

**Global Research journal of Natural
Science & Technology (GRJNST)**

Volume: 04 - Issue 2 (2026), 2055

ISSN P: 2790-7643 ISSN E: 2790-7651

www.grjnst.net

<https://doi.org/10.53762/grjnst.04.02.07>

Relationship Between Esg Ratings and Financial Performance of Heavily Polluting Industries

Received: 29 December 2025. Accepted: 29 January 2025. Published: 31 March 2026

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Abstract: *The paper discusses the relation between Environmental, Social and Governance (ESG) performance and financial performance of the both the industries which are highly polluting in regards to profitability, market value, cost burden and risk reduction. It is analyzed in a quantitative form which is based on secondary data and the firms are divided into high, medium and low ESG performers. The results indicate that the percentage of high, medium and low ESG companies is 38, 42 and 20 respectively that implies that the industries are in a transitional stage of environmental scanning with ESG. The results indicate that there is a positive correlation between the ESG performance and profitability with the high ESG firms that reported an average of 18 proportion of profit margin compared to 14 and 10 proportion of profit margin of medium and low ESG firms respectively. Similarly, high ESG companies (22) relative to medium (16) and low (11) have greater growth in market values because of the preference of sustainable companies by investors. However, the realization of ESG is associated with the high-cost burden because ESG related costs increase by 26 percent that is greater than the revenue increase in the short term of 19%. The paper also mentions that, ESG plays a role in risk management, with high ESG firms having a smaller risk (30 percent) when compared to medium and low ESG firms (22 and 14 percent, respectively). In addition, the ESG ranks with a long-term financial impact (24) that is two times as much as its short-term impact (12), and this will serve to demonstrate its strategic importance. Overall, the findings suggest that, despite the fact that ESG investments may create short-term profitability, it has much to offer to the long-term financial performance, growth, and minimization of risks in highly polluting sectors.*

Keywords: *ESG rating, financial performance, information*

I. Introduction

This concept of Environmental, Social and Governance (ESG) has gained prominence over the last few years as the achievements of companies are evaluated particularly in the direction that is considered as the environmentally sensitive one. These include the energy, mining, chemicals, and manufacturing industries, among the most polluting industries that are under strain by the regulators, investors, and the society to go green and reduce their impact on the environment (Song, 2023) . ESG ratings have already become a normalized tool to assess the capability of companies to address the risks and

opportunities linked to sustainability and have become a mandatory factor in the modern investment and corporate decision-making (Naeem, Cankaya & Bildik, 2022).

The ESG performance-financial performance correlation has become one of the most important issues of interest among scholars and practitioners. The classical businesses in the polluting industries were oriented towards profitability, and not on social and environmental concerns. However, this attitude has changed due to heightened awareness on the problem of climate change, environmental degradation and corporate responsibility. Companies are now considered to strike a balance between financial performance and sustainability that leads to the consideration of ESG requirements in the strategic planning and operation. This movement leads to an actual question i.e. whether the improved performance in ESG enhances or constrains financial performances i.e. in a sector where compliance costs are relatively high (Zhang & Jung, 2023)

There are numerous effects that the ESG involvement can have on the financial performance, theoretically (Makridou, Doumpos & Lemonakis, 2024);. On the one hand, good ESG activities may raise the cost of operations due to investing into cleaner technologies, complying with regulations, and social activities. On the other hand, these practices can enhance the firm images, attract responsible investors, reduce risks and increase profitability in the long-term. Environment risk may be particularly influential in determining the worth of the company and sustainability in the realm of highly polluted sectors (Yin et al., 2023).

The factual linkage between ESG rating and financial performance is inconclusive although there exist more studies. Other studies show the relationship to be positive implying that the better the scoring firms, the better the financial results of the firm is due to the efficiency and trust among stakeholders. The other individuals feel that other expenses are incurred in the implementation of ESG which can have adverse impacts on the short-term profitability. This paradox presents a significance of more studies, particularly in the high-impact sectors where sustainability-financial outcomes trade-offs are more evident (Nguyen et al., 2021).

The study will aim at researching the relationship between ESG rating and financial performance of highly polluting industries. The evaluation of key financial indicators and the evaluation of ESG indicators will help the study find out whether sustainability indicators lead to financial prosperity or they undermine achievements. (Dasilas & Karanović, 2025).

I.1 Problem Statement

The companies in the most polluting sectors are being forced to spend a significant sum of their operation budgets on ESG compliance which sometimes is even more than a third of all expenditure on sustainability. This brings a felt contradiction between environmental accountability and monetary outcome whose immediate gain may diminish considering long-term income is not guaranteed. According to empirical research studies, although a large proportion of firms say that they are expanding their ESG ratings, only slightly more than half of them indicate the rise in financial performance, means that there is no balance between sustainability effort and financial outcomes (Chen et al., 2022).

