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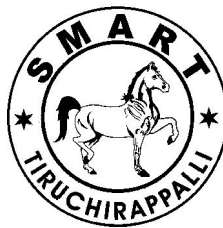
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ESG PERFORMANCE AS DETERMINANT OF FIRM PERFORMANCE: ACCOUNTING AND MARKET - BASED APPROACH

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Abstract

Stakeholders and regulators now consider environmental, social, and governance (ESG) activities as an important metric to measure the firm performance. The present study aims to analyze the impact of ESG performance on the financial performance of Indian firms. Considering a sample of 344 firms, the study employed the cross-sectional regression approach for data analysis. To measure ESG performance, proprietary data from CRISIL

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India was obtained through the public domain. Further, the current research applied accounting (measured by ROA) as well as market-based (Tobin's Q ratio) measures to measure financial performance. Based on the results, the findings revealed that ESG performance exerted significant positive effect on the accounting performance of the firm but market-based performance was not affected by the same. The present study provides several suggestions for academicians, managers, and policymakers, by considering a sample of one of the largest emerging economies. Further, it also adds value to the growing literature in the domain of ESG and financial performance.

1. Introduction

The National Voluntary Guidelines on Social, Environmental, and Economic Responsibilities of Business were released by the Ministry of Corporate Affairs (MCA), Government of India (GOI), in 2011 and marked the official start of the environmental, social, and governance (ESG) reporting in India. India has subsequently been on a path of rapid progress in creating ESG reporting practices, driven by the goal of aligning investments with ESG themes. However, it has become more widely recognized in recent years that the ESG reporting standard should move beyond its conventionally 'reactive' view of stock-taking and performance measuring schemes. Instead, the policy should adopt a "proactive" stance to create long-term value, combining several performance indicators and calculating ESG opportunities in both financial and non-financial terms **(Tyagi, 2021)**. Investors and other stakeholders consider ESG practices as an important determinant for firms' performance evaluation. ESG considerations are currently being used widely around the globe, to the point that the capitalization of ESG-geared portfolios in key markets is estimated to be US $30 trillion in 2019 **(Broadstock et al., 2021)**. Given the significance of ESG practices and their disclosure, there is a lack of comprehensive metrics to measure ESG performance at a global level. Further, managers and practitioners are also skeptical about the potential relationship between firm performance and the implementation of ESG practices. Stakeholders do not have any reliable source to acquire ESG performance data of corporations due to voluntary reporting frameworks in most countries, especially developing ones **(Raval et al., 2021)**. Therefore, the current research proposes to examine the relationship between financial performance and ESG score of listed companies in the context of the Indian economy which is the largest developing economy.

In the absence of standard metrics, CRISIL (credit rating firm) provides ESG risk assessment scores (out of 100) through their proprietary method, using the publically available data of companies. Various constituents of the composite ESG scoring are portrayed in Figure – 1 and the weights assigned are environmental - 35%, social - 25%, and governance - 40%. The ESG rating assists financial institutions and corporations in monitoring ESG risks in their holdings and also enhances cross-sector comparability. Present research used the CRISIL ESG score as the independent variable and examined its impact on financial performance.

2. Review of Literature

The present section describes the extant literature, focusing on ESG and firm performance. As the results are inconsistent, the section has been subdivided into two parts, integrating the positive and negative impact of ESG on financial performance.

2.1. ESG and Firm Performance: Positive Relation

Aboud and Diab (2018) studied Egyptian firms' ESG performance and discovered that businesses featured in the ESG index, reported better firm value and that there was positive relationship between firm value and higher ranks in the index. **Ahmad et al. (2021)** considered UK-based corporations, to study the influence of ESG performance on financial success. They concluded that ESG positively impacted the financial performance and also confirmed the moderating role of firm size. **Abdi et al. (2022)** analyzed 38 global airlines (2009-2019) and found that financial support for governance positively impacted the market-to-book ratio, while social and environmental engagement enhanced financial efficiency. **Fu and Li (2023)** analyzed the Chinese listed companies and concluded that ESG performance did have positive impact on financial performance. They also suggested greater impact for polluting companies than non-polluting ones. Another study by **Chang et al. (2023)** examined the relationship between ESG performance and corporate financing efficiency, through digital finance. They reported significant improvements in the financing efficiency of firms, with strong ESG performance and digital finance. **Bătae et al. (2021)** examined the connection between ESG aspects and European banks' performance and confirmed positive relation between financial performance and better ESG performance. **Aydoðmuþ et al. (2022)** studied the component-wise effect of ESG constituents, along with the composite ESG score of large-size global firms. They also found that composite ESG score, social, and governance scores positively impacted business value, but there was no meaningful association with environment ratings. Besides firm-level data, **Tampakoudis et al. (2023)** studied the performance of ESG-based mutual funds and suggested that high ESG mutual funds performed well across all types of non-equity, and equity-based funds. Another study by **Al Amosh et al. (2023)** found that ESG positively influenced Tobin's Q and return on equity, highlighting that prioritizing stakeholders, especially external ones, did improve the financial outcomes.

