ISSN 2323-5233
Vol 14, Issue 2 (2024)
http://eelet.org.uk

Impact of ESG on Financial Performance- An empirical study on Indian Listed Firms

Samson Gidla[1], Prasanth R Kumar[2]

[1]Research Scholar, [2]Supervisor, School of Management Studies, University of Hyderabad.

Abstract

In this study, we examine impact of Environmental, Social, and Governance (ESG) on financial performance and evaluates its impact in Indian listed firm. the present study based on the secondary data. The ESG factors score and financial data are extracted from the Bloomberg data base from 2012 to 2021. employed panel data techniques to estimate the impact of ESG factors on financial performance, typically involving operational metrics, ROA. The study of its impact examines the significance of relationship of ESG with FP individually by taking ESG scores. The findings reveal that the ESG factors in influencing financial performance. Finally concluded that companies focusing on environmental, social, and governance aspects tend to exhibit better financial performance.

Keywords: Financial performance, ROA, ESG,

1. Introduction

The traditional method of business has been measured only on firm's financial performance. Financial performance (FP) is a method that examines, evaluates and reports business activities. This report exclusively records all financial information that is done in a specified time period and in order to evaluate the overall business performance. This valuable metric highlights the data and specifics about how well the business is operating and consistently meets its strategic targets. Generally, this report is prepared either monthly, quarterly or annually. FP is essential for various financial analysts, stakeholders, investors, creditors, suppliers and managers to rely on these performances for making an appropriate decisions. The performance analysis helps in determining credit worthiness of the firm. Most importantly, this analysis is used as a monitoring tool to estimate and manage financial risk.

From, 1990's the focus on environment has become a major concern. The whole world had embraced the idea of Environmental, Social, and Governance (ESG). ESG score have been receiving a significant attention, as it started to influence business financial performance. ESG, influence business value by incorporating all non-financial information into business report called "Integrated Reporting". This non-financial metrics provides an opportunity to move towards sustainable development (Singh et.al.,2018). Adoption of ESG enhances FP. Today, majority of capital global markets are steering by ESG performance.

Today, Investors look FP along with ESG performance to assess the risk involved in it and also for business opportunities. ESG factors are increasingly being integrated into investment decisions, with private equity and venture capital actors advocating for the incorporation of ESG principles to drive financial returns (Bengo.,2022). The collaboration of FP with ESG will bring sustainability and financial data collectively. This integration has led to screening of investment opportunities based on ESG performance and the exclusion of those presenting specific ESG risks (Bengo et al., 2022). The introduction of sustainability ratings that include ESG factors is considered to be very crucial for many investors in evaluating any firm sustainable efforts with reliable ESG metrics to assess its performance (Wang, 2023). The introduction of ESG principles has been associated with improved market value and stock returns, with ESG components influencing stock returns and financial performance **(**Torrel.,2020**).** Furthermore, ESG disclosures have been found to lessening corporate financial irregularity risks and mitigate data imbalance, contributing to improved FP (Lu et al., 2022).

The increasing focus on ESG metrics takes a holistic view that extends beyond individual companies to broader economy. It has become a catalyst of a sustainable transaction (Igishev & Berdnikova, 2022). Studies have shown that, by the introduction of ESG metrics has led to improvement in ESG performance following the implementation of relevant regulatory directives (Aluchna et al., 2022). Also, the introduction of ESG has been

associated with lower cash holdings for firms with improved ESG initiatives, particularly young firms in the introduction and development stages **(**Atif et al., 2022).
The relationship between ESG and FP is complex and multifaceted. Few prior studies demonstrated a positive association of ESG on FP; few have highlighted the bidirectional relationship between ESG performance and earnings management (EM), thereby indicating a negative influence on AEM (Velte, 2019). Moreover, the introduction of ESG has been linked to enhanced bank stability during financial turmoil in Europe, suggesting a policy effect on FP (Chiaramonte, 2021).

ESG principles have profoundly impacted financial markets, influencing investment decisions, risk management, and FP. While the relationship between ESG and FP is multifaceted, the data suggests that the integration of ESG principles has the potential to drive positive financial outcomes and contribute to sustainable development.

In India, ESG has been promoting by regulatory bodies such as Securities and Exchange Board of India (SEBI) and Ministry of corporate affairs MCA to ensure a structured framework. As they mandated few listed firms to disclose their ESG performance and initiatives[1]. It even encouraged to incorporate the report in decision making. As these initiatives doesn't alone foster in enhancing business but also extend in sustainability and long term profitably.

