



Research Paper

ESG Practices and Financial Performance—Empirical Evidences from Indian Companies

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ABSTRACT: Traditionally, financial performance of a business across the globe has been considered as the main criteria to make prudent investment decisions. But, in last 20 years, apart from financial indicators, some non-financial factors have also found their place in the thought process of investors, and fund managers. Certainly the indication is towards environmental, social, and governance (ESG) dimensions. Long term sustainable goals of wealth maximization, involving ESG parameters are being focused. It has been recognized that the ESG factors are a source of risk to business, and have the ability to twist the financial returns. A large number of research studies have been conducted to explore affiliation between ESG practices and financial performance (FP) of companies. But, most research studies have been carried out in foreign countries; and diverse and conflicting findings have been reported regarding the relationship between these two aspects. This paper is focused to explore the collective as well as individual impact of ESG practices on FP of companies. ESG score calculated by CRISIL (Credit Rating and Information services India Limited) has been used as proxy to ESG practices. Tobin Q - market based indicator; and return on capital employed, and return on Assets - accounting indicators have been used to represent FP of 200 selected Indian companies across sectors. The other selected control variables are financial leverage, size of company, and nature of industry in which a company operates. The PROWESS data base has been used to extract financial data for the year 2020-21. In this research paper, two models of multiple regression has been used to trap the behavior of variables. The first model captures the impact of the consolidated ESG score as the key explanatory variable on FP, while the second model employs environmental (E), social (S), and governance (G) scores, individually as the basic explanatory variables, to gauge the effect of each these pillars on FP. The findings have revealed that there is a significant relationship between ESG practices and financial performance of companies. Among ESG factors, governance practices are found to be most prominent one. It throws light on the issue that good ESG practices add value to the entity by enhancing financial returns, and its goodwill among stakeholders. The outcome of analysis is material enough to not only investors, managers, and other stakeholders of the entity who are chasing the heights of bottom-line; but also to the regulator to decide upon the mandatory framework to improve adherence to these practices.

KEYWORDS: ESG Score, Financial Performance, Regression, Sustainability

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I. INTRODUCTION

Environmental (E), Social (S), and Corporate Governance (G) may be seen as three distinct and significant pillars. Each one of them is further consists of sub-parameters; that are used in assessing the non-financial performance of an entity. The 'E' factor generally includes a company's negative contribution to climate change, like Paper, Mining, and Cigarette Industry. It is assessed on the basis of environmental data or disclosures made by an entity on use of resources; and their impact on biodiversity, such as, efforts devoted to waste generation and recycling; efficient use of water, and energy; and reduction of pollution; and minimization on carbon emissions. These factors have created compulsion for businesses to adopt greener practices who operate for sustenance of the environment and resources for future generations, like following all measures towards making zero carbon-emissions. Similarly, the 'S' stands for social or workplace mentality of an entity like gender diversity, protection to women employees, and other stakeholders. It is, basically, means how the company manages its relationship with employees, suppliers, customers, and the community through corporate

citizenship and philanthropy. In other words, a socially responsible company takes part in various socio-economic causes through their Corporate Social Responsibility initiatives, and stresses on how the company is giving back to society. The ‘G’ factor is the most important one or is the foundation on which a company is judged. It ascertains whether the company is transparent in its actions; and treats respectfully and fairly all its stakeholders, such as, investors, minority shareholders, employees, and customers. It talks about the responsibilities of Board of Directors, and business ethics followed by them. It provides information on management’s goodwill, degree of independent functioning, composition; and relations with shareholders. It also takes into account quality and quantity of corporate disclosures; and extent of adherence to numerous mandatory, and voluntary regulations.

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 disclosures 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.

