DOES ESG CONTRIBUTE TOWARDS VIKSIT BHARAT? – UNDERSTANDING ITS EFFECT ON FIRM PERFORMANCE

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Abstract

The wave of Environmental, Social, and Governance (ESG) reporting has surged lately, as the scope of corporate stakeholders' concerns has now manoeuvred beyond simple financial gains due to the worldwide focus on triple-bottom-line reporting. While profit maximization remains the main goal for most companies, it should not come at the expense of the environment and society as a whole. Thus, the combination of ESG reporting and conventional financial reports has become essential in the present evolving reporting landscape across the globe. In India, the reporting of Socially Responsible Investments (SRIs) became compulsory for the top 100 listed firms by market capitalisation as mandated by SEBI via the Business Responsibility Report (BRR). This requirement was subsequently expanded to cover the top 500 listed companies in 2017 and later to the top 1000 listed firms in the financial year 2019-20. While numerous studies have explored the connection between ESG activities and their effects on firms' performance in Western nations, there is still a lack of research on this topic particularly in developing countries such as India in the recent times. Consequently, the current research aims to explore the connection between ESG activities considering them collectively as well as taking the individual pillars E, S, and G separately to unfurl their effect on select Indian companies over a five-year period, from 2018 to 2023.

However, since, Business Responsibility and Sustainability Reporting (BRSR) style has been introduced in the financial year 2021-22 and was made mandatory from 2022-23 for top 1000 listed companies, evaluation of ESG performance during this study period consists of two types of Reporting style, i.e., BRR & BRSR. The research employs the ESG scores of the companies being analyzed retrieved from LESG (formerly Refinitiv Eikon) database as a stand-in for their ESG performance, while Tobin's Q, Return on Assets (ROA), and Return on Capital Employed (ROCE) serve as the dependent variables that assess the performance of the chosen firms.

Keywords: ESG, Impact, Performance, Reporting, Sustainable India

Introduction

Historically, the financial performance of a company in the world has been considered the prime factor to make decisions on smart investment options. However, over the past 20 years, aside from financial factors, some non-financial

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factors have also found a seat in the investor's as well as in the fund manager's mindset, and that too in a very large manner. For sure, the indication is in the direction of environment, social, and governance (ESG) factors. There has been an enormous buzz globally in recent times regarding triple-bottom-line reporting. The companies are also disclosing their sustainability success along with financial performances for the interest of their stakeholders. Even though it was voluntary in nature, now in most of the countries, mandates have been formed under various legislations for mandatory disclosure of sustainability performances of certain categories of businesses. Sustainability reporting in formalized manner started first with Corporate Social Responsibility (CSR) initiatives which primarily focused on corporate philanthropy to make organizations good social citizens. Even though CSR directly addresses serious sustainability issues, i.e., the environment and society; governance-related issues are not being addressed explicitly. In order to address sustainability in a broader context, the concept of CSR has now shifted into the domain of environmental, social and governance (ESG) initiatives, which address all three major aspects of sustainability and address environmental protection in a broader context, Society and Governance (ESG). Long term sustainable goals of wealth maximization, encompassing ESG factors are, thus, now being targeted to analyze a company's ethical contribution to the triple bottom line and are a subset of sustainable investments. ESG is a new trend and is still in its nascent stage in most of the countries; particularly developing nations. Thus, in many extant literatures these two terms, 'CSR' and 'ESG' have been used interchangeably. It has been recognized that the ESG factors are a source of risk to business, and have the ability to twist the financial returns. Sustainability has, thus, become a robust demand for government, industries and every stakeholder who aims to drive the nation and economy forward. "ESG," for "Environmental, Social, and Governance," evaluates a company's moral impact on the triple bottom line and is a subset of sustainable investments.

In today's times, more and more firms are ready to implement ESG practices in business operations; and information disclosure related to ESG factors in prospectuses issued for the motive of raising funds. The corporates are under such pressure more than ever before in view of common knowledge that they are generating huge revenues, and are responsible towards larger society. The big firms are impacting billions of individuals on the planet with its products and services every day; and have come to have a deep sense of environmental and social ills. They have started incorporating these factors into the core of their organizational structures, strategies, and business models. It implies that the focus on ESG results in creation of value for the firm by effective and efficient management of resources, enhanced public reputation, cleaner environment,

better society, long-term sustainability, reduced regulatory issues in terms of fines and penalties, and creation of sources for raising funds at reduced costs. ESG is expected to have a positive relationship with financial performance of a firm. It has been observed that there is a tendency of negative effect on share price, and returns of firms; who faced a major ESG controversy, like, sea oil spill, CO_2 emissions, differential treatment to minority shareholders, production of relatively unhealthy products, and labour unrest.

