Environmental, social and corporate governance investment on organizational sustainability: A case of the South African mining sector

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Abstract

Mining companies continue to mine and process minerals as the demand for such minerals remains high and will do so into the future for livelihoods to be sustained. However, there are many risks associated with mining and mineral processing activities concerning environmental, social and governance (ESG) issues. For organizations listed on the Johannesburg Stock Exchange (JSE), there has been a mandatory call for ESG disclosure by these organizations to disclose what they are doing to eliminate or mitigate against risks associated with ESG. Addressing these risks requires a significant financial investment. The purpose of this research is to provide insight into the costs and benefits of investing in ESG within the context of the South African mining industry, with South Africa being a developing country.

ESG matters have not been fully studied in developing countries. The appreciation of what focusing on them requires in as far as investing financially relative to the costs remains a crucial consideration. Managers and leaders have been left asking themselves what it would cost to invest in ESG, along with the reward it is expected to bring. The aim of this work is to review what seven of the JSE listed mining companies have invested towards addressing ESG risks and what benefit it has brought them.

Secondary data available from the sustainability reports and annual reports of BHP Group Limited, Glencore plc, Anglo American plc, Gold Fields Limited, Anglo American Platinum, South32 Limited and Anglogold Ashanti, was sourced for this study. The chosen companies were chosen based on their value, being over R100 billion by market capitalization. These are companies for who's data would be available as they are obligated to disclose their actions concerning ESG.

From the results, the stakeholder community is in favour of companies having measures in place to address issues concerning ESG risks. Disclosure of the actions taken increases awareness for the company and because of this, the reward is brand awareness leading to organizational sustainability. The amount of money invested in ESG is negligible compared to the long-term reward for the company. The study concludes that investing in ESG contributes to organizational sustainability. This research has provided the answers to the questions asked about the benefits of investing in ESG. Those who have done it are greatly rewarded. It is recommended that mining companies set aside a budget to eliminate or mitigate against issues associated with ESG metrics to enjoy long-term sustainability.

Keywords: ESG, CSR, Organizational Sustainability, Stakeholder Theory, ESG Disclosure, Integrated Reporting

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1. Introduction

1.1 Background of the Study

The mining sector continues to impact various stakeholders through its operations in the quest to generate profits. In South Africa, some mining organizations have received fines because of contaminating the environment, have dealt with various community unrests due to social issues such as gender inequality and lack of diversity, as well as unrests associated with executive compensation and the wider gap between executive officers and lower employee salaries. Globally, today humanity is dealing with a lot of issues caused by carbon emissions, greenhouse gas emissions, excessive consumption of resources, and global warming, among other issues (Ackers & Grobbelaar, 2022). The global drive for compliance on environmental, social and corporate governance (ESG) metrics is aimed at ensuring that organizations care for the societies and jurisdictions in which they operate. International authorities have instituted reforms to address ESG compliance in the business environment (Abrams, Han, & Hossain, 2021). However, compliance with ESG global calls comes at a cost. The drive is for businesses to consider pertinent sustainability issues whilst striving for business success and financial benefits at the same time (Johnson, Mans-Kemp, & Erasmus, 2019).

In South Africa, mining companies are committed to responsible mining operations whilst carefully observing the bottom line. Due to the operational activity of the mining companies in South Africa, disclosure of their effects on the environment and the communities they mine in is becoming very important (Ackers & Grobbelaar, 2022). The industry has faced many challenges in terms of ESG compliance. For instance, in September 2022 a dam in a diamond mine in Jagersfontein collapsed, destroying homes and injuring a lot of people (Njini, 2022).
The Auditor-General's report in 2022 around the performance of local government painted a bleak picture. The mining industry, especially in the Rustenburg area, is receiving a lot of pressure to improve the lives of those within the communities (Mckay, 2022). The living conditions need a lot of improvement and youth unemployment is still rife. Awareness and care about ESG have complemented the drive of sustainability and responsible investments. Investors now look for ESG compliance, beyond risk and return, when thinking about their investments (Pasquini-Descomps & Sahut, 2013).

Previous research has generally ignored the risk-reducing benefits associated with ESG practices in running businesses, particularly in emerging markets (Johnson, Mans-Kemp, & Erasmus, 2019). There is a growing number of investors who want to align ESG compliance with financial returns of companies to ensure that their investments are classified as responsible investing, taking the pertinent issues of the society into consideration. The World Economic Forum (2018) noted that within the five top global risks, four were connected to ESG aspects. It is clear that ignorance of ESG compliance resulted into the long-term detriment of organisations. ***Freeman's Stakeholder Theory*** posits that companies need to generate value for all their stakeholders, not only their shareholders (Freeman R. , 1984). Focusing on only financial metrics, the bottom line, is but only a short-term benefit. The opportunity cost of focusing on ESG practices is short-term balooned profits substituted for long-term sustainability if ESG associated risks are taken into consideration.

The sustainability challenges which shareholders and investors alike should be concerned about are greenhouse gas emissions, air pollution, carbon emission reduction, water shortages, water pollution, as well as climate change, deforestation, data hygiene and security, customer success, community relations, gender and diversity inclusion, mental health, politics and lobbying, best practices for recruiting and onboarding, and executive compensation principles, venture partner compensation, and board of directors makeup (Diligent, 2023). The first six are environmental challenges, the next five are social challenges, and the last five are corporate governance challenges. These are issues which South Africa as a country is faced with, and issues which the mining industry in South Africa contributes a great deal in their occurrence. For instance, acid mine drainage caused by abondoned mines in South Africa is a source of negative impact on the environment and species that live in it (Rezaie & Anderson, 2020). On the 11th of September 2022, a mining dam collapsed in Jagersfontein, South Africa, negatively impacting the environment and devastating many homes (MacRobert, 2022).

However, although ESG comprises of environmental, social and corporate governance elements, several investors and previous research have narrowly focused and associated ESG with primarily corporate governance (Mans-Kemp, Erasmus, & Viviers, 2017). These investors have been obsessed with the board of directors' composition and executive compensation. This was exacerbated by the negative impact on the global economy, the 2008/2009 financial crisis (Mans-Kemp, Erasmus, & Viviers, 2017). Velte (2017) noted that the cause of the financial crisis came about because a lack of good corporate governance and being fixated on accelerated financial gains. This led to questions about ethical organizational behaviour.

1.2 Problem Statement

Prior research focused more on the developed market context when zooming in on the costs and rewards of ESG performance (Johnson, Mans-Kemp, & Erasmus, 2019). In their study, emphasis was based on what the benefits are, as well as the opportunity cost of complying to ESG standards for South Africa's mining sector. The adoption of ESG standards within the developing market is lagging compared to the developed market. A great contributor to this is fears associated with discomfort on whether sustainability will be assured in this context. It is well known that historically countries in the developed regions have contributed more to challenges associated with ESG (Skeie, Peters, Fuglestvedt, & Andrew, 2021). This explains why prior research focused more on this region concerning ESG performance. Research has found that investing in ESG benefits the environment, the society around and the company itself, leading to improved financial results and increased market value in relation to competitors, embracing a sustainable competitive advantage (Gillan, Koch, & Starks, 2021). On the other end of the spectrum, theories such as the trade-off theory claim that companies need to utilize their capabilities and resources to serve their shareholders' interest in the most fulfilling way that maximizes revenue (Gillan, Koch, & Starks, 2021). There is the belief that investing in ESG increases costs and results to reduced profits (Behl, Kumari, Makhija, & Sharma, 2021). The disinvestment in coal plants for instance in South Africa threatens the livelihoods of those working in those operations and may lead to job loss (Strambo, Burton, & Atteridge, 2019). This research aims to unpack if ***ESG investment*** is sustainable, whether the benefits outweigh the costs, within the context of South Africa for mining companies. The primary research question is the following: ***what are the expenses and gains from investing in ESG goals for South African mining organizations?***

1.3 Research Questions

To aid this study, the secondary questions address the primary research question in line with Freeman's Stakeholder Theory:

- Why should organizations care about investing in performance in terms of environmental, social, and corporate governance?
- What are the costs of social, environmental, and corporate governance investments?

- How can environmental, social and corporate governance compliance lead to sustainability without compromising the bottom line?

1.4 Justification for the Research

Finding answers to these research questions provided valuable information to mining companies and their stakeholders on what the costs of investing in ESG are and for what value it generates in the South African context. Following from international authorities who have instituted reforms to address ESG performance, the outcomes from this study can inform the development of policies which will drive companies to invest in ESG compliance for the benefit of all stakeholders and the company itself through sustainability. Given the focus on Freeman's stakeholder theory, this research contributed to highlighting important factors which lead to stakeholder satisfaction across various stakeholders. Stakeholders include employees, investors, suppliers, customers, communities, trade unions and governments.

For the employee, a culture of transparency by the organization is important. Employees will be proud of their company investing in ESG, thus improving employee engagement. For the investor, this research will assist in risk assessment for their investment, determination of long-term sustainability and stakeholder engagement. For company managers, they will know what is important for long-term sustainability. For governments and policymakers, the outcomes of this study can help to foster policy development in the mining sector, how they could help mining companies in improving their ESG performance, thereby satisfying their stakeholders. The research can also encourage mining companies to contribute to the academic literature on ESG investments in the mining sector.

1.5 Delimitations of the study

This research is important, necessary and timely in today's circumstances climate change is a concern, where social aspects are critical in a country that has a history of inequality due to the apartheid system and engulfed by exclusion of others. The study is also important for a country whose democracy is relatively new, a country clouded by political interference in the business environment and in decision making. The perspective adopted therefore within the mining industry is limited to the environmental influence because of mining activities, the social contribution to the communities and other stakeholders and good corporate governance standards.

The study is limited to the establishment of ESG investment on organizational sustainability. It is limited to seven mining companies (chosen by value) listed on the Johannesburg Stock Exchange (JSE) as these companies are obligated to disclose their contribution towards ESG metrics. The study aims to ascertain the relationship of the financial commitment required for long-term organizational sustainability. The study is limited to the mining sector because it is one sector that contributes extensively to the environment, social metrics, as well as corporate governance, with the mining sector contributing 7.53% towards South Africa's GDP in 2022 (Africa, 2023).

1.6 Operational Definitions

The following operational definitions are applied in the context of investment initiatives in environmental, social and corporate governance (ESG) performance in mining companies in South Africa:

1.6.1 Environmental, Social and Governance:

This paper recognizes that there are many definitions of ESG from different perspectives. ESG is a combination of three important non-financial categories into one data source (Eccles, Lee, & Stroehle, 2020). Different institutions may use different definitions and measurements to measure, capture, define and interpret ESG information and metrics. ESG performance evaluations of the same company may differ depending on weights and measurements applied by different jurisdictions (Eccles, Lee, & Stroehle, 2020). It then follows without saying that to effectively measure ESG performance, both investment professionals and academic researchers need to possess a thorough comprehension of how data was developed.

1.6.2 Corporate Social Responsibility

Corporate Social Responsibility (CSR), as the name suggests, relates to how corporations' activities relate to socially being more reliable (Gillan, Koch, & Starks, 2021). The difference between CSR and ESG is that ESG directly addresses corporate governance issues in its focus whilst CSR indirectly addresses governance, only doing it via social responsibility. Globalization has exerted pressure on the practices of CSR (Garcia & Orsato, 2020). One of the primary points to deliver corporate social responsibility is the requirement that mining companies should develop the communities in which they mine. Those communities should be left improved, even after the mine has ceased its operations.

