The Impact of Environmental, Social and Governance Reporting on Corporate Performance of Energy and Minerals Sector in South Africa

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Environmental, Social, and Governance (ESG) issues impact corporate strategy and performance; hence, reporting on environmental and social strategies within an effective corporate governance system enhances corporate performance and sustainability. This study contributes to the existing literature on ESG reporting by providing empirical evidence on the influence of ESG reporting on corporate performance, specifically exploring its impact using the gross profits of firms in the energy and minerals sector in South Africa. The research analyses a dataset of five firms spanning the period from 2013 to 202. Using correlation analysis, the results indicate that the relationship between gross profit and ESG metrics varies. In some years, a positive correlation emerges, indicating that companies with stronger ESG performance tend to see financial improvements. Companies with consistently high gross profit in earlier years tend to sustain their profitability over time, reflecting financial stability and resilience. However, in other instances, the correlation is weak or even negative, suggesting that investments in ESG initiatives may initially reduce profit margins before yielding long-term financial benefits. These findings indicate a growing alignment between ESG reporting and financial performance, suggesting that sustainability-driven business models are increasingly financially viable and reinforcing the need to integrate sustainability into business strategies.

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1 Introduction

In recent decades, the business landscape has evolved, with stakeholders increasingly recognizing the importance of factors beyond conventional financial metrics in evaluating firm performance (Friede et al., 2015). This growing awareness has led to the prominence of Environmental, Social, and Governance (ESG) considerations, which collectively reflect the non-financial performance of a company (Kim & Li, 2021). ESG factors encompass a broad spectrum of considerations, including a firm's environmental footprint (e.g., carbon emissions, resource consumption, and pollution), its engagement with stakeholders (e.g., employees, customers, community, human rights), and the quality of its corporate governance, e.g., management systems, transparency and accountability, protections for shareholder rights Gesso & Lodhi, 2024).

The integration of ESG principles into business strategies and decision-making processes has moved from being a voluntary undertaking or initiative, often driven by ethical considerations or societal expectations, to a de-facto requirement and a potential strategic imperative (Bernow et al., 2017). A critical question that has emerged alongside this increased focus on ESG is how these non-financial factors influence a firm's financial performance (FP) and its broader value (Friede et al., 2015). While the ultimate objective of a firm is often perceived as generating greater financial returns, analysing the nexus between ESG efforts and profitability has become increasingly important for managers, investors, and policymakers (Velte, 2017).

Understanding the intricate ways in which ESG factors affect firm profitability is essential. Such insights enable businesses to make informed decisions about integrating sustainability into their core strategies and operational frameworks, potentially contributing to not only enhanced financial performance but also beneficial environmental and societal outcomes. The paper seeks to establish the relationship between ESG reporting and corporate performance in terms of gross profits of the companies in the energy and minerals sector in South Africa. The study's insights, though based on a small sample of five firms, offer a focused exploration of ESG impacts within the South African context and should be interpreted with this limitation in mind.

2 Literature review

This section will cover various aspects of ESG issues, the general background of the energy and minerals sector in South Africa, ESG reporting and corporate financial performance, theories of ESG and the association between ESG reporting and business performance.

2.1 The energy and minerals sector and ESG reporting in South Africa

South Africa is an important player in the world's coal trading. The nation has abundant coal reserves, limited oil reserves and insignificant natural gas resources (Mokwena et al., 2023). The energy and minerals sector is a cornerstone of South Africa's economy, contributing approximately 12% of the country's GDP (Department of Mineral Resources and Energy, 2022). Generally, companies in the energy sector face significant pressure from stakeholders to report on non-financial information (Esposito et al., 2025). Effective companies in the energy sector must simultaneously achieve social, environmental, and economic objectives (Esposito et al., 2024).

In South Africa, the landscape of ESG practices has evolved significantly since its introduction in 2004. Using the United Nations' Sustainable Development Goals (SDGs) and economic, environmental, and social dimensions, this country has made significant progress in integrating these sustainability principles into corporate practices. In the year 2024, South Africa had an overall ESG score of 63.8, in second place after Namibia, with the highest overall ESG score of 67, in Africa and the Middle East (Statista, 2024).