Nowadays, it has been recognized and emphasized that old system of assessment of investment, based on only financial parameters; are required to be overhauled; which may be achieved by integrating ESG factors into financial indicators to judge the value of firm. It is believed that it would not only strengthen the firm’s exposure to global sustainability-related shocks but also the economy as a whole. This school of thought has intensified discussions and considerations about the significance, size, and value of interconnectedness of sustainability and the financial system. The outbreak of Covid-19 may be considered as a wake-up call to spread the idea, and need of building risk resilient businesses than ever before; although it is very challenging, yet vital.

The companies are expected to be good stewards of environment and social community; and also to work towards inclusive and sustainable growth, in addition to financially profitable and successful. The firms are being indirectly pressurized and challenged to behave responsibly because they do not function in a vacuum. They take from the environment around, the work force they employ, and to a large extent affect lives of those they serve indirectly. Therefore, the way a firm carries out its business not only affects itself, but also the society it exists in. This is the underlying reason of importance and evaluation of a company’s sustainable, responsible, and ethical practices in the same manner as its financial performance.

It has been observed that the companies who are sound enough to ESG parameters; attract long-term benefits. It has been established by Kotsantonis, Pinney, & Serafeim, (2016) that the companies scoring high on ESG have enjoyed the increase in operating efficiency, and expansion in new markets; due to decreased risk, and lower cost of capital. These firms may be termed as “responsible companies”. Being ESG compliant does not mean replacement of financial indicators with non-financial ones. Rather, the focus is on maintaining a “balance” between these two types of parameters. The increasing awareness among stakeholders about these issues; has made a compelling case for corporates and policymakers to enlarge, formulate, and implement their vision and strategies on ESG factors. Moreover, the investment analysts deeply integrate sustainability in their analysis and decisions-making process. They not only focus on numbers reported annually, but also on not obvious issues, such as, greenhouse gas emissions, labor practices, and engagement processes with stakeholders. Wang & Sarkis (2013) found positive association between supply chain management related to environment, and social aspects; and financial performance in US companies.

It has redefined the judgment process of investment or fund managers; and approach of companies to risk management in India. The stakeholders are paying attention on corporates for management of risk associated with environmental change; care for responsible social behavior; and ethical behavior of Board. They presume that ESG compliant companies might not expose to risk which may be projected by these three elements. It is the underlying reason that increasing number of ESG issues are being raised, and discussed in shareholder’s meeting. Further, the institutional investors are valuing long-term perspectives of investment, in relation to risks and returns; rather than focusing on short term aspects. Sassen, Hinze & Hardeck (2016) found that a higher focus on Corporate Social Performance has resulted in decreasing the idiosyncratic and total risk in European firms. Therefore, formal incorporation of ESG into business methods, procedures, and processes; has become critical for raising funds by corporates, and also for consumer and investment management. The companies may use the ESG disclosures in their marketing strategy to enhance customer-base. According to Amel-Zadeh, & Serafeim (2018) ESG has occupied the central stage of decision making process related to investment. The number of ESG fund, and the amount raised have grown sharply.

On the other hand, the companies which have ignored ESG factors are prone to higher risks, and likely to face challenges in raising capital in near future. So, a growing number of companies are inclined to integrate ESG practices in business conduct; and disclosing information related to ESG criteria in prospectuses issued to

raise funds. The corporates are facing this pressure than ever before because of widespread awareness that they are earning huge profits, and have responsibility towards larger society. The big companies are reaching to billions of people on globe through its products and services on daily basis; and have developed a sophisticated understanding of social and environmental challenges. They have started bringing these considerations into the core of their organizational structures, strategies, and business models.

It implies that the focus on ESG results into creation of value for firm by effective and efficient utilization of resources, enhanced public image, greener environment, better society, long-term sustainability, reduced regulatory issues in terms of fines and penalties, and creating avenues for raising funds at lower costs. ESG is expected to have a positive link with financial performance of a company. It has been observed that there is a tendency of negative effect on share price, and returns of companies; who hit a major ESG controversy, such as, oil spills in sea, CO₂ emissions, differential treatment to minority shareholders, manufacturing of relatively unhealthier products, and labor unrest. Ashwin Kumar, Smith, Badis, Wang, Ambrosy, & Tavares (2016) analyzed that the corporates which follow ESG practices are observed with lower volatility in their stock prices as compare to their counterparts in the same industry in US market. They also explored that ESG impacts each industry differently. Similarly, Verheyden, Eccles, & Feiner (2016) explained that the incorporation of ESG based information in decision-making process for investment, results in better risk-adjusted returns.