1.6.3 Sustainability investment

Sustainability throughout the context of this research is the ability of meeting organizational goals today without negatively influencing the ability for future generations meeting their own goals. Disclosing sustainability investment is still perceived as a voluntary practice in South African listed companies (Wasara & Ganda, 2019). However, it has been postulated that reporting sustainable investment results in a positive image for the company and leads to increased financial performance (Wasara & Ganda, 2019).

1.6.4 Freeman's Stakeholder Theory

Edward Freeman opposed the views of Milton Friedman. The shareholder theory, which is the Friedman doctrine, asserts that an organization's social responsibility is in increasing profits for the shareholders (Friedman, 1970). The view by Friedman is that businesses should not neglect but focus on all the stakeholders of the business. The stakeholder theory states that there is an interconnected relationship between the business and the business' stakeholders (Freeman R. , 1984). The stakeholder theory's relevance to this work is in appreciating stakeholder influence as a result of focusing on ESG initiatives towards achieving organizational sustainability.

1.7 Outline of the Report

This report is outlined as follows: the next section presents a systematic, critical literature review with the aim of recognizing and interpreting the research gaps presented and investigated in this paper. The theoretical basis on the foundation of the stakeholder theory was investigated to anchor the hypotheses and propositions with respect to organizational sustainability. The empirical review and theoretical framework were presented. Following the analysis of the literature review I presented the hypotheses and propositions. This was followed by the research methodology, approached from a positivist research paradigm. The second theoretical aspect of the perspective was informed by the stakeholder theory, being the backbone for the concepts to be investigated. Within the research methodology, data collection and sampling were undertaken. The results were then shown and followed by an interpretation of the discussed results. Bringing the findings all together in terms of key insights from the study was the concluding section. The implications of the research to policy, management and practice followed. Finally, the study's limitations were presented together with the recommendations for future research.

2. Systematic Review of Literature

2.1 Introduction

This part of the literature review presents the empirical review aimed at identifying the empirical evidence on work done by others within the same study and presents the research gaps in relation to whether ESG investment is rewarding beyond the cost impact (opportunity cost) in South Africa's mining sector. The research questions will be covered in detail. Part two will present the theoretical framework where the perspective, in relation to the aspects of the paradigm and theory, are presented. The conclusion of the literature review will then present four hypotheses which are aligned with the research questions. The first part of the empirical review will address the conceptual definitions of each key concept related to the performance in environmental, social, and corporate governance in mining organizations. A systematic literature review, from the perspective of freeman's stakeholder theory, is then presented to answer the primary review question:" ***what are the expenses and gains from investing in ESG goals for South African mining organizations?***" from the introduction rationale, ESG performance contributes to long-term sustainability for organizations. The research gaps will then be identified from this systematic literature review.

2.2 Empirical Review of Literature

2.2.1 Definition of topic and background discussion

2.2.1.1 ESG Investing

The concept of investing in ESG has been widely investigated in recent years, with the market demanding that organizations be considerate of the world they operate within. There is an increasing number of investors who are now interested in investing in environmental, social and corporate governance (ESG) matters (Mans-Kemp, Erasmus, & Viviers, 2017). The focus is on long-term sustainability rather than on the short-term benefits, which are mostly financial. As investors consider socially responsible investments (SRI) which offer superior return, ESG integration as a strategy has grown by 60% based on the European Sustainability Investment Fund (EUROSIF) over the last 20 years (Umar, Kenourgiosc, & Papathanasiou, 2020). The debate continues whether measuring ESG performance hampers on the capacity to truly affect sustainability or improves ESG performance to ensure sustainability (Ademi & Klungseth, 2022).

2.2.1.2 ESG Disclosure Influence

It has been contested that full ESG disclosure performance reduces the cost of capital of an organization (Johnson, 2020). The corporate governance requirement and ethical compliance has been motivated by financial troubles, like the 2008 global financial crisis, as well as financial scandals like the Enron scandal (Umar, Kenourgiosc, & Papathanasiou, 2020). In South Africa, most scholars have predominantly focused on this leg of ESG, the corporate governance, at the expense of the environmental and social legs (Johnson, Mans-Kemp, & Erasmus, 2019). Comparing different countries globally, Europe is leading the pack in concentration of ESG assets worldwide, followed by the US, then Japan (Umar, Kenourgiosc, & Papathanasiou, 2020). This accounts for the top three globally.

2.2.1.3 Sustainability and ESG

The Institute of Directors in Southern Africa (IoDSA) (2016) noted that unless long-term wealth generation that is sustainable is considered, short-term focus on benefits result to the risk of negative consequences over the long-term. Organizations should aim to be sustainable. The aim should be on eliminating any negative actions against the sustainability components which are environmental, social, cultural and economic (Johnson, Mans-Kemp, & Erasmus, 2019). Sustainability goes beyond just going green. Werbach (2009) noted that if organizations are to be sustainable, other components ought to be considered such as social aspects, economic aspects, as well as cultural aspects, above the environmental issues. Concerning culture, he noted that the way communities manifest their identity and cultivate habits has an influence on a company's sustainability strategy (Werbach, 2009). Johnson, Mans-Kemp and Erasmus (2019) agree and conclude that a paradigm shift is required within orgnaizational leadership on the decision-making process and the way investment portfolios are developed. The International Organization for Standardization (ISO) has implemented standards such as ISO14001 which cares about the environment and sustainability and more organizations are complying (International Organization for Standardization, 2018).

2.2.1.4 Corporate Social Resposibility

The interest in running sustainable organizations leads to the idea of corporate social responsibility (CSR). Available literature suggests that organizations which are financially strong exhibit a higher level of willingness to comply with environmtal and social compliance requirements (Gillan, Koch, & Starks, 2021). This may indicate that the costs of compliance are a deciding factor. The question remains whether investing in these requirements has a reward, be it financial or long-term sustainability. The focus of CSR is on wealth creation from an organizational perspective (Viviers, Krüger, & Venter, 2012). Investors perceive organizations that invest in corporate social responsibility as less risky (Johnson, 2020). Pucker (2021) argues that commitment to CSR and ESG ratings is expected to:

- bolster sustainability efforts because “what gets measured gets done”;
- produce improved equity performance; and
- have customers and investors reward sustainability players.

South African mining companies are obligated to report on sustainability matters as per the Johannesburg Stock Exchange (JSE) Socially Responsible Investment (SRI) Index (Wasara & Ganda, 2019).

2.2.2 First Research Question/Objective of Literature Review

Corporate managers continue to ask themselves why their organizations should care about investing in ESG performance. Many companies still treat it as an ad hoc initiative, without incorporating it into the strategy (Bonini & Gorner, 2011). They treat it as a reactive approach. For starters, it is becoming a legal requirement to comply (Abrams, Han, & Hossain, 2021). According to the legitimacy theory, there are legal and compliance requirements whereby companies are expected to disclose sustainability information to reflect their commitment to the issues concerned with the environment, social and corporate governance (Patten, 1991, 1992). The challenge is that there is not enough research and detail associated with the effects of ESG disclosure in developing countries (Goyal & Rahman, 2013).

ESG first came to light in 2004 in a report by some financial institutions following a call by the then Secreteary General of the United Nations, Kofi Anon (Gillan, Koch, & Starks, 2021). Companies should therefore integrate ESG management techniques to foster a competitive advantage, prevent reputational damage, ensure increased operational efficiency and to care for the environment (Alsayegh, Rahman, & Homayoun, 2020). This will increase the shared value.

Some authors found that ESG disclosure and corporate transparency in reporting has a positive relationship with corporate productivity at the moderate disclosure level (Xie, Nozawa, Yagi, Fujii, & Managi, 2018). This shows that transparency, stakeholder trust and accountability improve the value of a company (Umar, Kenourgiosc, & Papathanasiou, 2020). Fatemi et al. (2018) observed that ESG performance and disclosure by companies increases their value, whilst the lack of investment in ESG and lack of disclosure decreases the value of a company. They concluded that strengths in ESG increase a company's value whilst weaknesses in ESG decrease their value. They however, also find that over disclosure may result in the opposite effect where the market may interprete this as an attempt by a company to justify an overinvestment in ESG initiatives.

2.2.3 Second Research Question/Objective of Literature Review

Investing in ESG surely comes at a cost. The question is at what cost? There is a view from some researchers that companies should continue the trade-off theory trajectory, being responsible for shareholders instead of stakeholders (Behl, Kumari, Makhija, & Sharma, 2021). This view aims to maximize profit for the shareholder. If profit maximization is the focus, companies may not indulge in producing sustainable products, environmental care and social responsibility (Behl, Kumari, Makhija, & Sharma, 2021). The problem for companies in making financial decisions is to know which assets to invest in and how much to be invested to minimize the risk of the investment whilst maximizing the returns (Garcia, Gankova-Ivanova, González-Bueno, Oliver, & Tamošiūnienė, 2022).

The first obvious cost of not investing in ESG is the benefit of lost investors who are socially responsible who otherwise have invested had the company been investing in ESG. However, empirical evidence that socially conscious businesses perform better significantly superior to traditional companies not putting much investment into it is lacking (Garcia, Gankova-Ivanova, González-Bueno, Oliver, & Tamošiūnienė, 2022). Without compelling evidence, this seems to suggest that spending more money to ensure ESG compliance for a company might not be contributing the same equal measure from the perceived benefits of such investment, in as far as performance is concerned. The current confusion is exacerbated by that the relationship between ESG investment and financial results for multiple geographical areas is inconsistent, resulting to contradictory evidence (Ademi & Klungseth, 2022). Seemingly the focus should be on other benefits.

One of the reasons why ESG should result to increased value of the company is that the price incurred for the establishment of ESG metrics is offset against a reduction in the cost of capital because investors are prepared to put money into such a company (Pasquini-Descomps & Sahut, 2013). There is a view that only the strengths of the environmental component of ESG increase a company's value, with strengths in social acumen and governance not contributing to increase in value significantly (Fatemi, Glaum, & Kaiser, 2018). Their concerns and weaknesses though do, however, contribute to a decrease in value.

2.2.4 Third Research Question/Objective of Literature Review

The bottom line for companies is to create value for shareholders, to make money. That is why businesses are in business. The question is how can ESG performance contribute to long-term sustainability without compromising the bottom line? The stakeholder theory implies that if a company gets concerned with ESG performance for the larger society, it will reap sustainable benefits and profits (Behl, Kumari, Makhija, & Sharma, 2021). As posited by the legitimacy theory, companies' disclosures of ESG measures generates sustainable profits due to the implication of a company's commitment towards the betterment of the society (Behl, Kumari, Makhija, & Sharma, 2021).

Stakeholders believe that ESG investments provide long-term returns as sustainability benefits which equate to value creation (Alsayegh, Rahman, & Homayoun, 2020). However, other researchers have questioned the validity of these results to the approaches used. The argument has been that many studies have generalized the results, ignoring that they vary according to the industry and country (Xiong, 2016). Since the financial implications of sustainability are still not sufficiently clear, companies are halting significant changes in the long-term strategies in application (Bocken & Geradts, 2020).

Taliento, Favino and Netti (2019) observed that in as far as the European market is concerned, if companies take ESG consideration into perspective, there is value creation in the long run which leads to greater economic-financial returns. Ademi (2022) noted that companies with extraordinary ESG performance become the favourites with investors and usually have it easier during a crisis compared to others. Corporate sustainability aims to protect and sustain society and the environment for generations to come without compromising the market capitalization objective (Alsayegh, Rahman, & Homayoun, 2020).