It depicts that ESG has occupied the central stage of decision-making process related to investment. The increase in number of ESG funds, and the sizable amount of money collected have grown rapidly, so the need for its regulation was realized. Just like the developed countries, the developing countries like India are no exception in this regard. The formal regulatory framework on ESG disclosures was initiated in our country through the Companies Act, 2013; which mandated companies to report information on "Energy Conservation". The Corporate Social Responsibility rules came into force in 2014. In 2015, Securities and Exchange Board of India required disclosures in annual reports on "opportunities, threats, risks, and concerns" for listed companies. It further, introduced the "Disclosure Requirements for Issuance and Listing of Green Debt Securities", in 2017; to boost the confidence of investors, and to draw finance for ESG-compliant ventures, such as, renewable energy, waste water management, and conservation of eco-system. More recently, in June 2021, SEBI has come forward with Business Responsibility and Sustainability Reporting (BRSR) framework, to relatively enhanced and improved ESG integrated practices by corporates. Its adoption is voluntary at present, but the same will be mandatory for top listed companies from financial year 2022-23. It has laid emphasis on ESG disclosures of qualitative as well as of quantitative nature; enabling comparison amongst companies. Therefore, by taking these measures, regulators have not only nudged corporates but also mandated them to embed ESG in ways of doing business.

1. Background

Environmental (E), Social (S), and Corporate Governance (G) can be regarded as three different and important pillars. Each and every one of them is further comprises sub-parameters; which are utilized in measuring the non financial performance of an entity. The 'E' factor typically encompasses a company's negative contribution towards climate change, such as Paper, Mining, and Cigarette Industry. It is measured on the basis of environmental information or disclosures made by an entity on utilization of resources; and their effects on biodiversity, such as, efforts put on waste generation and recycling; proper use of water, and energy; and pollution reduction; and minimizing on carbon emissions. These factors have brought compulsion upon businesses to switch to greener ways to operate who are operating for sustenance of the environment and

resources for future generations, such as, implementing all steps towards becoming zero carbon-emissions. Likewise, the 'S' is for social or workplace culture of an entity, such as gender diversity, safety to women employees, and other stakeholders. It is, essentially, means how the company is managing its relationship with employees, suppliers, customers, and the community through corporate citizenship and philanthropy. In other words, a socially responsible company is involved in various socio-economic causes through their Corporate Social Responsibility initiatives, and emphasizes on how the company is giving back to society The 'G' factor is the most crucial one or is the pillar on which a company is evaluated. It determines if the company is transparent in its actions; and treats respectfully and fairly all its stakeholders, such as, investors, minority shareholders, employees, and customers. It speaks about the duties of Board of Directors, and business ethics followed by them. It reflects information on management's goodwill, degree of independent functioning, organization structure, and relationships with shareholders. It considers also the quantity and quality of corporate disclosures and the extent of compliance with various mandatory and voluntary requirements.

These three non-financial aspects have been gaining enhanced repercussions day by day, but are seen as interlocked. When efforts are made to deal any one of them individually, they are observed as overlapping each other, i.e. the analysis of cigarette industry enlightens us about its impact on environment as well as on society. Therefore, these three factors are taken together for consideration. In other words, the term ESG, is representative of a firm's collective meticulousness for social and environmental, and governance parameters. It is a score which is generally compiled from data or disclosers made by companies in public domain. ESG score may also be called as "intangible assets" for the entity; because it is used by numerous stakeholders, especially, the investors; to measure the impact of business on resources related to sustainability or society.

Now, it has been realized and stressed that traditional method of investment assessment, based on only financial metrics; has to be revamped; which could be done by combining ESG metrics with financial metrics to assess the value of firm. It is thought that it would not only enhance firm's exposure to worldwide sustainability-related shocks but the economy as a whole also. This school of thought has ignited debate and deliberations regarding the importance, magnitude, and worth of sustainability's interconnectedness with the financial system.

2. Rationale of the study

The firms are supposed to be corporate citizens of the society and environment; and also, to strive towards inclusive and sustainable development, besides

financially rewarding and successful. The firms are indirectly challenged and pressured to act responsibly because they do not stand alone. They draw from the environment surrounding them, labour they utilize, and to great extent impact lives of the individuals they indirectly serve. Thus, how a firm conducts its business not only impacts it, but also the society it inhabits. This is the underlying reason of significance and assessment of a business firm's sustainable, responsible, and ethical conduct just like its financial performance.

3. Review of literature

"Is there a significant relationship between the ESG attributes of a firm and its performance and value?"- is perhaps one of the most contested topics among most of the literature that is currently published. The researchers also tried to establish if management decisions on ESG investments have a positive impact on their value and performance. Whereas most of the literature is in agreement on a positive association between the two, others argue that it is negative, while there are also a few studies with an indecisive opinion on the issue.