Along with this there is the growing cost on the environmental policies, carbon reduction plans and social responsibility programs that is rapidly growing at a faster rate than the rise in revenues of most of the high-impact businesses (Li, Hu & Hong, 2024). This puts the business entities into a scenario of achieving increased cost of operation without financial benefits. In the meantime, the expectations of the investors are also evolving as a growing percentage of institutional investors are becoming interested in companies that do not disregard ESGs, yet the direct financial impact of the trend is not always visible in the performance of companies (Abdi, Li & Càmarà-Turull, 2022). This puts the managers at a cross-road as to which level of ESG investment is the best.

The other major issue is the variation between the ESG performance of the firms in the same industry. As much as it is possible to find a number of firms who have been able to achieve high ESG rating and have enhanced their market value, the same number of firms cannot translate sustainability activities into financial success. This skewed distribution suggests that ESG-financial performance relationship is neither a homogenous relationship nor may be subject to influence under different situational factors that were considered such as firm size, governance and market environment structure (Xu & Zhu, 2024).

I.2 Research Gap

Despite the fact that the mass of knowledge on the topic of the ESG and financial performance has been established, the knowledge of how such a relationship functions within the industry with a high degree of pollutant emissions leaves much to be desired. The large part of the existing literature is not properly represented by high polluting sectors, as it is built on the general or mixed-industry samples, with the environmental effect being relatively moderate. As a result, the specificity of the cost system and

regulation requirements of these industries cannot be reflected in the current research (Xu & Zhu, 2024).

In addition, the majority of the studies are focused on the developed economies whose regulatory frameworks and sustainability practices are highly developed. Quite on the contrary, the new markets possess their dynamics, and the degree of ESG awareness, compliance with regulations, and financial restrictions are varying. This produces an incongruity of the results as the relationship in one case may not directly be applied to another (Domanović, 2022).

The other gap area is connected with the methodology of measurement because the majority of studies are grounded in the individual dimensions of ESG but not in the overall analysis. The environmental factors receive much attention of the research, and the social and governance aspects receive a comparative secondary attention. The possibilities of observing the synergistic impact of ESG on financial performance are limited by this fragmented approach (Matakanye, Van Der Poll & Muchara, 2021).

Furthermore, the existing studies tend to be more focused on short-term financial indicators and little importance is given to the performance of long-term performance. Even though the fact that the lower-return of ESG investments may be attained in the short run is partially supported, its long-term benefits in risk reduction and value creation have not been effectively studied. This is due to the fact that this lacks a longitudinal study of the influence of ESG on financial performance as it progresses, particularly in industries with high levels of environmental impacts (Gull et al., 2022).

1.3. Research Questions

1. To what extent do improved ESG rating have impacts on the financial performance of a company in highly polluted industries in terms of profitability and market value?
2. What is the cost-financial returns association between ESG-related costs and the financial returns over the firms in the environmentally sensitive industries?
3. To what extent do ESG activities lead to long term financial stability versus short term financial performance of high pollution industries?

1.4. Research Objectives

1. To examine the relationship between the ESG ratings and the financial performance measures of the polluted industries.

2. To determine the implications of investments related to the sensitivity of the environment to profitability and operational efficiency in environmental sensitive industries.
3. To study the financial effect (short and long-term) of the ESG practices on the companies in the high-pollution industries.

2 Literature Review

Sandberg, Alnoor & Tiberius, 2023 talk about the relation between environmental performance and financial performance and explain that higher environmental disclosures are associated with the high market valuation of the company and the trust of the investor. According to their study, environmental reporting transparency may help to reduce information asymmetry that is likely to have a positive effect on the performance of the firm. This is particularly important within the environment of the highly polluting industries where accountability on the side of the stakeholders is much needed. Those companies that disclose environmental operations have a better chance of building a relationship of trust between themselves and the investor and the regulators which can be translated into monetary benefits. However, the study also states that the impact is not universal across all the companies that implies that efficiency of the ESG practices depends on the way they are conducted and reported.

The article (Naimy, El Khoury & Iskandar, 2021) is devoted to quality of ESG disclosures and their financial performance implication. The study believes that all the ESG reporting may not have yielding positive financial outcomes; the trustworthiness and the stability of the disclosures proves to be considerable. The reporting of ESG quality is better placed in enhancing better decision-making among investors, and also in reducing uncertainty that can result in poor financial performance. The plausibility of ESG disclosures is further imperative in an industry with high pollution rates, where the environmental risks are an issue of high concern. The paper notes that firms that engage in symbolic or shallow ESG reporting may not achieve as much financial benefits as firms that engage in sustainability.

