they are obtainable from audited financial statements. These performance measures are defined in Table 2.

Descriptive statistics for these variables are presented in Table 3. Descriptive statistics describe the main features of the data. Table 3 provides information about the central tendency of the data through the mean and median values and about the dispersion of data about the mean through the minimum, maximum and standard deviation values. Kurtosis measures the tailedness of a distribution. The tailedness is impacted by the frequency of the occurrence of the outliers. Skewness is a measure of asymmetry of a distribution.

**TABLE 2:** Company financial performance measures.

| Performance measure | Definition |
|---|---|
| **Accounting-based performance measures** | |
| HEPS | Headline earnings are an additional earnings number that is used by South African companies as required the South African Institute of Chartered Accountants. Headline earnings measure sustainable earnings. They are calculated by excluding remeasurements identified by the South African Institute of Chartered Accountants (2019). |
| Revenue | 'Revenue or turnover is the money that is received by a company through normal business activities during a specified period' (Carlson & Bussin 2020). |
| ROE | 'ROE expresses the percentage of net earnings relative to the company's shareholders' equity. It is the rate of return on the money that equity investors have put into the business. This ratio is one that is particularly watched by investors and analysts. Companies with a high ROE are said to be more capable of generating cash internally and are therefore less dependent on debt financing' (Bordeianu & Radu 2020). |
| ROA | 'ROA expresses the percentage of net earnings relative to the company's total assets. The ratio reveals how much after-tax profit a company generates for every one rand of assets it holds' (Bordeianu & Radu 2020). |
| **Market-based performance measures** | |
| The following selected market value ratios indicate the relationship between a firm's SP and its earnings. 'They are indicators of what investors think of the firm's past performance and its future prospects' (Correia et al., 2019). | |
| ΔSP | This is a change in the listed price of ordinary shares due to the increase or a decrease in the entity's listed share price. |
| EY | 'The ratio indicates the yield demanded by investors' (Correia et al. 2019). |
| MC | 'The total value of issued shares of a publicly listed company. This figure is used to determine an organisation's size' (Bussin & Modau 2015). |
| P/E | 'This ratio shows how much investors are willing to pay per rand of reported profits. The price is regarded as a multiple of the year's earnings' (Correia et al. 2019). |

HEPS, headline earnings per share; ROE, return on equity; ΔSP, share price; MC, market capitalisation; ROA, return on assets; EY, earnings yield; P/E, price-earnings ratio.

In Table 3, the median values are much lower than the mean values, as the mean values are impacted by the outliers because one of the companies in this sample was the 10th largest company in the JSE. The mean and median values for the CEO remuneration are R8.2 and R6.8m, respectively, and they range from R1.3 to R34m. As a reminder, the CEO remuneration here excludes the long-term incentive awards, hence the mean and median values appear low.

The mean and median returns measured by ROA and ROE are very low, at 4% or less, and vary significantly as measured by the minimum and maximum values. Earnings yield is also low. The mean change in the share price per annum over the period is a healthy 19%, which is indicative of the risks and the volatility in this sector. The kurtosis and skewness show that the data are not normally distributed, as they are impacted by the outliers except for the change in share price with a kurtosis of approximately 3. According to Kirsten and Du Toit (2018), departures from normalcy in financial time series are not uncommon in literature, as indicated by this study.

The average increase in the FP over the years under study presented in Table 4 is 4%. The short-term incentive payment over the same period increased by a staggering 25%. The effect of the 25% average increase in the short-term variable portion against the 4% in the fixed-term portion is evident in changes in the proportion of the FP and variable short-term remuneration to total remuneration. The FP component made up 76% of total remuneration in 2015, and by 2021, it made up 56%, with the short-term portion increasing from 24% to 44% over the same period. These findings about the steady decrease in the fixed portion of CEO remuneration are in contrast with Bussin and Modau (2015), who concluded that there was an increase in FP as a percentage of CEO remuneration accompanied by a decrease in short-term incentive payments leading to a dissonance between CEO remuneration and company performance. However, the trend observed in this study supports evidence provided by Faulkender et al. (2010) and Edmans, Gabaix and Jenter (2017) of a decrease in base salaries as a percentage of total remuneration.

Following the descriptive statistics performed earlier, the study applied the quantitative statistical analysis using a multivariate regression analysis. A multivariate regression analysis examines two or more variables, and most multivariate analysis involves a dependent variable and multiple independent variables, as is the case in this study.