3.1. Positive relationship

Benabou and Tirole (2010), Baron (2007, 2008), Fatemi et al. (2015), and Albuquerque et al. (2019) etc. theorize that greater ESG expenditures are chiefly associated in two positive manners with the firm's value and performance. To begin with, improved ESG performance increases the firm's goodwill and/or decreases the discount rate, leading to the reduction of the firm's overall cost of capital. As a result, the cash flows of the company are supported positively, thereby enhancing the value of its shareholders. Improved ESG performance also generates more value to shareholders in terms of making them feel confident that they are buying shares in good companies irrespective of how the firms' cash flows shift. Friede et al. (2015) try to confirm this empirically by meta-analysis of over two thousand scholarly works and conclude that approximately 90% of papers find a positive correlation between ESG and company financial performance (CFP); and more notably, the large majority of papers yield positive outcomes. Applying KLD categories Gillan et al. (2010) and Borghesi et al. (2014) examine the relationship between the performance of the firms and the ESG ratings. It establishes that companies with more ESG activities usually enjoy better operating performance, enhanced cash flows and Tobin's q. Chang et al. (2019) use a whole different approach in examining how the value of firms is linked with ESG practices by determining whether the value of an extra dollar in cash balances is greater in high-ESG companies than in companies that have poor ESG scores. They find that for firms that have good ESG scores, an extra dollar in cash equates to larger value adjustments than for companies that have low ESG scores. Based on the study conducted by Bolton and Kacperczyk (2020), firms

with lower carbon dioxide emissions have lower stock returns, indicating that firms with improved ESG performance have lower capital costs. Flammer (2015) examined how ESG proposals would affect the stock market based on a Regression Discontinuity Design (RDD). His work indicated that such proposals not only create value in the form of an increase in sales and productivity of labour but also return supernormal profits. Flammer (2021) examine the impact of green bond issuance on stock market returns. While green bond issuance is not limited to firms with high ESG ratings, research has established that it increases the value of the firm and improves stock liquidity and a sense of ownership.

3.2. Negative relationship

Hong et al. (2012) contend that instead of creating value by fulfilling the interests of the shareholders, ESG activities inflict agency problems. Buchanan et al. (2018) apply Bloomberg ratings to assess the ESG nature of the firms, with the focus on the quality of the firm's ESG disclosure as compared to its ESG performance. The study categorizes all the firms under research into two binary categories based on the level of their ESG disclosure. They find a significant inverse relationship between Tobin's q, ESG disclosure, and crisis indicators. The financial crisis creates agency conflicts to deteriorate, as per their research. ESG disclosure leads to a decline in the stock market, revealing that investors do not appreciate such activity when engaging in investment choices, as per Masulis and Reza's (2015) study. Changes in KLD scores are utilized as a proxy in Di Giuli and Kostovetsky (2014). Within the study, no significant relation is found. The authors further conclude that benefits from social responsibility to stakeholder's result directly at the cost of firm value. The authors argue that the expansion of ESG activities leads to subsequent stock underperformance and a deterring effect on long-term ROA.

3.3. No relationship

The long-term profitability of the companies or Tobin's q measures reveals no apparent correlation with shareholder value. Humphrey et al. (2012) is another which comes to the same conclusion comparing the performance metrics of UK firms after risk adjustment with high and low CSP (Corporate Social Performance) rated firms based on a private database of CSP ratings of UK businesses. "Investors and managers are able to apply a CSP investment or business strategy without having to bear any substantial financial cost (or gain) in terms of risk or return," they conclude.

4. Research gap

First and foremost, although there have been reasonably good volumes of research studies in the topic of impact of sustainability reporting on firms'

performance, earlier literatures have provided mixed findings to the relationship between the two. Only some studies have yielded positive correlation between two variables, while a few others have yielded negative or no correlation between the same. Therefore, the literatures on impacts of ESG disclosure on Corporate Financial Performance are still intermittent. Secondly, ESG reporting has three significant pillars of sustainability, i.e., Environment, Social and Governance. Therefore, apart from analyzing the relationship between a firm's financial performances against its ESG activities in total, how each pillar of ESG contributes to the performance of the firm must be explored. Finally, most of the studies associated with ESG disclosures are being performed in developed economies. Nevertheless, very few studies have studied the ESG disclosures of firms that operate in developing and least-developed economies, so, driven by this research gap, we extended the earlier social and environmental accounting literature to the Indian context.

5. Research objectives

The research is conducted aiming at the following objectives –

5.1. Primary objective

To examine how ESG scores correlate with financial performance.

5.2. Secondary objectives

  i. To examine the relationship between environmental score and financial performance.

 ii. To find out the association between social scores and financial performance.

iii. To investigate the relationship between governance score and financial performance.

6. Hypothesis of the study

H_0: ESG practices do not affect financial performance of companies.