2.2 Theories of ESG

The study identified four theories that link ESG reporting in relation to corporate performance. Firstly, the stakeholder theory emphasizes an organization's responsibility to various stakeholders (investors, consumers, employees, suppliers, local government, and the community at large), influencing its operations and value creation. The theory is of the view that satisfying stakeholders' expectations and information demand, protecting their interests, and gaining their trust may improve corporate performance and profitability (Gholami et al., 2022; Suttipun et al., 2023).

Secondly, the legitimacy theory examines the extent to which organizations fulfil their social obligations with a view to gaining public acceptance and support by aligning their behaviour with societal values and norms (Rezaee, 2016). It suggests a positive relationship between the entity's compliance and financial stability, implying that effective ESG reporting enhances the organization's credibility in the eyes of stakeholders, leading to improved performance (Deegan, 2019). Thirdly, the institutional theory argues that social institutions attributes, such as norms, regulations and cultural values, shape and influence organizations' behaviour and structures more than other factors, suggesting that the organization's ESG reporting and performance are determined by institutional pressures (Weber, 2014). Lastly, the agency theory examines the relationship between the management (agents) and the owners of the business (principals). It suggests that conflicts of interest may arise between agents and principals due to divergent objectives and information asymmetry, thereby affecting ESG reporting and firm performance (Rezaee, 2016).

2.3 The Association Between ESG Reporting and Business Performance

Empirical literature has extensively examined this dynamic since the 1970s, yet the findings have often been mixed and inconclusive. Studies have reported positive, negative, curvilinear, or even insignificant associations between ESG and FP, highlighting the complexity of this relationship and the need for further empirical investigation across various industries and methodological approaches (Friede et al., 2015; Garcia et al., 2017). The rising concerns on environmental, economic and social issues have changed the corporate strategy towards profits; more emphasis is put on the planet, the people and their welfare rather than the profits (Chourasia & Pandey, 2025). Corporate strategy is evolving as businesses are striving to balance profit with social and environmental responsibility (Rani et al., 2025). ESG reporting can benefit a firm or add costs to a firm, hence, companies must take into consideration both the costs and benefits of ESG performance to achieve sustainable development and stakeholder engagement (Wu & Chang, 2022). In evaluating firm performance, improvements in gross profits are noted when higher average prices are combined with lower production costs (Dietz et al., 2020). Recent literature suggests mixed relationships between ESG reporting and Business Performance; for example, in Turkey, efforts towards ESG sustainability led to the utilization of lower inputs, which had a negative effect on firm productivity and gross profits (Kilic et al., 2020). Related studies suggest that ESG reporting attracts

ESG investors who play a significant positive role in firm performance (Ahmad et al., 2023; Chang et al., 2022). Again, a more recent study is of the view that ESG scores have a positive impact on corporate financial performance, suggesting a reduction in financing costs, which has a positive effect on gross profit levels and long-term (Malik & Kashiramka, 2025).

The following section will discuss the research methods used by the authors; this includes the data collection process, the type of data used, the methods of analysis used, the variables used and the rationale of data analysis.

3 Methodology

Correlation Analysis was used to evaluate the relationship between ESG reporting and corporate financial performance in South Africa's energy and minerals sector. This study adopts a quantitative approach, using data for ESG reports and financial records of five companies over the period of eleven years (2013–2023). These reports were sourced from publicly available sustainability disclosures, company financial reports, and ESG Books. The study examined gross profit as a financial performance measure compared to metrics linked to ESG in annual reports. To maintain consistency and reliability, only firms with complete and ongoing ESG reporting throughout the ten-year period were selected. To preserve the reliability of the correlation analysis, companies that did not provide data points were eliminated.

