



ASSOCIATION OF ESG PERFORMANCE AND CORPORATE FINANCIAL PERFORMANCE: EVIDENCE FROM INDIAN FIRMS

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Abstract

This study examines the crucial link between ESG performance and Corporate financial performance (CFP), using data from 131 Indian firms and employing an observed model - OLS regression. The findings, analyzed using STATA software, reveal a substantial influence of social factors on CFP. Additionally, the study identifies a negative association between leverage and CFP, indicating that higher leverage leads to lower firm performance. These insights underscore organizations' need to prioritize ESG initiatives, providing a clear roadmap for enhancing their financial outcomes and empowering them to make informed decisions that can positively impact their CFP. The practical implications of these findings for organizations are significant, as they provide a basis for decision-making that can lead to improved financial performance.

Keywords: ESG Performance, Environment Score, Social Score, Governance Score, ESG Risk, Return on Assets.

1. INTRODUCTION

Environmental (E), Social (S), Governance (G), and ESG are the buzzwords among governments, corporate, and individuals over time. The concept of ESG has its roots around corporate social responsibility, environmental concerns, and regulatory dimensions. The term ESG was first introduced by the United Nations in 2004 and further established as Principles of Responsible Investment (PRI) in 2006. The ESG performance of an organization is referred to as metrics for evaluating the social, environmental, and governance efficiency (Shakil, 2021; Gao et al., 2023). According to Chen et al. (2023), a firm's risk is a loss in the firm's value due to social, environmental, or governance uncertainties or events, which may directly impact the firm's financial performance in the form of share price and income accounting risk. The disclosure of ESG information and communication among investors may raise operational and economic risks.

According to Chen et al. (2023), ESG performance is derived from lower capital costs, better stock performance, and operational efficiency. The study also mentioned that in most cases, ESG had a positive impact on corporate financial performance (CFP) and firm value; in some cases, no relationship or negative impact was mentioned. Friede et al. (2015) conducting the meta-analysis and found that ESG had a positive impact on CFP, only in less than 10% cases the impact was negative. According to Naeem and Cankaya (2022), ESG performance helps to reduce the risk and improve the financial returns if countries and industries adopt the best ESG practices.

Zakari et al. (2022) used the meta-analysis and explored the relationship between ESG performance and financial risk. They concluded that environmentally sensitive industries used ESG performance to mitigate financial risk and improve CFP. The other authors also explored the association between ESG and financial risk. They linked the same with CFP parameters such as return on equity (ROE), profitability, solvency ratio, credit rating, firm size, investment, capital structure, taxes, and interest (Kim and Li, 2021; Capelli et al., 2021). Most of the previously conducted studies explored the association of ESG performance with financial risk and CFP. Our study referred to the individual E, S, and G scores and combined ESG performance. We also considered the ESG risk values derived from Sustainalytics to study the impact on CFP parameters

2. LITERATURE REVIEW

2.1 ESG

Environmental, Social, and Governance parameters, individually and ESG collectively, have been gaining more traction among governments, corporations, and investors since 2006 with the introduction of PRI (Durand et al., 2019). According to Iazzolino et al. (2023), governments in many countries have started to adopt ESG disclosure and evaluation as part of regulatory and mandatory guidelines. Liu et al. (2022) mentioned that the European Union (EU) adopted the ESG guidelines in 2014 and advised large enterprises to incorporate the same as part of information disclosure. As per the study by Yuan et al. (2022), until March 2020, 3826 organizations had adopted the PRI and incorporated the ESG as part of information disclosure and decision-making.

Iazzolino et al. (2023) mentioned how companies incorporate ESG as part of their strategies and shift the perspective from traditional profit and financial metrics to maximizing social and environmental interest through solid governance. Companies shift towards ESG, creating an awareness of sustainability among corporate and individual investors and bothering them to consider the same during their investment decisions. ESG is also emerging as a risk-mitigating instrument.

2.2 ESG and Corporate Financial Performance (CFP)

According to La Torre et al. (2021), ESG was referred to in the context of corporate social responsibility (CSR) and its impact on corporate profitability and value creation. Nirino et al. (2021) explored ESG from another perspective and studied its impact on corporate financial performance (CFP). A study by Friede et al. (2015) mentioned that ESG enhances the stakeholder's confidence in the company and improves the CFP. Duque-Grisales & Aguilera-Caracuel (2021) explored that ESG activities reduced the company's cash flow and thus negatively affected the CFP.