H_1: ESG practices affect financial performance of companies.

7. Research Methods

7.1. Research design

The statistical technique used to empirically test the hypothesis is the multiple regression analysis. It has been identified to estimate the causal relationship between explained and explanatory variables. The various variables identified for the investigation are defined as follows:

1. *Dependent Variables* – There are various concerns related to the accounting and market measures of profitability. In this study, both measures have been

used to gauge the link between ESG practices and financial performance of the firm. The three variables identified for this purpose are:

a. Tobin's Q (TOB_Q) – It has been represented by the natural logarithm of ratio of market capitalization to book value of total assets.

b. Return on capital employed (RO_CE)–It has been calculated as ratio of profit after tax to total capital employed in the business.

c. Return on Assets (RO_A) – By this measure, the profitability has been viewed as how efficiently the assets are used to generate income from operation of business. So, it has been defined as ratio of EBDITA (Earnings before depreciation, interest, and income tax) to total assets of the entity.

2. *Explanatory Variables* – The scores relating to environmental, social, governance parameters individually and collectively; have been extracted from the data calculated by LESG (formerly Refinitiv Eikon). The range of score may be zero to hundred depending upon the qualitative and quantitative efforts made by companies on ESG front.

These are ESG Disclosure Score (ESG_S) used in Model - I; and Environmental Disclosure Score (ENV_S), Social Disclosure Score (SOC_S), and Governance Disclosure Score (GOV_S) used in Model-II.

3. *Control Variables* – The profitability is affected by other parameters also. Therefore, the additional or control variables identified are:

a. Size of company (SIZE_A) – It has been represented by the natural logarithm of total assets employed in business.

b. Leverage of company (LEV) – It has been calculated as the ratio of total debt used to carry out business, to the total amount of equity capital.

c. Nature of industry – Sector-specific dummies have been introduced to capture the difference in financial performance of the company, which may occur due to the industry-specific characteristics. The sample companies have been classified into seven industries on the basis of their primary operations or related business. These are Chemical and Allied, Engineering and Capital Goods (NOI_EC), Fast Moving Consumer Goods (NOI_FMCG), Information Technology and Allied (NOI_IT), Metals and Mining (NOI_MM), Oil and Power (NOI_OP), and Real Estate and Cement (NOI_RE). Chemical and Allied industry has been defined as reference category, and six dummy variables have been introduced in the regression equation.

Based on these variables, the following regression equation has been specified for Model-I:

$Y = a + b_1 (ESG\_S) + b_2(SIZE\_A) + b_3(LEV) + b_iX_j + e$ where,

Y is the financial performance, represented separately by TOB_Q, RO_CE, and RO_A;

$X_j = X_4$ to X_9 are dummy variables representing the six industries;

a is the intercept; b_1, b_2, b_3, and b_i (b_4 to b_9) are partial slope coefficients; and e is the random error term.

In Model-II, in place of ESG_S, three different variables, namely, ENV_S, SOC_S, and GOV_S have been introduced. All other variables remain the same.

7.2. Period of study

In India, the reporting of Socially Responsible Investments (SRIs) became compulsory for the top 100 listed firms by market capitalisation as mandated by SEBI via BRR. This requirement was subsequently expanded to cover the top 500 listed companies in 2017 and later to the top 1000 listed firms in the financial year 2019-20, followed by issuance of BRSR style for non-financial reporting. Thus, the financial year 2019-20 demands a special mention in the history of non-financial reporting in India. Hence, latest five-year data, i.e.; from 2019-20 to 2022-23 have been used for carrying out the empirical analysis to ascertain the association between the underlying variables.

7.3. Data collection and computation

Secondary sources of data have been used in the study. The ESG scores have been collected from the LESG (formerly Refinitiv Eikon) database. However, the financial data relating to the sample period have been extracted from Capitaline database. The necessary data analysis and statistical tests have been performed using Jamovi software.

7.4. Sample Selection

A sample of 29 companies covered under both BRR and later BRSR was selected from NSE 50 index as they stood on 3rd February 2025, excluding financial companies (namely, Bajaj Finance Ltd, HDFC Bank Ltd, HDFC Life Insurance Company Ltd, ICICI Bank Ltd, Shriram Finance Ltd, State Bank of India, Bajaj Finserv Ltd, Indusind Bank Ltd, Kotak Mahindra Bank Ltd, SBI Life Insurance Company Ltd, and Axis Bank Ltd) and companies with missing values (namely, HCL Technologies Ltd, ITC Ltd, Infosys Ltd, Tech Mahindra Ltd, Power Grid Corporation of India Ltd, Bajaj Auto Limited, Tata Consultancy Services Ltd, Wipro Ltd, Nestle India Ltd, and Oil and Natural Gas Corporation Ltd) for empirical investigation.