2. Literature review:

2.1 Impact of ESG factors on FP:

ESG factors have been the subject of extensive research to understand their impact on financial performance. Several studies have investigated this relationship and have arrived at varying conclusions.
Buallay (2019) found a significant positive impact of ESG on the performance in the European banking sector. Similarly, Ahmad (2021) study on ESG on firm FP revealed that there is a significant impact on each other, and that indicated a positive performance. Furthermore, Zhao (2018) confirmed the positive impact of ESG performance on the FP of listed power generation companies in China. All these findings suggest that there is a positive association between ESG and FP.
Conversely, Velte (2019) reported that ESG performance has a negative influence on AEM but not on REM. Şeker and Gungor (2022) found that, ESG performance has no impact on FP in the utilities sector. These contrasting findings indicate a lack of consensus regarding the impact of ESG on FP.
In addition, Broadstock (2021) revealed that ESG performance lowers financial risk during a crisis (Broadstock et al., 2021), while Cai et al. (2023) suggested a time-lag effect on the impact of ESG scores on FP. These findings introduce the dimension of temporal effects and risk mitigation through ESG performance.
Overall, the literature presents a mixed view of the relationship between ESG and financial performance, with some studies demonstrating a positive impact while others show no significant association. The varying conclusions underscore the complexity of this relationship and the need for further research to understand the influence of ESG factors on financial performance comprehensively.

2.2 Impact of Environment factors on FP:

Environmental factors have been the subject of extensive research to understand their impact on financial performance. Several studies have explored the relationship between environmental considerations and financial outcomes.

Cheng et al. (2013) found that the social and environmental dimensions of corporate social responsibility (CSR) significantly influence access to finance. Landi (2022) reported that an overall ESG assessment has resulted in higher systematic risk for firms. It also corresponds with a corporate environmental rating that has an upward effect (same risk dimension). Torre et al. (2020) provided evidence that firms highly rated in terms of ESG score

1 https://www.sebi.gov.in/media/press-releases/may-2021/sebi-issues-circular-on-business-responsibility-and-sustainability-reporting-by-listed-entities-_50097.html

resulted in higher excess returns and lower volatility, indicating that ESG factors are reckoned as a good proxy for firms' FP.

Conversely, Qureshi et al. (2021) pointed out that, environmental investments substantially intensify a firm's internal financial burden. This is leading to a decrease in its FP. Alareeni and Hamdan's (2020) studies highlight that CSR disclosure is negatively associated with ROA and ROE.

These contrasting findings underscore the complexity of the relationship between environmental factors and FP. In addition, Sandberg (2022) highlighted its increasing importance of ESG issues, aligning with increasing demand for corporate sustainability. Xu (2021) emphasized the significance of studying the relationship between environmental accounting information and the FP of enterprises. These studies collectively contribute to understanding the multifaceted impact of environmental factors on financial performance.

Overall, the studies presents a mixed view of the relationship between environmental factors and FP, with some studies demonstrating a positive impact while others show no significant association. The varying conclusions underscore the complexity of this relationship and the need for further research to understand the influence of environmental factors on FP comprehensively.

2.3 Impact of Social factors on FP (ESG):

The relationship between social factors and FP has been extensively researched, yielding varying perspectives.

Choi (2010) found a significant empirical relationship between CSR and corporate financial performance in Korea. Mangantar (2019) reported a positive direction between social responsibility and governance with FP. Conversely, Aras et al. (2010) found no significant relationship between corporate social responsibility and FP /profitability. Newell & Lee (2012) determined that the dimensions of corporate social responsibility (CSR) were currently less influential than standard financial factors in influencing performance.

On the other hand, Giannarakis et al. (2016) found that participation in socially responsible initiatives has a positive effect on FP. Bharti & Malik (2021) indicated that working on social performance enhances the financial performance of micro finance institutions. These studies collectively contribute to understanding the multifaceted impact of social factors on FP.

Overall, the literature presents a mixed view of the relationship between social factors and FP, with some studies demonstrating a positive impact while others show no significant association. The varying conclusions underscore the complexity of this relationship and the need for further research to understand the influence of social factors on FP comprehensively.

2.4 Impact of governance factors on FP (ESG):

Based on the provided references, the effect of governance factors on FP has been the subject of extensive research, yielding diverse findings.
Yang et al. (2020) found that the quality of internal control has a considerable positive impact on enterprise environmental protection investment and FP. Balagobei & Velnampy (2017) suggested that ownership structure as a corporate governance mechanism affects the scope of FP. Aggarwal (2013) explored the impact of corporate governance on FP, indicating a significant relationship between the two. Aluoch (2021) reported that corporate governance has a determining effect on the FP of listed agricultural firms in Kenya.
Conversely, Miladiasari et al. (2021) found that good corporate governance did not moderate the effect of environmental performance on FP. Furthermore, Freire et al. (2020) indicated that the independence of corporate governance influenced FP, but this relationship was statistically significant only with certain variables. These contrasting findings underscore the complexity of the relationship between governance factors and FP.
In addition, Adegbayibi (2022) concluded that corporate governance moderated the effect of investment in intellectual capital on financial performance. Furthermore, **Bawaneh (**2020) highlighted the substantial impact of corporate governance on the financial stability of institutions. These studies collectively contribute to understanding the multifaceted impact of governance factors on FP.