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. The formal regulatory framework on ESG disclosures was initiated 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.

II. LITERATURE REVIEW

A number of studies have been carried out to predict the relationship between FP, and non-financial factors represented by ESG indicators. The numerous empirical studies have presented contradictory association between the two. The maximum results have derived positive linkage between the ESG practices and FP of an entity, and lesser number of studies arrived with negative or negligible link. However, different variables have been recognized and substituted in empirical analysis to proxy ESG practices, and financial outcome in various studies.

Chelawat & Trivedi (2016) revealed that performance on the ESG factors escalates economic performance. Tarmuji, Maelah, & Tarmuji (2016) exhibited that ESG practices influence economic indicators in Malaysia and Singapore. Volte (2017) analyzed three different components of ESG separately with financial indicators; and found a positive link with FP, when it is measured by return on assets. It also indicated the strongest impact of governance factors as compared to other two components for German firms. Garcia, Mendes-Da-Silva, & Orsato (2019) predicted a positive relationship between ESG factors and financial profile of a firm from Brazil, Russia, India, China, and South Africa (BRICS countries). They also indicated that larger firms enjoy higher level of performance by undertaking ESG paradigm. Dalal, & Thaker (2019) analyzed that adherence to ESG pillars leads to increase in FP which has been measured through both accounting and market-based indicator in Indian firms listed on National Stock Exchange. Ziolo, Filipiak, Bąk, & Cheba (2019) confirmed the positive contribution of ESG compliance by Chinese firms in to FP and profitability, as measured by return on capital employed. Alareeni & Hamdan (2020) determined that disclosure by companies on ESG components positively impacts the financial performance in US listed companies. Alsayegh, Abdul Rahman, & Homayoun (2020) showed the interdependence of ESG disclosure and sustainability performance. It depicted the evidences that the compliance environmental and social framework along with good corporate governance measures in a business improves its economic sustainability performance among Asian firms. Chouaibi, Chouaibi, & Rossi (2021) shed light that strengthening of ESG pillars and increases the value of firm; and the weaknesses on ESG fronts tend to decrease the same in UK and Germany.

Duque-Grisales, Aguilera-Caracuel (2021) revealed a statistically significant relationship between the ESG score and financial performance in multinationals from Latin America. López-Toro, Sánchez-Teba, Benítez-Márquez & Rodríguez-Fernández (2021) analyzed positive link between ESG paradigms and financial ratios in Pharmaceuticals companies in US. They directed the attention of management towards investment in ESG being a profitable strategy.

Nirino, Santoro, Miglietta, & Quaglia (2021) put forth the evidences on negative relationship between corporate controversies related to ESG practices and financial performance in European listed companies. Landi, & Sciarelli, (2019) revealed that in spite of continuous growing on spending to comply with ESG parameters; a non- positive but statistically significant effect on financial indicators, in listed companies in Italy.

III. RESEARCH METHODS

3.1 Objectives of Study

The study aims at the following objectives:

1. To explore the direction and degree of impact of ESG practices undertaken by companies on financial indicators or performance;
2. To provide understanding to all stakeholders on ESG issues, regulatory framework, and other related aspects in Indian companies across sectors;
3. To aid and facilitate the decision making process of all stakeholders, especially, the investors who are enthusiastic to make sound investment in Indian companies; and
4. To broaden the area of research on ESG framework in India.

3.2 Hypothesis of Study

H₀: ESG practices do not affect financial performance of companies.

H_A: ESG practices affect financial performance of companies.