The Correlation Analysis approach was selected to assess the relationship between ESG engagement and gross profit given that ESG investments often require long-term strategic commitments, which can slow the translation to profitability. This approach allows long-term risk and gross profits to be analysed in a way that identifies a negative, positive, or negligible correlation between corporate sustainability. The analysis of the Pearson correlation coefficient of ESG reporting and the financial performance measurement was employed. This approach was selected to examine the linear association between ESG indices and gross profit over time. The correlation analysis sought to establish the following: (1) whether higher ESG scores correlate with higher gross profits over time, (2) annual comparisons to observe potential trends or fluctuations in correlation strength, (3) whether firms that demonstrated strong ESG performance in earlier years maintained long-term profitability.

This research seeks to provide empirical evidence on the financial significance of ESG practices in the energy and minerals sector, leveraging a well-defined dataset and rigorous analytical techniques.

The following section presents the results of the research, which helps to draw conclusions on ESG reporting and gross profits in companies in the energy and minerals sector in South Africa.

4 Results

In South Africa's energy and minerals sector from 2013 to 2023, the correlation analysis of ESG reporting and gross profit showed that while changing with time, it does not have consistent results. In some years, ESG scores showed a negative correlation with gross profit, indicating that companies allocating resources to sustainability efforts experienced an initial financial downturn in the short run (Figure 1). It highlights the transition period needed for ESG initiatives to yield value.

Between 2013 and 2017, the size of the correlation coefficients tended toward low negative values, with 2013 (-0.234) and 2015 (-0.208). This suggests that early ESG investments had a weak but persistent inverse relationship with profitability. In 2016, the effect had gathered force, and the correlation was -0.186, showing that ESG spending delivered the biggest short-term impact on FP. The findings are consistent with the fact that larger initial capital expenditures made for sustainability initiatives, such as greener technologies, tighter regulation compliance and enhanced corporate governance, generally do not produce quick financial payoffs.

Between 2018 and 2020, correlation values wavered yet stayed negative, though 2019 (-0.268) and 2020 (-0.266). This is likely to reflect the continuation of an ongoing pattern where short-term profits suffer from increased expenses for ESG spending. It is likely that during this period, the operational costs of regulation got bigger, and the costs of operating in a sustainable business community were most heavily felt.

From 2021 onward, the correlation itself began to weaken, with 2021 (-0.218) and 2022 (-0.152) moving gradually back toward recovery. By 2023, it had virtually vanished at 0.015, indicating that the financial burden from ESG spending was

coming off, and companies might start reaping the long-term benefits of their sustainable policies. These findings suggest that while ESG investments initially negatively impact gross profit, they play a strategic role in ensuring financial resilience over the longer term.

Figure 1 depicts the correlation trend of ESG reporting with gross profit from 2013 to 2023, showing that in earlier years, the correlation was negative (particularly between the years 2016-2020), and it gradually neutralized as of 2023. This supports the finding that ESG investments may initially reduce profits but enhance financial stability in the long term.

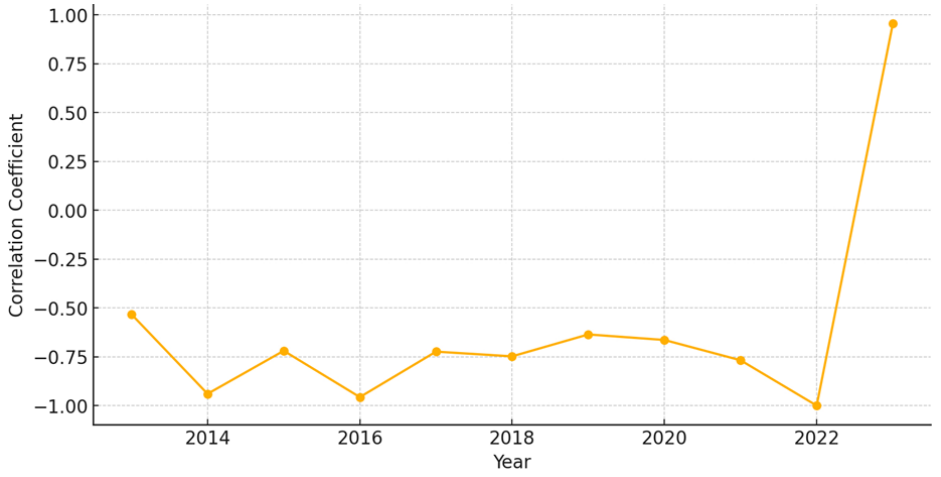

Figure 1: Correlation between ESG Reporting and Gross profits
Source: Authors' computation based on publicly available EGG and financial data