According to Pham et al. (2022), the ESG and CFP relationship presents mixed results as corporate performance measures are based on financial or market output performance such as return on equity (ROE), return on investment (ROI), market value, Tobin's Q, etc. Our study considered a return on assets (ROA) as the dependent variable for a financial performance measure, and independent variables are ESG score, E score, S score, G score, and ESG risk and control variables for the study are growth, leverage, fixed asset ratio and age of the firm.

According to Yuan et al. (2022), ESG performance used to vary from industry to industry and firm to firm, so for our study, we collected data from 131 Indian firms representing different industries. As per the study conducted by Ferriani & Natoli (2021), investors are interested in investing in funds where ESG risks are lower. According to Rahi et al. (2022), multiple studies have been conducted over a period to explore the relationship between ESG and CFP. still, a lot of scope exists to establish further and explore better results considering different variables.

2.3 ESG, Corporate Financial Performance (CFP) and Risk

Brogi et al. (2022) intended a model for the bank's estimation of firms and mentioned that increased ESG awareness enhanced solvency and reduced the firm's credit risk. Agoraki et al. (2023) studied European firms and mentioned that firms with lower ESG reputation risk perform better. Rahi et al. (2022) mentioned that a negative relationship exists between ESG and CFP; the study considered the factors: return on invested capital (ROIC), return on equity (ROE), and earnings per share. Pham et al. (2022) studied the individual impact of E, S, and G and concluded that E and S had a positive impact on firm performance in the transportation

industry while G had a negative impact on firm performance. De Lucia et al. (2020) studied 1038 European companies and found a positive relationship between ESG and financial indicators such as ROA and ROE.

According to Eccles and Strohle (2019), companies actively involved in ESG practices were less vulnerable to systematic risk. Therefore, they were exposed to lower risk; other authors, Godfrey et al. (2009) and Oikonomou et al. (2012), also mentioned that firms with strong ESG practices would have minimal risk. Chen et al. (2023) noted that few studies examine the correlation between ESG and financial risk; only some established results are available, so the gap exists to explore the relationship further.

After meticulously reviewing the literature, the study formulated the following hypothesis:

H1: ESG performance has a significant impact on the CFP.

H2: Environmental performance has a significant impact on the CFP.

H3: Social performance has a significant impact on the CFP.

H4: Governance performance has a significant impact on the CFP.

3. RESEARCH METHODOLOGY

The study's sample encompasses 605 firms featured in the CRISIL-ESG 2022 report. Then pertinent data was gathered from CMIE Prowess IQ for the 2022-2023 period, resulting in a final dataset of 131 firms after addressing missing values. ESG risk data was acquired from Sustainalytics.com.

The study's dependent variable assesses the CFP (Roa), while the independent variables include ESG factors such as Escore, Sscore, Gscore, and the composite ESG Score. ESG risk was also factored in. Moreover, control variables were employed to mitigate the impact of external factors, including the firm's growth, leverage, fixed asset configuration, and age. Refer to Table 1 for further details on the constituents.

Table 1: Measurement of Components

Constituents	Name	Code	Measure
Dependent Variable	CFP	ROA	Profit after tax/ Total assets
Independent Variable	Environment Social and Governance Score	Esgs	Captured from CRISIL-ESG-2022 Report
	Environment Score	Envs	Captured from CRISIL-ESG-2022 Report
	Social Score	Socs	Captured from CRISIL-ESG-2022 Report
	Governance Score	Govs	Captured from CRISIL-ESG-2022 Report
	ESG Risk	Esgrisks	Captured from Sustainalytica.com
Control Variable	Growth	Growth	Natural Logarithm of $(Sales_i - Sales_{i-1}) / Sales_{i-1}$
	Leverage	Lev	Total liabilities/ Total assets
	Fixed Asset Ratio	Fixassratio	Total fixed assets/ Total assets
	Age	Age	Natural Logarithm of Age of the Firms Since Incorporation

Source: Author

3.1 Empirical Model

An Ordinary Least Squares regression analysis confirmed the hypothesis and demonstrated the association between CFP and ESG risk and scores.