8. Analysis and Findings

Table - 1 presents descriptive statistics of research variables employed in empirical analysis. Mean value, standard deviation, kurtosis, skewness, range, minimum, and maximum are provided for chosen variables. These statistics are not demonstrating the presence of normal distribution properties. The mean values of all variables (excluding leverage) are not approaching zero; and those of standard deviation are also not approaching one.

The mean value of ESG is 57.25 across industries, which indicates towards more than moderate performance is exercised by companies on ESG front. It indicates towards the approach of corporate India to acknowledge and grant an increasing importance to these non-financial factors. The governance pillar has attained the highest score of 67.46, followed by the score of social dimensions with 53.75. It implies that adherence to good governance practices is major priority in corporate sector. The reason may the existence of mandatory regulatory framework for governance related factors. The average score for the environmental initiatives has come out to be lowest as 48.09, with highest value of dispersion among sustainability variables; indicating more consistent efforts are required to carry out policies and practices on green management.

Table – 1: Summary of Descriptive Statistics of Variables

Statistic	RO_CE	RO_A	LTOB_Q	ESG_S	ENV_S	SOC_S	GOV_S	SIZE_A	LEV
Mean	11.909	14.576	0.261	57.250	48.095	53.730	67.460	5.233	0.225
Standard Error	0.881	0.619	0.046	0.530	0.905	0.617	0.562	0.053	0.017
Median	9.247	13.444	0.424	56.000	47.500	54.000	69.000	5.053	0.137
Standard Deviation	12.465	8.753	0.648	7.492	12.792	8.719	7.954	0.754	0.245
Sample Variance	155.373	76.617	0.420	56.128	163.634	76.017	63.265	0.568	0.060
Kurtosis	14.702	0.245	0.790	0.146	-0.267	-0.328	0.588	0.188	1.148
Skewness	2.590	0.790	-1.013	0.271	0.288	-0.234	-0.682	0.823	1.258
Range	124.318	43.806	3.292	42.000	64.000	43.000	43.000	3.698	1.230
Minimum	-28.217	-1.896	-1.693	37.000	22.000	29.000	40.000	3.958	0.000

Data compiled and calculated by the authors using Jamovi

Table - 2 presents Karl Pearson's correlation coefficients between the ESG score composite and its components as calculated. The values indicate that correlations

between the ESG score composite and its components are more than 0.5, and environment, social, and governance scores correlate 0.86, 0.71, and 0.64, respectively, with ESG score. Therefore, to mitigate the possible multicollinearity issue in the independent variables, individual regression models have been run. In Model I, we have employed ESG_S alone as the independent variable in the regression equation; the findings are presented in Tables 3, 4, and 5, where dependent variables are TOB_Q, RO_CE, and RO_A, respectively.

In Model II, to identify the exact causal relationship between FP and each of three pillars; i.e., ENV_S, SOC_S, and GOV_S were used as significant explanatory variables. That is, the composite ESG score has been removed from the regression equation; and the findings have been given in Table - 6, Table - 7 and Table - 8.

Table – 2: Correlation Matrix of variables

	RO_CE	RO_A	TOB_Q	ESG_S	ENV_S	SOC_S	GOV_S	SIZE_A	LEV	NOI_EC	NOI_FMCG	NOI_IT	NOI_MM	NOI_OP	NOI_RE
RO_CE	1.00														
RO_A	0.82	1.00													
TOB_Q	0.50	0.53	1.00												
ESG_S	-0.05	-0.06	-0.10	1.00											
ENV_S	-0.19	-0.20	-0.22	0.87	1.00										
SOC_S	-0.15	-0.13	-0.39	0.71	0.57	1.00									
GOV_S	0.24	0.23	0.34	0.64	0.26	0.19	1.00								
SIZE_A	-0.37	-0.41	-0.77	0.44	0.47	0.62	-0.03	1.00							
LEV	-0.48	-0.36	-0.60	0.19	0.25	0.34	-0.15	0.55	1.00						
NOI_EC	-0.06	-0.12	0.14	-0.05	-0.03	-0.14	0.01	-0.11	-0.23	1.00					
NOI_FMCG	0.35	0.27	0.27	-0.07	-0.04	-0.31	0.09	-0.23	-0.16	-0.17	1.00				
NOI_IT	0.08	0.18	0.13	0.25	0.26	0.16	0.13	-0.03	-0.11	-0.13	-0.10	1.00			
NOI_MM	0.04	0.06	-0.06	-0.19	-0.17	-0.05	-0.16	0.09	0.01	-0.11	-0.09	-0.07	1.00		
NOI_OP	-0.09	-0.09	-0.05	-0.09	-0.07	-0.03	-0.10	0.04	0.11	-0.14	-0.11	-0.09	-0.07	1.00	
NOI_RE	-0.11	-0.14	-0.01	-0.18	-0.12	-0.22	-0.10	-0.14	-0.11	-0.08	-0.07	-0.09	-0.09	-0.08	1.00

Data compiled and calculated by the authors using Jamovi

8.1 Empirical Findings Regarding ESG Score - Model I

Table - 3 gives multiple regression results. The dependent variable or outcome used is TOB_Q, since market-based measure of financial performance. The R-square is 77.88%, and the adjusted R-square is 76.71%. This means the independent variables used are accounting for 76.71% of the change in the dependent variable. F-value is also significant at 1% significance. Thus, it shows that model is fitted well to the data, and has explanatory power to capture the underlying causal relationship between dependent and independent variables.