3.3 Statement of Problem

It has been widely realized by corporates and stakeholders that ESG factors are a source of risk which may dwindle the financial prosperity of the organizations. It has been reinforced by the outcome of Covid-19 pandemic and its effect on business. Moreover, companies are looking forward to sustainable long-term growth rather than myopic short-term accomplishments. Therefore, there is a need to assess empirically whether ESG practices are capable of stirring financial indicators of an entity, and thereby, making their adherence by corporates mandatory, to safeguard the interest of stakeholders.

3.4 Data and Research Methodology

3.4.1 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 FP 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 CRISIL. 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 Mode-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 FP of the company, which may occur due to the industry-specific characteristics. The sample companies have been classified into eight industries on the basis of their primary operations or related business. These are Chemical and Allied, Engineering and Capital Goods (NOI_EC), Financial (NOI_FIN), 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 seven dummy variables have been introduced in the regression equation.

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

$$Y = a + b_1 (ESG_S) + b_2 (SIZE_A) + b_3 (LEV) + b_i X_j + e \text{ where,}$$

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

X_j = X₄ to X₁₀ and are dummy variables representing the seven industries;

a is the intercept; b₁, b₂, b₃, and b_i (b₄ to b₁₀) 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.

3.4.2 Period of study

The data for the year 2020-21 has been used for the empirical analysis carried out to ascertain the link between the underlying variables.

3.4.3 Data Collection

Secondary sources of data have been used in the study. The ESG score has been collected from the “ESG Compendium” which was published by CRISIL, in June 2021. However, the financial data relating to the sample period, of 200 financially sound companies; have been extracted from PROWESS database. It has been created and preserved by Centre for Monitoring Indian Economy (CMIE).

3.4.4 Sample Selection

A sample of 200 companies was selected for empirical investigation. It was guided by the availability of financial data for all selected variables of the study, and ESG score. Therefore, “judgment sampling” technique is the basis of selection of the sample.

3.4.5 Analysis of Data and Research Findings

Table 1 shows the descriptive statistics of research variables used in empirical analysis. The value of mean, standard deviation, kurtosis, skewness, range, minimum, and maximum are presented for selected variables. These values are not displaying the existence of normal distribution characteristics. The mean values of all variables (except leverage) are not nearing zero; and that of standard deviation are also not closer to 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 dimension with 53.75. It implies that adherence to good governance practices is major priority in corporate sector. The reason may be 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

	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	0.13

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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
Maximum	96.101	41.910	1.599	79.000	86.000	72.000	83.000	7.657	1.230

Table 2 is presenting the Karl Pearson’s coefficient of correlation between the selected variables for the study. It has been observed that the correlation between consolidated ESG score, and its constituents is more than 0.5, i.e. environmental, social, and governance scores have correlation values with ESG as 0.86, 0.71, and 0.64 respectively. Therefore, to avoid the existence of multicollinearity among independent variables, separate regression models have been run. In Model I, only ESG has been included as explanatory variable in regression equation; and results are presented in Table 3, Table 4, and Table 5 by considering dependent variable as TOB_Q, RO_CE, and RO_A respectively.

In Model II, to ascertain the precise causal relationship between FP and each of three pillars; i.e. ENV_S, SOC_S, and GOV_S have been identified as key explanatory variables. In other words, the consolidated ESG score has been dropped from the regression equation; and the results have been presented 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_FIN	NOI_F_MCG	NOI_IT	NOI_M_M	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_FIN	0.36	-0.39	-0.65	0.43	0.49	0.51	-0.02	0.60	0.58	-0.23	1.00					
NOI_F_MCG	0.35	0.27	0.27	0.07	0.04	0.31	0.09	-0.23	-0.16	-0.17	-0.18	1.00				
NOI_IT	0.08	0.18	0.13	0.25	0.26	0.16	0.13	-0.03	-0.11	-0.13	-0.14	-0.10	1.00			
NOI_M_M	0.04	0.06	-0.06	0.19	0.17	0.05	-0.16	0.09	0.01	-0.11	-0.12	-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	-0.15	-0.11	-0.09	0.07	1.00	
NOI_RE	0.11	-0.14	-0.01	0.18	0.12	0.22	-0.10	-0.08	-0.01	-0.14	-0.15	-0.11	-0.08	0.07	-0.09	1.00