Overall, the literature presents a mixed view of the relationship between governance factors and FP, with some studies demonstrating a positive impact while others show no significant association. The varying conclusions underscore the complexity of this relationship and the need for further research to understand the influence of governance factors on financial performance comprehensively.

3. Hypothesis:

From the above literature review, considering the increased interest from various research studies, the proposed study expects high performance on ESG performance may have a positive impact FP. The following hypothesis are tested:

Hypothesis 1: ESG had a positive impact on the financial performance.
Hypothesis 2: Environmental factors had a positive impact on the financial performance
Hypothesis 3: Social factors had a positive impact on the financial performance.
Hypothesis 4: Governance factors had a positive impact on the financial performance.

Many academic studies and research suggest that there exists a positive relationship between ESG and firm value and profitability. From previous research studies there also exist few studies with negative and mixed results. Using the hypothesis, this paper will attempt to debate with a large, recent, comprehensive dataset.

4. Data and Methodology

The present study's target's to investigate the relationship between ESG performance and the FP of listed firms in India using panel data methodology.

4.1 Sample data:

The sample for the study is NSE, in which top 500 listed firms on the Indian National Stock Exchange from 2010 and are active from 2012 to 2021. we filter the firms that have complete and contiguous annual reports and financial statements from 2012 to 2021. To capture corporate performance from ESG factors were employed. These proxies include ROA and ROE, which are widely recognized in existing collected work (Lee & Isa, 2022), (Qureshi et al., 2021) and (**Yun & Lee, 2022**).

4.1.1 Dependent variables:

Many of the research studies choose ROA as a proxy to measure FP.
ROA= Return on Assets is dependent variable of the study.

4.1.2.Independent variables:

The proposed study uses three independent variables. ESG-Score total Environmental, Social, and Governance Score, ENV-Score Environmental score, SOCL- Score Social Score, GOV-Score Governance Score

4.1.3. controlled variables:

This study selected leverage (LEV), current ratio (CUR_RATIO), log of assets (log(ASSET)), and age as control variables.

This study employed a set of company-specific variables to analyse the performance of firms. The selection of these variables was based on a thorough review of both classical and contemporary literature and employed panel data techniques to estimate the impact of ESG factors on financial performance, which can serve as a reference for the methodology (Zhao et al. 2018; Ahmad et al., 2021; Velte, 2019, and Gholami et al., 2022).

The proposed methodology has yielded empirical models, which encompass the following models:

4.1.4 Methodology:

This study runs four models to estimate results.

❖ 1: ESG had a positive impact on the financial performance.

$$\mathrm{ROA}_{it} = \beta_0 + \beta_1 \mathrm{ESG}_{\mathrm{Score}_{it}} + \beta_2 \mathrm{Crt}_{\mathrm{Ratio}_{it}} + \beta_3 \mathrm{LEV}_{it} + \beta_4 \mathrm{TotalAsset}_{it} + \beta_5 \mathrm{Age} + \beta_6 \mathrm{factor(Year)}_{it} \varepsilon_{it}$$

❖ 2: Environmental factors had positive impact on the financial performance.

$$\mathrm{ROA}_{it} = \beta_0 + \beta_1 \mathrm{ENV}_{\mathrm{Score}_{it}} + \beta_2 \mathrm{Crt}_{\mathrm{Ratio}_{it}} + \beta_3 \mathrm{LEV}_{it} + \beta_4 \mathrm{TotalAsset}_{it} + \beta_5 \mathrm{Age} + \beta_6 \mathrm{factor(Year)}_{it} \varepsilon_{it}$$

❖ H3: Social factors had a positive impact on the financial performance.

$$\mathrm{ROA}_{it} = \beta_0 + \beta_1 \mathrm{SOCL}_{\mathrm{Score}_{it}} + \beta_2 \mathrm{Crt}_{\mathrm{Ratio}_{it}} + \beta_3 \mathrm{LEV}_{it} + \beta_4 \mathrm{TotalAsset}_{it} + \beta_5 \mathrm{Age} + \beta_6 \mathrm{factor(Year)}_{it} \varepsilon_{it}$$

❖ H4: Governance factors had a positive impact on the financial performance.

$$ROA_{it} = \beta_0 + \beta_1 SOCL_{Score_{it}} + \beta_2 Crt_{Ratio_{it}} + \beta_3 LEV_{it} + \beta_4 TotalAsset_{it} + \beta_5 Age + \beta_6 factor(Year)_{it}\varepsilon_{it}$$

Note: Where "ROA= Return on Assets is dependent variable of the study. Regarding the independent variables: ESG-Score = total Environmental, Social, and Governance Score, ENV-Score = Environmental score, SOCL-Score = Social Score, GOV-Score= Governance Score, LEV = Leverage, AGE, Year, and Ɛ = error", current ratio (CUR_RATIO).