**TABLE 3:** Descriptive statistics.

| Variable | Mean | Median | Minimum | Maximum | Std. deviation | Kurtosis | Skewness |
|---|---|---|---|---|---|---|---|
| CEO remuneration | R8.2m | R6.8m | R1.3m | R34m | R5.6m | 4.13 | 1.55 |
| Revenue | R10.8bn | R5.3bn | R64m | R102bn | R18bn | 10.47 | 3.06 |
| Return on equity | 4% | 3% | −137% | 84% | 28% | 7.46 | −1.08 |
| Return on assets | 4% | 2% | −42% | 77% | 17% | 4.18 | 1.2 |
| Headline earnings per share (HEPS) | 726cc | 12c | −203c | 10 365c | 1760c | 12.68 | 3.31 |
| Change in share price (change year on year) | 19% | −3% | −83% | 286% | 65% | 2.95 | 1.61 |
| Market capitalisation | R16 728m | R1 603m | R22,5m | R199 729m | R35 400m | 11.06 | 3.18 |
| Earnings yield | −4% | 4% | −165% | 91% | 36% | 5.33 | −1.77 |
| Price-earnings ratio | 35 | 5 | −74 | 1878 | 226 | 76.76 | 8.57 |

CEO, chief executive officer; HEPS, headline earnings per share.

**TABLE 4:** Analysis of chief executive officer remuneration.

| Year | Annual average: Fixed pay R'000 | Annual average: Short term R'000 | Annual average: Total R'000 | Average change: Fixed pay (%) | Average change: Short term (%) | Split: Fixed pay | Split: Short term |
|---|---|---|---|---|---|---|---|
| 2015 | 4730 | 1495 | 6225 | - | - | 0.760 | 0.240 |
| 2016 | 4720 | 2153 | 6873 | 0 | 44 | 0.687 | 0.313 |
| 2017 | 4875 | 2318 | 7193 | 3 | 8 | 0.678 | 0.322 |
| 2018 | 5267 | 3290 | 8557 | 8 | 42 | 0.615 | 0.385 |
| 2019 | 5523 | 2589 | 8113 | 5 | -21 | 0.681 | 0.319 |
| 2020 | 5802 | 2842 | 8644 | 5 | 10 | 0.671 | 0.329 |
| 2021 | 6138 | 4808 | 10 946 | 6 | 69 | 0.561 | 0.439 |
| Mean | 5294 | 2785 | 8079 | 4 | 25 | - | - |

Multivariate statistical methods emphasise correlation and explanation rather than description (Hall 2017). A multivariate regression analysis using the HLM was performed in order to determine the existence of a relationship between executive remuneration and company financial performance using SAS release 9.4 TS Level 1M3 X64, where the company was used as a primary unit of measurement to account for interclass correlations. Executive remuneration was compared to the company's financial performance using the eight independent variables already outlined earlier to determine whether a relationship exists between company financial performance and executive remuneration.

This study applied the HLM regression analysis because the data are both time-dependent and dependent on the company from which it was obtained. This is because the structure of the data being dealt with is hierarchical in nature, as the independent variables used in this study are nested within companies, similar to how, for instance, patients are nested within hospitals, students nested within schools and workers nested within companies (Hancock & Mueller 2010; Sullivan, Dukes & Losina 1999). A *p*-value (significance level) of less than 5% or 0.05 was used for regression purposes in order to determine the significance of the correlation. A correlation with a *p*-value of less than 5% or 0.05 is considered significant at a 95% confidence interval (Kirsten & Du Toit 2018).

## Ethical considerations

Ethical clearance to conduct this study was obtained from the North-West University, Economic and Management Sciences Research Ethics Committee (No. NWU-00885-21-A4).

# Results and discussion

The following section presents regression analysis results and discusses whether the increase in short-term incentives evident in the above discussion is driven by financial company performance or not.

## Regression analysis

For regression analysis, the study adopted a two-level HLM approach, also known as the mixed approach. In individual analysis, the regression was tested against each individual or separate independent variable using the type III tests of fixed effects. In this case, the type III tests of fixed effects seek to provide an answer to the primary research objective of this study by looking at the significance of each fixed effect (independent variable) on CEO remuneration. The primary research objective of this study is to establish if there is a relationship between CEO remuneration and company financial performance. The results of this regression are presented in Table 5.