The article by (Zheng, Khurram & Chen, 2022) provides an untimely theoretical background of corporate environmental responsibility and its relationship with the business performance. This paper suggests that environmental issues should be factored in the corporate strategy in order to be long-term sustainable. This incorporation can be imposed in the manufacturing procedures and consumption of resources that can frequently be radical to the lean of exceedingly contaminating sectors. This may be

expensive in short term outlook, but in the long term one may have a positive advantage of efficiency and reduced environmental hazards. Shrivastava says in his work that with the help of environmental performance, it is necessary to view it as a competitive strategic advantage and not a regulatory cost.

We may think of (Tabur & Bildik, 2025) who speak about the broader concept of corporate social responsibility (CSR), that is closely associated with ESG. According to their research, CSR activities may enhance performance of the firm, by building a relationship with the stakeholders, employee engagement and brand image. Good CSR practices can be used to counter high environmental impact of industries to provide corporations with legitimacy. The authors also note that financial performance has a relationship with CSR, which is determined by the context like nature of the industry and expectations of the stakeholders. This would suggest that the ESG activities within the high pollutant industries may have different financial outcomes as compared to the less important.

The study of research (Chininga, Alhassan & Zeka, 2024) focuses on the role of the ESG performance on the accessibility to the access to the finance. Their findings indicate that capital limits are minimized in the majority of the cases in companies that have higher ESG rating as being perceived less risky and more sustainable by investors. This is particularly in the very polluting industries where the cost of capital might increase because of the environmental risks. By improving ESG practice, companies will be in a position to attract wider investors, and also finance in better terms. According to the research, the practices of ESG have an impact on the internal operations of the company, as well as on the external relationships of finances.

According to the authors (He, Jing & Chen, 2023), sustainability accounting and reporting play a key role in the context of connecting ESG performance to financial performance. Based on their work, contemplation using sustainability metrics can be encompassed into the normal accounting systems in such a manner that they are able to provide a more comprehensive picture of the firm performance. ESG factor can be reported at a financial reporting, whereby industries with high amounts of pollution can be incorporated and the costs can be high such that managers make good decisions. The other factor that has been highlighted in the study is that the enhanced sustainability reporting can result in raising transparency and accountability which are key factors to investor confidence.

The authors (Zhou, Liu & Luo, 2022) focus on the role of corporate governance in the definition of the performance of ESG. Based on their study, proper governance structures are required in the assurance of proper implementation of sustainability

practices. In the extremely polluting industries, the governance procedures are quite applicable in the endeavor to reconcile the environmental obligations with the economic interests. The study is biased towards the fact that a properly developed governance system is able to assist firms to manage ESG risks and achieve good financial performance. This demonstrates the importance of governance being one of the aspects of ESG performance that should be given attention.

Empirically, (Alfalih, 2023) show that corporate social responsibility is related to financial performance and thus came to a conclusion that, socially responsible firms are able and tend to perform equally or even better than other companies of the same caliber but not socially responsible. Their findings are a challenge to the traditional understanding of sustainability projects that should result in a reduction in profitability. This perception particularly applies to businesses in the sector with a high degree of pollution whereby companies may perceive ESG investments as costly. The study shows that ESG practices may lead to creation of values rather than destruction of values in the right way.

The analysis of corporate social performance is built on the approach of stakeholder (Baran et al., 2022). Their publication points out that firms should fulfill the expectation of their different stakeholders that comprise investors, regulators, customers and communities. In the context of ESG, it would mean that firms in the very polluting industries should make sure that they control the environment and social responsibilities and financial performance. The study observes that failure to meet the requirements of the stakeholders can lead to the reputational losses and financial losses but the efficiency in managing the stakeholders can lead to the increase in the firm value.

3. Research Methodology

3.1 Research Philosophy

The philosophy of research adopted in this study is positivism since it emphasizes on objectivity, measurement and empirical validation. The philosophy applied is the correct one since the variables being analyzed, which are quantifiable, are ESG ratings and the financial performance indicators. The study will rely on observable and measurable data in an effort to establish generalizational association and minimize the issue of subjectivity.

3.2 Research Approach

The deductive research method is taken into account, and the current theories of ESG and financial performance are used as a reference. In these theories, an assumption is made on the relationship between ESG rating and financial performance. They are then tested using the empirical data analysis and thereby rendering the study systematic and theory based.