2.2.5 Summary of readings

Table 1: Summary of readings

Author/Year	**Methods**	**Arguments**	**Who do they agree with?**	**Who do they disagree with?**
Patten (1992)	Survey	The legitimacy theory, advocating that companies must contribute positively to society	Freeman (1987)	Friedman (1987)
Mans-Kemp et al. (2017)	Survey	Corporate governance contributes to improved earnings in South African companies	IoDA (2016)	Du Plessis (2011)
Umar, Kenourgiosc, & Papathanasiou (2020)	Survey	ESG disclosure increases value, whilst non-disclosure decreases the value of a company	Fatemi, Glaum, & Kaiser (2018)	Garcia et al (2022)
Johnson (2020)	Case study	Companies that invest in ESG are less risky	Pucker (2021)	Friedman (1970)

Johnson et al. (2019)	Case study	To generate sustainable returns, managers should have a long-term	Werbach (2009)	Friedman (1970)
		perspective when addressing ESG issues		
Werbach (2009)		Sustainability can be achieved if companies care about the society	Johnson et al. (2019)	Xiong (2016)
Freeman (1987)	Survey	Companies should focus on all stakeholders and not just satisfying shareholders	Patten (1992)	Friedman (1970)
Alsayegh et al. (2020)	Survey	Companies should integrate ESG strategies to foster competitive advantage	Mans-Kemp et al. (2017)	Friedman (1970)
Gillan, Koch, & Starks (2021)	Survey	Bigger companies are more willing to invest in ESG	Ademi & Klungseth (2022)	Garcia et al (2022)
Pucker (2021)	Survey	Long-term sustainability is profitable	Johnson (2020)	Garcia et al (2022)
Wasara & Ganda (2019)		South African companies are obligated to report on sustainability matters	Gillan, Koch, & Starks (2021)	Friedman (1970)

Ademi & Klungseth (2022)	Survey	Delivering high ESG performance contributes to increased company value	Freeman (1984)	Garcia et al. (2022)
Fatemi, Glaum, & Kaiser (2018)	Survey	ESG disclosure increases value, whilst non-disclosure decreases the value of a company	Ademi & Klungseth (2022)	Garcia et al. (2022)
Bocken & Geradts (2020)	Survey	The financial implications of sustainability are still not sufficiently clear	Garcia et al (2022)	Garcia et al. (2022)
Friedman (1970)		Companies should primarily aim to satisfy shareholders	Ademi & Klungseth (2022)	Freeman (1987)
Behl (2021)		ESG investment leads to long-term sustainability	Freeman (1987); Alsayegh et al. (2020)	Garcia et al. (2022)

Research gaps: • The effects of ESG compliance have not been studied sufficiently in developing countries. • The cost of ESG investment has not been fully quantified against the benefits thereof. • Previous ESG study outcomes have been generalized, yet results are different for different geographical areas. • How much needs to be invested in ESG to maximize profits and minimize the risks associated with the investment? • Should companies not obligated to disclose their ESG performance invest in ESG?

2.2.7 Theories used in the study

Table 2: Theories used in the study

Theories being used	**Description**
• Stakeholder theory	• Companies need to generate value for all their stakeholders, not only their shareholders. **This theory is most relevant for my study and the study aims to prove it**. It is important in today's environment because of the issues concerned with the environment, social matters and corporate governance matters. If South African mining companies are to last for generations, it is important to satisfy all company stakeholders concerned, not just the shareholder.
• Legitimacy theory	• Companies' disclosures of ESG measures generates sustainable profits due to the implication of a company's commitment towards the betterment of the society
• Trade-off theory	• Companies need to utilize their capabilities and resources to serve their shareholders' interest in the most fulfilling way possible and maximize revenue
• Shareholder theory	• The social responsibility of businesses is to maximize profits for the shareholders

2.3 Theoretical Review of Literature

In assessing the impact of ESG investments in the mining industry in South Africa, the focus will be more on the stakeholder theory and legitimacy theory, rather than the trade-off theory and shareholder theory. The justification for this is that this work is aimed at establishing if there are benefits for the companies in this industry to make such investments. ESG investments are supported by the stakeholder and legitimacy theories (Freeman, Phillips, & Sisodia, 2020). The ideology encompassed and in relation to the trade-off and shareholder theories, that of companies serving primarily the shareholders, is well understood and businesses were predominantly established for this purpose. That is therefore not the subject of this study.

2.3.1 Stakeholder Theory

2.3.1.1 Long-term sustainability

The stakeholder theory seems to promise long-term sustainability for organizations. The theory suggests that a business should be viewed as a system, therefore leading it requires a systems approach (Freeman, Phillips, & Sisodia, 2020). Business owners should have the thinking of a value network as opposed to a value chain. A value chain has one destination for one stakeholder, who is the shareholder, whereas a value network appreciates that there are other players who share different values and a shared purpose. Literature reviews stakeholder theory in two streams of instrumental stakeholder theory and moral stakeholder theory (Gooyert, Rouwette, Kranenburg, & Freeman, 2017). Instrumental stakeholder theory views stakeholders as those that can affect the focal point of the organization, whilst moral stakeholder theory focuses on engaging stakeholder from a position of the engagement being the right thing to do. In moral stakeholder theory one would then include a larger pool of stakeholders, even those that do not have the power to affect the performance of the organization.

2.3.1.2 Sustainable competitive advantage

Stakeholder theory is able to provide sustainable competitive advantage (Jones & Harrison, 2018). This is done through ensuring that a close relationship capability which is rare and inimitable with stakeholders is achieved. According to the stakeholder theory, the quintessence of business is successful relationship building and value creation for all stakeholders (Freeman & Dmytriyev, 2017). Jones and Harrison (2018) argue that the incremental costs of developing such capability depends on the stakeholder culture within the organization.

The stakeholder theory underscores the significance of societal interests in the running of businesses (Freeman & Dmytriyev, 2017). It is about embracing and incorporating the stakeholders which affect the business in decision making. Figure 1 reflects the various stakeholders which a business has and should focus on in as far as stakeholder theory is concerned, versus the stakeholders a business focuses on when concerned with the concept of CSR. The company's stakeholders are classified as primary stakeholders (inner circle in Figure 1), secondary stakeholders (outer circle in Figure 1), and the larger stakeholder group beyond secondary stakeholders.

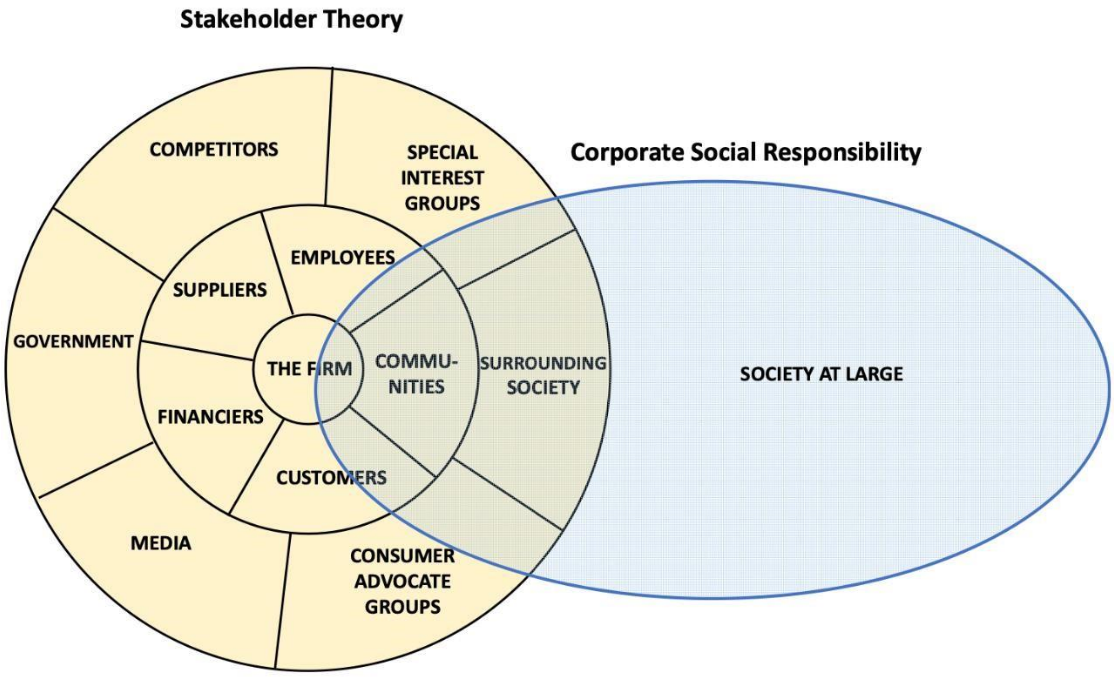


Figure 1: Stakeholder theory and its stakeholders, plus the relation to CSR (Freeman & Dmytriyev, 2017)

Focusing on the company's stakeholders means corporate responsibility according to the stakeholder theory in relation to all stakeholders, not just CSR which only focuses on the society as the company's responsibility.

2.3.2 ESG Disclosure

2.3.2.1 Integrated Reporting

According to Barth et al. (2017), South Africa is the only country with integrated reporting as mandated. This is for all organizations listed on the Johannesburg Stock Exchange (JSE). The King Reports on Corporate Governance, coupled with the International Integrated Reporting Council (IIRC) framework, mandate all listed companies on the JSE to report not only on financial metrics but also non-financial metrics associated with the environmental, social and governance elements in a single report (Iredele & Moloi, 2020). South Africa is therefore regarded as a leader in the integrated reporting movement globally (Ackers & Grobbelaar, 2022). The mining industry in South Africa is the appropriate industry for such disclosure benefit in environmental, social and corporate governance due to the operational impacts of the companies in this industry.

2.3.2.2.CEO Sentiments

The 19th PricewaterhouseCoopers Global Survey for Chief Executive Officers revealed that 52% of CEOs believed that creating value for a wider group of stakeholders beyond shareholders increases profitability for an organization (PWC, 2016). It is worth noting that for organizations to remain viable and profitable, the needs of all stakeholders need to be taken into consideration and incorporated in strategic goals and operational plans (Ackers & Grobbelaar, 2022). The depletion of natural resources has caused companies to be more cautious about their operational activities and be considerate to future generations, certainly in the South African mining industry.

2.3.2.3.South African Mines and Disclosure

Closer focus on the mining industry for South Africa is important because the South African economic activity in the latter years has been around mining activities and their supplies and services (Mineral Council of South Africa, 2019). Platinum, gold, coal and diamonds are the famous minerals of South Africa mined, whilst there are also vanadium, chrome, titanium and other less value minerals mined (Iredele & Moloi, 2020). The industry also attracts foreign direct investment to the country. It is for this reason that whilst integrated reporting is mandatory, the benefit to the industry and the individual companies for doing this is well understood.

2.3.3 Legitimacy Theory

The relevance of the legitimacy theory is in its support for the environmental information reporting to legitimize the operations of the organization (Iredele & Moloi, 2020). Organizations technically report on their role on environmental contributions to secure legitimacy within the stakeholders they serve (Nishitani, Unerman, & Kokubu, 2021). The integrated reporting mandated in South Africa is different from sustainability reporting in that it mandates reporting on social and environmental metrics which are likely to impact the longterm financial results of organizations (Nishitani, Unerman, & Kokubu, 2021). Sustainability reporting reports on a broader range of environmental and social metrics. Information on environmental, social and corporate governance has become as important as financial information for legitimacy in investment decisions, especially with the United Nations' Sustainable Development Goals issued (Nishitani, Haider, & Kokubu, 2020).