5. Results

Descriptive Analysis:

Descriptive Analysis					
Variables	**Avg**	**SD**	**MEDUM**	**MIN**	**MAX**
ESG_SCORE	26.980	14.024	23.967	4.545	77.608
ENV_SCORE	17.134	15.661	11.628	0.332	77.288
SOC_SCORE	28.196	14.494	28.070	0.635	89.063
GOV_SCORE	54.787	14.994	48.214	3.571	98.615
LEV	72.799	357.526	18.862	-428.543	14173.535
Total Assets	4.714	0.709	4.624	1.579	7.121
CUR_RATIO	1.855	1.662	1.442	0.034	28.409
AGE	36.421	23.618	31.000	-7.000	158.000

Table1: Descriptive Analysis

The descriptive statistics provide a summary of the key variables in the dataset related to ESG factors and financial performance of the listed companies in India. The average ESG score is approximately 26.980, with a standard deviation of 14.024, indicating a moderate level of variation in ESG performance among the companies. The median ESG score is 23.967, suggesting that the distribution of ESG scores is slightly skewed to the right, with a minimum score of 4.545 and a maximum score of 77.608.

In terms of environmental (ENV_SCORE), social (SOC_SCORE), and governance (GOV_SCORE) scores, the average scores are 17.134, 28.196, and 54.787, respectively. The standard deviations for these scores are 15.661, 14.494, and 14.994, indicating varying levels of dispersion in ESG performance across the firms. The median scores for ESG aspects are 11.628, 28.070, and 48.214, respectively, with a wide range of scores from the minimum to the maximum values.

The leverage (LEV) ratio shows an average of 72.799 with a high standard deviation of 357.526, indicating significant variability in leverage levels among the listed firms. The median LEV ratio is 18.862, with a wide range from a negative value of -428.543 to a maximum of 14173.535, suggesting potential outliers in the data.

Total assets have an average of 4.714 with a standard deviation of 0.709, indicating relatively stable asset levels across the firms. The current ratio (CUR_RATIO) has an average of 1.855 and a standard deviation of 1.662, with a median of 1.442, reflecting the liquidity position of the companies.

The age of the companies (AGE) shows an average of 36.421 years with a standard deviation of 23.618, indicating a wide range in the age distribution. The median age is 31 years, with companies ranging from -7 to 158 years, suggesting potential data quality issues or unique cases in the dataset.

These descriptive statistics provide a foundational understanding of the ESG factors and FP of listed firms in India, highlighting the variability and distribution of key variables in the dataset.

ESG on ROA				
	ESG -Model	**ENV- Model**	**SOC - Model**	**GOV - Model**
(Intercept)	24.283***	21.610***	19.969***	20.261***
	-16.589	-13.31	-12.785	-14.221
ESG_SCORE	0.092***			
	-5.904			
LEV	-0.002***	-0.002***	-0.002***	-0.002***
	(-7.338)	(-6.878)	(-6.850)	(-7.354)
CUR_RATIO	1.230***	1.012***	0.996***	1.227***
	-12.826	-9.973	-9.908	-12.779
log(ASSET)	-1.651***	-1.284***	-1.175***	-1.463***
	(-12.623)	(-9.607)	(-9.692)	(-12.033)
AGE	0.006	0.01	0.009	0.007
	-0.944	-1.401	-1.272	-1.077
factor(YEAR)2013	-0.752	-0.237	-0.358	-0.652
	(-1.288)	(-0.309)	(-0.466)	(-1.115)
factor(YEAR)2014	-0.688	-0.009	-0.237	-0.445
	(-1.186)	(-0.012)	(-0.315)	(-0.765)
factor(YEAR)2015	-1.012*	-0.136	-0.704	-0.816
	(-1.736)	(-0.186)	(-0.960)	(-1.400)
factor(YEAR)2016	-0.891	0.163	-0.432	-0.663
	(-1.513)	-0.226	(-0.595)	(-1.129)
factor(YEAR)2017	-1.054*	0.088	-0.669	-0.616
	(-1.757)	-0.128	(-0.950)	(-1.044)
factor(YEAR)2018	1.158*	0.731	0.689	1.317**
	-1.917	-1.244	-1.18	-2.125
factor(YEAR)2019	1.233**	0.892	0.857	1.382**
	-2.055	-1.521	-1.469	-2.254
factor(YEAR)2020	-0.205	-0.28	-0.292	-0.21
	(-0.346)	(-0.477)	(-0.503)	(-0.354)
factor(YEAR)2021	NA	NA	NA	NA
ENVIRON_SCORE		0.041***		
		-2.788		
SOCIAL_SCORE			0.063***	
			-4.429	
GOVNCE_SCORE				0.076***
				-4.673
Num.Obs.	2620	2141	2153	2620
R2	0.365	0.347	0.354	0.362
R2 Adj.	0.351	0.328	0.336	0.347
F	24.958	18.728	19.481	24.586
Coefficients are exponentiated to signify Odds Ratio				
t statistic in parenthesis				
* p < 0.1, ** p < 0.05, *** p < 0.01				

Table 2: Panel Data Analysis of ESG and ESG factors

A panel data model was utilized to analyze the relationship between ESG and ROA. The model included coefficients for ESG scores, as well as control variables like leverage (LEV), current ratio (CUR_RATIO), log of assets (log(ASSET)), and age. The model results revealed a statistically significant positive effect of ESG score on ROA, with a coefficient of 0.092***. This indicates that higher ESG performance is linked to improved financial performance, specifically in terms of ROA.