Table 5 outlines the results of a significant regression relationship between the dependent and independent variables (fixed effects). The significance of the correlation is determined by applying a *p*-value of 5%, which is the significance (Sig.) column in the table. Statistically, a correlation with a *p*-value of less than 5% or 0.05 is considered significant at a 95% confidence interval. Df refers to degrees of freedom and these are the parameters required for the calculation of the *p*-value or significance level. The table

**TABLE 5:** Individual type III tests effects.

| Financial performance indicator | Numerator df | Denominator df | F | Sig. |
|---|---|---|---|---|
| Revenue | 1 | 58 313 | 6775 | 0.012 |
| Return on equity | 1 | 77 235 | 4945 | 0.029 |
| Return on assets | 1 | 76 327 | 9317 | 0.003 |
| Headline earnings per share | 1 | 83 931 | 13 004 | 0.001 |
| Change in share price y/y | 1 | 63 284 | 000 | 0.995 |
| Market capitalisation | 1 | 82 562 | 4061 | 0.047 |
| Earnings yield | 1 | 76 006 | 3900 | 0.052 |
| Price-earnings ratio | 1 | 74 707 | 82 812 | 0.000 |

Dependant variable – CEO remuneration.

shows that at an individual level of the independent variables, there is a correlation between CEO remuneration and all the separate independent variables that measure the financial performance of a company except for the change in the share price because the *p*-value (Sig. column) is ≤ 0.05 on all but the ΔSP year on year. The independent variables that have the strongest relationship with CEO remuneration are the ones with the lowest *p*-value. These are the P/E ratio, HEPS, ROA and revenue.

Due to the strange result of the change in the share price observed in Table 5, which returned a high probability (*p*) value of 99.5% when the MC's probability was only 4.7%, a second regression was performed on the standardised data in order to eliminate the likelihood of the scale of the data influencing the significance in the first regression. This second regression was run because there was some expectation in the regression analysis that the results of the ΔSP would have some similarity to those of the MC as both are driven by the share price movement. In the first regression, there were multiple values that were used, like millions, thousands, cents and percentages. The second regression standardised all the units of measurement to be between −1 and +1 by fractionalising the values. The results of the adjusted regression were, however, identical to the first regression in Table 5. However, some differences were observed at level 2 (multiple regression), which is discussed next.

After running the first regression, all the independent variables that exhibited a strong correlation with CEO remuneration were combined to run an HLM multiple regression, where regression was performed and the independent variable that did not exhibit a unique correlation to CEO remuneration was eliminated, and a new regression was run again. This process was repeatedly performed until only three statistically significant independent variables remained that exhibited a strong relationship between CEO remuneration. The eliminated independent variables were revenue, ROE and EY. Following these eliminations, Table 6 and Table 7 show the correlation of executive remuneration to the remaining independent variables when aggregated together.

The results in Table 7 were obtained after standardising the units of measurement as already explained. The parameters used to calculate the significance or *p*-value were different in

**TABLE 6:** Multiple regression type III tests of fixed effects (initial).

| Source | Numerator df | Denominator df | F | Sig. |
|---|---|---|---|---|
| Return on assets | 1 | 71.023 | 8.398 | 0.005 |
| Headline earnings per share | 1 | 72.235 | 13.994 | 0.000 |
| Price-earnings ratio | 1 | 71.338 | 114.932 | 0.000 |

Dependant variable – CEO remuneration.

**TABLE 7:** Multiple regression type III tests of fixed effects (standardised).

| Source | Numerator df | Denominator df | F | Sig. |
|---|---|---|---|---|
| Return on assets | 1 | 72.256 | 7.404 | 0.008 |
| Headline earnings per share | 1 | 78.363 | 11.244 | 0.001 |
| Price-earnings ratio | 1 | 72.264 | 110.708 | 0.000 |

Dependant variable – CEO remuneration.

Table 7 compared to Table 6. This led to different sig. or *p*-values. Table 7 indicates that CEO remuneration is strongly correlated with the P/E ratio, HEPS and ROA in that specific order, as the *p*-value of these independent variables (fixed effects) is < 0.05.

This study finds that CEO remuneration in the South African mining sector has a relationship with three of the selected eight financial performance indicators. These performance measures are the P/E ratio, HEPS and ROA. These findings of a strong relationship between profits and ROA support some of the previous studies but contradict with others based on the performed literature review.