2.3.4 Conceptual Framework for ESG investments and Organizational Sustainability

This study builds on previous research on the costs and benefits of ESG investments in the South African mining sector. ESG is currently the buzzword within this sector, particularly as the organizations seek to identify improved ways of stakeholder engagements and satisfaction for continued sustainability (Johnson, Mans-Kemp, & Erasmus, 2019). Jones and Harrison (2018) concluded that given a company's specific conditions, the benefits of having a keen interest and maintaining a close stakeholder relationship outweigh the costs invested in the strategy to develop that relationship and maintain it. The stakeholder culture within an organization is therefore a moderating variable influencing the organization's value proposition and sustainability, as shown in Figure 2. The benefits should outweigh the costs for this to be valuable.

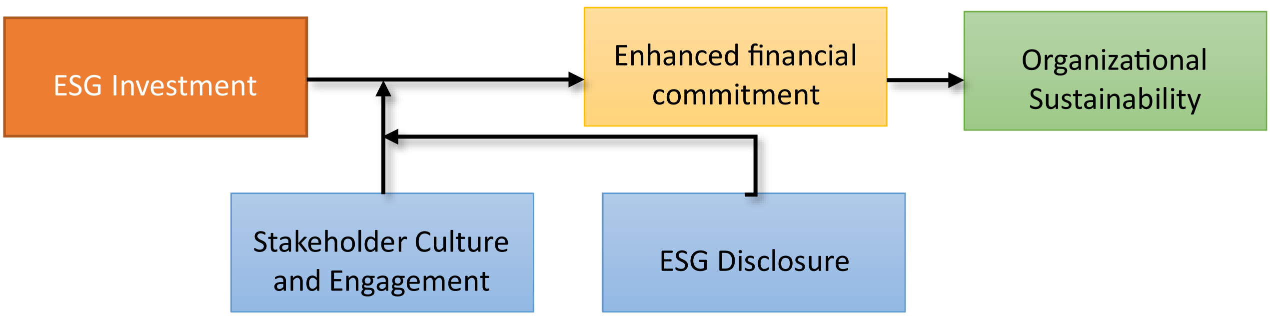


Figure 2: Conceptual Framework for ESG (Source: Researcher)

Additionally, the concepts of ESG disclosure and enhanced financial commitment were added to the conceptual framework. Since integrated reporting is mandated in South Africa for listed organizations, ESG disclosure seems to therefore act as a moderating variable between ESG investments as the independent variable and organizational sustainability as the dependent variable.

This conceptual framework proposed for the study aims to understand the influence of ESG investments on organizational sustainability within the key constructs of the stakeholder theory, stakeholder culture, ESG disclosure and the enhanced financial commitment of investment. These constructs interact with one another to affect organizational sustainability. The dependent variable is organizational sustainability as conceptualized by Freeman, Phillips and Sisodia (2020). There are two moderating variables. One moderating variable is stakeholder culture and engagement as conceptualized by Jones and Harrison (2018). The second moderating variable is ESG disclosure as conceptualized by Ackers and Grobbelaar (2022). The mediating variable is the enhanced financial commitment of ESG investments as conceptualized by Garcia et al. (2022). In the next sub-sections, the concepts are operationalized in the South African mining context.

2.3.4.1 Linking ESG investment and Organizational Sustainability

This study proposes that ESG investment has a direct impact on organizational sustainability. Johnson (2019) concluded that managers and leaders should embrace a long-term focus in relation with ESG metrics to enjoy sustainable returns. There is sufficient prior research which supports the relationship between ESG investment and organizational sustainability. The following hypothesis (quantitative study) linking ESG investment as the independent variable to Organizational sustainability is generated:

- There is a significant relationship between ESG investment and organizational sustainability

2.3.4.2 Linking Stakeholder Culture and Engagement and Organizational Sustainability

The organization's stakeholder culture is important to ensure its own long-term sustainability (Jones & Harrison, 2018). Each stakeholder is important for the organization and each of them contributes towards collective flourishing and benefit (Freeman, Phillips, & Sisodia, 2020). Stakeholders who are heard by the organization usually value the organization. This ensures that they support that organization for the long-term (Gooyert, Rouwette, Kranenburg, & Freeman, 2017). The hypothesis linked to the concept of "Stakeholder Culture and Engagement" is the following:

- Stakeholder Culture and Engagement moderates the relationship between ESG investment and organizational sustainability.

2.3.4.3 Linking ESG Disclosure and Organizational Sustainability

ESG disclosure has a relationship with organizational sustainability in the South African mining industry. Companies which disclose their ESG performance are most likely to realize less risk and may therefore have a lower capital cost (Johnson, 2020). Integrated reporting as mandated, contributes to long-term sustainability (Iredele & Moloi, 2020). Mining companies have the inherent need to maintain legitimacy to ensure that they keep their license to operate (Ackers & Grobbelaar, 2022). Therefore, the hypothesis linked to this concept of "ESG Disclosure" is as follows:

- ESG Disclosure moderates the relationship between ESG investment and organizational sustainability.

2.3.4.4 Linking Enhanced Financial Commitment of ESG Investment and Organizational Sustainability

Finally, the cost of ESG investment plays a role in organizational sustainability. ESG integration is supposed to be part of an organization's investment process (Marais, Lugt, & Mans-Kemp, 2022). The cost of ESG investment is offset in the long run through since sustainability is achieved whilst addressing societal issues and managing ESG risks at the same time (Johnson, 2020). Focusing on delivering on ESG performance above industry peers for an organization may maximize the bottom-line, profitability, and increase market valuation because of satisfied stakeholders (Ademi & Klungseth, 2022). The hypothesis linked to the concept of "Enhanced Financial Commitment" is the following:

- The enhanced financial commitment of ESG investment mediates the relationship between ESG investment and organizational sustainability.

2.4 Chapter Two Summary

From the literature on ESG studies, there are a few research gaps and this study will cover some of them. The gaps identified are the effects of ESG compliance not having been studied enough in developing countries; the lack of specific studies in ESG for the South African mining industry; and the unclear amount of ESG investment required to realize the benefits, if any for that matter. The relevant theories for this work are the stakeholder theory and the legitimacy theory.

The four hypotheses stated will be tested, evaluated and conclusions and recommendations drawn. These hypotheses are drawn from the conceptual framework developed, which seeks to establish and unpack the influence of ESG investments on organizational sustainability. The next Chapter will present the research methodology used to collect data from a sample to be presented, approached from a positivist research paradigm.

3. Research Methodology

This Chapter describes the research methodology which was followed to validate the hypotheses that came from the literature review and which are detailed as responses to the research questions which this study seeks to answer.

The research approach to be undertaken is discussed in this Chapter, and the reasons for the choice of research approach are given. The Chapter detailed only the research approach taken and ignore all others not covered by this study. The next sub-section described the study design to be adopted, discussing why the specific design chosen is appropriate in attempting to find answers to the questions posed in this research work. The advantages and disadvantages of the chosen research design were discussed. To answer the research questions, data needed to be collected. The data collection method to be used was discussed in this Chapter. An explanation was also given explaining why the chosen method is appropriate for the data needed to respond to the questions posed and the hypotheses drawn.

The population from which data was gathered was defined and explained in this Chapter. The sample was also qualified through the sampling method. The next sub-section was a description of the research instrument used. The choice of the research instrument was also justified. The procedure for data collection using the research instrument was detailed in this Chapter. This will also assist potential future researchers who may wish to replicate this work. The data collection procedure choice was justified. The strategies for data analysis and interpretation were explained and the methodological sources referenced. Only the analysis method chosen was described and justified. No study is without limitations and therefore, the limitations of this study were discussed, along with the foreseen challenges. The quality assurance of this study was discussed. This Chapter also explained the ethical considerations for this research work, and finally give the proposed schedule and timelines for the research project. Reference is made to Appendix A which shows the consistency table with the summarized research questions, hypotheses, data collection and data analysis tools.

3.1 Research Approach

The research approach chosen for this study is the quantitative approach. It was more inclined towards the quantitative approach, however, requires some elements of the qualitative approach. This study aims to understand quantitatively the relationship that exists between the different ESG investments, ESG disclosure, stakeholder culture and engagement, and the enhanced financial commitment of ESG investment, with organizational sustainability. The aim is also to further explore qualitatively the nature of the relationship (Creswell & Creswell, 2011). The research questions in Chapter 2 this work aims to address emanate from a general observation by the researcher and literature, leading to inductive reasoning. An explanation for the observation was then provisionally developed, leading to the hypotheses developed, which was then be estimated through deductive reasoning (Sekaran & Bougie, 2013). This is one reason why the quantitative approach was chosen for this work.

It is also worth noting that the relationships between the variables discussed in Chapter 2 from which the four hypotheses are drawn are correlational in nature, and therefore descriptive. This is another reason why the qualitative elements was explored for this work. The aim is to establish a correlation between the one independent variable and the dependent variable; the two moderating variables and the dependent variable; and the mediating variable and dependent variable. Significant correlations were respectively established, therefore each of the respective hypotheses were established and confirmed. This study is correlational in nature and the researcher had minimal interference in the natural setting of the variables.

The benefit and appropriateness of the quantitative method approach in this work is in its ability to allow for triangulation of data (Creswell & Creswell, 2011). Triangulation results in increased credibility of the study. The integration of data obtained quantitatively with that obtained qualitatively yielded additional insight than that provided by either of the individual approaches alone. The use of a quantitative approach alone would require researcher interference with the natural setting of the independent, moderating and mediating variables to determine their effects on the dependent variable, which for this study is impractical considering the timeframe allocated and noting that there is still little knowledge rather than extensive knowledge on the extent of ESG investments available within the South African mining industry. The information on ESG investments available allows the researcher to test the validity of the correlational relationships, to some extent. For this reason and to close these gaps, the quantitative method approach is appropriate for this work. The key assumption of the quantitative method approach is that there should be a positive correlation between the other variables and the dependent variable.

The basis of the quantitative method research approach is the pragmatic worldview (Creswell & Creswell, 2011). The philosophical underpinning here is on focusing on the research problem and using various approaches to extract knowledge about that problem. It is for this reason again that the quantitative method approach is chosen; to avoid being bound to one system of philosophy but draw from quantitative assumptions. For this work, there was another reliance on the positivism paradigm. The association of the positivism paradigm is with the hypothetico-deductive model which emanates from the observation the researcher has made, leading to the verification of the developed hypothesis and relationship of the variables (Park, Konge, & Artico, 2020). Insights from positivists researchers are likely to have a high quality of validity and reliability (Cohen, Manion, & Morrison, 2011). The aim of this work through the quantitative method approach is to discover the objective truths concerning organizational sustainability in relation to the questions posed and as a subject of ESG investments, ESG disclosure, stakeholder culture and engagement, and the enhanced financial commitment of ESG.