Table - 3: Results of Multiple Regression (Dependent Variable - TOB_Q)

Variable	Coefficients	Standard Error	t Stat	P-value
Intercept	1.5510	0.2434	6.3720	0.0000
ESG_S	0.0332	0.0038	8.7931*	0.0000
SIZE_A	-0.5738	0.0430	-13.3388*	0.0000
LEV	-0.1927	0.1229	-1.5685	0.1184
NOI_EC	-0.0410	0.0723	-0.5669	0.5715
NOI_FMCG	0.0987	0.0810	1.2191	0.2243
NOI_IT	-0.1258	0.0999	-1.2593	0.2095
NOI_MM	0.0493	0.1114	0.4425	0.6586
NOI_OP	-0.1035	0.0941	-1.0997	0.2729
NOI_RE	-0.1273	0.0931	-1.3671	0.1732
R-square	0.7788	F-statistic	66.5594	
Adjusted R-square	0.7671	Significance F	0.0000*	

*Level of Significant at 1%

Data compiled and calculated by the authors using Jamovi

The value of the coefficient of ESG_S has come out to be positive and extremely statistically significant according to expectations. It indicates that firms with greater compliance with ESG dimensions have greater market valuation, and investors' favourite destination. All else equal, findings are revealing that as ESG score increases by a unit, company's market value rises by 0.0332 units. Thus, null hypothesis is rejected, and the research hypothesis is accepted. It validates that improved ESG practices result in greater financial performance of firm, and thus are inclined to attract greater investments. Multiple regression results based on accounting measures, RO_CE, and RO_A are summarized in Table - 4 and Table - 5, respectively. These are interpreting that the coefficient value of ESG_S is positive and statistically significant for the dependent variables i.e. RO_CE, and RO_A, at 5%, and 10% respectively, are in conformity with the establishment of positive and significant relationship between ESG practices and FP of companies by different studies at national and international levels.

Table – 4: Results of Multiple Regression (Dependent Variable - RO_CE)

	Coefficients	Standard Error	t Stat	P-value
Intercept	22.7192	5.5597	4.0865	0.0001
ESG_S	0.1854	0.0863	2.1474**	0.0330
SIZE_A	-2.7384	0.9825	-2.7872*	0.0059
LEV	-2.7631	2.8067	-0.9845	0.3261
NOI_EC	-6.8018	1.6518	-4.1179*	0.0001
NOI_FMCG	1.3225	1.8500	0.7149	0.4756
NOI_IT	0.0959	2.2822	0.0420	0.9665

NOI_MM	0.1680	2.5448	0.0660	0.9474
NOI_OP	-5.4504	2.1492	-2.5360*	0.0120
NOI_RE	-7.7309	2.1273	-3.6341*	0.0004
R-square	0.3669	F-statistic	10.9540	
Adjusted R-square	0.3334	Significance F	0.0000*	

Data compiled and calculated by the authors using Jamovi

*Statistically Significant at 1% Level of Significance; **Statistically Significant at 5% Level of Significance

While, there are constraints associated with both accounting, and market-based measures of financial performance of firms. But market-based measures may be treated as more reliable as they tend to reflect the attitude, and investor perception regarding the current and future outlook.

Table – 5: Results of Multiple Regression (Dependent Variable - RO_A)

	Coefficients	Standard Error	t Stat	P-value
Intercept	16.1269	7.9449	2.0298	0.0438
ESG_S	0.2199	0.1234	1.7827***	0.0762
SIZE_A	-2.0097	1.4040	-1.4314	0.1540
LEV	-16.8977	4.0109	-4.2130*	0.0000
NOI_EC	-6.3749	2.3604	-2.7007*	0.0075
NOI_FMCG	7.0827	2.6437	2.6791*	0.0080
NOI_IT	-2.3282	3.2613	-0.7139	0.4762
NOI_MM	1.2665	3.6367	0.3483	0.7280
NOI_OP	-3.7647	3.0713	-1.2258	0.2218
NOI_RE	-6.7370	3.0400	-2.2161**	0.0279
R-square	0.3625	F-statistic	10.7461	
Adjusted R-square	0.3287	Significance F	0.0000*	