Some of the previous studies supported our study; a study on sustainability reporting in the European banking sector demonstrated a positive association between environmental disclosure and ROA, supporting the positive impact of ESG on financial performance (Buallay, 2019). Similarly, research on ESG risk scores and firm performance highlighted a significant positive influence of ESG components and combined ESG scores on profitability, aligning with the model's findings (Shobhwani, 2023).

The panel data analysis presented in the ENV_Model aims to explore the impact of environmental (ENV) performance on ROA in a sample of 2141 observations. The model's R-squared value of 0.347 indicates that approximately 34.7% of the variation in ROA can be explained by the independent variables included in the model. The adjusted R-squared value of 0.328 suggests that the model accounts for the degrees of freedom and sample size, providing a more accurate representation of the model's explanatory power.

The F-statistic of 18.728 indicates that the overall model is statistically significant, implying that at least one independent variable significantly affects ROA. The results are robust, as indicated by the statistical significance levels (*** $p < 0.01$) of the coefficients for LEV, CUR_RATIO, log(ASSET), and ENVIRON_SCORE.

The coefficient for LEV is -0.002 with a t-statistic of -6.878, suggesting a negative relationship between leverage and ROA. CUR_RATIO has a coefficient of 1.012 with a t-statistic of -9.973, indicating a positive association with ROA. log(ASSET) shows a coefficient of -1.284 with a t-statistic of -9.607, implying a negative impact on ROA. The ENVIRON_SCORE coefficient is 0.041 with a t-statistic of -2.788, signifying a positive relationship between environmental performance and ROA.

This result is in line with the studies by Derila et al. (2020), Ismail (2021), Lastiningsih et al. (2020), Nakao et al. (2006) and Gull et al. (2022), who found the same results significant relationship with the financial performance of the firms. The panel data analysis presented in the SOCL Model aims to explore the impact of Social performance on Return on Assets (ROA) in a sample of 2153 observations. The overall model performance is evaluated through the R-squared value, which indicates that approximately 35.4% of the variation in ROA can be explained by the factors included in the model. The Adjusted R-squared value is slightly lower, suggesting that the model may slightly overfit the data. The F-statistic tests the overall significance of the model.

The model presented indicates the impact of various factors on Return on Assets (ROA) in the context of Environmental, Social, and Governance (ESG) criteria. The results suggest that the Current Ratio (CUR_RATIO) and the logarithm of Assets (log(ASSET)) have a positive influence on ROA, as indicated by their coefficients being statistically significant and positive. Conversely, the level of debt (LEV) and the company's age (AGE) have a negative impact on ROA, with LEV being statistically significant.

The Score (SOCIAL_SCORE) is found to have a positive and statistically significant effect on ROA, indicating that companies with higher social scores tend to have better ROA. Previous studies by authors such as Oikonomou, I., Brooks, C., & Pavelin, S. (2014), Kim, Y., Park, M. S., & Wier, B. (2012). , and Jones, P., Comfort, D., & Hillier, D. (2016), who found the same results have a significant relationship with the financial performance of the firms.

The model results suggest that factors such as Current Ratio, Assets, Level of Debt, Age of the company, Social Score, and specific years play a significant role in determining Return on Assets in the context of ESG criteria. These findings provide valuable insights for companies and investors looking to understand the relationship between ESG factors and FP.

The Governance Score on ROA is crucial in evaluating the performance and effectiveness of governance practices within a company. The model presented includes various independent variables such as LEV (Leverage), CUR_RATIO (Current Ratio), log(ASSET), AGE, and factors representing different years from 2013 to 2020. the

model has an R-squared value of 0.362, indicating that approximately 36.2% of the variance in the Governance Score on ROA can be explained by the independent variables included in the model. The F-statistic of 24.586 is statistically significant, further supporting the overall significance of the model.

The results indicate that LEV has a statistically significant negative effect on the Governance Score on ROA, with a coefficient of -0.002 and a t-statistic of -7.354, both significant at the 1% level. This suggests that as leverage increases, the Governance Score on ROA tends to decrease.

Similarly, CUR_RATIO positively impacts the Governance Score on ROA, with a coefficient of 1.227 and a t-statistic of -12.779, both significant at the 1% level. This implies that companies with higher current ratios tend to have higher Governance Scores on ROA.