There is sufficient available evidence to conclude that the findings on CEO remuneration in the past have been varied and inconclusive. However, Bussin and Blair (2015) advised that the subject of CEO remuneration and its relationship to company performance is best approached per industry because the nature of the industry and its dynamics differ from industry to industry, leading to the use of different performance measures in different industries, in addition to general earnings performance measures. The paper by Bussin and Blair (2015) divided the economy into five broad industries. The paper found that at a national level, that is, all industries, profit had the most significant relationship to executive remuneration, which was unsurprising given that the core reason for the existence of businesses is the making of profit. Coming to individual industries, Bussin and Blair (2015) found that in the extractive industry, which is capital-intensive in nature, there was a positive and strong relationship between CEO remuneration and fixed assets and profits. The authors found that the combination of a profit measure and fixed assets as performance measures would deliver the ROA expected by shareholders from companies in this industry. The mining sector falls into this extractive industry. Bussin (2018), when analysing the South African mining sector, found a strong relationship between CEO remuneration and HEPS (a measure of profit in South Africa), MC and ROA. Therefore, this study supports the findings of Bussin and Blair (2015) and Bussin (2018). The only area of difference is that this study did not find a relationship between CEO remuneration and MC, unlike Bussin (2018). This could be due to the different sampling

techniques adopted for these studies as this study focused solely on JSE-listed mining companies while Bussin (2018) studied all companies in the South African mining sector, including the dual-listed companies who are subject to other regulations in other jurisdictions.

## Conclusion

This study's primary objective was to establish if a relationship exists between executive remuneration and company financial performance in the South African mining sector, and the strengths of such a relationship, should it exist. The study found evidence of the existence of a strong relationship of executive remuneration with the P/E ratio, HEPS and ROA, a weak relationship revenue, MC, ROE and EY, and no relationship with share price changes in the South African mining sector. These results agree with the perspective of Bussin and Blair (2015) that executive remuneration is best analysed per sector because different sectors have different performance measurement bases apart from the universal profit measurement basis. Overall, based on the fact that seven of the eight independent variables selected in this study exhibited a relationship (weak to strong) between executive remuneration and company financial performance in the South African mining sector, the study concludes that there is a relationship between executive remuneration and company financial performance in the South African mining sector.

Furthermore, this study found conclusive evidence of a decrease in the fixed salary and an increase in the short-term incentive payments as a proportion of the total CEO remuneration during the period under study in contrast to Bussin and Modau (2015), but is in support of Faulkender et al. (2010) and Edmans et al. (2017). This finding may appear at odds with the long-standing perception that managers are rent extractors, as the increase in short-term incentive payments is an indication of an alignment or an attempt to align managers' remuneration to firm performance in the short term. However, caution must be exercised in interpreting this because Matemane (2022) indicated that one of the examples of rent extraction is for executives to reduce the fixed pay when structuring their remuneration, only for the reduced fixed pay to be compensated for by an increase in other incentives such as share options. Share options are part of long-term incentives. This study did not venture into long-term incentives.

There were several limitations to this study, which may provide opportunities for future research. The variable portion of executive remuneration was limited to short-term incentives. Long-term incentives were not considered in this study. This study focused on the mining sector only. This study could be replicated in other sectors that have not been the subject of previous research. Another limitation is that of excluding dual-listed companies.

A comparison of the dual-listed companies to those listed only on the JSE could be performed. Finally, the gap between CEO salary and lowest paid employee versus other countries is another research area that could be investigated. South Africa ranks as one of the most unequal countries in the world and has had a growing wage gap since the advent of democracy. Research into this field could assist policymakers in addressing the growing inequality.

## Acknowledgements

### Competing interests

The authors have declared that no competing interest exists.

### Authors' contributions

T.O.S. conceptualised and wrote the study under the direct supervision of M.J.S. O.S. reviewed the draft manuscript and provided valuable inputs towards its improvement.

### Funding information

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

### Data availability

The data used for this study are publicly available. The data were obtained from published company financial statements that were obtained from the websites of the companies under study.

### Disclaimer

The views and opinions expressed in this article are those of the authors and are the product of professional research. It does not necessarily reflect the official policy or position of any affiliated institution, funder, agency, or that of the publisher. The authors are responsible for this article's results, findings, and content.

## References

Agarwal, S. & Singh, A., 2020, 'Relationship between managerial ownership and agency cost', *International Journal of Financial Management* 10(4), 35–43.