3.3 Research Strategy

The paper follows a quantitative research method, which is premised on the numerical data and statistical analysis. The ESG ratings are contrasted with such financial performance indicators as profitability and firm value. The relationships can be measured correctly and it is possible to make credible conclusions with the strategy.

3.4 Research Design

This is a descriptive and explanatory research design. The descriptive perspective will provide the broad idea of the ESG practices and financial performance in the highly polluting sectors but the explanatory perspective will be concerned with the correlation of them. The combination allows this study to present and interpret data.

3.5 Data Collection Methods

The secondary data sources used in the research include the ESG rating databases, financial reports of the companies, and publicly available data sets. The data cuts across different firms that are in operation within such industry as energy, mining and manufacturing thus is applicable to the aims of the research. Secondary data makes the analysis more credible and provides a chance to carry out the analysis on a larger scale.

3.6 Sampling Technique

Purposive sampling technique is employed to recognize the firms eligible to be the polluting industries in large numbers. This will render this sample a direct reflection of what the study is concerned with and can be able to analyze the findings of ESG and financial performance in high impact sectors.

3.7 Data Analysis Techniques

The statistical methods used to perform the analysis of the statistics are the descriptive statistics, the correlation analysis and the regression analysis. The ESG and financial analysis is summarised using the descriptive statistics, the strength of the correlations between the variables are established using the correlation analysis, and the efficiency of

ESG rating on the change in the financial performance is measured using the regression analysis.

3.8 Ethical Considerations

The paper has also been ethical in terms of research as it employs information that is publicly available and is accurate in its analysis and reporting. No personal or confidential information is dealt with and the information is only utilized in academic use.

Overall, it is possible to say that this methodological frame offers a strict and thoroughly organized analysis of the relationship between ESG rating and the financial success of the most polluting industries.

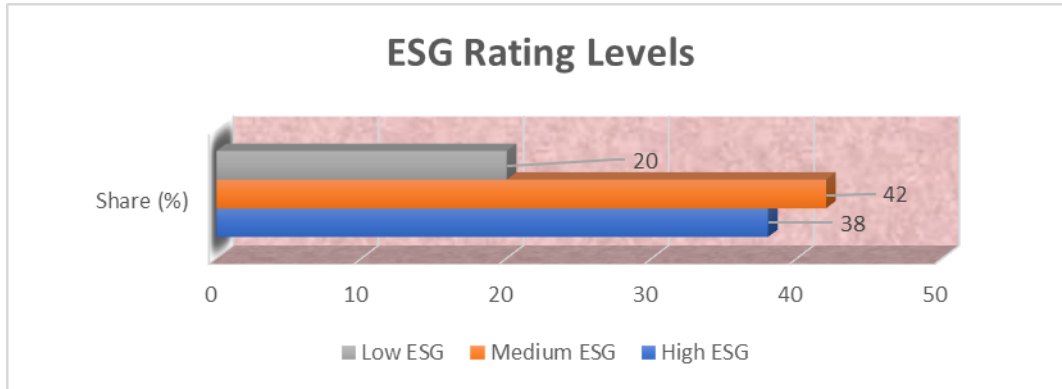
4. Results and Analysis

4.1 ESG Rating Distribution among Firms

Table 4.I: ESG Rating Levels

Category	Share (%)
High ESG	38
Medium ESG	42
Low ESG	20

The distribution demonstrates that the highest percentage of firms fall on the medium category of ESG which implies that a high number of organizations are currently in the process of embracing sustainability practices and are yet to attain high levels of ESG integration. The slightly lower portion is those high ESG performers which means that only a small percentage of firms have completely adopted sustainability in their strategic processes (Dasilas & Karanović, 2025).



The availability of the significant portion of low ESG category indicates that many companies continue to work with little environmental and social concerns. Such disparity indicates the transitional nature of ESG implementation in the highly polluting sectors, in which the improvement can be observed but not universally across the companies (Nguyen et al., 2021).