Empirical Findings Regarding ESG Score - Model I

The multiple regression results have been presented in Table 3, where dependent variable is TOB_Q as market-based measure of financial performance. The value of R-square is 78%, and that of adjusted R-square is 77%. It may be inferred that selected independent variables are explaining 77% of variability in dependent variable. F-value is also statistically significant at 1% of significance. Therefore, it implies 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: Multiple Regression Results

Dependent Variable - TOB_Q				
	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_FIN	-0.6263	0.0960	-6.5245*	0.0000
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%

The coefficient value of ESG_S has turned out to be positive and highly statistically significant as per expectations. It reveals that companies with higher adherence to ESG dimensions enjoy higher market valuation, and a preferred destination for investment among investors. Other things being equal, the results are divulging that as ESG score moves up by one unit, the market value of company enhances by 0.0332 units. Therefore, null hypothesis is rejected i.e. “ESG practices do not affect financial performance of companies”. It confirms that better ESG practices lead to higher financial performance of firm, which in turn tends to attract more investments.

The multiple regression results based on accounting measures, RO_CE, and RO_A are presented in Table 4 and Table 5, respectively. These are explaining 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 link between ESG practices and FP of companies by various studies conducted at national and international level. These are Tarmuji, Maelah, & Tarmuji (2016), Chelawat & Trivedi (2016), Velte (2017), Dalal, & Thaker (2019), Garcia, Mendes-Da-Silva, & Orsato (2019), Ziolo, Filipiak, Bąk, & Cheba (2019), Alsayegh, Abdul Rahman, & Homayoun (2020), Nirino, Santoro, Miglietta, & Quaglia (2021), and Chouaibi, Chouaibi, & Rossi (2021).

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_FIN	-8.4984	2.1924	-3.8762*	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*	

*Statistically Significant at 1% Level of Significance

** Statistically Significant at 5% Level of Significance

Although, there are limitations attached to 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 perception of investors about the present and future prospects.

Table 5: Multiple Regression Results

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 FIN	-6.0964	3.1331	-1.9458**	0.0532
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

The control variables - SIZE_A and LEV are negative, and imply a negative relationship 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 might be interpreted that with increase in size of firm, the organizational inefficiencies have pulled down its value. Similarly, LEV measuring the impact of capital structure on firm's financial performance is statistically significant at 1%, when regressed with RO_A. It indicates that higher amount of debts on the part of firm are not greeted by shareholders.

The coefficients of six dummy variables representing the nature of industry are found negative for the dependent variable TOB_Q. It implies that their influence on TOB_Q is less by the value of their respective coefficients than the impact of reference category. NOI_MM is bearing the positive sign but not found statistically significant. Similarly, more dummies with negative coefficients than the positive ones, are seen with accounting measures i.e. RO_CE, RO_A. But, NOI_FIN has come up with positive and statistically significant with all three dependent variables. It suggests that the coefficients with positive sign impact financial performance more as compare to benchmark industry.

The outcome of statistically significant F-value for all three measures of financial performance; indicates the existence of link between nature of industry and its performance. Therefore, it can be said that the industry in which a company operates; is an important source of variability in the figure of FP.