*Statistically Significant at 1% Level of Significance

** Statistically Significant at 5% Level of Significance

***Statistically Significant at 10% Level of Significance

Data compiled and calculated by the authors using Jamovi

The control variables - SIZE_A and LEV are negative, and suggest a negative correlation with the performance of entity with all three measures of dependent variables. The coefficient of the variable, SIZE_A is statistically significant at 1% when measured by TOB_Q, and RO_A. It may be seen that with increase in size of firm, the organizational inefficiencies have dragged its value down. Likewise, LEV measuring the influence of capital structure on financial performance of firm is significant at 1% level, when controlled with RO_A. It shows that firm's

greater quantities of debts are not welcomed by shareholders.

Coefficients of the dummy variables concerned signify the character of industry and are seen as negative for the dependent variable TOB_Q. It suggests that their effect on TOB_Q is smaller by the magnitude of their respective coefficients than reference category's impact. NOI_MM is carrying positive sign but not statistically significant. Likewise, greater number of dummies with negative coefficients than positive ones, are observed with accounting measures i.e. RO_CE, RO_A. The result of statistically significant F-value for all three financial performance measures; reflects the presence of relationship between performance of industry and nature of industry. Thus, it can be said that the industry where a company is based; is a significant source of variation in the figure of financial performance.

8.2 Results of Multiple Regression Equation of Model-II

The Table - 6, Table - 7 and Table - 8 are indicating that the resulting F-statistic is significant at 1% level of significance. It implies that model is well fit to the dataset. The results are not in accordance with regards to relationship between ENV_S, SOC_S, and GOV_S pillars and financial performance, when approximated by market-based and accounting measures.

Table – 6: Results of Multiple Regression (Dependent Variable - TOB_Q)

	Coefficients	Standard Error	t Stat	P-value
Intercept	1.2517	0.2753	4.5463	0.0000
ENV_S	0.0083	0.0025	3.2770*	0.0013
SOC_S	0.0058	0.0040	1.4759	0.1416
GOV_S	0.0198	0.0030	6.5128*	0.0000
SIZE_A	-0.5499	0.0461	-11.9381*	0.0000
LEV	-0.1790	0.1215	-1.4732	0.1424
NOI_EC	-0.0206	0.0756	-0.2718	0.7861
NOI_FMCG	0.1038	0.0878	1.1813	0.2390
NOI_IT	-0.0707	0.1032	-0.6850	0.4942
NOI_MM	0.0658	0.1110	0.5927	0.5541
NOI_OP	-0.0713	0.0953	-0.7477	0.4556
NOI_RE	-0.1180	0.0967	-1.2199	0.2241
R-square	0.7727	**F-statistic**	57.3823	
Adjusted R-square	0.3287	**Significance F**	0.0000*	

Data compiled and calculated by the authors using Jamovi

*Significant at 1% Level of Significance

The coefficient of ENV_S has been positively correlated with TOB_Q or firm's market value and also statistically significant at 1% level of significance. The same has emerged negative but not statistically meaningful, as calculated by accounting metrics i.e. RO_CE and RO_A. It means that the corporates are more and more willing to implement green practices to improve financial metrics, and measures are being implemented to minimize their negative footprints to conserve the environment.

Table – 7: Results of Multiple Regression (Dependent Variable - RO_CE)

	Coefficients	Standard Error	t Stat	P-value
Intercept	4.2200	8.9295	0.4726	0.6371
ENV_S	-0.1379	0.0818	-1.6851	0.0936
SOC_S	0.2593	0.1282	2.0217**	0.0446
GOV_S	0.2478	0.0987	2.5111*	0.0129
SIZE_A	-2.3139	1.4938	-1.5490	0.1231
LEV	-16.6715	3.9414	-4.2298*	0.0000
NOI_EC	-4.0726	2.4533	-1.6600	0.0986
NOI_FMCG	9.8831	2.8491	3.4689**	0.0006
NOI_IT	0.6123	3.3469	0.1829	0.8550
NOI_MM	2.6813	3.6017	0.7445	0.4575
NOI_OP	-1.6915	3.0908	-0.5472	0.5849
NOI_RE	-4.2285	3.1370	-1.3479	0.1793
R-square	0.3921	**F-statistic**	10.0510	
Adjusted R-square	0.3531	**Significance F**	0.0000*	

*Statistically Significant at 1% level of significance

** Statistically Significant at 5% level of significance

Data compiled and calculated by the authors using Jamovi

All three dependent variables have evidenced the creation of a positive correlation with SOC_S. However statistically significant relationship is absent, except with TOB_Q. It seems to suggest that improvement in social practices, have led to positive returns and improved accounting performance. However, simultaneously, it is also indicating that investors are perceiving lesser financial risk in the firms, which is involvement in greater extent of social activities. Thus, one can conclude from the analysis that compliance with corporate social responsibilities helps in maximizing the financial worth of enterprise.