3.2 Research Design

Given the research questions formulated in Chapter 2, the appropriate research design is required for this work to establish the relevant evidence required to answer the questions posed (Ochara N., 2016). For this reason, the study design chosen for this research work is the explanatory sequential mixed methods design, with a strong leaning towards quantitative data. In this design, quantitative research is conducted, results analyzed, then the results are explained in more detail using qualitative research (Creswell & Creswell, 2011). The aim is to be able to analyze unexpected results obtained from the secondary quantitative data through interviews to collect qualitative data and make a comparison. The design is explanatory because the results collected quantitatively are further explained qualitatively with qualitative data. It is also sequential because one method follows the other. The quantitative data collection is followed by qualitative data collection. A quantitative research instrument was used to collect data followed by a qualitative research instrument to corroborate and further explain the results obtained quantitatively.

This type of research design is appropriate for this study and was chosen to eliminate the challenges posed by either of the quantitative and qualitative research designs respectively. Quantitative designs are limited by their nature of requiring a lot of interference from the researcher to be able to extract the relevant data (Sekaran & Bougie, 2013). The results presented may be biased and may turn out different had the researcher not interfered, or minimally interfered. Qualitative designs are limited by being unstructured and too open. This, used alone, would not be appropriate for a study that has some information and knowledge on this topic under research. Considering the questions asked in Chapter 2, the correct evidence in respect to ESG investments influencing organizational sustainability is to be collected. Collecting the evidence quantitatively and qualitatively, triangulating the results, ensured that a comprehensive explanation to answer the questions is achieved.

The chosen design within the mixed methods approach is therefore appropriate to merge the two and eliminate the gaps embedded with each, respectively, and ensures a complete appreciation of the research problem. Utilizing the mixed method design compensates for the weaknesses presented by one method by taking advantage of the strengths of both quantitative and qualitative methods (Ochara N. M., 2023). Using the mixed method research design ensures various perspectives are taken into consideration for an enriched analysis.

3.3 Data Collection Methods

In this study, secondary data was sourced and additional data collected through a structured computer-assisted interview. This was done in noncontrived settings. The secondary data was important to gather the quantitative data, whilst the structured interview was important to gather the qualitative data. These two methods draw on the possibilities presented by each. Secondary data was sectionalized into two parts. The first part, Part A addressed the general information about the target organization. Part B captured the objectives of this study (Ochara N., 2016). The advantage of the secondary data for this work is that a lot of information can be sourced in a short period of time (Sekaran & Bougie, 2013). This is very important because the data sourced was from the annual reports of the companies covered by this work. The other main advantage with the secondary data is that it had a wide range of collected data which would have otherwise been difficult to reach with other methods.

The structured computer-assisted interview had 5 questions aimed at soliciting data with minimal researcher interference. The 5 questions are informed by the number of variables of interest in this work. This data was original and distinct, coming from the target respondent resulting to increased validity and reliability of the results (George, 2022). The advantage of the structured computer-assisted interview is in its strength to obtain more in-depth information about the specific variables of ESG investments, ESG disclosure, stakeholder culture and engagement, enhanced financial commitment of ESG and organizational sustainability. The one major flaw of this type of interview is that body language ques cannot be read (Sekaran & Bougie, 2013).

The choice of data collection methods for this work are appropriate because they drive specificity towards the objectives of the study. The aim of these methods is to ensure that the research problem is addressed in detail, without leaving conclusions to chance. Both the secondary data and structured interview are specific towards addressing possible correlational relationships between the variables of interest, thereby testing the hypotheses developed.

3.4 Population and Sample

3.4.1 Population

The target population of this study includes listed South African mining companies on the JSE. It also includes senior leaders of stakeholders to those organizations. This population is chosen because the data to be sourced and the answers can more effectively be provided by managers and senior leaders from the South African mining companies, as well as their stakeholders. It is very critical that the correct answers are obtained from the correct people.

3.4.2 Sample and Sampling Method

A sample to send the structured computer-assisted interview is chosen from the defined population. To define the sample size, equation 1 was used (Sample size calculator, 2023):

$$Sample\ Size = \frac{\dfrac{z^2 \times p(1-p)}{e^2}}{1 + \left(\dfrac{z_2 \times p(1-p)}{e_2 \times N}\right)} \ldots\ldots\ldots\ldots\ldots (1)$$

where, z: z- score, which is determined by predicting the confidence level and can be extrapolated using

below:

Table 3: Z- score predictor

Desired confidence level	**z-score**
80%	1.28
85%	1.44
90%	1.65
95%	1.96
99%	2.58

N: total population size

E: Margin of error (percentage in decimal form) p:

Standard deviation (%)

The sample size is easily determined from the concepts covered in this study. This research explores four (4) concepts. Therefore, sixteen (16) questions were targeted to be answered by the secondary data on a 5-point Likert scale, with each concept having four items. This therefore yielded a sample size of sixty-four (64).

The purposive sampling method was used in this study (Sharma, 2017). The reason this method is chosen over others is because the researcher has insight through literature and publicly available information of the companies which are in the forefront of ESG matters in the South African mining industry. It would not be very fruitful for this study if random sampling or any other sampling method were chosen, when there are specific organizations that can be targeted to yield better answers to the questions posed as they are more familiar with the matters of this topic.

With a sample size of sixty-four (64), the secondary data aimed to obtain about twenty responses. A 30% response rate is considered exceptional in such cases (Sekaran & Bougie, 2013). The interview also had five (5) questions addressing the five (5) variables of interest and the intention is to obtain responses from twenty respondents, as per secondary data collected.

Each respondent therefore responded to five questions on the interview. This is a total of twenty-five questions with all respondents combined.

3.5 The Research Instrument

With this study based on the mixed methods approach, the secondary data to address quantitative data and structured computer-assisted interview research instrument to address qualitative data was used as has been stated. Considering the questions posed, the secondary data ensured that the data sourced was structured and focused on sourcing specific answers for those questions. The interviews ensured that the exactitude of the sourced information was achieved from the respondents with minimal outside interference from the natural environment. Reference is made to Appendix B for the interview guide.

The secondary data and interview are key in establishing the expected correlation between the variables of interest within the study. The secondary data included generalized questions about the target organization, the novelty of the research topic, ESG investments, contextual justification, the relevance of stakeholders and their culture, the importance of ESG disclosure, the influence of the cost of ESG on organizational sustainability, maintaining alignment with the research objectives and maintaining a logical narrative. The interview questions afforded the respondents an opportunity to offer further insights with depth in interpreting the quantitative data supplied.

3.6 Procedure for Data Collection

Data was collected electronically, through the sourcing of the secondary data from the library and the electronic distribution of the structured interview. The sample respondents received a unique email link directing them to the interview questions.

The use of an online platform is the ease of its administration, capacity of reach and response effectiveness without constraining respondents to geographic constraints (Sekaran & Bougie, 2013). Respondents can also answer at their own time and responses are automatically processed (Cushman, Kelly, Fusco-Rollins, & Faulkner, 2021). Respondents were informed about the interview, detailing the purpose and the need, before they proceed to participate, voluntarily. There were clear instructions on how to access and participate in the structured interview. The respondents were also advised of the timeframe for responding to the interview as there was a specific duration for which the responses can be filled and submitted before participation is closed. The time afforded for completion was enough for the calibre of respondents sampled. Respondents were assured of the confidentiality and anonymity of their responses. The responses were used for this study only and not distributed further, in accordance with the POPI Act compliance as well (Government Gazette, 2013).

3.7 Data Analysis Strategies and Interpretation

3.7.1 Quantitative Data Analysis

The IBM Statistical Package for Social Sciences (SPSS) (version 28) program was used to analyse the qualitative data. SPSS is a statistical tool to analyse the data using the following metrics:

- descriptive statistics used to describe the basic features of the data;
- reliability and factor analysis used to test the goodness of the data;
- inferential analysis used to draw conclusions about the sample.

Cronbach’s coefficient alpha was used to determine the interitem consistency reliability. The measurement is used for comparison, determining how comparable respondents' responses to the same topic are. The higher the coefficient the more reliable the measuring instrument (Sekaran & Bougie, 2013).

The correlational relationships of the variables need to be assessed to determine how strong they are to perform factor analysis. The Kaiser-Meyer-Olkin (KMO) measure assesses this. The KMO value range is from 0 to 1, with higher values indicating better adequacy for factor analysis (Ochara N. M., 2023).

Bartlett's Test of Sphericity checks if the correlation matrix of the observed variables is significantly different from an identity matrix and a significant result of p-value <0.05 indicates sufficient correlations among the variables to just the use of factor analysis (Ochara N. M., 2023).

The exploratory factor analysis helps to (i) identify the underlying dimensions or factors; (ii) reduce data dimensionality; (iii) evaluate construct validity and (iv) improve survey design (Ochara N. M., 2023).

3.7.2 Qualitative Data Analysis

The thematic analysis technique was used for the qualitative data analysis. This method was chosen because it gives essential abilities which are valuable for doing many kinds of analysis (Braun & Clarke, 2006). This technique is versatile and is not bound by a theoretical viewpoint or specific epistemology (Braun & Clarke, 2006). The purpose of this technique was to establish repetitive themes and patterns from the qualitative data collected. These themes were used to address the research questions posed.

Because the interviews to be conducted were computer-assisted, the themes which this thematic analysis strategy addressed are the semantic themes, defined as those within the explicit and surface interpretation of the data (Braun & Clarke, 2006). This is the limitation of the computer-assisted interviews as latent themes cannot be established, which are more the underlying assumptions, ideologies and conceptualizations sourced from a respondent through face-to-face or telephonic interviews.

3.8 Possible Limitations and Challenges of the Study

This study is not without its limitations and challenges. Potential weaknesses do exist for the following sub-sections:

- The choice of the explanatory sequential mixed method research design. This design assumes that the respondent will provide the quantitative data first before providing the qualitative data for interpretation. Perhaps an explanatory parallel mixed method design could have also covered a situation where the data is provided at the same time. This should, however, not negatively influence the data interpretation and analysis.
- The chosen data collection methods of secondary data and interviews have their own limitations in relation to this work. For starters, secondary data might be slightly outdated. If there has been a lot of changes between the time of archiving the secondary data and now, it will be a challenge to draw relevant conclusions from data which is not representative of the sample, nor the population in totality. Assumptions might have to be made and further recommendations noted for future works by others. The computer based interviews are also limited in the inability to present nonwritten ideologies and extrapolations.
- Another limitation is in the sample size. The sample needs to be representative of the population to generalize the results to the entire population, and/or even be able to transfer, as this study is a mixed methods study.
- The procedure for data collection chosen also has its weaknesses. The online approach through electronic mail may result in the sent email reporting in some respondents' junk mailbox. This may result to those respondents not realizing that they have received the link, and therefore negatively impacting participation and data collection for this study. Some people also do not appreciate just receiving an email without prior notice via a phone call to inform them that such communication will be coming through.

These are some of the limitations and anticipated potential weaknesses that may negatively influence the objectives of this research work. The conclusions and recommendations from this work addressed the material limitations and weaknesses for future studies.

3.9 Quality Assurance

3.9.1 External Validity

The validity of this study is a question of whether the research is believable and true, and whether it evaluates what it is supposed to be evaluating (Zohrabi, 2013). This research purposed to be generalizable in other settings and with other subjects. The aim was that the findings become applicable to other contexts as well. This, however, is subject to the underlying similarities within the different contexts relative to the context of this study (Zohrabi, 2013). The extent of validity was the focus from the research approach to the research design to data collection, research instruments and interpretation of data.