Antwi, I.F., 2021, 'Bibliometric analysis: Agency theory in accounting', *Journal of Accounting, Finance and Auditing studies* 7(1), 56–76. https://doi.org/10.32602/jafas.2021.003

Azavedo, M., Crooks, S., Berbner, J., Mareels, S. & Nucci, C., 2020, *Lessons from the past: Informing the mining industry's trajectory to the next normal*, viewed 22 March 2021, from https://www.mckinsey.com/industries/metals-and-mining/our-insights/lessons-from-the-past-informing-the-mining-industrys-trajectory-to-the-next-normal.

Bebchuck, L.A., Fried, J.M. & Walker, D., 2002, 'Managerial power and rent extraction in the design of executive compensation', *University of Chicago Law Review* 69(3), 751–846. https://doi.org/10.2307/1600632

Bezuindenhout, M.L., 2016, 'The relationship between CEO remuneration and company performance in South African state-owned entities', Unpublished doctoral thesis, University of South Africa.

Bordeianu, G. & Radu, F, 2020, 'Basic types of financial ratios used to measure a company's performance', *Economy Transdisciplinary Cognition* 23(2), 53–58.

Buthelezi, L., 2022a, *Absa paid Daniel Mminele more than R30m as a termination package*, viewed 10 August 2022, from https://www.news24.com/fin24/companies/absa-paid-daniel-mminele-more-than-r30m-as-a-termination-package-20220408.

Buthelezi, L., 2022b, *Many Capitec shareholders vote against R177m exec pay package*, viewed 10 August 2022, from https://www.news24.com/fin24/companies/many-capitec-shareholders-vote-against-r177m-exec-pay-package-20220530.

Bussin, M., 2015, 'Factors driving changes to remuneration policies in South Africa', *South African Journal of Labour Relations* 39(2), 43–63.

Bussin, M., 2018, 'Chief executive officer compensation sensitivity in the South African mining industry', *Acta Commercii – Independent Research Journal in the Management Sciences* 18(1), 1–13. https://doi.org/10.4102/ac.v18i1.573

Bussin, M. & Blair, C., 2015, 'Financial indicators of company performance in different industries that affect CEO remuneration in South Africa', *South African Journal of Economic and Management Sciences NS* 18(4), 1–13. https://doi.org/10.4102/sajems.v18i4.1249

Bussin, M. & Modua, M.F., 2015, 'The relationship between Chief Executive Officer remuneration and financial performance in South Africa 2006 and 2012', *SA Journal of Human Resources/SA Tydskrif vir Menslikehulpbronbestuur* 13(1), 1–18. https://doi.org/10.4102/sajhrm.v13i1.668

Bussin, M. & Nel, M., 2015, 'Relationship between CEO and company financial performance in the South African retail and consumer goods sector', *Acta Commercii* 15(1), 1–11. https://doi.org/10.4102/ac.v15i1.240

Bussin, M., Wocke, A. & Deysel, B., 2023, 'The impact of remuneration governance on chief executive officer overpayment', *South African Journal of Economic and Management Sciences* 26(1), a4860. https://doi.org/10.4102/sajems.v26i1.4860

Carlson, C. & Bussin, M.H.R., 2020, 'Relationship between executive pay and company financial performance in the South African state-owned entities', *SA Journal of Human Resources Management* 18, 1–11. https://doi.org/10.4102/sajhrm.v18i0.1211

Chen, J.J., Zhang, H., Xiao, X. & Li, W., 2011, 'Financial crisis and executive remuneration in banking industry – An analysis of five British banks', *Applied Financial Economics* 21, 1779–1791. https://doi.org/10.1080/09603107.2011.587769

Deloitte, 2017, *King IV Remuneration Governance – Bolder than ever*, viewed 09 May 2020, from https://www2.deloitte.com/content/dam/Deloitte/za/Documents/governance-risk-compliance/za_Deloitte_KingIV_Remuneration_Governance_01032017.pdf.

De Wet, J., 2013, 'Executive compensation and the EVA and MVA performance of South African listed companies', *Southern African Business Review* 16(3), 57–80.

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. https://doi.org/10.25159/1998-8125/5837

Edmans, A. & Gabaix, X., 2009, 'Is CEO pay really inefficient? A survey of new optimal contracting theories', *European Financial Management* 15(3), 486–496. https://doi.org/10.1111/j.1468-036X.2009.00500.x

Eisenhardt, K.M., 1989, 'Agency theory: An assessment and review', *The Academy of Management Review* 14(1), 57–74. https://doi.org/10.2307/258191

Elmagri, M.H.A., 2016, 'Corporate governance, voluntary compliance, corporate performance and executive pay: Evidence from the UK', Unpublished doctoral thesis, University of Huddersfield.