2.2. ESG and Firm Performance: Negative Relation

Makridou et al. (2023) analysed 911 firm-year observations, from 85 European energy-sector companies (1995-2020), revealing a minimal and negative impact of ESG components on the Corporate Financial Performance (CFP) of EU energy firms. Environmental responsibility exerted significantly negative effect while corporate social and governance duties were positively but not substantially associated with CFP. **Gutiérrez-Ponce and Wibowo (2023)** studied Indonesian banks (2010-2020) and reported negative impact of ESG on financial performance, measured by ROA and Tobin's Q. Component-wise, the study confirmed the negative impact of social and governance pillars on firm performance while the environmental pillar did exert limited impact on financial performance. **Agarwal et al. (2023)** studied the impact of ESG performance on the financial performance of Indian healthcare companies and reported substantial inverse relationship. **El Khoury et al. (2023)** examined the ESG's impact on banks in the MENAT region (2007-2019), identifying a non-linear and

negative relationship with varying trends for ESG pillars, emphasizing the importance of identifying ESG tipping points for rational investment decisions.

3. Statement of the Problem

Given the need for sustainable economic practices, corporate organizations are expected to contribute significantly to the realization of sustainable development. ESG performance is a significant metric of business sustainability. However, the multidimensionality of ESG constructs, the unclear reporting regulations, and the country-wide differences are potential factors that enhance the complexity of analyzing the ESG and firm performance nexus **(Figure-1)**. Therefore, stakeholders are unclear about its implications in business decision-making. Hence, the present research proposes to analyze the effect of ESG performance on financial performance and provide inputs for stakeholder decision-making.

4. Need of the Study

Given the growing adoption, the academic literature on ESG practices is scant and underexplored. Few studies have analyzed the association between ESG and financial performance (**Bătae et al. 2021; Nirino et al. 2021; Abdi et al. 2022**), and majority of them have focused on developed economies and there is a need to explore this area from the emerging economy perspective. Secondly, the existing research work on ESG had employed a voluntary reporting framework. But regulatory bodies are imposing mandatory requirements to implement and disclose ESG-related practices **(Desai, 2023),** and the current research will provide more relevant findings, considering the present institutional setting. Third, the extant literature on ESG practices and financial performance has posited inconsistent and contradictory results, which necessitates further probing in this area.

5. Objectives of the Study

The present study proposes to study the impact of ESG performance on the financial performance of Indian listed companies. In specific terms, the study proposes:

- To analyze the effect of CRISIL ESG score on accounting performance, measured by ROA
- To analyze the effect of CRISIL ESG score on market-based performance, measured by Tobin's Q ratio

6. Hypotheses of the Study

H_1: Individual components (environment, social, governance) of ESG performance have significant impact on ROA.

H_2: Individual components (environment, social, governance) of ESG performance have significant impact on Tobin's Q ratio.

H_3: Composite ESG score has significant impact on ROA.

H_4: Composite ESG score has significant impact on Tobin's Q ratio.

7. Research Methodology

7.1 Sample Selection

The present study was based on the ESG scores issued by CRISIL for the Indian-listed firms. To start with, all 526 companies were considered for evaluation and a final sample was arrived at, based on the availability of data. Current research employed a multi-stage sampling approach, wherein (i) firms with missing information about the selected variables were removed, and (ii) financial firms were also excluded due to distinct operating norms. Hence the final sample was arrived at as 344 companies.

7.2 Sources of Data

ESG scores of sample firms were collected from the web-published sources of CRISIL. Further, the PROWESS database of the Centre

for Monitoring Indian Economy (CMIE) was used, to collect financial data about the selected variables. It is one of the most widely used sources of data in past studies, focusing on Indian companies **(Desai, 2023; Agarwal et al. 2023)**.

7.3 Period of the Study

CRISIL India, for the first time issued the ESG score of Indian companies, in the year 2022 and hence the financial data were taken for the fiscal year 2021-22. The sample also consisted of cross-sectional data, from 344 companies, for the financial year 2021-22.