The dataset includes ESG scores from five companies spanning from 2013 to 2023 (table 1). The average ESG scores demonstrate marked fluctuations throughout the years, with the highest average scores occurring in 2014 and 2019, while 2023 experiences a significant decline. The standard deviation of the ESG scores is generally quite high, reflecting substantial variation in ESG performance among companies. The minimum scores for each year indicate that many companies report low or zero ESG scores, especially in earlier years, pointing to possible gaps in data reporting or overall performance.

Table 1: Descriptive statistics of ECS scores and gross profits

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
count	11	12	12	12	12	12	12	12	12	12	12
mean	1656440	2934914	2338867	1697952	1701571	1766031	2622768	2594467	1926865	1586177	7791 7.75
std	3385041	5016415	4754582	3228913	3229264	3243947	3925103	3936583	3773032	4900255	2636 10.6
min	0	0	0	0	0	0	920	892	0	0	0
25%	0	2014	1677.5	1680.25	1684.5	1741	9058.5	8755	1713	0	0
50%	2013	455406	204745	2364 45.5	236710	2381 42.5	494755	4303 30.5	1688 73.5	2022	0
75%	544147	2533516	9689 97.3	9735 47.5	985773	1198934	3860485	3783214	912738	5242 95.8	2023
max	9931092	14509044	14509044	9931092	9931092	9931092	9931092	9931092	9931092	17119586	914887

Source: Authors' computation based on publicly available EGG and financial data

5 Discussion

Based on the theoretical rationale presented, this research examines the association between ESG reporting in the energy and minerals sector companies in South Africa and corporate financial performance over a decade (2013-2023). Our findings add to the literature on the costs and benefits of ESG by providing evidence on the short-term and long-term performance impact of ESG investments.

The correlation analysis demonstrated a mixed relationship between ESG reporting and gross profit. During the first several years of the review period (2013-2017), the connection between ESG reporting and profitability was weakly negative, indicating that companies that put resources towards ESG strategies faced near-term financial penalties. Such a phenomenon aligns with previous research documenting a gap of time in the association between the implementation of ESG practices and clearer financial returns (Arvidsson & Dumay, 2022). Most ESG investments, especially environmental and social initiatives, require significant capital expenditures upfront, which may not deliver immediate financial returns. This is consistent with the concept that the financial payoff for sustainability investments is generally deferred to the medium to long term, as operational efficiencies and stakeholder trust from

meeting these expectations can take time to materialize. This is consistent with the results of a study by Behl et al. (2022) on the Indian energy sector, which suggests a negative relationship between (CFP) and ESG scores in the short run and a positive relationship in the long run.

From the period 2018 to 2020, this trend remained negative, suggesting that the lack of profitability in companies due to ESG investments exerted a heavy burden on the company's finances. There may be higher operating costs during this period due to the enforcement of stricter environmental regulations and the adoption of cleaner technologies. However, what is observed after 2021 is a steady decline of the negative correlation, and in the year 2023, the correlation is almost a neutral one (0.015), indicating that the companies in the sector started to benefit from the long-term value creation of their ESG investments. However, as organizations made progress in becoming sustainable, their efforts not only appeared to no longer detract from financial performance but were associated with improved relationships, including the reduction of supply chain interruptions and bolstered sales, which contributed to increased revenue; this is consistent with recent literature by (Gesso & Lodhi, 2024).