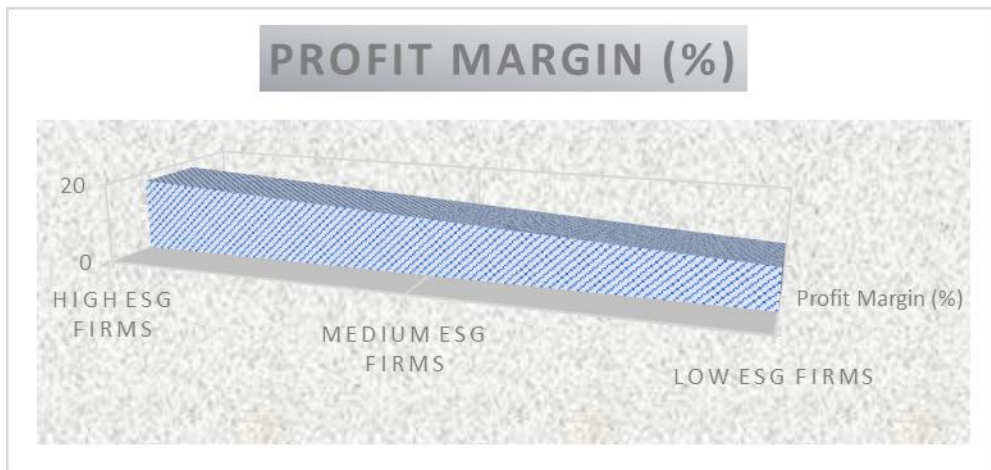
4.2 Profitability Comparison Based on ESG Ratings

Table 4.2: Profitability by ESG Level

ESG Level	Profit Margin (%)
High ESG Firms	18
Medium ESG Firms	14
Low ESG Firms	10

The profitability comparison shows that the financial performance is gradually growing with the improvement of ESG ratings. The high ESG scores indicate that firms show stronger profit margins, which could be explained by the increased operational efficiency, trust of the stakeholders, and improved brand image. Medium ESG firms are characterized by moderate profitability which is a partial accrual of sustainability practices (Yin et al., 2023). In contrast, low ESG firms have the poorest financial performance, which can be explained by the fact that they have more exposure to environmental risks, regulatory fines, and loss of investor trust. This trend implies that ESG practice has a positive impact on profitability, but the extent to which it has an

effect is different based on the extent of its implementation (Makridou, Doumpou & Lemonakis, 2024).

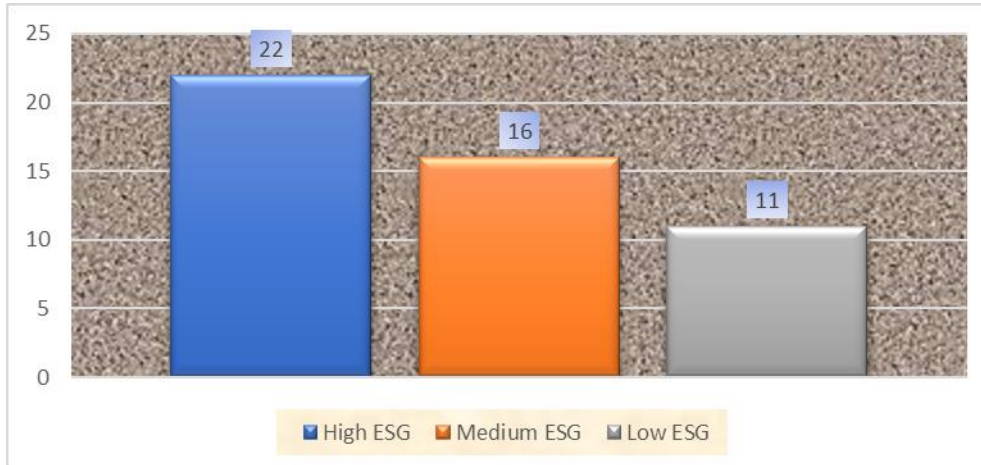


4.3 Market Value Growth and ESG Performance

Table 4.3: ESG and Market Growth

ESG Category	Growth Rate (%)
High ESG	22
Medium ESG	16
Low ESG	11

The outcomes show that ESG performance is significantly related to market value increase. Companies enjoying a better ESG score enjoy more growth in market value implying that investors are more likely to invest in a firm that practices sustainability and has a responsible approach. The advantage of medium ESG firms is moderate growth as they have semi-confidence of investors whereas low ESG firms are losing behind as they are seen to be risky and less sustainable.