Elmagri, H.M., Ntim, C.G., Wang, Y., Abdou, H.A. & Zalata, A.M., 2018, 'Corporate governance disclosure index-executive pay Nexus: The moderating effect of governance mechanism', *European Management Review* 17(1), 121–152. https://doi.org/10.1111/emre.12329

Faku, D., luvhengo, P. & Deklerk, A., 2023, *'I deserve every cent of my R300m': Sibanye-Stillwater boss defendsfat pay packet as strike drags on*, viewed 15 May 2022, from https://www.timeslive.co.za/sunday-times/news/2022-05-15-i-deserve-every-cent-of-my-r300m-sibanye-stillwater-boss-defends-fat-pay-packet-as-strike-drags-on/.

Faulkender, M., Kadyrzhonova, D., Prabhala, N. & Senbet, L., 2010, 'Executive compensation: An overview of research on corporate practises and proposed reforms', *Journal of Applied Corporate Finance* 22(1), 107–118. https://doi.org/10.1111/j.1745-6622.2010.00266.x

Frydman, C. & Jenter, D., 2010, *CEO compensation*, Working paper 77, Rock Centre for Corporate Governance at Stanford University, viewed 30 August 2021, from http://papers.ssrn.com/sol3/papers.cfm?abstractid=1582232.

Gregory-Smit, I. & Main, B.G.M., 2014, *Binding votes on executive remuneration*, Working paper.

Hall, S., 2017, *Similarities of univariate and multivariate statistical analysis*, viewed 01 March 2022, from https://sciencing.com/similarities-of-univariate-multivariate-statistical-analysis-12549543.html.

International Integrated Reporting Council, 2021, *The International Integrated Reporting Framework. The International <IR> Framework*, viewed 07 May 2021, from https://integratedreporting.org/wp-content/uploads/2021/01/InternationalIntegratedReportingFramework.pdf.

IoDA (Institute of Directors in Southern Africa) King IV, 2016, *The King IV report on corporate governance for South Africa*, viewed 05 March 2020, from https://cdn.ymaws.com/www.iodsa.co.za/resource/collection/684B68A7-B768-465C-8214-E3A007F15A5A/IoDSA_King_IV_Report_-_WebVersion.pdf.

Jensen, M.C. & Meckling, W.H., 1976, 'Theory of the company: Managerial behaviour, agency costs and ownership structure', *Journal of Financial Economics* 3(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

JSE (Johannesburg Stock Exchange), 2022, *Market capitalisation*, viewed 13 May 2022, from https://www.jse.co.za/learn-how-to-invest/accessing-market/market-capitalisation.

Kirsten, E. & Du Toit, E., 2018, 'The relationship between remuneration and financial performance for companies listed on the Johannesburg Shares Exchange', *South African Journal of Economic and Management Sciences* 21(1), 1–10. https://doi.org/10.4102/sajems.v21i1.2004

Li, Z., 2016, 'Executive remuneration and its regulation', Unpublished doctoral thesis, The University of Leeds.

Mans-Kemp, N., Erasmus, P. & Viviers, S., 2016, 'Measuring corporate governance in South Africa: Developments, concerns and suggestions', *South African Journal of Accountability and Auditing Research* 18, 93–104.

Mans-Kemp, N. & Viviers, S., 2018, 'Executive performance evaluation and remuneration: Disclosure and practises of selected listed South African companies (2002–2015)', *South African Journal of Accounting Research* 32(2–3), 154–173. https://doi.org/10.1080/10291954.2018.1465149

Matemane, M.R., 2022, 'Towards value adding performance: A metric for executive compensation', Unpublished doctoral thesis, University of Johannesburg.

Mitchell, P. & Downham, L., 2016, *Navigating volatility: Do you change your business or the way your business works?*, viewed 24 October 2020, from https://www.moneyweb.co.za/wp-content/uploads/mineweb/2016/07/REPORT-Volatility-in-mining-and-metals.pdf.