3.9.2 Internal Validity

Concerning internal validity, the aim was to maintain that the research findings are compatible and in harmony with the reality (Zohrabi, 2013). It is important that what is supposed to be measured is measured. To enhance internal validity within this mixed methods study, the method of triangulation was applied. This is the sole reason why for this work, data is collected from more than one source through the secondary data and interviews. Data from one source could be biased and inconclusive for this topic of focus to answer the research problem. Collecting the data from different sources strengthened and confirmed the findings from the various sources. The findings from quantitative and qualitative data were also corroborated (Zohrabi, 2013).

3.9.3 Reliability

The aim was to get a higher Cronbach's coefficient alpha which indicated that the measuring instrument was more reliable, in this case being the secondary data for quantitative data. It is important that the data and findings are reliable. Should the findings reflect a positive correlation of ESG investments, ESG disclosure, stakeholder culture and engagement, and the enhanced financial commitment of ESG to organizational sustainability, these findings should be consistent, replicable and dependable.

For qualitative data collection, the aim was for the findings to be dependable and consistent, rather than being similar because it is challenging in qualitative findings to get similar results as they are more narrative in nature (Zohrabi, 2013). It was easier to get similar findings from the quantitative data.

To increase the reliability of this study, the different processes and stages of this inquiry have been explicitly explained. Every aspect has been elaborated, and the following sections were also elaborated in detail. The rationale of the study has been described, along with the design. The use of various sources of data collection also enhances the reliability of this work. The diversity of the population, and hence the sample, gave varied perspectives, further enhancing the reliability of the findings.

3.10 Ethical Considerations

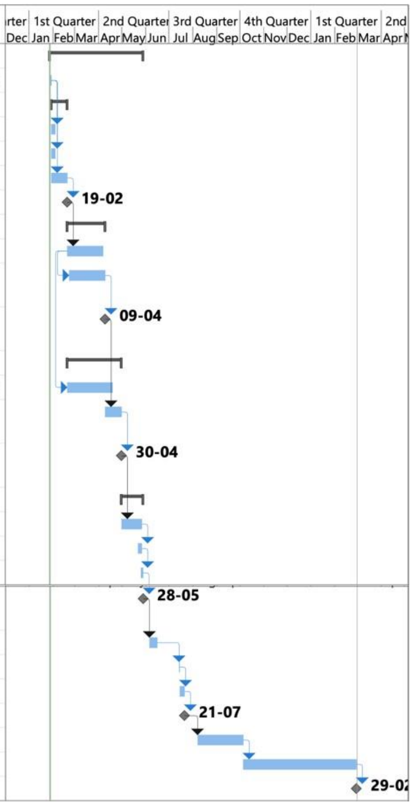
The ethical considerations of this study are very important for compliance to research standards. Confidentiality and anonymity of the respondents was maintained throughout this study. This was done through the sharing of a link to the interview and responds responding without being asked to share their personal information or specific company details. The POPI Act was also upheld as it is mandatory in the republic of South Africa (Government Gazette, 2013). Individual responses were not and cannot be linked to respondents. The participant information sheet is shown in Appendix D, whilst the consent form is Appendix E.

Respondents were asked to consent to participation in the study before they proceed to respond to the interview questions. Respondents were also assured that participation is voluntary, and a respondent is free to cancel their participation at any given moment throughout the study, without being penalized. However, to try and ensure that more respondents participate, participants were informed that if they complete their participation, they would have the first access to this work once completed and before distribution for public consumption.

The ethics form was filled and submitted for clearance to proceed with this study. The rights of all respondents were protected. Transparency in explaining the purpose of the study and the need for participation was detailed. Participation consent was sourced from respondents and voluntary participation maintained with the freewill to withdraw participation at any given moment. Anonymity and confidentially was always maintained. There was total commitment of the researcher to ethical integrity of this work.

3.11 Proposed Schedule and Timelines

ID	Task Name	Duration	Start	Finish
1	**Applied Research Project**	**100.5 days**	**Sat 28-01-23**	**Sun 28-05-23**
2	Introductory CES Session 1	1 day	Sat 28-01-23	Mon 30-01-23
3	**Assignment 1 - Chapter 1**	**17 days**	**Mon 30-01-23**	**Sun 19-02-23**
4	Develop Problem Statement	5 days	Mon 30-01-23	Sat 04-02-23
5	Develop Statement of Purpose	5 days	Mon 30-01-23	Sat 04-02-23
6	Write Assignment 1 - Chapter 1	17 days	Mon 30-01-23	Sun 19-02-23
7	Submit Assignment 1	0 days	Sun 19-02-23	Sun 19-02-23
8	**Assignment 2 - Chapter 2: Empirical Review of Literature**	**41 days**	**Sun 19-02-23**	**Sun 09-04-23**
9	Literature Review	40 days	Sun 19-02-23	Fri 07-04-23
10	Write Assignment 2 - Chapter 2: Empirical Review of Literature	38 days	Wed 22-02-23	Sun 09-04-23
11	Submit Assignment 2 - Chapter 2: Empirical Review of Literature	0 days	Sun 09-04-23	Sun 09-04-23
12	**Assignment 3 - Chapter 2: Theoretical Review of Literatur**	**59 days**	**Sun 19-02-23**	**Sun 30-04-23**
13	Literature Review	50 days	Sun 19-02-23	Wed 19-04-23
14	Write Assignment 3 - Chapter 2: Theoretical Review of Literature	18 days	Sun 09-04-23	Sun 30-04-23
15	Submit Assignment 3 - Chapter 2: Theoretical Review of Literature	0 days	Sun 30-04-23	Sun 30-04-23
16	**Final Summative Assessment: Research Proposal**	**23.5 days**	**Sun 30-04-23**	**Sun 28-05-23**
17	Write Chapter 3: Research Methodology	23 days	Sun 30-04-23	Sat 27-05-23
18	Review Chapters 1 and Chapter 2	5 days	Mon 22-05-23	Sat 27-05-23
19	Review entire proposal	1.5 days	Fri 26-05-23	Sun 28-05-23
20	Submit Research Proposal & Ethics Form with supporting documents	0 days	Sun 28-05-23	Sun 28-05-23
21	Present Proposal Before Panel	9 days	Mon 05-06-23	Thu 15-06-23
22	Receive Panel Feedback	0.5 days	Fri 14-07-23	Fri 14-07-23
23	Update Proposal and Re-submit	5 days	Sat 15-07-23	Fri 21-07-23
24	Submit Ethics Application for Approval	0 days	Fri 21-07-23	Fri 21-07-23
25	Collect Data after Ethics Approval	50 days	Mon 07-08-23	Thu 05-10-23
26	Proceed with Research Report	123 days	Thu 05-10-23	Thu 29-02-24
27	Submit Final Research Report	0 days	Thu 29-02-24	Thu 29-02-24



4. Results and Discussion

Data was collected from seven different South African mining companies which are listed on the JSE. This selection was limited to large companies with a market capitalization of over R100 billion, to limit the scope and ensure that the data required is found. The companies whose data was collected are: BHP Group Limited, Glencore plc, Anglo American plc, Gold Fields Limited, Anglo American Platinum, South32 Limited and Anglogold Ashanti. These are the only mining companies mining and processing minerals worth over R100 billion on the JSE. They were selected because not only are they South African mining giants, but they are also global companies with operations outside the borders of South Africa. Smaller companies were not considered because their focus on ESG consideration is limited by financial constraints (Johnson, Mans-Kemp, & Erasmus, 2019). Large firms have more focus from external stakeholders, and therefore there is an expectation that they invest in ESG metrics.

Table 4 lists the companies and their market capitalization.

Table 4: Company Market Capitalization

Company	Market Capitalization (R billion)
BHP Group Limited	2,880.00
Glencore plc	1,250.00
Anglo American plc	545.91
Gold Fields Limited	231.50
Anglo American Platinum	182.09
South32 Limited	175.24
Anglogold Ashanti	140.83

4.1 CSI

The results collected were for the 2022 financial year for all the companies. Figure 3 depicts how much the companies contributed towards corporate social investment (CSI). Such investment seeks to address the issue of social development. The aim is to improve the quality of life within which these mining houses operate.

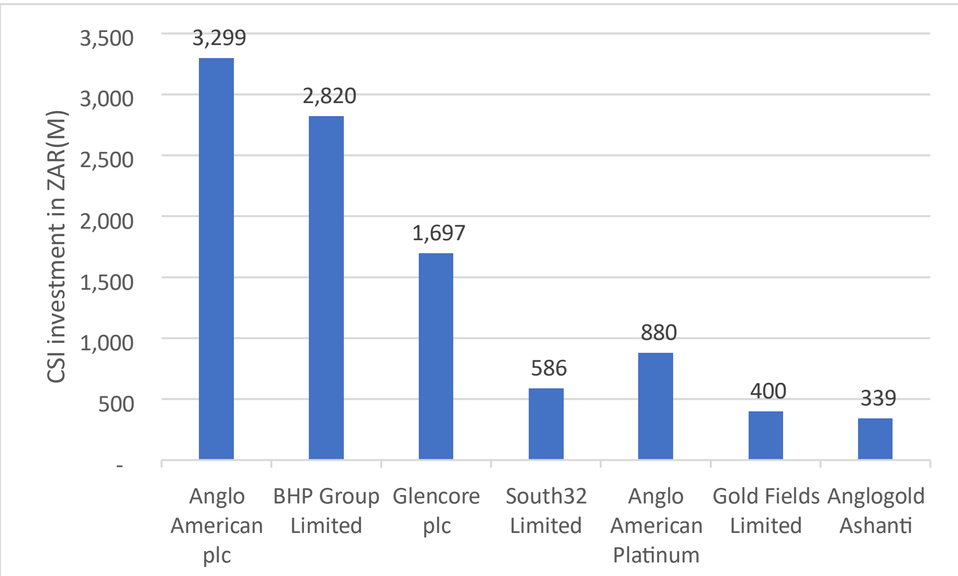


Figure 3: CSI investment in ZAR (M) for JSE listed global mining companies with operations in South Africa and abroad

A comparison of Table 4 and Figure 3 presents an interesting picture. The amount of investment to social initiatives was not linearly related to the size of the company by market capitalization as per 2022 performance. The largest company did not necessarily make the largest investment. Anglo American plc made the largest investment. However, it is worth noting that from the companies sampled, the smallest company which is Anglogold Ashanti made the smallest investment of all the seven companies. This reflects a declining trend in corporate social investment as the companies become smaller.

It is worth noting that Anglo American is one of the most popular and one of the best companies to work for in the country according to surveys from employees. It is number 1 based on a combination of significance, market influence, and overall prominence in the South African mining sector (Adeaga, Walubengo, & Wangare, 2024). This suggests that the more spend on CSI, the greater the brand awareness.

4.2 Greenhouse Gas Emissions

in light of the call to observe and reduce greenhouse gas emissions, the companies which form part of the scope of this study are working on increasing their emissions reduction rate. The exception in 2022 was South32 from those studied, which saw an increase in greenhouse gas emissions by 1.4%, as seen in Figure 4.