7.4 Tools Used in the Study

The present study was based on a cross-sectional regression model, considering firm value as the dependent variable and ESG scores as the independent variable. Further, the variance inflation factor (VIF) was used, to check multicollinearity and the Durbin-Watson Test was applied for autocorrelation. Equations (1) and (2) represent the models to be estimated, using a pooled regression approach. The **Table-1** presents the operationalization of the variables, along with the computation method and source.

$$TQ_i = \alpha + \beta_1 \times X_i + \beta_2 \times \sigma_i + \sum_{i=1}^{45} \text{Industry Effects} + \sum_{i=1}^{344} \text{Firm Effects} + \varepsilon \text{_____(1)}$$

$$ROA_i = \alpha + \beta_1 \times X_i + \beta_2 \times \sigma_i + \sum_{i=1}^{45} \text{Industry Effects} + \sum_{i=1}^{344} \text{Firm Effects} + \varepsilon \text{_____(2)}$$

Where,

X_i = Environmental Score, Social Score, Governance Score, ESG Score

σ_i = Firm-specific control variables like size, leverage, dividend pay-out, and cash flow

8. Data Analysis and Interpretation

8.1 Descriptive Statistics and Correlation Analysis of Financial Data of Sample Companies

Table-2 presents the descriptive results of the sample financial data. The mean values of Tobin's Q and ROA were 4.35 and 10.44% respectively, which reflected higher market value and mediocre profitability of sample companies. However, both measures of firm performance reported greater standard deviation (Q ratio = 6.30; ROA = 14.99%) value as compared to the mean, which signified a high degree of volatility. Referring to the scores, the environmental score was 43.98 whereas social and governance were 50.38 and 67.44 respectively. The mean value of the composite ESG score was also 54.98, which was marginally higher than 50%. Analyzing the control variables,

it can be inferred that sample companies had financed approximately 48% of their total assets through borrowing. Further, the average dividend pay-out of sample firms was 25.33%, showing that majority of profits was reinvested. The cash flow position of sample firms was found to be poor as indicated by the mean value, and hence the need for firms to work on their cash management.

Table-2 summarizes the results of Pearson correlation among the selected variables. Results revealed that ESG scores did report positive relation with financial performance indicators, both under market value and accounting measure. However, the correlation coefficient was not statistically significant for Tobin's Q ratio (p-value > 0.05) whereas the correlation between accounting profitability was significant (p-value < 0.05). Further, analyzing the control variables,

it was found that leverage and size reported negative and significant relation with the firm performance. Dividend payout and cash flow were found to have insignificant relation with both measures of financial performance.

8.2 Regression Analysis of Financial Performance, Using Tobin's Q and ROA

Table-3 describes the outcome of regression analysis, considering Tobin's Q and ROA as dependent variables. The component-wise scores of different ESG indicators were highly correlated and therefore, the regression model was estimated four times, by using each component; E, S, and G as well as the overall ESG score, to overcome the issue of multicollinearity. The study also applied VIF measure to control the multi-collinearity. The overall significance of the regression model was tested, using the F-test and results indicated that all models were statistically significant as p-value was < 0.01. The adjusted R^2 values of all models varied from 33% to 46%, indicating the changes in the financial performance explained by the estimated model. Lastly, the highest values of the VIF and DW test were 1.990 and 2.246, indicating that multicollinearity and autocorrelation did not affect the results and that findings were robust. The regression coefficient revealed that ESG scores did not affect the market value of sample companies (p-value > 0.05). Therefore, hypotheses H_2 and H_4 were rejected. Besides, except dividend and cash flow, all control variables i.e. size (p-value < 0.01), profitability (p-value < 0.05), and leverage (p-value < 0.10) had exerted significant effect on the Q ratio. On the contrary, component-wise as well as overall ESG scores exerted significant positive effect on financial performance, as measured by ROA (p-value < 0.01). Hence, the hypotheses H_1 and H_3 were supported by the findings and eventually accepted. Besides, except cash flow, all control variables i.e. size (p-value < 0.05), and leverage (p-value < 0.01) reported significant effect on ROA.