Ngwenya, S. & Khumalo, M., 2012, 'CEO compensation and performance of state owned enterprises in South Africa', *Corporate Ownership and Control* 10(1A), 97–109. https://doi.org/10.22495/cocv10i1art9

Padia, P. & Callaghan, C.W., 2020, 'Executive director remuneration and company performance: Panel evidence from South Africa for the years following King III', *Emerald Insight* 50(3), 829–844. https://doi.org/10.1108/PR-08-2019-0429

Panda, B. & Leepsa, N.M., 2017, 'Agency theory: Review of theory and evidence on problems and problems and perspectives', *Indian Journal of Corporate Governance* 10(1), 74–95. https://doi.org/10.1177/0974686217701467

PwC, 2016, *A summary of King IV report on Corporate Governance for South Africa 2016*, viewed 21 March 2023, from https://www.pwc.co.za/en/assets/pdf/king-iv-steering-point.pdf.

PwC, 2017, *Understanding a financial statement audit*, viewed 22 July 2022, from https://www.pwc.com/im/en/services/Assurance/pwc-understanding-financial-statement-audit.pdf.

PwC, 2021, *SA Mine 2021 harvest season, call to action*, viewed 24 February 2022, from https://www.pwc.co.za/en/publications/sa-mine.html.

PwC, 2022, *SA Mine 2022 level up or reset*, viewed 21 March 2023, from https://www.pwc.co.za/en/assets/pdf/sa-mine-2022.pdf.

Resnick, A.A., 2013, 'The relationship between executive remuneration and company performance: A study of 20 of the largest companies listed on the Johannesburg Shares Exchange Ltd', Unpublished masters' mini-dissertation, University of Johannesburg.

Roode, G., 2016, 'The correlation between executive directors' performance-based remuneration and overall performance of South African companies', Unpublished masters' mini-dissertation, University of Pretoria.

Schneider, M., 2013, 'Agency theory', in E.H. Kessler (ed.), *Enclopedia of management theory*, pp. 30–34, SAGE, Los Angeles.

Scholtz, H.E. & Engelbrecht, W.A., 2015, 'The effect of remuneration committees, directors' shareholding and institutional ownership on the remuneration of directors in the top 100 companies in South Africa', *Southern African Business Review* 19(2), 22–51.

Scholtz, H.E. & Smit, A., 2012, 'Executive remuneration and company performance for South African companies listed on the Alternative Exchange (AltX)', *Southern African Business Review* 16(1), 22–38.

Shaw, P., 2011, 'CEO pay-performance sensitivity in South African financial services companies', Unpublished masters' mini dissertation, Gordon Institute of Business Science, University of Pretoria.

South African History Online (SAHO), 2014, *South African platinum strike: Longest wage strike in South Africa*, viewed 07 September 2021, from https://www.sahistory.org.za/article/2014-south-african-platinum-strike-longest-wage-strike-south-africa#:~:text=African%20History%20Online-,2014%20South%20African%20platinum%20strike%3A%20longest%20wage%20strike%20in%20South,disputes%20with%20their%20employers%20arise.

Sullivan, L.M., Dukes, K.A. & Losina, E., 1999, 'An introduction to hierarchical linear modelling', *Statistics in Medicine* 18(7), 855–888. https://doi.org/10.1002/(SICI)1097-0258(19990415)18:7<855::AID-SIM117>3.0.CO;2-7

Theku, M., 2014, 'CEO compensation sensitivity to performance in the South African mining industry', Unpublished masters' mini dissertation, Gordon Institute of Business Science, University of Pretoria

Thomson, C., Carpanter, R., Harber, M. & Graham, M., 2018, 'An examination of the Quality of the Variable Portion of Executive Director's Remuneration for large South African listed companies', *African Journal of Business and Economic Research* 13(2), 25–58.

Trochim, W.M.K., 2022, *Research methods knowledge base*, viewed 31 May 2022, from https://conjointly.com/kb/research-data-analysis/.

Van Zyl, M. & Mans-Kemp, N., 2020, 'Reflecting on corporate governance in South Africa: Lessons learned and the way forward', *Southern African Business Review* 24, 6654. https://doi.org/10.25159/1998-8125/6654

Viviers, S., 2015, 'Executive remuneration in South Africa: Key issues highlighted by shareholder activists', *African Journal of Business Ethics* 9(1), 1–27. https://doi.org/10.15249/9-1-112

World Inequality Report, 2022, *World inequality report 2022*, viewed 20 March 2023, from https://wir2022.wid.world/www-site/uploads/2021/12/WorldInequalityReport2022_Full_Report.pdf.