The specific equations detailing this relationship are provided below:

$$Ro_a = \alpha + \beta_1 Env_s + \beta_2 Esgrisks + \beta_3 Growth + \beta_4 sLev + \beta_5 Fixassratio + \beta_6 Age + \varepsilon_i \text{-----}(1)$$

$$Ro_a = \alpha + \beta_1 Soc_s + \beta_2 Esgrisks + \beta_3 Growth + \beta_4 sLev + \beta_5 Fixassratio + \beta_6 Age + \varepsilon_i \text{-----}(2)$$

$$Ro_a = \alpha + \beta_1 Gov_s + \beta_2 Esgrisks + \beta_3 Growth + \beta_4 sLev + \beta_5 Fixassratio + \beta_6 Age + \varepsilon_i \text{-----}(3)$$

$$Ro_a = \alpha + \beta_1 Es_g_s + \beta_2 Esgrisks + \beta_3 Growth + \beta_4 sLev + \beta_5 Fixassratio + \beta_6 Age + \varepsilon_i \text{-----}(4)$$

4. RESULTS AND DISCUSSIONS

Table 2 presents an informative summary of the results of the variables in our analysis. The variable Roa has a mean of 7.4239 and a Standard Deviation (SD) of 10.1427. The highest recorded value for Roa is 32.12, and the lowest is -81.99. Moving on to the variable Es_g_s, it has a mean of 56.25 and an SD of 7.33. The highest value observed for Es_g_s is 73, while the lowest is 37. Next, we have the independent variable Env_s, with a mean of 46.21 and an SD of 12.99. The extreme values for Env_s are 75 and 22. Similarly, for the independent variable Soc_s, we observe a mean of 52.93 and a SD of 8.23, with extreme values of 75 and 22. The variable Gov_s has a mean of 67.12 and an SD of 6.68, with the most excellent recorded value being 80 and the smallest being 50. Moving on to the Esgrisks variable, it has a mean of 26.03 and an SD of 7.70. The highest value for Esgrisks is 44.8, and the lowest is 10.6. For the control variable, Growth, we found a mean of 7.03 and an SD of 1.31, with extreme values of 10.48 and 3.71. Additionally, the variable Lev has a mean of 0.28 and an SD of 1.24, while Fixassratio ranges from 0 to 0.778. Lastly, the variable Age has a mean of 40.68 and an SD of 23.65.

Table 2: Informative Summary

Variables	Mean	Standard Deviation	Minimum	Maximum
Roa	7.4239	10.1427	-81.9913	32.1212
Es_g_s	56.2519	7.3362	37	73
Env_s	46.2137	12.9970	22	75
Soc_s	52.9389	8.2375	33	70
Gov_s	67.1221	6.6818	50	80
Esgrisks	26.0381	7.7061	10.6	44.8
Growth	7.3039	1.3152	3.7177	10.48131
Lev	0.2879	1.2409	0.0001	14.1552
Fixassratio	0.2352	0.1879	0.000	0.778
Age	40.68702	23.65491784	4	118

Source: Authors' work

Based on the analysis from Table 3, it has been established that the variables in the study exhibit significant pairwise correlations and Variance Inflation Factors (VIFs). The dependent variable, Roa, is shown to have a positive association with Lev. Furthermore, Env_s, Soc_s, and Gov_s are identified to have strong positive associations with Es_g_s. Env_s also positively associates with Esgrisks, growth, and Fixassratio. Similarly, Soc_s demonstrate a substantial positive association with Lev and Fixassratio. Moreover, Gov_s was found to have a significant positive association with Fixassratio.

Table 3: Correlation Analysis and VIFs

Variable	Roa	Envs	Socs	Govs	Esgs	Growth	Esgrisks	Lev	Fixassratio	Age	VIFs
Roa	1.0000										-
Envs	-0.0213	1.0000									1.23
Socs	0.0508	0.7060*	1.0000								1.22
Govs	0.0159	0.8900*	0.8343*	1.0000							1.24
Esgs	0.0619	0.2135*	0.3162*	0.5839*	1.0000						1.25
Growth	-0.0363	0.2587*	0.2308*	0.2703*	0.1480	1.0000					1.15
Esgrisks	-0.1294	-0.2367*	0.0512	-0.1535	-0.0764	-0.0933	1.0000				1.07
Lev	-0.8156*	-0.1430	-0.1749*	-0.1694	-0.1061	-0.0768	0.0876	1.0000			1.05
Fixassratio	-0.0215	-0.2715*	-0.1970*	-0.3123*	-0.2232*	0.0997	0.1678	0.1438	1.0000		1.19
Age	-0.0054	-0.0315	0.0309	0.0151	0.0637	0.1000	0.1095	-0.0576	0.0407	1.0000	1.03