9. Findings of the Study

Based on descriptive results, the study found that the sample firms reported low to medium scores on various ESG-related parameters. It can be explained by the fact that ESG reporting in India is voluntary and there is no regulatory framework to monitor the same. Analyzing the regression results, the study found that the ESG score exerted insignificant impact on the firm market value (measured by Tobin's Q ratio), with positive significant impact on accounting profitability (measured by ROA). This can be explained by the voluntary nature of ESG reporting. CRISIL India employed a proprietary method to collect ESG-related data through questionnaires but there was no legal mandate to disclose ESG performance. Further, there is lack of standard measures to indicate ESG performance and as a result, investors do not consider ESG performance as value relevant. Similar findings are reported in emerging economies by **Raval et al. (2021)** and **Demers et al. (2021).** On the contrary, the positive impact of ESG score on ROA can be explained by the growing adoption of ESG practices across the globe and the same is valued by all stakeholders such as consumers, suppliers, and employees.

10. Suggestions

The results of the study will have several implications for managers and policymakers. Policymakers might encourage business organizations to start reporting on ESG factors since the study demonstrates a favourable correlation between ESG and firm value. This will increase transparency. Additionally, managers can improve stakeholder confidence and lessen knowledge asymmetry between

investors and management, by using ESG performance and disclosure. The market value of businesses may rise even more as a result. In the context of a growing nation, the current study aims to present compelling evidence for ESG performance and company performance.

11. Conclusion

Growing concerns about the ecological damage caused by corporate entities, regulators are forced to enact policy measures to compel disclosures and control the same. As an outcome of this, SEBI has issued guidelines for Indian enterprises to compulsorily file an ESG report, along with their annual financial statements, from the fiscal year 2022–2023. Considering the SEBI guidelines as the guiding force, the current study examined the effect of ESG performance on the financial performance of Indian companies. Based on the ESG scores developed by CRISIL India, the present research examined the impact of ESG performance on ROA (accounting measure) and Tobin's Q (market-based measure) of the sample firms. The current study employed a cross-sectional regression approach and analyzed the data of 344 publicly traded companies. Based on the regression results, the study found significant positive impact of ESG performance on ROA whereas Tobin's Q ratio was not considerably impacted by ESG scores. The findings also revealed that Indian capital markets do not consider ESG data as value-relevant as the disclosure of such data is voluntary and they are not available in the public domain.

12. Limitations of the Study

The present study encountered a few limitations that can be resolved by additional studies. The study was based on listed entities in the Indian stock market and hence the findings may not be applicable to unlisted firms. Second, as SEBI regulation was issued in May 2021, the current study was cross-sectional and considered only data from a single fiscal year.

13. Scope for Further Study

The present research can be extended in the future, by using time-series data of multiple financial years, to provide longitudinal effects of ESG scores. Second, in addition to financial aspects, it is possible to examine the impact of governance-related factors on company value, such as board size, board independence, and CEO duality.
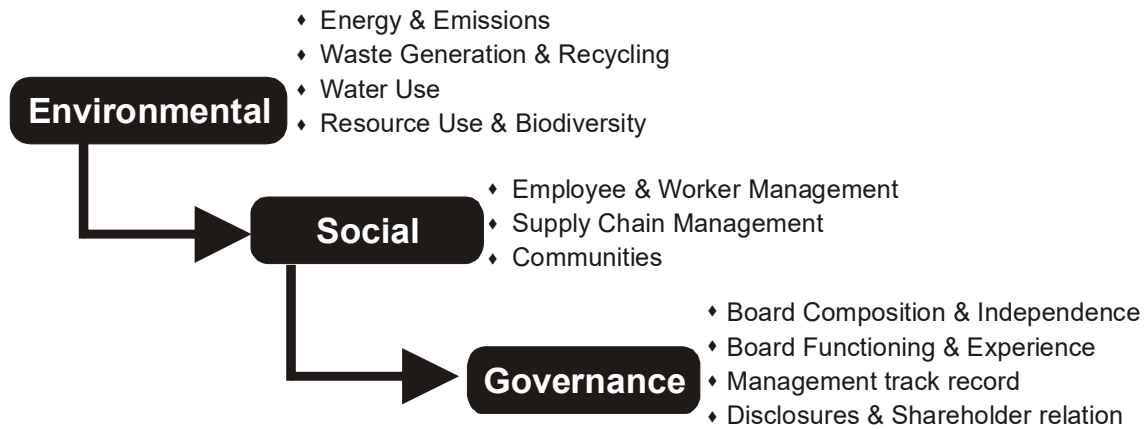
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Figure 1: Constituents of ESG Score

Environmental
- Energy & Emissions
- Waste Generation & Recycling
- Water Use
- Resource Use & Biodiversity