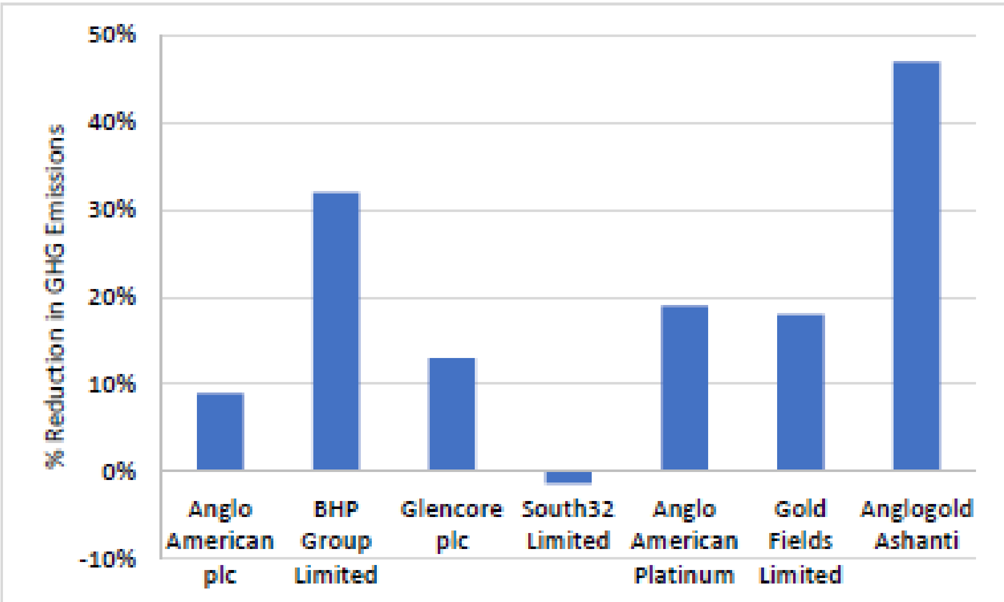


Figure 4: % reduction in greenhouse gas emissions for the year 2022 for top seven JSE listed mining houses

From Figure 4, it can be observed that Anglogold Ashanti had the highest reduction rate for the year 2022 at 47%. It was followed by BHP Group Limited at 32%. South32 saw an increase of 1.4% compared to 2021 figures. These companies all disclose on Scope 1 and Scope 2 emissions. Scope 1 emissions are direct emissions generated from combustion of fuels onsite.

Scope 2 emissions are indirect emissions form purchased electricity.

Figure 5 depicts the amount of operational greenhouse gas emissions in metric tons of carbon dioxide equivalent.

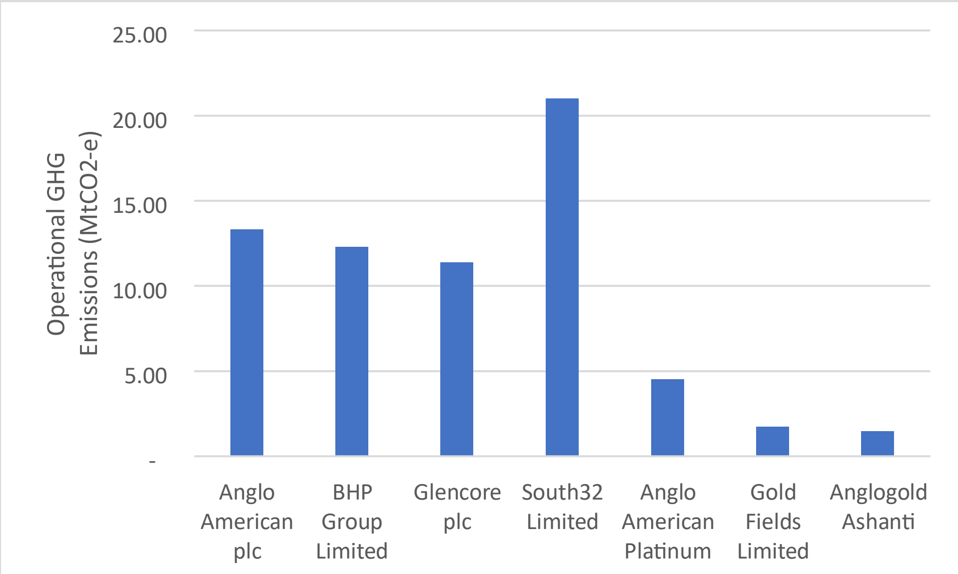


Figure 5: Operational GHG Emissions (MtCO2-e) for top seven JSE listed mining houses

A comparison of Figure 4 and Figure 5 does not present a pretty picture for South32. The company increased greenhouse gas emissions and it was the highest in operational greenhouse gas emissions among the seven companies in 2022, as per Figure 5.

Putting focus on each of the companies concerning ESG matters, the next subsection addresses the data as provided on the companies' sustainability reports.

4.3 Typical Disclosed ESG Information per Company

In this subsection, three companies were chosen to reflect the ESG information which these companies disclose in as far as environmental, social and governance issues are concerned. The chosen companies were BHP Group Limited, Anglo American and Anglo American Platinum. This selection was based on getting the top two companies by CSI contributions, with Anglo American Platinum added as the third company for comparison against its largest shareholder, Anglo American.

4.3.1 Anglo American

The Issue	Potential Impact on enterprise value (creation, erosion and preservation)	Potential Impact on our planet and stakeholders
Environmental		
Energy: biodiversity and environmental management.	Value erosion if we cannot attain and exploit energy at the right price. Value creation in embracing self-generation and investing in renewable energy.	Reduced consumption of electricity from the grid frees generation capacity for society. Potential for communities to share rewards of renewable energy investments and access to energy. Contributing to decarbonisation.

Water: meeting the Sustainable Mining Plan.	Around the world, we operate in water stressed and water scarce areas, which are factors becoming more acute because of climate change.	Competition for scarce water supply with other stakeholders.

Mineral residue management: air quality and operational emissions being an issue. Circular economy and materials stewardship.	Operationally, we have identified dependence on third-party infrastructure and power supply as a heightened risk, especially in South Africa.	The regulatory environment in which we operate remains impacted by sociopolitical changes in key countries, which could affect future production and delay the deployment of new technologies to support future production and sustainability initiatives.
Social		
Thriving Communities: ensure a collaborative regional development and development through partnerships environment. Maintain cultural heritage	We are continuing to implement our industry leading social performance management system for the global extractive sector, the Anglo American Social Way 3.0. It represents a thorough and innovative approach to how we interact with host communities that prioritise respect and mutual benefit for all stakeholders.	Collaborative Regional Development (CRD) is Anglo American's innovative model to support diversified, sustainable regional development, which is undertaken in partnership with a range of organizational stakeholders.
Governance		

Public policy engagement:	In 2022, we encouraged discussions about the role of responsible mining for critical minerals, as recycling alone will be unable to meet the needs of a low carbon economy.	As a global leader in the mining industry, we are accountable to all of our Stakeholders.
Ethical value chains: We understand that ethical reputation is a critical asset for building trust with our stakeholders.	In 2022, we assessed and updated nearly 40% of the Group's policies that underpin the Code of Conduct in line with their standard review cycle.	We expect our employees and business partners alike to behave ethically and consistently show care and respect for colleagues, communities and the environment in which we operate
Responsible and inclusive supply chain: Our approach to responsible sourcing is aligned to our Purpose	Defined sustainability requirements allow us to prioritise ethical decision making when selecting and managing the suppliers we work with, and to support and uphold fundamental human rights through our supply chain.	We expect all suppliers to meet applicable laws – while sharing our commitment to improve people's lives, society, and our environment.

4.3.2 BHP Group Limited

Issue	**Definition**	**Scope**
Environment		
Energy	Energy produced and consumed	Global operations and corporate

Greenhouse gas emissions	Direct and indirect emissions from combustion of fuels and purchased electricity	Global operations and corporate
Air emissions	Emissions to air as per National Pollutant Inventory (NPI) classification	Australian operations
Water withdrawal	Groundwater, rainwater captured, municipal water and recycled water	Global operations
Water discharge	From below groundwater bodies, surface water bodies, sewage and wastewater and use for suppression of dust	Global operations
Mineral Waste	Material removed to gain access to mineral ore, and material on rock, oils and greases	Global operations
Rehabilitation and closure	Total area of land covered	Sum of land as per definition and production tenements
Environmental compliance & investment	Amount of material spilled, fines incurred, significant incidents and monetary value of investments in environmental stewardship	Total sums in value and in number
Social		
Workforce engagement (NEW)	Results on engagement score, with surveys on fairness and respect, and belonging and contribution	Total workforce
Diversity & Equality	Total employees, gender comparison and pay comparison	Total workforce

Representation at leadership level (employees only)	Number of executives who identify as male and those as female, senior, middle and junior management	Employees
Employee turnover	Percentage of employees who identify as either male or female leaving the organization	Employees
Collective bargaining and ethical conduct	Percentage workforce covered by collective bargaining or union membership	Workforce

4.3.3 Anglo American Platinum

The Issue	Potential Impact on enterprise value (creation, erosion and preservation)	Potential Impact on our planet and stakeholders
Environmental		
Energy transition and security: Investing in renewable energy to enhance energy security and contribute to the decarbonisation journey.	Value erosion if we cannot attain and exploit energy at the right price. Value creation in embracing self-generation and investing in renewables.	Reduced consumption of electricity from the grid frees generation capacity for society. Potential for communities to share rewards of renewable energy investments and access to energy. Contributing to decarbonisation.
Building climate change resilience: Embedding climate change resilience in our business	Physical impacts of climate change could lead to higher operational costs and disrupted	Improving resilience to, and adaptation of, certain climate change

to address potential impact on operations of physical climate risks (acute weather events such as droughts and floods), rising temperatures and accelerating loss of biodiversity.	production, hence value erosion. Value creation and preservation are possible if we recognize opportunities to address physical impacts of climate change that can also support decarbonisation or other social commitments.	responses, especially interlinked impacts on food security and health.
Tailings management: Ensuring the integrity of our tailings storage facilities (TSFs), complying with local and international standards and requirements, and building trust with host communities on our tailings management.	Any failures or incidents at our TSFs could have negative impacts, including on reputation, with additional costs to remediate or address their impacts. Innovation in tailings management could conserve natural resources.	Depending on the zone of influence and related impacts, any failures or incidents could result in loss of life or injury, damage to property and environmental contamination.
Access to water: Ensuring our operations have the right quantity and quality of water on which they depend and being mindful of the demand for water resources by other stakeholders.	Lack of water to operate can impact production and increase costs, ie value erosion. Effective water stewardship can reduce costs.	Competition for scarce water resources with other stakeholders.
Social		
Skilled workforce: Continuing to attract, retain and develop the right skills to deliver our business strategy.	Value creation if we can access and develop the right skills and talent to deliver on our plans, but value erosion if we cannot.	Opportunities for skills development, reskilling and participating in new opportunities.

Resettlement and relocation: Delivering resettlement processes that lead to enhanced livelihoods and maintaining good community relationships,	Delays to relocation could impact production. Higher costs for resettlement could erode value. Potential for reputational harm	Enhanced livelihoods if resettlement is successful.
as well as achieving compensation and application of rights processes in line with commitments		
Socio-economic and political context: Navigating our highly complex operating context, exacerbated by high levels of unemployment, infrastructure and service-delivery challenges, and limited municipal and institutional capacity	Value destruction if we cannot achieve more stable operating contexts, address socio economic challenges and maintain stable relationships. Value creation if we are able to navigate this successfully	Impacts tied to violence and insecurity.
Diversity and inclusion: Ensuring a diverse workforce and inclusive workplace for all, one that is representative of our operating context	Value creation and preservation if we can achieve a more diverse and inclusive workplace	Opportunities for participation by underrepresented stakeholders
Health and safety: Delivering on our zero-harm promise to employees and communities	Value creation and preservation if we achieve zero harm. Value erosion through loss of life and illness, as well as reputational harm	Loss of life or injury, or illness.
Governance		

Geopolitical: Navigating uncertainties and volatility, and reframing global markets, relationships, regional blocks and national positions	Value erosion if this leads to higher costs to do business	Potential repercussions on our value chain and communities if it affects our ability to operate
Crime and corruption: Ensuring adherence to the highest ethical standards and business practices, and addressing risks of corruption and coercion	Value erosion tied to the financial liability associated with illegal mining and increased costs to manage crime.	Impacts on security and wellbeing of communities.
Economic/financial		
Value creation from ESG: Balancing the cost of maintaining ESG/sustainability leadership and achieving our SMP with perceived value in the market and among stakeholders.	Value creation when we conduct our business in a responsible way, aligned with stakeholders' ESG expectations and supporting the role of PGMs in the global decarbonization transition.	Stakeholders depending on our economic contributions might be impacted negatively, especially the communities in which we operate.