Moreover, log(ASSET) shows a negative relationship with the Governance Score on ROA, with a coefficient of -1.463 and a t-statistic of -12.033, both significant at the 1% level. This indicates that as the natural logarithm of assets increases, the Governance Score on ROA decreases.

The factors representing different years also play a role in influencing the Governance Score on ROA. For instance, in 2018 and 2019, there is a positive impact on the Governance Score on ROA, with coefficients of 1.317 and 1.382, respectively, both significant at the 5% level. This suggests that companies in these years had higher Governance Scores on ROA compared to the base year.

The Score (GOVNCE_SCORE) is found to have a positive and statistically significant effect on ROA, indicating that companies with higher governance scores tend to have better ROA. Previous studies by authors such as Yang et al. (2020), Aggarwal (2013), and Aluoch (2021) found the same results with a significant relationship with the FP of the firms.

The Governance Score on ROA is influenced by various factors such as leverage, current ratio, asset size, and the year of observation. Understanding these relationships is essential for companies and stakeholders to assess and improve governance practices for better FP. The results suggest a positive association between environmental performance and FP; higher ENV performance is linked to improved FP, specifically in terms of ROA.

Conclusion & limitations

The ESG model on ROA incorporates three sub-models: ENV_Model, SOC_Model, and GOV_Model, in addition to the ESG_Model. Each sub-model examines the impact of specific ESG factors on ROA alongside other relevant variables.

The ESG_SCORE, which represents the overall ESG performance of firms, has a statistically significant positive effect on ROA in the ESG_Model. With a coefficient of 0.092 and a t-statistic of -5.904, both are significant at the 1% level, suggesting that companies with higher ESG scores tend to have higher ROA.

In the ENV_Model, the ENVIRON_SCORE positively impacts ROA, with a coefficient of 0.041 and a t-statistic of -2.788, significant at the 1% level. This indicates that companies with better environmental performance also tend to exhibit higher ROA.

Similarly, in the SOC_Model, the SOCIAL_SCORE shows a positive relationship with ROA, with a coefficient of 0.063 and a t-statistic of -4.429, significant at the 1% level. This implies that companies with stronger social performance tend to have higher ROA.

In the GOV_Model, the GOVNCE_SCORE has a statistically significant positive effect on ROA, with a coefficient of 0.076 and a t-statistic of -4.673, significant at the 1% level. This suggests that companies with better governance practices achieve higher ROA.

Furthermore, the control variables such as LEV, CUR_RATIO, log(ASSET), and AGE exhibit similar patterns across the ESG, ENV, SOC, and GOV models, with significant impacts on ROA as indicated by their coefficients and t-statistics.

The ESG factors play a significant role in influencing a firm's ROA. Firms prioritising ESG considerations tend to have better FP, as reflected in their ROA. Understanding these relationships is crucial for investors, stakeholders, and policymakers aiming to promote sustainable and profitable business practices.

This study has a few limitations, which highlight the need for further studies. This paper was conducted on the impact of ESG factors on the FP of the top NSE 500 companies in India. However, the FP is influenced by board characteristics. Future studies should explore the characteristics of boards such as CEOs, risk management committees, audit committees, chief financial officers (CFOs), and fraud management committees. This study uses secondary sources, mainly utilities annual reports and the Bloomberg database, to gather the data. Future studies can use primary data like surveys and interviews in order to get an understanding of the impact of performance and ESG factors. The paper used the multiple regression panel data methodology to investigate the ESG factor's impact on the profitability of the top NSE 500 companies in India. Future studies may employ alternative estimating methods such as Data Envelopment Analysis (DEA).

References:

1. 148. https://doi.org/10.4236/ojbm.2023.111008
2. ADEGBAYIBI, A. (2022). Intellectual capital and firm performance of listed firms in nigeria: moderating role of corporate governance. Jurnal Akuntansi Dan Auditing, 17(2), 33-46. https://doi.org/10.14710/jaa.17.2.33-46
3. Aggarwal, P. (2013). Impact of corporate governance on corporate financial performance. Iosr Journal of Business and Management, 13(3), 01-05. https://doi.org/10.9790/487x-1330105
4. Ahmad, N., Mobarek, A., & Roni, N. (2021). Revisiting the impact of esg on financial performance of ftse350 uk firms: static and dynamic panel data analysis. Cogent Business & Management, 8(1). https://doi.org/10.1080/23311975.2021.1900500
5. Ahmad, N., Mobarek, A., & Roni, N. (2021). Revisiting the impact of esg on financial performance of ftse350 uk firms: static and dynamic panel data analysis. Cogent Business & Management, 8(1). https://doi.org/10.1080/23311975.2021.1900500
6. Alareeni, B. and Hamdan, A. (2020). Esg impact on performance of us s&p 500-listed firms. Corporate Governance, 20(7), 1409-1428. https://doi.org/10.1108/cg-06-2020-0258
7. Aluchna, M., Roszkowska-Menkes, M., & Kamiński, B. (2022). From talk to action: the effects of the non-financial reporting directive on esg performance. Meditari Accountancy Research, 31(7), 1-25. https://doi.org/10.1108/medar-12-2021-1530
8. Aluchna, M., Roszkowska-Menkes, M., & Kamiński, B. (2022). From talk to action: the effects of the non-financial reporting directive on esg performance. Meditari Accountancy Research, 31(7), 1-25. https://doi.org/10.1108/medar-12-2021-1530
9. Aluoch, M. (2021). Corporate governance, financial characteristics, macroeconomic factors and financial performance of agricultural firms listed at the nairobi securities exchange, kenya. European Scientific Journal Esj, 17(19). https://doi.org/10.19044/esj.2021.v17n19p71
10. Aras, G., Aybars, A., & Kutlu, O. (2010). Managing corporate performance. International Journal of Productivity and Performance Management, 59(3), 229-254. https://doi.org/10.1108/17410401011023573
11. Balagobei, S. and Velnampy, T. (2017). A study on ownership structure and financial performance of listed beverage food and tobacco companies in sri lanka. International Journal of Accounting and Financial Reporting, 7(2), 36. https://doi.org/10.5296/ijafr.v7i2.11518
12. Broadstock, D., Chan, K., Cheng, L., & Wang, X. (2021). The role of esg performance during times of financial crisis: evidence from covid-19 in china. Finance Research Letters, 38, 101716. https://doi.org/10.1016/j.frl.2020.101716
13. Buallay, A. (2019). Is sustainability reporting (esg) associated with performance? evidence from the european banking sector. Management of Environmental Quality an International Journal, 30(1), 98-115. https://doi.org/10.1108/meq-12-2017-0149

14. Buallay, A. (2019). Is sustainability reporting (esg) associated with performance? evidence from the european banking sector. Management of Environmental Quality an International Journal, 30(1), 98-115. https://doi.org/10.1108/meq-12-2017-0149
15. Cai, Z., Qian, M., & Wang, L. (2023). Comprehensive esg score and financial performance of carbon-neutral concept enterprises —based on entropy weight-topsis and grey relational analysis. Open Journal of Business and Management, 11(01), 133-148. https://doi.org/10.4236/ojbm.2023.111008
16. Cheng, B., Ioannou, I., & Serafeim, G. (2013). Corporate social responsibility and access to finance. Strategic Management Journal, 35(1), 1-23. https://doi.org/10.1002/smj.2131
17. Chiaramonte, L., Dreassi, A., Girardone, C., & Piserà, S. (2021). Do esg strategies enhance bank stability during financial turmoil? evidence from europe. European Journal of Finance, 28(12), 1173-1211. https://doi.org/10.1080/1351847x.2021.1964556
18. Choi, J., Kwak, Y., & Choe, C. (2010). Corporate social responsibility and corporate financial performance: evidence from korea. Australian Journal of Management, 35(3), 291-311. https://doi.org/10.1177/0312896210384681
19. Derila, C., Evana, E., & Dewi, F. (2020). Effect of environmental performance and environmental costs on financial performance with csr disclosure as intervening variables. International Journal for Innovation Education and Research, 8(1), 37-43. https://doi.org/10.31686/ijier.vol8.iss1.2054
20. Freire, C., Carrera, F., & Auquilla, P. (2020). Independence of corporate governance and its relation to financial performance. Problems and Perspectives in Management, 18(3), 150-159. https://doi.org/10.21511/ppm.18(3).2020.13
21. Gholami, A., Sands, J., & Rahman, H. (2022). Environmental, social and governance disclosure and value generation: is the financial industry different?. Sustainability, 14(5), 2647. https://doi.org/10.3390/su14052647
22. Giannarakis, G., Konteos, G., Zafeiriou, E., & Partalidou, X. (2016). The impact of corporate social responsibility on financial performance. Investment Management and Financial Innovations, 13(3), 171-182. https://doi.org/10.21511/imfi.13(3-1).2016.03
23. Gull, A., Saeed, A., Suleman, M., & Mushtaq, R. (2022). Revisiting the association between environmental performance and financial performance: does the level of environmental orientation matter?. Corporate Social Responsibility and Environmental Management, 29(5), 1647-1662. https://doi.org/10.1002/csr.2310
24. Igishev, A. and Berdnikova, N. (2022). Esg principles – a responsible approach for the sustainable development of society. The Economy of the North-West Problems and Prospects of Development, 2(69), 30-37. https://doi.org/10.52897/2411-4588-2022-2-30-37
25. Ismail, A. (2021). The influence of environmental performance and environmental costs on financial performance. Jasa (Jurnal Akuntansi Audit Dan Sistem Informasi Akuntansi), 5(3), 395-408. https://doi.org/10.36555/jasa.v5i3.1622
26. Jones, P., Comfort, D., & Hillier, D. (2016). Corporate social responsibility and the role of the board: The impact of the financial crisis. Journal of Business Ethics, 135(3), 429-438. doi:10.1007/s10551-014-2480-6
27. Kim, Y., Park, M. S., & Wier, B. (2012). Is earnings quality associated with corporate social responsibility? The Accounting Review, 87(3), 761-796. doi:10.2308/accr-50222
28. Landi, G., Iandolo, F., Renzi, A., & Rey, A. (2022). Embedding sustainability in risk management: the impact of environmental, social, and governance ratings on corporate financial risk. Corporate Social Responsibility and Environmental Management, 29(4), 1096-1107. https://doi.org/10.1002/csr.2256
29. Lastiningsih, N. and Aswar, K. (2020). Financial performance in indonesian companies: the role of environmental performance and environmental disclosure. Journal of Economics and Behavioral Studies, 12(2(J)), 27-33. https://doi.org/10.22610/jebs.v12i2(j).3022
30. Lu, P., Hamori, S., & Tian, S. (2022). Policy effect of the “blue sky plan” on air pollution, esg investment, and financial performance of china’s steel industry. Frontiers in Environmental Science, 10. https://doi.org/10.3389/fenvs.2022.955906
31. Mangantar, M. (2019). The influence of corporate social responsibility and corporate governance on banking financial performance. European Research Studies Journal, XXII(Issue 3), 95-105. https://doi.org/10.35808/ersj/1459