Results of Multiple Regression Equation of Model-II

The Table 6, Table 7, and Table 8 are showing that the resultant F-statistic is significant at 1% level of significance. It suggests that model is appropriately fitted to the dataset. The findings are not consistent with regards to link between ENV_S, SOC_S, and GOV_S pillars and FP, when estimated 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_FIN	-0.5610	0.1004	-5.5888*	0.0000
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	0.7864	F-statistic	57.3823	
Adjusted R-square	0.7727	Significance F	0.0000*	

*Significant at 1% Level of Significance

The coefficient of ENV_S has been found positively linked with TOB_Q or firm's market value and also statistically significant at 1% level of significance. The same has surfaced negative but not statistically significant, when calculated by accounting measures i.e. RO_CE and RO_A. It indicates that the corporates are increasingly inclined towards adopting green practices to enhance financial indicators, and steps are being taken to reduce their negative footprints to save 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_FIN	-2.9860	3.2556	-0.9172	0.3602
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

All the three dependent variables have shown the establishment of a positive relationship with SOC_S. But statistically significant relationship is missing, only with TOB_Q. It tends to imply that improvement in social practices, have resulted in positive returns and better accounting performance. But, at the same time, it is also pointing out that investors are viewing lesser financial risk in the companies, which are involvement in higher level of social activities. Therefore, it can be inferred from the analysis that adherence to corporate social responsibilities in enhancing the financial value of enterprise.

Table 8: Multiple Regression Results

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_FIN	-6.6290	2.2893	-2.8956*	0.0042
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

The positive and statistically significant association is observed between GOV_S and all financial indicators. It is statistically significant at 1% when measured by TOB_Q, and RO_CE. It affirms that adhering to good governance practices leads to higher valuation of firm, and yields higher returns to investor. It also boosts the confidence of investors in the firm.

The outcome and performance of identified control variables – LEV, SIZE_A, and seven dummy variables representing the nature of industry - is likely to be almost similar to as it was witnessed in Model - I. The significant but negative sign of coefficients of LEV, and SIZE_A have demonstrated the inverse relationship with value of firm. The statistically significant value of F-Statistics of model describes that there is strong relationship between nature of industry and the value of company.

IV. CONCLUSION

In nineties, the ESG trends were not in public eye, but now the principal of ESG-based investing is a rising recognition among diverse set of stakeholders in emerging economies like India; and attaining more importance than ever before. Numerous studies have been undertaken to investigate the impact of ESG factors on financial performance of companies. More research has been carried out at international level than at home. But, the results have reported conflicting outcomes on the relationship of underlying variables. Therefore, an attempt has been made in this paper to trap and understand the linkage between the two issues; and also to increase the area of research by assessing the importance of non-financial factors – ESG practices – in affecting the FP of firm. A sample of 200 companies have been selected; for which required financial data, and ESG score; representing the quality of ESG practices; was available for the year 2020-21. The financial statistics have been extracted from PROWESS database, and the ESG score from the compendium of CRISIL. Both, the market-based and accounting-based measures have been used to represent the FP of companies. These are Tobin's Q; Returns on capital employed, and Return on assets. Capital structure or leverage, size of company, and nature of industry has been recognized as additional variables. Two models of regression analysis have been employed in the analysis. In the first model the combined ESG score has been used as proxy to ESG practices; whereas, in second model, individual score of each of three ESG pillars have replaced the consolidated score of

ESG factors. The empirical analysis has established a statistically significant positive impact of ESG factors on FP. On individual front, governance practices are found to be the major influential on FP, followed by social and environmental factors. The findings have demonstrated that good quality of ESG practices not only enhance FP, but also provide guidance in decision-making process to fund-providers, board of directors, regulators, and society.

V. LIMITATION OF THE STUDY

The following may be considered as the limitations of the study:

1. The outcome of analysis may be different, if panel data is analyzed.
2. The study is based on the statistics of the year 2020-21, which is not a normal year for business activities, due to wide spread Covid-19 pandemic all over the world.
3. Availability of data is a major concern. Only secondary sources of data have been the basis of research, which suffers from inherent limitations.

VI. FURTHER SCOPE OF THE STUDY

The study has its importance for different stakeholders, but not comprehensive enough to throw light on all minute aspects of ESG related issues, and their contribution to FP. Therefore, more elaborate and inclusive research efforts may be carried out with the cross-sectional data based on secondary as well as primary sources. The analysis provides a basic understanding to carry out further research.

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