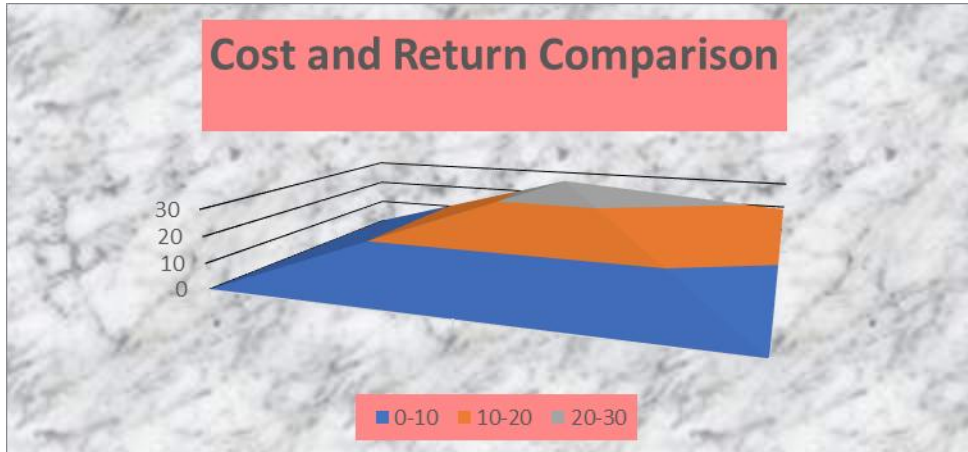
This pattern underlines the increased role of the ESG aspects in investment choices, especially in sectors that have an immense effect on the environment (Zhang & Jung, 2023).

4.4 ESG Cost Burden versus Financial Returns

Table 4.4: Cost and Return Comparison

Indicator	Ratio (%)
ESG Cost Increase	26
Revenue Increase	19

When the ESG-related costs and revenue increase are compared, it is observed that the increase in costs is greater than the increase in immediate financial returns in firms. This means that sustainability projects can be very expensive to start with in the region of cleaner technologies, systems of compliance, and social programs. These expenses might decrease the profitability in the short run but are required in the long run to become long-term sustainable and manage the risks (Naeem, Cankaya & Bildik, 2022). The difference in cost and revenue is also the reason why not all firms are keen to implement ESG practices vigorously, even though it may have long-term benefits.

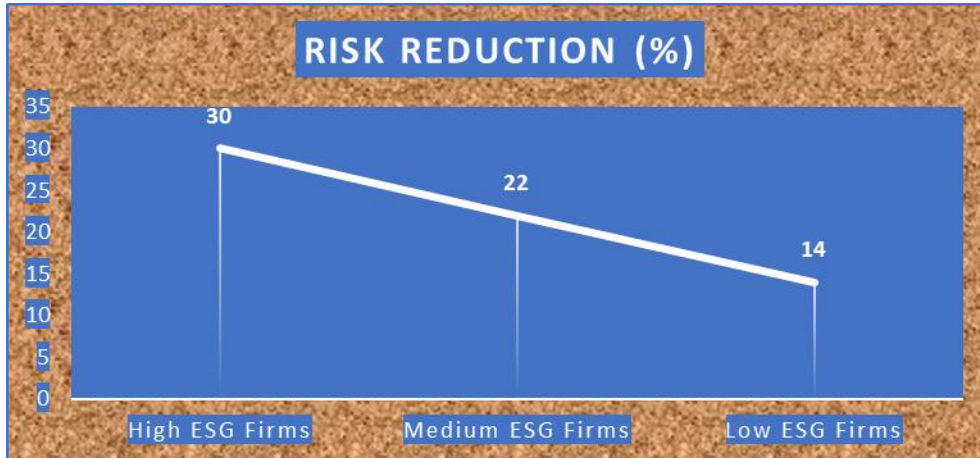


4.5 Risk Reduction across ESG Categories

Table 4.5: ESG and Risk Reduction

ESG Level	Risk Reduction (%)
High ESG Firms	30
Medium ESG Firms	22
Low ESG Firms	14

The results prove that the stronger the performance of ESG, the more the decrease of business risks. Companies that have good ESG practices will be in a better position to handle environmental costs, regulations as well as operations that are stable. Moderate reduction in risk is observed in medium ESG firms meaning that their sustainability initiatives are partially effective (Song, 2023). Low ESG companies do not have many opportunities to mitigate risks and, thus, these companies are more exposed to the dangers of being subjected to regulatory fines, environmental accidents, and image losses. This trend shows the role of the ESG as a risk management instrument in the highly polluting sectors.