32. Nakao, Y., Amano, A., Matsumura, K., Genba, K., & Nakano, M. (2006). Relationship between environmental performance and financial performance: an empirical analysis of japanese corporations. Business Strategy and the Environment, 16(2), 106-118. https://doi.org/10.1002/bse.476
33. Newell, G. and Lee, C. (2012). Influence of the corporate social responsibility factors and financial factors on reit performance in australia. Journal of Property Investment & Finance, 30(4), 389-403. https://doi.org/10.1108/14635781211241789
34. Oikonomou, I., Brooks, C., & Pavelin, S. (2014). The impact of corporate social performance on financial risk and utility: A longitudinal analysis. Financial Management, 43(3), 611-631. doi:10.1111/fima.12044
35. Qureshi, M., Akbar, M., Akbar, A., & Poulova, P. (2021). Do esg endeavors assist firms in achieving superior financial performance? a case of 100 best corporate citizens. Sage Open, 11(2), 215824402110215. https://doi.org/10.1177/21582440211021598
36. Sandberg, H., Alnoor, A., & Tiberius, V. (2022). Environmental, social, and governance ratings and financial performance: evidence from the european food industry. Business Strategy and the Environment, 32(4), 2471-2489. https://doi.org/10.1002/bse.3259
37. Shobhwani, K. (2023). Impact of esg risk scores on firm performance: an empirical analysis of nse-100 companies. Asia-Pacific Journal of Management Research and Innovation, 2319510X2311709. https://doi.org/10.1177/2319510x231170910
38. Torre, M., Mango, F., Cafaro, A., & Leo, S. (2020). Does the esg index affect stock return? evidence from the eurostoxx50. Sustainability, 12(16), 6387. https://doi.org/10.3390/su12166387
39. Velte, P. (2019). The bidirectional relationship between esg performance and earnings management – empirical evidence from germany. Journal of Global Responsibility, 10(4), 322-338. https://doi.org/10.1108/jgr-01-2019-0001
40. Velte, P. (2019). The bidirectional relationship between esg performance and earnings management – empirical evidence from germany. Journal of Global Responsibility, 10(4), 322-338. https://doi.org/10.1108/jgr-01-2019-0001
41. Wang, L. (2023). Truth or dare? esg risk disclosure of mutual funds. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.4326492
42. Xu, C. (2021). Study of environmental accounting information disclosure and financial performance of heavy pollution enterprises — based on empirical evidence of coal enterprises.. https://doi.org/10.2991/aebmr.k.210210.086
43. Yang, L., Qin, H., Gan, Q., & Su, J. (2020). Internal control quality, enterprise environmental protection investment and finance performance: an empirical study of china's a-share heavy pollution industry. International Journal of Environmental Research and Public Health, 17(17), 6082. https://doi.org/10.3390/ijerph17176082
44. Zhao, C., Guo, Y., Yuan, J., Wu, M., Li, D., Zhou, Y., … & Jiangang, K. (2018). Esg and corporate financial performance: empirical evidence from china's listed power generation companies. Sustainability, 10(8), 2607. https://doi.org/10.3390/su10082607
45. Zhao, C., Guo, Y., Yuan, J., Wu, M., Li, D., Zhou, Y., … & Jiangang, K. (2018). Esg and corporate financial performance: empirical evidence from china's listed power generation companies. Sustainability, 10(8), 2607. https://doi.org/10.3390/su10082607