4.4 Discussion

From the data presented, the information disclosed is detailed and very important to external stakeholders. It appears evident that organizational sustainability is improved by spending time and money in ESG metrics. The leaders of the companies in this study spend time and money in investing in ESG with a long-term focus to enjoy favour and acceptance by their stakeholders (Johnson, 2020). The share price of these companies on the JSE is on the high side, as a result. Inversely, if investments in ESG decline, the share price responds directly reflecting a downward trend.

Concerning stakeholder culture and engagement, it is clear from the CSR perspective, with data obtained for the subset of CSI, that stakeholders are appreciative of contributions in social metrics. From the Anglo American data, it is clear that the company puts emphasis on collaboration with host communities as well as focusing on regional development through a drive to influence and produce thriving communities.

From the BHP Group Limited data, the company discloses and reflects more focus on its primary stakeholders, more specifically its workforce constituting of employees and contracting partners. This includes a focus on inclusivity and diversity, representation at leadership level, turnover of employees, and an open relationship with union representation. The result is that BHP Group Limited invests a significant amount of money in improving the experience of its stakeholders with the company. Ultimately for BHP, this translates to a reward of long-term organizational sustainability. The company is currently the largest by value on the JSE as seen in Table 4.

Anglo American Platinum's focus on social aspects include working on attracting, retaining and developing the right skills, maintaining community relationships and providing enhanced livelihoods where resettlements have taken place, addressing socio-economic challenges, to drive value creation, identifying opportunities for participation by the historically disadvantaged South Africans and other underrepresented stakeholders through diversity and inclusion, and focusing on delivering the promise of zero-harm to employees and communities. This has resulted to Anglo American Platinum enjoying long-term organizational sustainability and being recognized as one of the leading brands by employees and communities alike.

Concerning the disclosure of ESG performance as mandated, this is what leads to organizational sustainability. Anglo American's governance focus reflects a great focus on public policy engagement, ethical value chains including employees and business partners, and responsible and inclusive supply chain. BHP Group Limited's governance focus.

The enhanced financial commitment brought about by ESG investments supports the journey and target towards organizational sustainability. It is clear from the results that stakeholders view the financial commitment in a positive light, reflecting the company's commitment towards contributing to a sustainable future for the host community and the country at large.
This leads to buy-in by stakeholders and thus good productive relationships with the company.

5. Conclusions and Recommendations

5.1 Conclusions

From this study, it can be concluded that there is a significant relationship between ESG investment and organizational sustainability. That relationship is directly related. Investing in ESG contributes towards organizational sustainability. Stakeholders appreciate a company which contributes to ESG metrics, and that reflects on the brand and value of that company.

It can also be concluded that stakeholder culture and engagement is important for organizational sustainability. As Jones and Harrison (2018) reported, this relationship is necessary for long-term sustainability. Investing in ESG alone is no guarantee for organizational sustainability. The company stakeholders need to be engaged, involved and accommodated to facilitate the drive towards organizational sustainability. It largely the relationship with stakeholders which keep the company sustainable, giving it a sustainable competitive advantage.

It can be concluded that ESG disclosure is important for organizational sustainability. Companies may invest in ESG. However, if these investments are not disclosed, then the greater stakeholder society will not be aware about them. The awareness of that company will be as one which has not invested in ESG at all or invested significantly less. Therefore, more than that the JSE listed companies are mandated to disclose, it helps the companies' brands to disclose, even voluntarily. Stakeholders need to be aware that the bottom line is not the primary focus but ensuring that the environment is protected for the future, social constructs are worked on, and ethical governance is adhered to, should also be the known focus to ensure organizational sustainability.

It can be concluded that enhanced financial commitment towards ESG reflects to the stakeholder community that the company is serious about the greater good. The companies in this study have contributed significantly towards ESG metrics over the years, reflecting to stakeholders a collaborative approach to sustainability and tackling geopolitical, economic, social, technological, legal, ethical and environmental issues together. Such a commitment rubber-stamps and assures the concerned company sustainability for the future. The immediate alternate opportunity cost of directing investment towards ESG is negligible compared to the reward of organizational sustainability in the longer-term as a result of addressing societal issues and managing ESG risks (Johnson, 2020).

This study could be improved by considering more companies also in the mid-tier range by market capitalization. Limiting this study to large companies worth over R100 billion excluded the data which could be obtained from other well contributing companies worth less than R100 billion in the mining sector. Further limited the sourcing of some of the results being presented in this study to three companies excluded additional results which could have been sourced from the other four companies which are worth over R100 billion. The rationale of this limitation being that all the companies report on similar data. This is the author's observation on the fallibility of the research process undertaken. Having concluded this work, the observation is that there is a lot of information available on ESG metrics disclosed by JSE listed companies, the unpacking and interpretation of which requires more time and contribution to it, which may be the scope of a PhD study.

5.2 Recommendations

This study may have implications for other companies and market players. The results of this study reflect that investing in ESG improves the chances of organizational sustainability significantly. Investing in ESG is not a financial waste, particularly if the view extends beyond the short-term. Those companies which have invested significant amounts of money have enjoyed a sustainable competitive advantage. Focusing on ESG metrics and eliminating or mitigating, where elimination is not possible, the risks of ESG goes beyond a noble act, but assures and reflects commitment by the organization that it is committed to stay the course.

Investing in ESG, coupled with ESG disclosure and stakeholder engagement, is a driver of long-term sustainability. It requires the subject company to allocate a budget for resolving issues associated with the environment, issues associated with social metrics, and issues associated with corporate governance. The mining sector has no shortage of such issues. If companies want to last longer, it is imperative that they set aside finances for this and ensure that the future is still that of a world where, beyond healthy living being sustained, but also that they can still mine minerals for the next 50 years.

The various incidents which have historically taken place in the mining sector associated with environmental pollution, lack of inclusion and diversity, and unethical behaviour need to be proactively eliminated, and mitigated where applicable, to ensure that the sector and the companies regain societal trust for long-term sustainability.

Finally, future studies should focus including mid-tier companies and smaller companies which have invested in managing the risks associated with ESG and have disclosed their initiatives in some way. It would be interesting to understand how this has benefitted those smaller companies in as far as long-term sustainability is concerned.

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APPENDIX A

Table 5: Consistency table: research questions, hypotheses, data collection and data analysis

RQ No.	Research Question	Hypothesis No.	Hypothesis	Data collection Detail	Data Analysis Method
1	Why should organizations invest in ESG performance?	1	There is a significant relationship between ESG investment and organizational sustainability	• Secondary data from the library • Interview guide questions 1 and 5	• SPSS • Thematic analysis
		2	Stakeholder Culture and Engagement moderates the relationship between ESG investment and organizational sustainability.	• Secondary data from the library • Interview guide questions 2 and 5	• SPSS • Thematic analysis
2	What is the cost of ESG investment?	4	The enhanced financial commitment of ESG investment mediates the relationship between ESG investment	• Secondary data from the library • Interview guide questions 4 and 5	• SPSS • Thematic analysis

			and organizational sustainability.		
3	How can ESG performance contribute to long-term sustainability without compromising the bottom line?	3	ESG Disclosure moderates the relationship between ESG investment and organizational sustainability.	• Secondary data from the library • Interview guide questions 3 and 5	• SPSS • Thematic analysis

APPENDIX B

Interview Guide

1. Briefly elaborate to what extent investing in ESG metrics contributes to long-term organizational sustainability
2. How is stakeholder culture and engagement important for organizations' long-term sustainability?
3. How is public disclosure of ESG performance necessary for organizational long-term sustainability
4. How much should organizations be investing in ESG for long-term sustainability and what should inform that cost?
5. What else significantly contributes to organizational long-term sustainability which supports ESG performance?

APPENDIX C

Participant Information Sheet (PIS)

Dear Sir / Madam

My name is Brian Dlamini. I am a Masters student member in Masters of Business Administration at the University of the Witwatersrand, Johannesburg. My supervisor is Dr Lumkile Mondi. I am conducting a research study about the influence of ESG investments, ESG disclosure, stakeholder culture and engagement, and the cost of ESG, on organizational sustainability. The study title is Environmental, Social and Corporate Governance Investments in the South African Mining Sector.

I am inviting you to take part in answering an interview. If you decide to take part, your participation in this research study will last about 30 minutes. The interview will take place online and you are welcome to partake at your own leisure. The interview will be available for a period of 14 days from when it is issued.

With your permission, I would like to digitally record the interview. This data will be stored digitally once all potentially participant identifying information is removed. Only the researcher will have access to the data.

During the research activity, I will need to ask personal information about you, including your position in your organization.

The interview will be confidential and anonymous. When I share the results of the research study, I will not include your name or anything else that could identify you. With your permission, other researchers may use the data collected from this research study, but your name and any personal information will not be used or passed on.

If you decide to take part in the research study, it should be because you want to volunteer. You do not have to take part. You can stop being in the study at any time. You do not have to answer any questions if you do not want to. You will not get any direct benefits if you choose to join the research study. You will not lose any services, benefits or rights you would normally have if you decide not to join. Taking part in the research study will not cost you anything. You will not be paid for being in this research study.

The risks for this research study are no more than what happens in everyday life / the questions asked may make you feel sad or upset. If this happens, you are welcome to withdraw from participation.

This research study will be written up as a research report. The report will be available on the university library website. If you would like to receive a summary of this report, I will be happy to send it to you.

If you have any questions during or afterwards about this research study, feel free to contact me or my supervisor on the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnonmedical@wits.ac.za.

Yours sincerely,

Researcher:
Brian Dlamini, 2293388@students.wits.ac.za, 083 990 1781

Supervisor:
Dr Lumkile Mondi, lumkile.mondi@wits.ac.za

APPENDIX D

ESG Research Consent Form

Title of project:
Environmental, social and corporate governance investments in the South African mining sector

Name of researcher

I, ……………………………………….., agree to participate in this research project.

I agree to the following:

(Please circle the relevant options below)

The research study was explained to me. I understand what this study is about.	YES	NO
I understand that I can volunteer to take part in the study	YES	NO
I agree that the interview may be digitally recorded	YES	NO
I agree that direct quotations from my interview may be used by the researcher in their research report	YES	NO
I agree that my participation will remain anonymous (my name or other identifying data will not be used by the researcher in their research report	YES	NO

I agree that other researchers may use the information I provide in YES NO my interview (depending on their own ethics clearance being obtained) but my name and any personal information will not be used or passed on

…………………………………… (signature)
…………………………………… (name of participant)

…………………………………… (date)

…………………………………… (signature)

…………………………………… (name of researcher/person seeking consent)

…………………………………… (date)