Social
- Employee & Worker Management
- Supply Chain Management
- Communities

Governance
- Board Composition & Independence
- Board Functioning & Experience
- Management track record
- Disclosures & Shareholder relation

Source: Compiled by authors

Table 1: Operationalization of Variables along with Computation and Sources

Variable Name	Computation Method	Source
Dependent Variables		
Tobin's Q (TQ)	$\dfrac{\text{Equity Market Value + Book value of Debt}}{\text{Total Asset}}$	Al-Qahtani and Elgharbawy (2020)
ROA	$\dfrac{\text{EBIT}}{\text{Total Assets}}$	Pulino et al. (2022)
Independent Variable		
Component-wise as well as Composite ESG Score		Obtained from the published sources of CRISIL India
Control Variables		
Leverage	$\dfrac{\text{Total Debt}}{\text{Total Asset}}$	Zhou et al. (2022)
Size	Log (Total Assets)	Aydoğmuş et al. (2022)
Div_Pay-out	$\dfrac{\text{Dividend}}{\text{Profit after tax}}$	Abdi et al. (2022)
Cash Flow	$\dfrac{\text{Net Cashflow}}{\text{Total Asset}}$	Agarwal et al. (2023)

Source: Compiled by authors

Table-2: Summary Statistics and Correlation Matrix for the Variables under Study

Variables	Mean (SD)	Max (Min)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TQ (1)	4.35 (6.30)	61.11 (0.02)	1									
ROA (2)	0.10 (0.15)	0.96 (-1.22)	0.176**	1								
E_S (3)	43.98 (11.89)	81 (20)	0.006	0.067*	1							
S_S (4)	50.39 (8.35)	68 (25)	0.009	0.126*	0.612**	1						
G_S (5)	67.44 (6.71)	82 (40)	0.059	0.168**	0.315**	0.315**	1					
ESG (6)	54.98 (7.10)	76 (36)	0.022	0.135*	0.888**	0.772**	0.657**	1				
Lev (7)	0.48 (0.99)	8.09 (0.00)	-0.188**	-0.190**	0.056	0.043	0.057	-0.012	1			
Size (8)	10.85 (0.73)	13.7 (9.54)	-0.215**	-0.133*	0.210*	0.267*	-0.067	0.172*	0.288**	1		
DPR (9)	0.25 (0.35)	2.51 (0.00)	0.052	0.307**	0.085	0.076	0.188**	0.139*	0.146*	0.047	1	
CFA (10)	0.01 (0.04)	0.21 (-0.2)	0.026	-0.111	0.06	0.056	-0.012	0.048	0.097	0.086	-0.188*	1

Source: Authors' compilation based on SPSS output

*significant at 5%; **significant at 1%

Table-3: Cross-sectional Regression Model of Financial Performance using Tobin's Q and ROA

	ENV→TQ	SCL→TQ	GVN→TQ	ESG→TQ	ENV→ROA	SCL→ROA	GVN→ROA	ESG→ROA
Constant	19.543**	19.290**	18.935**	18.565**	0.286*	0.245*	0.075*	0.179***
E_Score	0.022	--	--	--	0.010***	--	--	--
S_Score	--	0.019	--	--	--	0.030**	--	--
G_Score	--	--	0.009	--	--	--	0.034**	--
ESG	--	--	--	0.030	--	--	--	0.035**
Leverage	-0.759***	-0.754***	-0.748***	-0.748***	-0.240**	-0.230**	-0.021**	-0.022**
Size	-1.494**	-1.481**	-1.417**	-1.476**	-0.021*	-0.026*	-0.016*	-0.023***
Cash Flow	1.568	1.743	1.921	1.601	-0.347	-0.354	-0.325	-0.354
Profitability	5.633*	5.606*	5.729*	5.590*	--	--	--	--
Dividend	0.294	0.256	0.257	0.307	--	--	--	--
Firm Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F – Stat	3.925**	3.874**	3.849**	3.904**	4.288**	5.598**	4.977**	5.310**
R^2 / Adj. R^2	0.382 / 0.361	0.350/0.332	0.378/0.352	0.392/0.374	0.461/0.447	0.478/0.464	0.470/0.456	0.474/0.461
DW Stat / VIF	1.990 / 1.151	1.985/1.194	1.986/1.165	1.986/1.153	2.208/ 1.140	2.206/1.176	2.246/ 1.120	2.224/1.131

Source: Authors' compilation based on E-views output
*significant at 5%; **significant at 1%; ***significant at 10%