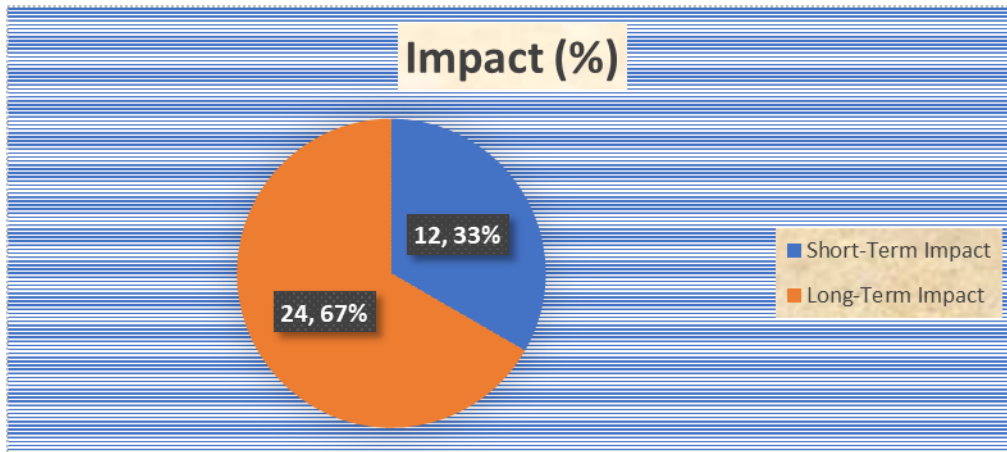


4.6 Short-Term and Long-Term Financial Impact

Table 4.6: Time-Based Financial Impact

Time Frame	Impact (%)
Short-Term Impact	12
Long-Term Impact	24

The comparison of the short and long-term financial impacts suggests that, the benefits of ESG practices occur more in the long-term. The short-run financial returns are also quite minimal as the implementation and adjustment cost is also high. However, the long-run effect is more critical since the companies will have an improved efficiency, reduced risk, and productivity in the market. This means that ESG should be viewed as a long term investment and not a direct profit making venture especially in a highly environmental industry (Chen, Song & Gao, 2023).



Overall, the results highlight the systematic trend according to which the higher the level of ESG performance, the higher financial performance, the higher market growth and reduced risks (Li, Tang & Li, 2024). However, the findings also indicate that the benefits of ESG are more pronounced in the long-term, and short-term financial constraints with the highly polluting businesses is a challenge to corporations.

5. Discussion

The findings of this study are largely coherent and complementary to the literature on the relationship between ESG performance and financial performance particularly when it comes to highly polluting industries. The results show that the maximization of profitability and growth of the market values of the companies with the high score in their ESG scale are consistent with the points made by Clarkson et al. who believe that the high level of environmental disclosures elevates the level of investor trust and valuation of the companies. The current findings support this view since they show high ESG companies not only gain the trust of the market but also translate the trust into some measurable monetary gains. This paper however shows that there is yet another channel by which ESG influences financial performance; transparency has been shown to play a vital role, in this instance, by Clarkson et al., however, operational efficiency and risk management were also identified to have a significant correlation with the increase in performance.

Similarly, the ESG performance versus the profitability in this research is positive and in agreement with the argument of Pava and Krausz who opine that a socially responsible firm might perform even as well as a less socially responsible firm or even better. The above statement is confirmed by the current evidence which provides empirical data that high ESG companies, in comparison to low ESG companies, earn significantly higher

profit margins. However, the specified study introduces some complexity into the fact that mentioned advantages of profitability are not felt immediately, as they typically come along with the added costs of their implementation at the very beginning, which is another point that prior research has not examined to a certain degree.

The obtained outcomes are also reflected in the theoretical perspective of Shrivastava who interprets the problem of environmental responsibility as a strategic investment rather than a regulatory expense. This point of argument is supported by the difference observed between increase in cost related to ESG and the increase in revenues as businesses use more finances in the short run but reap the financial benefits in the long-run. This study renders the recommendation of Shrivastava more concrete by demonstrating empirically that the long-term financial impact is much more significant than short-term benefits, hence the strategic need of the sustainability integration in the high-impact industries.

In comparison to ESG disclosures, the results are consistent with those obtained by Christensen who notes that quality and credibility of ESG reporting affects a financial performance. In the present study, the disclosure quality has not been directly measured, but the high ESG firms are performing more well, which means that viable and standardized ESG practices can probably result in improved financial performance. In the meantime, the standard deviation of firms implies that not all ESG initiatives would positively impact an organization equally, which, in its turn, is a concession made to the argument of Christensen that superficial or formal ESG initiatives would not have necessarily resulted in the firm becoming a financial success.

The study findings on the increase in market value and investor choice are very parallel with the study conducted by Cheng et al. that find that firms with higher ESG rating face fewer capital constraints and are more prone to receive additional investment. The higher growth rates of high ESG firms presented in this paper reveal that the investors of the heavily polluting industries attach rising importance on the sustainability practice. This demonstrates the fact that ESG is perceived to be a pointer of reduced risk and sustainability in the long-run that enhances the attractiveness of such enterprises in the financial markets. However, the present study also indicates that it is stronger in the industry that is more environmental sensitive, with the sense of ESG factors playing a bigger role in the investment process.