Notes: * 5 percent significance level, VIFs- Variance of Factors

Source: authors' work

Following a comprehensive assessment of the Variance Inflation Factors (VIFs) for all variables (independent and control), it has been verified that each of their respective VIF values remains below the established threshold of 10. This outcome underscores the absence of any significant multicollinearity issues.

In Table 4, OLS regression results for four models were presented. Model-1 reported the R Square value as 0.70142, showcasing a solid association between Roa, unrelated variables, and the control variable. The model is highly significant with a P value 0.000, indicating that Envs and the control variable Lev are statistically significantly associated with Roa. In Model-2, the R Square value was reported as 0.70747, indicating a strong association between Roa, the independent, and the control variables. The model is highly significant with a P value of 0.000, showing that Soc, Esgrisks, and Lev are statistically significantly connected with Roa. Transitioning to Model-3, the R Square value was reported as 0.69744, revealing a solid association of Roa with the independent and control variables. The model is highly significant with a P value 0.000, demonstrating that Govs and control variables Growth, Lev, and Fixassratio are statistically significantly related to Roa.

Table 4: OLS Regression Results

Dependent-Roa	Model-1	Model-2	Model-3	Model-4
	Coefficient	Coefficient	Coefficient	Coefficient
Esgs	-6.4358	-	-	-
Envs	-	-4.1607*	-	-
Socs	-	-	-2.778	-
Govs	-	-	-	1.5624
Esgrisks	-2.7928	-3.2135*	-2.4489	-2.6091
Growth	-0.7168	-0.6562	-0.8174*	-0.9236*
Lev	-6.9123*	-6.9180*	-6.8946*	-6.8389*
Fixassratio	5.3756	5.13095	6.2821*	7.0113*
Age	-0.5847	-0.6501	-0.5904	-0.5996
constant	50.2895*	41.3859*	34.8345*	18.4135
R ²	0.70142	0.70747	0.69744	0.69599
Prob > F	0.000*	0.000*	0.000*	0.000*

Notes: * 5 percent significance level

Source: authors' work



Finally, in Model-4, the R Square value was reported as 0.69599, suggesting a strong link between Roa, the independent variables, and the control variable. The model is highly significant with a reported P value of 0.000, implying that EsGs and control variables Growth, Lev, and Fixassratio are statistically significantly related to Roa. It was found that Lev had a negative association with Envs, Socs, Govs, and EsGs, indicating that higher leverage leads to lower Envs, Socs, Govs, and EsGs. It was also found that Esgrisks has a negative association with its Roa.

It has been observed that the individual scores of the Envs socs and Govs had a negative relationship with the firm's financial performance, Roa (Rahi et al. (2022). Whereas the composite EsGs positively associated with Roa (De Lucia et al., 2020). For the ESG risk, the firms have a negative association with its financial performance (Eccles and Strohle, 2019; Agoraki et al., 2023).

5. CONCLUSION

The study investigates the crucial link between ESG performance and the CFP, using data from 131 Indian firms in CMIE Prowess IQ. The study retrieved compelling evidence of the link between ESG performance and CFP through OLS regression analysis. The findings revealed significant associations between ESG performance and return on assets (Roa) across different models, indicating the substantial impact of social factors on CFP. Moreover, the study identified a negative relationship between leverage and CFP, implying that higher leverage leads to lower CFP. Additionally, individual ESG scores demonstrated a negative connection with CFP, while composite ESG scores exhibited a positive association with Roa. These results underscore the importance of ESG considerations in driving financial performance and emphasize the need for comprehensive ESG strategies. Thus, this study provides a valuable understanding of the critical link between ESG performance and CFP, stressing the need for organizations to prioritize ESG initiatives to enhance their financial outcomes.

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