The results also indicate that governance-related ESG practices were most positively correlated with profitability. This is consistent with the literature (Gesso & Lodhi, 2024; Doni et al., 2025) and the stakeholder theory which suggests that governance practices like ethical leadership, transparent reporting, and protecting shareholders are crucial to building trust in investors and stakeholders (Muneer et al., 2025; Malik & Kashiramka, 2025). Good governance is directly proportional to better financial performance. Companies with good governance attract capital and have a favorable perception in the market (Darsono et al., 2025). On the other hand, the environmental pillar showed mixed results, which is reflected in the dichotomy where some companies were able to reap rewards by going green while others struggled with high implementation costs. The social pillar had a moderate internal rate of return, as companies that ignored social aspects, including workers and community relations, had mixed financial performance.

6 Conclusions

The study highlights the need for a holistic ESG approach that incorporates environmental, social, and governance aspects into a single framework in the South African energy and minerals sector. Although ESG investments may incur an initial financial loss, firms that persistently implement sustainable and just governance practices are expected to prosper and become more resilient to crises in the long run. The results also indicate that companies in the energy and minerals sector should focus more on governance practices, as governance showed the strongest relationship with financial performance.

These findings underscore the importance of ESG practices in today's business landscape and support evidence for their positive impact on FP. It emphasizes the significance of businesses adopting a long-term outlook on investments in the ESG framework and highlights governance practices as determinants of strong financial performance. The short-term costs of ESG initiatives cannot be understated, although the long-term benefits in terms of financial stability, stakeholder trust, and sustainability resilience are well on their way to becoming evident. The papers recommend that companies in the energy and minerals sector, and more broadly, integrate ESG principles into their core strategies given the significant potential for a long-term greener environment, financial rewards and societal benefits.

6.1 Implications for future research

Given the contribution of ESG practices and corporate performance of firms to the environmental and economic well-being of the world. Further studies may broaden the sample size to include companies in different industries and geographical regions, as different industry sectors and regions are affected differently by economic, social and environmental factors; this will aid in giving cross-sectional impacts and enhance policymakers, scholars and other stakeholders to guide their contributions to this phenomenon. Further studies can focus on and use more financial metrics to evaluate the global implications of ESG investments in the energy and minerals sector, other industry sectors and geographic regions. Future research could also explore how artificial intelligence (AI) can be leveraged to improve the accuracy, consistency, and timeliness of ESG data. AI tools can assist in automated ESG data extraction, real-time sentiment analysis from news and social

media, and predictive modelling of ESG impacts on firm performance. These technological advancements could help overcome current challenges in ESG reporting, such as data fragmentation, lack of standardization, and greenwashing. Integrating AI into ESG systems could enhance transparency, reduce bias in ratings, and enable real-time ESG monitoring.

6.2 Limitations of the study

Despite the study's comprehensive contribution to the literature in ESG reporting and corporate performance in the energy and minerals sector in South Africa, few limitations are noted. Firstly, the study only examined five firms operating within the South African energy and minerals sector; this examination was not sufficiently large to account for the breadth of ESG practices observed across industries or regions. Secondly, the choice of gross profit as the only measure of corporate performance and other measures of financial performance, such as the net profit margin, market share, or return on investment, would give more insight into the financial impact of ESG practices. Thirdly, the choice of the industry sector does not give conclusive and indicative insights towards policy formulation, as different industry sectors are affected differently by the business environment and regulations. Fourthly, while this study used correlation analysis for preliminary insights, future research should employ panel regression techniques to account for firm-specific effects and temporal dynamics. Fixed-effects models could help isolate the impact of ESG on financial performance by controlling for unobserved heterogeneity across firms. Because correlation analysis by itself cannot fully capture the influence of these control variables, employing panel data techniques would offer a more comprehensive approach to assessing their effects.

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Conflict of interest

The authors have neither financial nor non-financial conflicts of interest.

Ethical Considerations

No confidential or sensitive data were accessed or utilized in the study. This research is conducted following academic integrity standards, which means findings are reported honestly and impartially.

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