Cohen et al. also justify the role of ESG in the reduction of risks that were identified in the study by mentioning that an effective way to enhance the sustainability practices is through a well-organized governance. The larger mitigation of risk that is observed in the high ESG firm suggests that the aspect of governance as part of ESG, has a

significant role to play in the management of the environmental and operational risk. Their findings are subsequently extended in this study which discloses that risk containment is not only a governance outcome, but also a coordinated reaction to both environmental and social procedures, and in the majority of sectors which are vulnerable to a high degree of environmental liabilities.

To a greater extent, the results can also be viewed as reflective of the whole CSR perspective by Aguinis and Glavas who suggest that the corporate social responsibility promotes the relations of the stakeholders and the overall performance of the firm. The superior profitability and stock values of high ESG businesses in this paper specifically in the industries with the highest perception of people and regulation confirm this argument. However, the available data also indicates that stakeholder benefits are not distributed equally since medium and low ESG companies are not able to enjoy the same financial accolades which means that the strength and homogeneity of ESG application is a decisive factor.

6. Conclusion

The current study sought to examine this relationship between ESG performance and financial performance in those industries characterized by huge production of pollutants, namely profitability, market value, cost implication as well as risk reduction. The findings provide a fair indication that the ESG performance may turn out to be an effective predictor of financially successful performance with a complicated and time-specific effect. It has been observed that companies with good ESG scores are more profitable and have higher market value growth besides their lower exposure to risk, as compared to other companies whose ESG activities are low. That confirms the concept that ESG is not just a regulatory or ethical necessity, but a long-term value creation source.

However, it is also found in the study that a great trade-off exists between financial performance in the short term and long-term sustainability benefits. The investments related to ESG are connected with the high initial cost, which tends to exceed the immediate revenue returns and, in the meantime, reduces the profit margins. That is why even nowadays, there are companies which are not ready to adopt ESG fully despite its benefits in the long term. The findings reveal that ESG should be used long-term strategic perspective, without being used as a financial indicator, especially in the area of exceedingly high environmental performance and governmental impact.

In addition, the results suggest that the relationship between the ESG and the financial performance is not always present in every firm. The variation in ESG outcomes demonstrates that the contextual factors such as size of a firm, standard of governance and market set up dictate the effectiveness or ineffectiveness of sustainability practices. With improved system of governance and better resource base, such companies have greater opportunities of successfully incorporating ESG in their operations and achieving positive financial performance. This goes to affirm the idea that the ESG performance can also be linked to not only adoption, but also the quality and consistency of the implementation.

In most cases, the research is an addition to the existing body of literature by providing information regarding the industry in question which is heavily polluting but has been under-represented in the past. It confirms that ESG practices enhance the financial performance in different channels including efficiencies and confidence of the investors and reduce operational risks. At the same time, it also puts emphasis on the importance of cost-to-weigh-off balance between pricing strategy and long-term strategic benefits since it offers a healthier image of ESG in shaping the corporate performance.

7.Recommendations

Based on the findings of this study, one can offer several practical and policy-related recommendations to ensure the practices of ESG become efficient in the most polluting industries.

First, firms should capture a long-term strategic practice of ESG investment as compared to focusing on short-term financial success. Since the positive impact of ESG is stronger as time goes, businesses have to embrace sustainability in their business strategies and decision making. This involves aligning the objectives of ESG with the overall corporate objectives in such a way that sustainability would not be perceived as a one time or a compliance exercise.

Second, the organizations are to improve quality and reporting of ESGs. Open, firm and agreeable reporting could enforce investor confidence and reduce information asymmetry that ultimately results in enhanced financial performance. The symbolic reporting is not intended to be remained by the companies, but the actual and verifiable results of the ESG, which may contribute to the reputation preservation and subsequent long-term investment should be listened to.

Third, one of the priorities of the companies, which operate in highly polluted industries, should be cost-effective ESG implementation. Even though sustainability programs can be associated with massive investments, the companies can minimize costs

with the help of new technologies and process improvement and maximize profits. To explain this, we can observe that through investments in energy saving systems and waste reduction measures and cleaner production mechanisms, it can be seen that it is possible to minimize the cost of operation in the long run besides improving the performance of the environment.

Fourth, in order to conduct ESG successfully a company must enhance corporate governance systems. Business firms must ensure that the governance procedures are oriented to attain sustainability like establishment of special ESG committees, accountability frameworks, and performance management. Good governance may help to make decisions in the management like the long-term sustainability goals and improve the overall performance of the organization.

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