Table – 8: Results of Multiple Regression (Dependent Variable - RO_A)

	Coefficients	Standard Error	t Stat	P-value
Intercept	15.6726	6.2793	2.4959	0.0134
ENV_S	-0.0690	0.0575	-1.1992	0.2320
SOC_S	0.1961	0.0902	2.1742**	0.0309
GOV_S	0.1595	0.0694	2.2986**	0.0226
SIZE_A	-3.0497	1.0505	-2.9032*	0.0041
LEV	-2.6364	2.7716	-0.9512	0.3427
NOI_EC	-5.3086	1.7252	-3.0771*	0.0024
NOI_FMCG	3.2304	2.0035	1.6124	0.1086
NOI_IT	1.8880	2.3536	0.8022	0.4235
NOI_MM	1.0650	2.5328	0.4205	0.6746
NOI_OP	-4.1356	2.1735	-1.9027	0.0586
NOI_RE	-6.0687	2.2060	-2.7510*	0.0065
R-square	0.3904	**F-statistic**	9.9794	
Adjusted R-square	0.3513	**Significance F**	0.0000*	

*Statistically Significant at 1% level of significance

** Statistically Significant at 5% level of significance

Data compiled and calculated by the authors using Jamovi

The statistically significant and positive relationship is seen between GOV_S and all the financial variables. It is statistically significant at 1% when it is measured by TOB_Q, and RO_CE. It supports the fact that following the good governance principles results in higher valuation of the firm, and brings greater returns to the investor. It also increases the investors' confidence in the firm.

The result and performance of recognized control variables – LEV, SIZE_A, and six dummy variables for the type of industry - will most probably be nearly identical to what was observed in Model - I. The high but negative values of coefficients of LEV, and SIZE_A have shown the negative relationship with firm value. The value of F-Statistics of model statistically significant interprets that there is significant correlation between industry nature and firm value.

9. Limitations of the study

i. The sample of the study was India's top 29 NSE companies selected from Nifty 50, excluding financial companies and companies with missing values, as it stood on 3ʳᵈ February 2025, only for five years, namely 2019 to 2023.

ii. Since, BRSR style has been introduced in the financial year 2021-22 and was made mandatory from 2022-23 for top 1000 listed companies, evaluation of ESG performance during this study period consists of two

types of Reporting style, i.e., BRR & BRSR. This may be considered as a week point of the present study.

iii. In order to quantify the success of a company financially, return-on-assets ratio, return-on-capital employed ratio, and Tobin's Q ratios are employed. Any other variables that could affect a company's performance financially are ignored.

iv. The present study concentrates on restricted data owing to time limitations.

10. Conclusion and suggestions

In nineties, the ESG trends were not in limelight, but today the ESG-based investing principle is an emerging awareness among various set of stakeholders in emerging economies such as India; and gaining more significance than ever. Various studies have been conducted to study the effect of ESG factors on financial performance of firms. More studies have been conducted at global level than domestically. But, the findings have indicated conflicting results on the correlation of underlying variables. Hence, an effort has been made in this paper to catch and comprehend the connection between the two issues; and also to expand the research area by evaluating the significance of non-financial factors – ESG practices – in influencing the FP of firm. A sample of 29 top firms has been chosen from Nifty 50 index, excluding the financial companies and the companies with missing values; for which necessary financial information and ESG scores; indicating the quality of ESG practices; were presented for the year 2019-23. The financial data have been taken from Capitaline database, and the ESG scores from the compendium of LESG (formerly Refinitiv Eikon) database. Both, market-based and accounting-based measures have been utilized to depict the FP of firms. These are Tobin's Q; Returns on capital employed, and Return on assets. Leverage or capital structure, company size, and industry nature have been identified as control variables. Two regression analysis models have been utilized in the analysis. In first model combined ESG score has been utilized as proxy to ESG practices; while, in second model, individual scores of each of three ESG pillars have substituted consolidated score of ESG factors. Empirical analysis has found a statistically significant positive effect of ESG factors on financial performance of he selected companies. On individual level, governance practices are revealed to be the key driver of financial performance, followed by environmental and social drivers. The results have proven that high quality of ESG practices not only improve the financial performances, but also offer directions in decision-making process to regulators, fund-providers, board of directors, and society. The implementation challenge that is faced is in the form of the poor ESG data quality to ESG data disclosures made by firms. This should be addressed at the earliest. Setting up a universal template for the ESG data verification and disclosure might be the potential solution through ensuring

greater industry-level transparency as well as standardization. Furthermore, working with companies, regulators, and other stakeholders may be able to bring out the best practices and resolve challenges associated with carbon credit trades and ESG data quality.

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